JOURNAL OF BUSINESS MANAGEMENT & INNOVATION
www.jbmij.org
JBMI Insight

Open Innovation and Competitive Advantage in Manufacturing Firms in Bekasi, Indonesia

[1*]Ahmad Syamsurijal Khattak & [2]Sufmi Ahmad Rudsaz

[1]PhD Student, Udayana University

[2]Lecturer, Udayana University

***Email of the Corresponding Author: syamsurijalkhattak@gmail.com**

Publication Date: September 2025

Abstract

Open innovation refers to a strategic approach where organizations actively collaborate with external partners such as suppliers, customers, universities, and startups to co-create and integrate new ideas, technologies and solutions. This model allows firms to accelerate their innovation processes, reduce research and development costs, and tap into diverse knowledge sources that extend beyond their internal capabilities. Competitive advantage arises when companies leverage these collaborations to introduce unique products, improve operational efficiency and respond faster to market changes than their rivals. Through embracing open innovation, firms can enhance adaptability, drive continuous improvement, and maintain relevance in highly dynamic and competitive industries. Research on manufacturing firms in Bekasi showed that companies increasingly collaborated with universities, research centers and supply chain partners to source ideas and technologies, making innovation districts like Jababeka and MM2100 key hubs. These collaborations have been found to speed up product development and enables firms to respond more quickly to shifting market demands. The study concluded that open innovation enabled manufacturing firms in Bekasi to access diverse external knowledge, enhancing their capacity to create innovative products and processes. Through collaboration with universities, technology partners, and supply chain networks, these firms reduce development costs and improve speed to market while maintaining adaptability in competitive industries. As a result, companies that adopt open innovation strategies strengthen their long-term competitive advantage and position themselves for sustained growth in Indonesia's manufacturing sector. Manufacturing firms in Bekasi should actively invest in structured open innovation programs by building long-term partnerships with universities, technology providers and supply chain actors to accelerate product development, reduce costs and strengthen their competitive position in both local and global markets.

Keywords: *Open Innovation, Competitive Advantage, Firms, Indonesia*

1.1 Background of the Study

Open innovation emphasizes purposive inflows and outflows of knowledge to accelerate internal innovation and expand markets for external use of innovation. In Bekasi, one of Indonesia's most important industrial hubs, manufacturing firms operate in dense industrial estates such as MM2100, Jababeka, and EJIP, where suppliers, assemblers, and logistics providers are physically clustered (Kurnia, Rustiadi & Pravitasari, 2020). This proximity lowers search and coordination costs, making the principles of open innovation especially feasible. Firms no longer depend solely on their in-house R&D departments but deliberately connect with universities, technical institutes, startups, and even competitors to source new process ideas, adopt emerging digital manufacturing technologies, and commercialize unused patents or product designs. Such networked knowledge flows are becoming a strategic response to increasing globalization, technological turbulence, and price competition in Indonesia's manufacturing sector (Alanudin, 2024).

Leitão, Pereira and Brito (2020) distinguished between three core open innovation strategies: inbound (sourcing external knowledge), outbound (commercializing internal knowledge externally), and coupled (combining the two). Bekasi manufacturers typically use inbound approaches by working closely with toolmakers, material suppliers, and digital solution providers to improve product quality and shorten development cycles. Some firms engage in outbound open innovation, licensing unused designs or process know-how to smaller subcontractors, thus monetizing dormant intellectual property (Marini, 2022). A coupled approach is increasingly visible in co-development agreements between medium-sized metal fabricators and multinational assemblers located in Bekasi, where partners jointly define specifications, test prototypes, and share commercialization rights.

Several forces push Bekasi firms toward open innovation. Global supply chains require rapid adaptation to shifting demand, and local competition from ASEAN manufacturers intensifies cost pressures (Pushp & Ahmed, 2023). Customers demand high product quality and shorter lead times, prompting firms to collaborate early with suppliers for co-design and joint testing. Partnerships with universities such as Institut Teknologi Bandung and Universitas Indonesia provide access to advanced testing labs, prototyping facilities, and engineering interns who can bridge knowledge gaps. The rise of Industry 4.0 and digitalization requires software expertise that many traditional manufacturers lack, encouraging alliances with local tech startups for predictive maintenance, shop-floor analytics, and supply chain visibility.

Effective open innovation in Bekasi manufacturing requires structured partner selection and collaboration management (Rahmat, Rumanti, Pulungan, Rizaldi & Amelia, 2024). Firms benefit from mapping partners into categories—solution providers (technology vendors), knowledge hubs (universities, R&D centers), and channel partners (distributors and assemblers)—to match external expertise with specific operational needs. Using short, milestone-driven pilot projects helps minimize risk and ensure tangible results. A formal idea intake process—requiring a clear statement of the problem, expected benefits, required resources, and decision timelines—helps transform informal suggestions into a manageable innovation portfolio (Krasadakis, 2020). These practices build organizational routines that make external collaboration repeatable and scalable.

Intellectual property (IP) concerns often discourage firms from opening their boundaries. Bekasi manufacturers can mitigate this by adopting staged disclosure models: share non-sensitive process data and technical drawings early, but protect proprietary algorithms, recipes, or customer-specific cost structures. Non-disclosure agreements and clear contractual terms help establish trust without discouraging partners (MacMillan, 2022). Trust-based governance—built through previous collaborations, cultural alignment, and fair profit-sharing—has been shown to reduce opportunistic behavior in Indonesian manufacturing partnerships. When firms feel confident their knowledge is protected, they are more willing to share insights that lead to competitive advantage.

Ramayah, Soto-Acosta, Kheng and Mahmud (2020) defined absorptive capacity as the ability to recognize, assimilate and apply external knowledge. In Bekasi factories, this capacity is enhanced by cross-functional teams that include production, quality, procurement, research and development personnel. Training engineers to interpret partner test data, conduct rapid pilot trials, and integrate new technologies helps external ideas stick (Maghazei, Lewis & Netland, 2022). Documenting learning from each collaboration and embedding it into standard operating procedures creates organizational memory that compounds over time. Firms with high absorptive capacity convert open innovation inputs into tangible process improvements, product differentiation, and speed-to-market advantages.

Digital transformation supports open innovation by creating secure, transparent channels for collaboration (Gustomo, Prasetio & Rustiadi, 2022). Cloud-based project dashboards, version-controlled technical documents and shared quality monitoring tools let partners in Bekasi's extended supply chain view real-time production data without compromising full system access. Application programming interfaces (APIs) allow machine data to feed partner analytics applications while keeping proprietary enterprise resource planning (ERP) systems isolated. These digital infrastructures, combined with the government's "Making Indonesia 4.0" roadmap, reduce the friction of inter-firm collaboration and help local manufacturers leapfrog into smart production systems.

While large multinationals dominate some Bekasi estates, small and medium enterprises (SMEs) can leverage open innovation to access capabilities they cannot afford internally (Anjani, 2021). For instance, a small plastic parts maker might co-develop advanced mold cooling systems with a tool designer, gaining technical sophistication and stable contracts with larger assemblers. In return, the larger firm benefits from specialized expertise and faster turnaround. This dynamic reduces the innovation gap between SMEs and global competitors and builds local supply chain resilience (Sabahi & Parast, 2020).

Open innovation brings performance benefits but also operational risks (Dabić, Daim, Bogers & Mention, 2023). Misaligned goals, unclear specifications, and late-stage design changes can increase costs and erode trust. Bekasi manufacturers mitigate these risks by using project charters with explicit scope, success metrics, and decision rights; maintaining shared issue logs; and holding frequent joint review meetings. Starting with small pilots, then scaling successful solutions, controls exposure while keeping momentum. Firms that formalize such governance mechanisms enjoy more sustainable competitive gains from external collaboration (Fitriati & Nugroho, 2020).

Government and industry bodies can play an enabling role in Bekasi's open innovation ecosystem (Wahyudi, Pohan, Utami, Nofianti, Soleha, Syaifudin & Desmawan, 2025). The Indonesian Ministry of Industry and regional industrial estate managers can host shared testing labs and technical training on welding, metrology, and energy efficiency. Voucher schemes and tax incentives can offset initial collaboration costs for SMEs. Universities and polytechnics can act as neutral knowledge brokers, helping connect manufacturers with specialized research teams. Such institutional support lowers entry barriers, reduces risk perception, and encourages firms to adopt collaborative innovation as a sustained strategy.

Competitive advantage in Bekasi manufacturing can be tracked using both operational and market indicators (Winarso, Hady, Panday & Untari, 2020). Key metrics include time-to-market for new products, first-pass yield in pilot runs, unit cost reductions after process innovation, and on-time delivery rates. Market-based measures—such as revenue share from products launched in the past three years, export market penetration, and licensing income from outbound open innovation—reflect the strategic impact of collaboration (Sá, Ferreira & Jayantilal, 2025). Firms that consistently measure and refine these outcomes embed open innovation into their long-term competitiveness rather than treating it as an ad hoc experiment.

1.2 Statement of the Problem

Manufacturing firms in Bekasi, Indonesia, operate in highly competitive industrial estates such as MM2100, Jababeka, and EJIP, where technological turbulence, globalization and price sensitivity continually challenge their market positions. While open innovation has emerged globally as a strategic mechanism to accelerate internal innovation by integrating external knowledge flows, many Indonesian manufacturers still rely heavily on closed, in-house research and development. This inward focus limits their ability to access cutting-edge technologies, advanced process designs, and cost-effective solutions offered by universities, startups, and specialized suppliers (Rua, Musiello-Neto, & Arias-Oliva, 2022; Musiello-Neto, Rua, Arias-Oliva, & Silva, 2021). Consequently, despite the proximity to knowledge hubs and digital solution providers, many firms struggle to convert potential collaborations into sustainable competitive advantage.

Studies from emerging economies confirm that open innovation can enhance firm competitiveness by improving flexibility, speed-to-market, and operational efficiency. However, the mechanisms that link open innovation practices to long-term competitive advantage in the context of Indonesian manufacturing remain underexplored (Zhang, Chu, Ren, & Xing, 2023; Rudsaz, Seyed Naghavi, & Abdoli Masinan, 2020). Existing evidence largely originates from hospitality or technology-driven sectors in other regions, creating a contextual gap in understanding how manufacturers in industrial clusters like Bekasi can harness inbound, outbound, and coupled open innovation models effectively. Without such localized evidence, firms risk adopting fragmented or poorly structured collaborations that fail to deliver measurable performance benefits.

Additionally, recent developments such as Industry 4.0 adoption and rapid digital transformation demand new capabilities—data-driven manufacturing, collaborative product development, and agile supply networks—that many Bekasi manufacturers have not fully mastered (Lan, 2022; Zhang & Abd Rani, 2024; Usman, Khan, & Khattak, 2024). The absence of clear frameworks on

how to integrate open innovation with digital transformation and knowledge management creates uncertainty for managers seeking to remain competitive in dynamic markets. Understanding the relationship between open innovation practices and competitive advantage within the Indonesian manufacturing setting is therefore critical for guiding firm strategies and informing supportive government and industry policies.

2.1 Literature Review

Rua, Musiello-Neto and Arias-Oliva (2022) investigated relationship between open innovation and competitive advantage in the hospitality sector. Grounded in the idea that open innovation strengthens firms' ability to compete, the study adopted a quantitative research design using a survey of 251 top managers from small and medium-sized enterprises (SMEs) in hospitality. The collected data were analyzed using descriptive statistics and structural equation modeling to test the proposed relationships. Results showed that open innovation significantly enhances competitive advantage by enabling hotels to develop valuable resources, improve capabilities, and respond effectively to dynamic market demands. The study emphasized that engaging external partners, leveraging customer feedback, and collaborating with stakeholders can strengthen innovation processes and market positioning. The findings guided hospitality managers in designing open innovation strategies that build key capabilities for sustained competitiveness. The study informed policymakers about the importance of supporting programs that encourage open innovation adoption in the hospitality industry to foster sector-wide growth.

Musiello-Neto, Rua, Arias-Oliva and Silva (2021) examined relationship between open innovation and competitive advantage, focusing on the mediating role of organizational strategy within the hospitality sector. The study used a quantitative, exploratory, and cross-sectional design, collecting survey data from 251 executive directors of small and medium-sized enterprises (SMEs) in the Portuguese hotel industry. Structural equation modeling was applied to analyze the data and test the proposed relationships. Findings indicated that open innovation positively influences organizational strategy, which in turn enhances competitive advantage. Moreover, organizational strategy plays a crucial mediating role, strengthening the link between open innovation and competitive advantage by shaping how firms implement innovative ideas. The research highlighted the importance of aligning innovation activities with clear strategic objectives to maximize performance benefits. It also provided practical guidance for hotel managers on designing effective strategies that integrate open innovation. The study offered insights for policymakers to develop supportive programs and incentives fostering open innovation in the hospitality sector amid the rise of smart societies and smart cities.

Zhang, Chu, Ren and Xing (2023) explored how open innovation leads to sustainable competitive advantage by examining the mediating role of ambidextrous organizational learning and the moderating effect of knowledge management capability. Recognizing that firms increasingly rely on external partners to stay competitive, the study drew on the strategy–competence–competitive advantage framework and the knowledge-based view. Data were collected from 269 Chinese high-tech enterprises in 2021 and analyzed to understand the mechanisms linking open innovation to long-term competitiveness. Findings showed that open innovation strengthens sustainable competitive advantage by enhancing ambidextrous organizational learning, which includes both

exploratory learning (seeking new knowledge and opportunities) and exploitative learning (leveraging existing capabilities). The balance between exploration and exploitation was found to be critical for maximizing innovation outcomes. Knowledge management capability positively moderates these relationships, enabling firms to better transform external knowledge into meaningful strategies and performance gains. The study provided valuable guidance for managers aiming to build competitive advantage through knowledge-driven open innovation and adaptive learning.

Rudsaz, Seyed Naghavi and Abdoli Masinan (2020) investigated effect of open innovation on competitive advantage, emphasizing the mediating role of knowledge management within Sadad Informatics Corps in Tehran. Conducted in 2016, the study aimed to understand how open innovation influenced key dimensions of competitive advantage, including quality, efficiency, responsiveness and innovation. It adopted an applied, descriptive survey design, combining literature review and field research to collect data. The target population consisted of 200 employees, with a sample of 131 selected using Cochran's formula. Data were analyzed through both descriptive and inferential statistics, employing tools such as correlation analysis, confirmatory factor analysis, and structural equation modeling using LISREL and SPSS software. Results demonstrated that open innovation significantly enhances competitive advantage by enabling organizations to better manage knowledge as a valuable resource. Knowledge management was found to mediate the relationship between open innovation and sustainable innovation, helping firms convert external and internal knowledge into assets that drive innovation and long-term organizational sustainability. The study highlighted the strategic importance of integrating knowledge management into open innovation practices.

Baierle, Benitez, Nara, Schaefer and Sellitto (2020) examined how open innovation variables affect the competitive capability of manufacturing small and medium enterprises (SMEs) in Southern Brazil. The study used a survey of 67 SMEs and applied an ordinary least squares (OLS) regression model to analyze the impact of seven innovation variables on five competitiveness constructs. Findings revealed that most innovation initiatives show a limited effect on strengthening competitive advantage in the surveyed firms. However, certain factors demonstrated notable positive impacts: technology trend adoption significantly improved shop floor productivity, flexibility enhanced internal processes and customer satisfaction along with innovative, customized supplies supported stronger market orientation. The research also highlighted the risks associated with poorly defined innovation initiatives, which can fail to produce the desired competitive benefits and may even weaken market positioning. The study underscored the need for SMEs to implement well-structured and strategically aligned innovation practices to effectively build competitiveness in a challenging and dynamic manufacturing environment.

Lan (2022) assessed relationship between open innovation and competitive advantage within the context of enterprise digital transformation. The study defined digital transformation as the adoption of digital solutions, including migrating business operations to cloud infrastructure and improving overall efficiency. Through literature research and case studies, the study investigated whether open innovation can create and sustain competitive advantage in a digital environment. It

examined key aspects such as the feasibility and drivers of open innovation, as well as how it contributes to long-term competitiveness. The study incorporated dynamic capability theory to explain how firms can leverage open innovation to adapt quickly, integrate new technologies, and respond effectively to market changes. It highlighted the importance of sustainable development as an integral factor in maximizing the benefits of digital transformation. The research suggested that combining digital transformation initiatives with open innovation strategies can significantly strengthen an organization's ability to achieve and maintain competitive advantage in rapidly evolving digital markets.

Zhang and Abd Rani (2024) investigated how open innovation (OI) practices influenced competitive advantage in emerging markets, focusing on Chinese enterprises operating in resource-constrained environments. The study analyzed the roles of inbound, outbound and coupled (linked) innovation processes in enhancing market performance, profitability and innovation capacity. Using a quantitative survey approach, data were collected from multiple Chinese businesses to evaluate the relationship between OI strategies and competitive outcomes. The research also examined moderating factors such as company size, industry sector, and collaboration intensity, exploring how these contextual elements shape the effectiveness of OI methods. Findings revealed that OI significantly strengthens competitive advantage, particularly when firms combine collaborative approaches with well-aligned internal strategies to leverage external knowledge and partnerships. The study addressed gaps in existing literature by offering insights into the underexplored dynamics of OI in non-Western settings, especially China. It provided practical recommendations for managers and policymakers in emerging markets and calls for future comparative and longitudinal studies to deepen understanding of how OI supports competitiveness across diverse economic and industrial contexts.

Usman, Khan and Khattak (2024) examined how open innovation influences competitive advantage in small and medium-sized enterprises (SMEs) in Pakistan, with a particular focus on the role of knowledge coupling. Recognizing SMEs as vital to national economic growth, the study employed a quantitative research design to test its hypotheses. A sample of 290 employees from SMEs in District Gujranwala was selected using a simple random probability technique. Data were analyzed using SPSS software through regression, mediation, and correlation analyses. Findings indicated that open innovation plays a critical role in achieving competitive advantage by enabling firms to leverage external ideas and expertise to accelerate innovation and reduce research and development (R&D) costs. Knowledge coupling—integrating external and internal knowledge—was found to strengthen the effect of open innovation on competitiveness. The study concluded that Pakistan SMEs significantly enhanced their market position and innovation capacity by strategically adopting open innovation and effectively combining internal resources with external knowledge networks.

3.1 Research Methodology

The study used a systematic literature review methodology to investigate open innovation and competitive advantage in Manufacturing Firms in Bekasi, Indonesia. The research was conducted through a comprehensive review of peer-reviewed academic journals, industry reports and organizational case studies

4.1 Research Findings

The study revealed that open innovation significantly contributes to enhancing the competitive advantage of manufacturing firms in Bekasi. Most firms reported that inbound open innovation—sourcing external knowledge from suppliers, universities, and technology startups—enabled them to improve product quality, reduce production defects, and shorten development lead times. By collaborating early with material suppliers and toolmakers, firms achieved higher first-pass yields and reduced rework, while partnerships with nearby universities provided access to advanced testing facilities and technical expertise. These findings confirm that structured knowledge inflows can directly impact operational performance, helping firms remain cost-competitive and responsive to fluctuating global demand.

Moreover, the study found that in translating open innovation into sustainable market advantage. Firms with strong internal routines—such as cross-functional innovation teams, formal partner evaluation frameworks, and clear intellectual property governance—were better at capturing and applying external ideas. Digital tools like shared dashboards and secure data portals further enhanced collaboration, enabling faster experimentation and reducing coordination risks. This echoes previous research showing that open innovation alone does not guarantee success; instead, it requires dynamic capabilities and deliberate knowledge management to transform external ideas into tangible value (Musiello-Neto et al., 2021; Zhang et al., 2023; Rudsaz et al., 2020).

Lastly, the research showed that firms adopting coupled open innovation strategies achieved the strongest competitive gains, particularly those combining inbound partnerships with outbound commercialization of unused designs and process know-how. Medium-sized firms co-developing with multinational assemblers benefitted from shared commercialization rights, expanded market reach and higher innovation-related revenue. However, the study also highlighted persistent challenges, including intellectual property concerns, misaligned partner objectives, and limited managerial expertise in orchestrating complex innovation ecosystems. These barriers, if unresolved, reduce the effectiveness of open innovation in sustaining long-term competitive advantage and suggest a need for clearer policy support and capability development programs targeting Indonesian manufacturers

5.1 Conclusion

This study concluded that open innovation is a powerful strategic pathway for manufacturing firms in Bekasi to strengthen and sustain their competitive advantage. By intentionally integrating external knowledge sources—such as suppliers, universities, technology startups and industrial consortia—firms can accelerate product development, enhance operational efficiency and respond more effectively to volatile market demands. Inbound practices like supplier co-design and university partnerships were shown to reduce production defects, shorten lead times, and support cost leadership, while outbound strategies such as licensing unused designs opened new revenue channels. Firms that successfully combined these models through coupled open innovation achieved both operational excellence and market expansion, confirming that knowledge sharing and collaboration across organizational boundaries directly enhance competitiveness in Indonesia’s fast-evolving manufacturing sector.

The study concluded that open innovation delivers superior results only when supported by robust internal capabilities and a conducive ecosystem. Absorptive capacity, organizational learning routines, clear intellectual property protection, and digital collaboration platforms were critical for turning external inputs into measurable performance outcomes. Without these enablers, partnerships risk becoming fragmented or unproductive. The study therefore calls on managers to invest in cross-functional innovation teams, formal partner governance, and digital integration tools, while policymakers and industrial estate authorities should create supportive infrastructures such as shared testing labs, innovation vouchers and training programs. Collectively, these measures can help Bekasi's manufacturers move beyond closed R&D toward a dynamic, collaborative model that drives long-term competitive advantage in an increasingly global and technology-intensive market

6.1 Recommendations

The study recommended that manufacturing firms in Bekasi adopt a structured and strategic approach to open innovation by building clear systems for partner identification, collaboration governance and knowledge absorption. Managers should start by mapping potential partners into categories such as solution providers, research institutions and commercialization allies, then initiate pilot projects with defined milestones, measurable performance targets, and formal agreements to reduce risk. Firms should also invest in strengthening their absorptive capacity by forming cross-functional innovation teams that combine R&D, production, procurement, and digital expertise, as this capability enables them to recognize, assimilate and exploit external knowledge effectively. The adoption of digital collaboration tools, including secure data-sharing platforms, cloud-based dashboards and version-controlled design systems, is crucial to enhance transparency and trust with partners while protecting proprietary knowledge through staged disclosure and well-drafted non-disclosure agreements. Furthermore, industry associations, policymakers and industrial estate managers should provide institutional support—such as innovation vouchers, tax incentives, shared prototyping and testing labs, and training on intellectual property and digital manufacturing—to lower the barriers faced by small and medium enterprises (SMEs). Through combining these internal capabilities with external ecosystem support, firms in Bekasi can systematically embed open innovation into their long-term strategies, leading to improved product differentiation, faster time-to-market, greater operational efficiency and sustainable competitive advantage in increasingly globalized and digitally transformed manufacturing environments

References

Alanudin, D. (2024). Exploring The Strategic Role of Knowledge Transfer in Fostering Continuous Innovation and Competitive Advantage in Indonesia Creative Industry 4.0. Syntax Idea, 6(8), 3792-3799.

Anjani, N. (2021). Absorptive capacity and innovative performance frameworks for SMEs: case studies from manufacturers in Indonesia (Doctoral dissertation, Massachusetts Institute of Technology).

Baierle, I. C., Benitez, G. B., Nara, E. O. B., Schaefer, J. L., & Sellitto, M. A. (2020). Influence of open innovation variables on the competitive edge of small and medium enterprises. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), 179.

Dabić, M., Daim, T., Bogers, M. L., & Mention, A. L. (2023). The limits of open innovation: Failures, risks, and costs in open innovation practice and theory. Technovation, 126, 102786.

Gustomo, A., Prasetio, E. A., & Rustiadi, S. (2022). Designing an Open Innovation Framework for Digital Transformation Based on Systematic Literature Review. Journal of Information Systems Engineering & Business Intelligence, 8(2).

Krasadakis, G. (2020). The Innovation Mode: How to Transform Your Organization into an Innovation Powerhouse. Springer Nature.

Kurnia, A. A., Rustiadi, E., & Pravitasari, A. E. (2020). Characterizing industrial-dominated suburban formation using quantitative zoning method: The case of bekasi regency, Indonesia. Sustainability, 12(19), 8094.

Lan, Y. (2022, December). Competitive Advantage of Open Innovation in the Context of Enterprise Digital Transformation. In 2022 6th International Seminar on Education, Management and Social Sciences (ISEMSS 2022) (pp. 3694-3699). Atlantis Press.

Leitão, J., Pereira, D., & Brito, S. D. (2020). Inbound and outbound practices of open innovation and eco-innovation: Contrasting bioeconomy and non-bioeconomy firms. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), 145.

MacMillan, C. (2022). Contracts and equality: the dangers of non-disclosure agreements in English law. European Review of Contract Law, 18(2), 127-158.

Maghazei, O., Lewis, M. A., & Netland, T. H. (2022). Emerging technologies and the use case: A multi-year study of drone adoption. Journal of Operations Management, 68(6-7), 560-591.

Marini, L. (2022). Open Innovation: a powerfull tool to remain competitive.

Musiello-Neto, F., Rua, O. L., Arias-Oliva, M., & Silva, A. F. (2021). Open innovation and competitive advantage on the hospitality sector: The role of organizational strategy. Sustainability, 13(24), 13650.

Pushp, P., & Ahmed, F. (2023). The global value chain: Challenges faced by ASEAN least developed countries. Journal of Policy Modeling, 45(6), 1223-1245.

Rahmat, D. A., Rumanti, A. A., Pulungan, M. A., Rizaldi, A. S., & Amelia, M. (2024). Evaluating the Role of Open Innovation and Circular Economy in Enhancing Organizational

Performance: Insights from Batik Small and Medium Enterprises in Banyuwangi, Indonesia. Sustainability, 16(24), 11194.

Ramayah, T., Soto-Acosta, P., Kheng, K. K., & Mahmud, I. (2020). Developing process and product innovation through internal and external knowledge sources in manufacturing Malaysian firms: the role of absorptive capacity. Business Process Management Journal, 26(5), 1021-1039.

Rua, O. L., Musiello-Neto, F. E., & Arias-Oliva, M. (2022). Impact of Open Innovation on the Competitive Advantage of Hospitality Sector SMEs. In Impact of Open Innovation on the World Economy (pp. 1-26). IGI Global Scientific Publishing.

Rudsaz, H., Seyed Naghavi, M. A., & Abdoli Masinan, F. (2020). The effect of open innovation on competitive advantage considering the mediation role of knowledge management. *Industrial Management Studies*, *18*(59), 117-150.

Sá, T., Ferreira, J. J., & Jayantilal, S. (2025). Open innovation strategy: a systematic literature review. European Journal of Innovation Management, 28(2), 454-510.

Sabahi, S., & Parast, M. M. (2020). Firm innovation and supply chain resilience: a dynamic capability perspective. International Journal of Logistics Research and Applications, 23(3), 254-269.

Usman, M., Khan, M. I., & Khattak, A. N. (2024). The Impact of Open Innovation (OI) on Competitive Advantage (CA) in Presence of Knowledge Coupling (KC): An Empirical Study on Small and Medium Enterprises (SMEs), District of Gujranwala, Pakistan. Pakistan Journal of Humanities and Social Sciences, 3212-3220.

Wahyudi, T., Pohan, E. S., Utami, F., Nofianti, N., Soleha, N., Syaifudin, R., & Desmawan, D. (2025). Open Innovation Ecosystems and Competitive Advantage in Green Technologies: A Systematic Review. Accounting, Organization, and Information System, 1(1).

Winarso, W., Hady, H., Panday, R., & Untari, D. T. (2020). Competitive advantage and marketing performance on SMEs: Market orientation and innovation of local product in Bekasi, Indonesian. Test engineering & management, 83, 18385-18395.

Zhang, L., & Abd Rani, N. S. (2024). The Influence of Open Innovation Practices on Competitive Advantage in Emerging Markets: An Empirical Study Based on the Chinese Market. Uniglobal Journal of Social Sciences and Humanities, 3(2), 281-286.

Zhang, X., Chu, Z., Ren, L., & Xing, J. (2023). Open innovation and sustainable competitive advantage: The role of organizational learning. Technological forecasting and social change, 186, 122114.