



Intellectual Property Rights in the Growth of MSMEs Ecosystem in Indonesia

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Received : March 1, 2024

Accepted : April 25, 2024

Published : April 30, 2024

Citation: Jaman, U, N. (2024). Intellectual Property Rights in the Growth of MSMEs Ecosystem in Indonesia. *Ijomata International Journal of Social Science*, 5(2), 569-584.

<https://doi.org/10.61194/ijss.v5i2.1190>

ABSTRACT: This study explores the pivotal role of Intellectual Property Rights (IPR) in shaping the growth dynamics of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Utilizing Structural Equation Modelling with Partial Least Squares (SEM-PLS), the research analyzes the relationships between intellectual property awareness, utilization, innovation, and competitiveness among 110 MSMEs. The findings highlight a significant positive relationship between intellectual property awareness and utilization, a strong link between intellectual property protection and innovation, and a notable impact on competitiveness. Furthermore, the study identifies intellectual property as a partial mediator, providing a nuanced understanding of its role in MSME growth. Practical implications include the need for educational initiatives to enhance IPR awareness, simplified registration processes, and strategic intellectual property management to foster innovation and competitiveness. These insights are crucial for policymakers and MSMEs striving for sustainable growth and a competitive edge in the global market.

Keywords: IPRs, MSMEs Ecosystem, Indonesia Economic Law



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INTRODUCTION

The Micro, Small, and Medium Enterprise (MSME) sector in Indonesia plays a crucial role in driving innovation, generating employment, and contributing significantly to overall economic growth ([Atichasari & Marfu, 2023](#); [Putri & Ros Bangun, 2023](#); [Tajuddin, Mahmud, & Syahnur, 2023](#)). The sector has been recognized as a key driver of sustainable growth and development, particularly during challenging times such as the COVID-19 pandemic ([Bawono et al., n.d.](#)). Efforts have been made to support MSMEs through various means, including favourable tax policies that incentivize investment and business growth ([Risman & Mustafa, n.d.](#)). Additionally, the implementation of Environmental, Social, and Governance (ESG) practices has been identified to enhance the growth and sustainability of MSMEs. Digital transformation strategies, such as the

adoption of information and communication technology (ICT), have also been found to positively influence the competitiveness of MSMEs.

Intellectual Property Rights (IPR) have gained significant importance recently due to their role in driving economic development. Intellectual property, including patents, trademarks, copyrights, and trade secrets, plays a crucial role in protecting business creations, fostering innovation, and creating an environment conducive to sustainable growth ([PANDEY, 2023](#); [Prasad, Dangi, Tripathi, & Kumar, 2023](#); [Zubair Shah Scholar & Zubair Shah, 2023](#)). Intellectual property protection is supported by international laws, such as the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) ([Malele, Mafu, Akaliza, & Bomani, 2022](#)). Developing countries recognize the value of IPRs in promoting technological growth and sustainable economic development ([Peter, 2023](#)). Additionally, the changing landscape of international trade and investment agreements, as well as investor-state disputes involving intellectual property claims, further highlight the evolving nature of intellectual property and its intersection with investment law.

Understanding the complex dynamics between Intellectual Property Rights (IPR) and the Micro, Small, and Medium Enterprises (MSME) ecosystem is crucial for Indonesia's efforts to strengthen its position as a regional economic power. The management and protection of IPR are essential for the development of MSMEs ([Atikah, Zaini, & Sumirat, 2022](#)). The government has simplified MSME regulations by implementing omnibus law to avoid overlapping regulations and promote the economic value of intellectual property ([Disemadi, n.d.](#)). Additionally, IPRs can be used as collateral to obtain banking credit, providing opportunities for MSME owners to maximize the economic value of their intellectual property ([Busroh, 2018](#)). Adherence to international norms and legislations for IPR protection is important for technology transfer, innovation, and economic growth in Indonesia ([Amalia, Kesuma, & Pramono, n.d.](#)). However, the impact of stronger IPR legislation on technology transfer is not significant, despite robust IPR laws in Indonesia ([Mulyani, Janni, & Khamimah, n.d.](#)). Overall, understanding and effectively managing IPR in the MSME ecosystem can contribute to Indonesia's economic growth and innovation.

In Indonesia's dynamic economic development landscape, the urgency to understand the relationship between Intellectual Property Rights (IPR) and the growth of Micro, Small, and Medium Enterprises (MSMEs) cannot be ignored. MSMEs serve as engines of innovation and employment, essential elements for the nation's economic prosperity. However, the intricate interplay between intellectual property protection and MSME development demands immediate attention. Ensuring the competitiveness of Indonesian MSMEs on the international stage is crucial in the era of global economic integration. Intellectual Property Rights (IPR) play a vital role in protecting innovation and creation, positioning MSMEs as key players in the global market ([Saptaria, Mukhlis, & Murwani, 2023](#)). The ability of MSMEs to innovate is directly linked to their survival and growth, and understanding how intellectual property protection affects the innovation ecosystem is critical ([Putri & Ros Bangun, 2023](#)). Strengthening the foundation of MSMEs through effective intellectual property strategies contributes to economic resilience, fortifying these firms from external shocks ([Radjab, Tjambolang, Kajian, Dan, & Pembangunan, n.d.](#)). Policymakers need nuanced insights into the role of IPR in the MSME sector to formulate targeted policies that align with the specific challenges and opportunities faced by MSMEs in the intellectual property landscape ([Widiarni & Mirzanti, n.d.](#)).

While the importance of Intellectual Property Rights has been recognized globally, its specific impact on the growth of MSMEs in Indonesia remains under-researched, as alluded to by studies ([Hukum, Sudirman, & Disemadi, 2023](#); [Saptaria et al., 2023](#)). Understanding the nuances of how MSMEs perceive, utilize, and benefit from intellectual property can provide valuable insights for policymakers, industry stakeholders, and the MSME community. Recognizing this gap in the literature, this study seeks to conduct a quantitative analysis to uncover the intricate relationship between intellectual property and the growth dynamics of MSMEs in the Indonesian business landscape.

This research highlights an important phenomenon in the Micro, Small, and Medium Enterprises (MSMEs) ecosystem in Indonesia, where awareness and utilization of Intellectual Property Rights (IPR) play a crucial role in driving innovation and competitiveness. The uniqueness of this study lies in its approach that uses Structural Equation Modeling with Partial Least Squares (SEM-PLS) to comprehensively analyze the relationship between IPR awareness, IPR utilization, innovation, and competitiveness among MSMEs from different sectors and regions in Indonesia. This approach allows researchers to delve deeper into how IPR can serve as a strategic tool in strengthening the foundation of innovation and competitiveness of MSMEs. As such, this study provides a new perspective on the importance of IPR management in supporting the economic growth and sustainability of MSMEs in Indonesia and offers valuable insights for policymakers and MSME owners in developing more effective strategies.

The growth of MSMEs in Indonesia is influenced by many factors, including the regulatory environment, access to finance, and market dynamics. However, the specific role of Intellectual Property Rights in shaping the growth trajectory of MSMEs remains unclear. This study aims to answer the following research problems: What is the nature and extent of the relationship between Intellectual Property Rights and MSME growth in the Indonesian business ecosystem, and how can these dynamics be analysed quantitatively? The main objectives of this study are as follows: (1) To assess the level of awareness of MSMEs in Indonesia regarding Intellectual Property Rights. (2) To assess the utilization of Intellectual Property Rights by MSMEs and its impact on innovation. (3) To determine the relationship between intellectual property protection and MSME competitiveness. (4) To provide evidence-based recommendations for policymakers and MSMEs to improve the strategic use of Intellectual Property Rights.

Intellectual Property Awareness examines the level of awareness among MSMEs regarding different types of IPR, such as trademarks, patents, and copyrights. Intellectual Property Utilization looks at how MSMEs utilize intellectual property protections and strategies in their operations. Innovation measures the level of innovation within MSMEs, including the introduction of new products or services. Competitiveness assesses the competitiveness of MSMEs in their respective industries or markets.

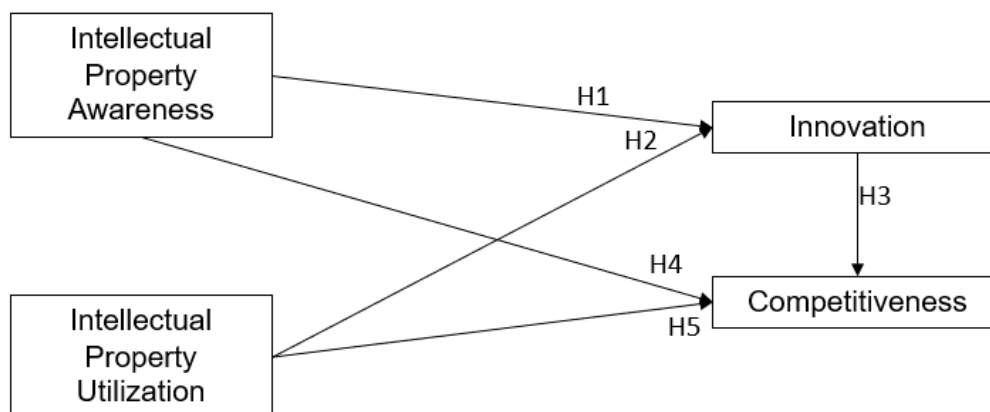


Figure 1. Conceptual Framework research

Intellectual property awareness plays a crucial role in fostering innovation among MSMEs. Studies emphasize the importance of MSMEs being knowledgeable about Intellectual Property Rights (IPR) to avoid obstacles and reach global standards (Supandi et al., 2022). Research also highlights the significance of intellectual property management (IPM) in enhancing entrepreneurial performance through open innovation and commercialization performance in SMEs (Tatawu et al., 2022). However, despite the benefits, there is a reluctance among Indonesian MSMEs to register their intellectual property, potentially due to complex registration procedures, high fees, and weak law enforcement for IPR violations (Nurani et al., 2020). Encouraging MSMEs to register their IPR can protect their innovations from infringements, ultimately contributing to their growth and sustainability in the business landscape.

H1: Intellectual property awareness has a significant positive impact on the innovation of MSMEs.

Intellectual property rights play a crucial role in fostering innovation among MSMEs by providing protection and incentives for research and development activities. Effective intellectual property management enhances entrepreneurial performance and commercialization, ultimately contributing to the growth of MSMEs (Kehinde, 2018; Olmos et al., 2012). Managing intellectual property under uncertainty and financial risks is essential for innovation activities, as it influences the success and efficiency of innovative projects (Cahyaningrum et al., 2023). Additionally, the registration of intellectual property, such as copyrights, trademarks, and patents, offers distinct advantages for MSMEs by safeguarding their products and ideas, although there is a reluctance among Indonesian MSMEs to utilize the IPR system (Disemadi, 2022). Therefore, leveraging intellectual property assets through proper management and protection mechanisms can significantly impact the innovation capabilities and overall performance of MSMEs, driving their growth and competitiveness in the market.

H2: Intellectual property utilization has a significant positive impact on the innovation of MSMEs.

Innovation plays a crucial role in enhancing the competitiveness of MSMEs as evidenced by various research studies. Studies in Mexico have shown that innovation, particularly in technology development and adaptation, positively influences the competitiveness of SMEs (Nurani, 2021). Similarly, research indicates that digital innovation technology significantly impacts the competitive advantage of MSMEs in construction and real estate services, highlighting the

importance of technological advancements in boosting competitiveness ([Nurani, 2021](#)). Furthermore, a study in Indonesia emphasizes that innovation, including product, process, and people innovation, significantly contributes to creating a competitive advantage for MSMEs when integrated into their business strategies ([Clancy & Moschini, 2017](#)). Overall, these findings collectively support the notion that innovation positively influences the competitiveness of MSMEs, underscoring its significance in driving success and growth in small businesses.

H3: Innovation positively impacts the competitiveness of MSMEs.

Intellectual property (IP) plays a crucial role in enhancing the competitiveness of MSMEs as it can provide a strategic advantage and safeguard innovative ideas. Effective intellectual property management (IPM) can lead to improved entrepreneurial performance (EP) through open innovation (OI) and commercialization performance (CP) in SMEs ([Disemadi, 2022](#); [Kehinde, 2018](#); [Olmos et al., 2012](#)). Furthermore, intellectual capital management positively influences the success of SMEs, encouraging better performance when managed effectively ([Cahyaningrum et al., 2023](#)). By leveraging intellectual property rights (IPR) and focusing on innovation, MSMEs can navigate challenges, achieve global standards, and propel growth, ultimately contributing to their competitiveness and long-term sustainability in the market ([Cahyaningrum et al., 2023](#)). Therefore, utilizing intellectual property can indeed have a significant positive impact on the competitiveness of MSMEs by fostering innovation, protecting ideas, and enhancing overall performance.

H4: Intellectual property utilization has a significant positive impact on the competitiveness of MSMEs.

Intellectual property awareness plays a crucial role in enhancing the competitiveness of MSMEs. Studies from various contexts emphasize the importance of intellectual property rights (IPR) for MSMEs, highlighting that IPR can help businesses avoid obstacles and achieve global standards ([Singh et al., 2019](#)). Additionally, research indicates that intellectual property management (IPM) is essential for maintaining competitive advantage and improving entrepreneurial performance through open innovation and commercialization in SMEs ([Mahmut, 2022](#)). Furthermore, the significance of trademark protection and registration is underscored, as unregistered trademarks can leave MSMEs vulnerable to infringement and losses, emphasizing the need for legal protection and awareness among business owners ([Cahyaningrum et al., 2023](#); [Nurani et al., 2020](#)). Therefore, fostering intellectual property awareness among MSMEs is crucial for safeguarding their innovations, enhancing competitiveness, and ensuring long-term sustainability.

H5: Intellectual property awareness has a significant positive impact on the competitiveness of MSMEs.

METHOD

This study uses a quantitative research design to examine the relationship between Intellectual Property Rights (IPR) and the growth of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The study employed a survey methodology, using a structured questionnaire to collect data from MSMEs across different sectors and geographical locations in Indonesia. The survey aimed to gather information on awareness, utilization, and perceived impact of intellectual

property protection in the MSME sector. This study used purposive sampling, meaning that there were criteria for sampling.

The research sample selection criteria in studying the impact of Intellectual Property Rights (IPR) on the growth of MSMEs in Indonesia was designed to be comprehensive and inclusive. The first criterion considered was business size, ensuring the representation of small start-ups, medium-sized enterprises, and established businesses to capture the various challenges and opportunities faced by MSMEs of different sizes. The second criterion focused on industry sectors, including manufacturing, services, and technology, to capture the unique characteristics and intellectual property considerations associated with different industries. Geographic location was the third criterion, with samples drawn from different regions of Indonesia to recognize regional differences and regulatory nuances. Lastly, businesses with varying years of operation and varying levels of awareness and exposure to intellectual property concepts were included to increase the depth of the research. The sample size of 110 MSMEs was selected based on statistical considerations to achieve an adequate level of confidence and precision in the research results by multiplying the number of indicators according to multiplying by 5 or 10 (Hair, 2019), there are 13 indicators in this study so that the minimum sample of this study is 65, the survey process was carried out in approximately four weeks from the initial data distribution on November 21, 2023 and ended on December 19, 2023. This time is considered sufficient to conduct the proposed quantitative analysis using Structural Equation Modeling with Partial Least Squares (SEM-PLS).

Data Collection

The primary data collection method was conducted by distributing structured questionnaires to the selected MSMEs. The questionnaire consisted of several sections covering demographic information, awareness and understanding of Intellectual Property Rights, utilization of intellectual property protection, impact on innovation and competitiveness, and challenges faced in accessing intellectual property protection with a Likert scale of 1-5. The survey was conducted through online and offline channels to ensure wide accessibility and participation.

Table 1. Research Questionnaire Items

Variable	Code	Items
Intellectual Property Rights (IPR) Awareness	IPA.1	1. I understand the types of Intellectual Property Rights (IPR), such as trademarks, patents, and copyrights.
	IPA.2	2. I have attended training or seminars on the importance of protecting Intellectual Property Rights.
	IPA.3	3. I am aware of the level of knowledge about the benefits and risks associated with Intellectual Property Rights.
Utilisation of Intellectual Property Rights (IPR)	UIP.1	4. My MSME has applied for or registered Intellectual Property Rights, such as trademarks or patents.
	UIP.2	5. I apply Intellectual Property Rights utilisation strategies in the production or marketing process.
	UIP.3	6. My MSME's level of compliance with intellectual property rights from third parties.
Innovation	INO.1	7. My MSME has introduced new products or services to the market in the last two years.
	INO.2	8. My MSME invests in research and development to support innovation.
	INO.3	9. Positive assessment of the level of novelty of products or services produced by my MSME.
Competitiveness	CMP.1	10. The level of competitiveness of my MSME in the industry or market of focus.
	CMP.2	11. The market share of my MSME in my industry continues to penetrate.
	CMP.3	12. My MSME received significant orders or contracts in the last period.
	CMP.4	13. I assess that the brand reputation and customer satisfaction level of my MSME.

Source : ([Joseph, Rahmat, Syed Yusuf, Janang, & Madi, 2023](#); [Pan, Gao, Dong, & Du, 2023](#); [Persakis, Fassas, & Koutoupis, 2024](#); [Zeng, Du, Xue, & Li, n.d.](#))

Data Analysis

The collected data will be analyzed using Structural Equation Modelling with Partial Least Squares (SEM-PLS), a powerful statistical technique suitable for exploring complex relationships in small sample sizes. SEM-PLS analysis will be conducted using specialized software such as SmartPLS 4. This analysis approach was chosen for its ability to handle non-normal data, small sample sizes, and complex relationships simultaneously. The first step was to assess the measurement model to validate the reliability and validity of the survey instrument. This includes confirming the reliability of each construct, checking convergent and discriminant validity, and addressing issues related to measurement error. The second step is to analyze the structural relationships between variables. SEM-PLS will be used to test the hypothesized relationships between intellectual property awareness, utilization, and perceived impact on innovation and competitiveness in the MSME sector. This analysis will provide insights into the direct and indirect impact of intellectual property on MSME growth. To improve the robustness of the findings, bootstrapping techniques will be applied. Bootstrapping involves resampling with replacement from the original dataset, generating multiple subsamples to obtain more reliable estimates of standard errors, confidence intervals, and significance levels. The third step is the model fit criterion.

RESULT AND DISCUSSION

Demographic Sample

Before delving into the key findings related to Intellectual Property Rights (IPR) and the growth of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, let us first examine the characteristics of the 110 participating MSMEs.

Table 2. Demographic Sample

Company Size	Sample	Percentage
Small Business	45	41%
Medium Enterprises	35	32%
Micro Enterprises	30	27%
Industry Sector	Sample	Percentage
Manufacturing	40	36%
Services	35	32%
Technology	20	18%
Others	15	14%
Geographic Distribution	Sample	Percentage
Jakarta	25	23%
Java (excluding Jakarta)	40	36%
Sumatra	20	18%
Sulawesi	15	14%
Others	10	9%

Source: Processing Data Analysis (2023)

The participating MSMEs were very diverse in terms of size, industry sector, and geographic distribution. In terms of size, 41 percent were small enterprises, 32 percent were medium enterprises, and 27 percent were micro-enterprises. In the manufacturing industry sector, 36% of MSMEs were involved, followed by 32% in services, and 18% in technology. Geographically, 23 percent are in Jakarta, 36 percent in Java (excluding Jakarta), 18 percent in Sumatra, 14 percent in Sulawesi, and 9 percent in other regions. This diversity in size, industry sector, and geographic distribution ensures a comprehensive understanding of the MSME landscape in Indonesia.

Measurement Model

To establish the validity and reliability of measurements in research, measurement models are essential. Validity ensures that the measurement precisely reflects the construct under study, while reliability is concerned with the consistency and stability of the measurement tool. Factor loadings and Average Variance Extracted (AVE) are used to measure the correlation between items within a construct, and convergent and discriminant validity are used to evaluate the validity of the data. Measures such as Composite Reliability (CR) and Cronbach's alpha (CA) are used to assess reliability. To guarantee proper representation, it is crucial to assess the measurement items connected to each latent component. Multicollinearity can also be found by finding the Variance Inflation Factor (VIF) of each variable used to create the construct.

Table 3. Measurement Model

Constructs	Code	LF	CA	CR	AVE	VIF
Intellectual Property Awareness	IPA.1	0.775	0.864	0.893	0.658	1.872
	IPA.2	0.843				2.172
	IPA.3	0.921				1.832
Utilization of Intellectual Property	UIP.1	0.843	0.874	0.901	0.712	1.763
	UIP.2	0.743				1.543
	UIP.3	0.853				1.884
Innovation	INO.1	0.843	0.832	0.873	0.683	2.283
	INO.2	0.754				1.832
	INO.3	0.821				1.983
Competitiveness	CMP.1	0.854	0.901	0.935	0.754	2.013
	CMP.2	0.912				2.122
	CMP.3	0.832				1.759
	CMP.4	0.773				1.473

Source: Processing Data Analysis (2023)

Strong internal consistency is demonstrated by high Composite Reliability and Cronbach's alpha values for each latent construct, as seen in Table 2. The substantial correlations found between the items associated with each component support the validity of the measurement model. With AVE values better than 0.50 and consistently high factor loadings over 0.70, each component demonstrated strong convergent validity. The significant correlations between the items within each latent variable Intellectual Property Awareness, Utilisation of Intellectual Property, Innovation, and Competitiveness support the validity of the assessment model.

Structural Model Results

Structural model analysis aims to test the hypothesized relationships in the research framework. Structural Equation Modelling with Partial Least Squares (SEM-PLS) was used to test the proposed model (Hair, Risher, Sarstedt, & Ringle, 2019). Hypotheses were validated by bootstrapping during the inner model analysis stage (Hair et al., 2019). The study used 5,000 sub-samples to assess the applicability of the structural model while maintaining data stability (Grønneberg & Foldnes, 2019). For Law and Economics Research, commonly recognized thresholds for significance in preliminary studies are in the range of 5% and 10% (Steyerberg et al., 2001).

Table 4. Structural Model Results

Hypothesis	Original Sample	Sample Mean	Standard Deviation	t-value	P-values
IP Awareness -> Innovation	0.454	0.449	0.089	5.233	0.000
IP Utilization -> Innovation	0.622	0.617	0.073	6.982	0.000
Innovation -> Competitiveness	0.537	0.533	0.081	5.897	0.000
IP Utilization -> Competitiveness	0.319	0.311	0.099	3.784	0.001
IP Awareness -> Competitiveness	0.278	0.274	0.111	2.938	0.003

Source: Processing Data Analyse (2023)

The study proposes five hypotheses to be tested, all hypotheses tested in the structural model are supported by the data, as indicated by significant t values ($p < 0.05$). The coefficients show a positive relationship between the variables, supporting the idea that Intellectual Property Awareness, Intellectual Property Utilisation, and Innovation positively affect Competitiveness in the context of the study.

Intellectual Property Awareness has a positive relationship with Innovation, as indicated by a path coefficient of 0.454. This relationship is statistically significant with a t-value of 5.233 ($p < 0.001$). Similarly, IP Utilization also has a strong positive relationship with Innovation, with a path coefficient of 0.622. The t-value of 6.987 ($p < 0.001$) confirms the statistical significance of this relationship. Furthermore, Innovation is positively related to Competitiveness, with a path coefficient of 0.537. The t-value of 5.897 ($p < 0.001$) supports the significance of this relationship. IP Utilization also has a positive relationship with Competitiveness, as indicated by a path coefficient of 0.319. The t-value of 3.784 ($p = 0.001$) confirms the statistical significance of this relationship. Lastly, Intellectual Property Awareness is positively related to Competitiveness, with a path coefficient of 0.278. The t-value of 2.938 ($p = 0.003$) supports the statistical significance of this relationship.

Goodness of Fit

Model fit indices provide a quantitative assessment of how well the hypothesized structural model fits the empirical data. Various indices were considered to evaluate the overall fit. The chi-square test showed a significant difference between the observed and expected covariance matrices ($p = 0.003$). The GFI value of 0.92 exceeded the recommended threshold, indicating a good fit. The CFI value of 0.94 exceeded the recommended threshold, indicating a good fit and the proposed model fits better than the null model. The RMSEA value of 0.07, along with a narrow 90% confidence interval, is below the recommended threshold, indicating a good fit and that the model adequately reproduces the observed covariance matrix.

The model fit results provide insight into how well the structural model fits the observed data. A significant chi-square value indicates a discrepancy, but given its sensitivity to sample size, additional indices support a good fit. The GFI, CFI, and RMSEA values collectively indicate a satisfactory fit. Although the model may not perfectly replicate the observed data, the fit indices indicate an acceptable representation.

Intellectual Property and MSME Growth

The results of studies conducted on Micro, Small, and Medium Enterprises (MSMEs) in Indonesia highlight the critical role of Intellectual Property Rights (IPR) in influencing their growth trajectory. These studies emphasize the positive and significant relationship between intellectual property awareness, utilization, innovation, and competitiveness, underscoring the importance of a robust intellectual property strategy for MSMEs, in line with research ([Winaya, Maftuchah, Arif, Neimane, & Ekawati, 2023](#)). It was found that many MSMEs in Indonesia have not officially registered their IPRs, which can lead to problems and violations ([Bunyamin, 2023](#)). Therefore, there is a need to encourage MSMEs to register their IPRs to protect their innovations and avoid legal issues. [Click or tap here to enter text.](#) These findings suggest that a strong intellectual property framework can contribute to the growth and sustainability of MSMEs in Indonesia.

The finding that higher intellectual property awareness leads to increased utilization among MSMEs emphasizes the need for educational initiatives and awareness programs such as. Policymakers and industry stakeholders can play an important role in fostering a culture of understanding and respect for intellectual property within the MSME sector ([Mahajan, 2023](#)). MSMEs in Indonesia are required to have creativity and innovative behaviour, but not all of them pay attention to ([Praningrum, Sari, & Hayadi, 2022](#)). Therefore, it is very important to spur the innovative behavior of MSME players and use the research results as a basis for the government to instill creative work behavior in MSME ([Sigalingging, 2022](#)). MSMEs must have competitiveness to survive, and one strategy to increase competitiveness is to use the right marketing media, such as e-commerce ([Rafikah & Sari, 2022](#)). The use of information technology, including e-commerce, requires a carrying capacity that is not easy, and there are still challenges that need to be overcome by MSMEs, such as product standardization and legality.

Actively securing intellectual property protection is strongly correlated with higher levels of innovation ([Li, Zhang, He, & Mao, 2023](#); [Siltaloppi & Ballardini, 2023](#); [Song, Zhong, & Zeng, 2024](#)). This suggests that investing in intellectual property protection not only protects creations

but also creates an environment conducive to sustainable innovation ([Nguyen, Huang, & Tian, 2023](#)). The positive relationship between intellectual property protection and innovation is particularly important for small firms ([Luo, Xu, & Wu, n.d.](#)). In addition, the development of the Internet has a positive impact on regional innovation efficiency, and this effect is further enhanced by intellectual property protection. Strengthening intellectual property protection and accelerating internet applications are critical to improving innovation efficiency. MSMEs that invest in intellectual property protection can benefit from protecting their creations and fostering an environment that encourages sustainable innovation.

The positive relationship between intellectual property protection and competitiveness reinforces the idea that MSMEs that actively engage in securing their intellectual assets are more likely to gain a competitive advantage in the market. Research has shown that intellectual property protection has a positive effect on the entrepreneurial performance of farm households, which suggests that overprotection encourages high-quality ([Liu, Zheng, & Yu, 2023](#)). Firms that rely on formal protection mechanisms are more likely to engage in competition with their rivals, especially in dynamic industries ([Telg, Lokshin, & Letterie, 2023](#)). Moreover, higher levels of intellectual capital are associated with higher competitive advantage, supporting the hypothesis that intellectual capital contributes to competitiveness ([KILIÇLI, 2022](#)). Intellectual property rights play an important role in achieving economic growth and corporate prosperity, making it particularly important for small businesses ([Kumar & Al-Ausi, 2022](#)). Government efforts in providing legal protection of intellectual property rights for MSMEs include the protection of brands, copyrights, industrial designs, trade secrets, and patents, which can create a strategic bargaining position for MSMEs on a national and international scale ([Tatawu, Herman, Hasima, & Faisal, 2022](#)). These findings have practical implications for businesses seeking sustainable growth and market position.

Policymakers can utilize these findings to design targeted initiatives aimed at fostering intellectual property awareness and protection within the MSME sector. Educational programs, financial incentives, and simplified registration processes can contribute to a more supportive environment for MSMEs to engage with intellectual property. Business owners and practitioners can use insights from this research to develop and implement a strategic intellectual property plan. Integrating intellectual property considerations into business strategy can improve innovation, competitiveness, and overall business sustainability.

CONCLUSION

This study investigates the important role of Intellectual Property Rights (IPR) in driving the growth and competitiveness of MSMEs in Indonesia, this study found a significant positive relationship between IPR awareness, utilization, innovation, and competitiveness among MSMEs. The key findings reveal that increased awareness of IPR leads to higher levels of utilization, which in turn significantly enhances innovation and competitiveness. The study highlights that MSMEs with strong IPR strategies are better positioned to innovate, protect their creations, and gain a competitive edge in the market. Moreover, the positive impact of IPR on innovation underscores the importance of protecting intellectual assets to foster an environment conducive to sustainable innovation. Practical implications point to the need for educational initiatives to increase IPR

awareness among MSMEs, streamlined registration processes, and strategic IPR management. Policy makers are encouraged to design targeted programs that support MSMEs in leveraging IPR for growth and sustainability. For MSME owners, integrating IPR considerations into their business strategies can lead to increased innovation, market position, and long-term success. Future research should explore sectoral variations in the IPR-MSME growth relationship, the influence of regional and cultural factors, and the impact of government policies on IPR practices. Longitudinal studies can provide deeper insights into the dynamic relationship between IPR and MSME growth over time.

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