

Intellectual Capital, Innovation and Sustainable Growth in Micro, Small and Medium Enterprises in the Fashion Sector

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Abstract

Purpose – This study aims to analyze the relationship between Intellectual Capital (IC), Innovation (Inn) and Sustainable Growth (SG) in Micro, Small and Medium Enterprises (Case Study of fashion sector MSMEs). Meanwhile, the mediating role of Inn in the relationship between IC and SG is explored. The hypothesis tested is that there is a positive relationship between intellectual capital, innovation, and sustainable growth in fashion MSMEs.

Methodology –The study used a quantitative method with a correlational approach. Data was collected through online questionnaires distributed directly to 200 respondents with purposive sampling focusing on owners or managers of Fashion Sector MSMEs in Palembang City. Data analysis using Structural Equation Modeling (SEM) with the help of Smart-PLS software.

Findings – The results of the analysis show that Intellectual Capital has a significant positive effect on Innovation in fashion MSMEs. Innovation also acts as a partial mediator in the relationship between Intellectual Capital and Sustainable Growth. The research model explains 79.1% of the variation in innovation and 92.7% of the variation in sustainable growth.

Originality – This research makes a new contribution by integrating the concepts of Intellectual Capital, Innovation, and Sustainable Growth in the context of fashion MSMEs in developing countries. This highlights the importance of intellectual capital management as the main driver of innovation and sustainable growth in the fashion sector MSMEs in Indonesia.

1. Introduction

In addressing the challenges of MSMEs, a holistic approach is needed to optimize IC, Inn, and SG. First, the utilization of technology can increase awareness of the importance of IC. Second, comprehensive training and mentoring programs will strengthen the capacity of MSMEs. Third, developing incentives and financial support can encourage investment in IC and Inn. Fourth, strengthening cooperation between MSMEs, research institutes, and universities will enhance knowledge transfer and innovative collaboration. Finally, encouraging the government to develop policies that favor MSMEs will create a conducive environment for business growth and sustainability. This integrated approach is expected to help MSMEs overcome challenges and contribute more optimally to the national economy. (Abulibdeh et al., 2024; Demartini & Beretta, 2020; Eide & Solbakken, 2021; Suriyan & Nagarajan, 2024).

This study examines the relationship between IC, Inn, and SG in MSMEs in the fashion sector. Several research gaps have been identified during the research process. First, there is an urgent need for practical guidance on IC management specific to MSMEs. Second, implementing open innovation in the context of MSMEs still requires explanation and concrete examples. Third, specific recommendations are needed to improve the quality of human resources when adopting innovations and new technologies. Finally, further exploration is needed to understand the relationship between IC, innovation, and sustainable growth across different MSME contexts, given the diversity of characteristics and challenges. This research is expected to fill the gap and significantly contribute to developing MSMEs in the fashion sector (Aghion & Howitt, 2005; Artati et al., 2024; Su & Wu, 2024)..

2. Literature Review

IC is a non-physical asset that includes the skills, insights, competencies, and capabilities of human resources and relationships with customers and other stakeholders. IC consists of three main components, namely Human Capital, which is improving employee knowledge and skills through continuous training, professional development programs, and creating an organizational learning culture. Relational Capital is the relationship with external stakeholders, including customers, suppliers, and business partners, to improve access to market information and collaboration opportunities. Structural Capital is the development of systems, processes, and technologies that support operational efficiency and facilitate innovation, such as implementing knowledge management systems or digital collaboration platforms. The characteristics of IC include its intangible, knowledge-based, strategic, and difficult-to-measure nature. Factors affecting IC in Fashion sector MSMEs include management commitment, innovative culture, knowledge management system, technology infrastructure, quality of human resources, industry characteristics, and economic conditions (Hina et al., 2024; Truong et al., 2024; Yulfiswandi & Alvin, 2024; Zhang & Li, 2024).

Inn is a crucial element for the survival and success of MSMEs in the Fashion sector. In this dynamic industry, innovation covers various aspects, from product development to marketing strategies. Fashion MSMEs can implement radical (new concept) or incremental (gradual improvement) innovations. Driving factors for innovation include market competition, consumer demands, technological developments, organizational culture, and leadership style. While innovation brings advantages such as increased competitiveness and profitability, MSMEs must consider challenges such as development costs, risk of failure, and the need for specialized skills. By effectively utilizing innovation, fashion sector MSMEs can improve competitiveness, expand

market share, and build consumer loyalty in an evolving industry (Chesbrough, 2024; Liu et al., 2024; Simeoni et al., 2024; Sun et al., 2024).

In the context of MSMEs, particularly in the Fashion sector, SG is a development strategy that balances economic growth with social and environmental responsibility. This idea aims to meet the present's needs without compromising future generations' capabilities. Three types of sustainable growth are interrelated: economic, social, and environmental. Sustainable economic growth focuses on achieving stable profitability while considering social and environmental impacts (Cabrita & Landeiro, 2005; Shahbaz et al., 2024). Drivers of SG include consumer pressure, government regulation, market competition, access to capital, and support from government and non-profit organizations. Key indicators include economic (profitability, market share, business growth), environmental (green business practices), and social (employee welfare, contribution to the community, corporate social responsibility) aspects. Implementing SG provides benefits such as improved brand reputation, customer loyalty, operational efficiency, and attractiveness to investors. However, challenges include high start-up costs, lack of knowledge and expertise, difficulty in measuring impact, and lack of incentives (Adshead et al., 2024; Sohu et al., 2024).

This study adopts the grand theory of Resource-Based View (RBV), a framework in strategic planning that emphasizes the crucial role of internal resources as the basis for sustainable competitive advantage. This theory states that a company can achieve sustainable competitive advantage if it has assets that meet the VRIN criteria: valuable, rare, inimitable, and non-substitutable (irreplaceable) (Barney et al. 2020). The Resource-Based View (RBV) theory provides a strong conceptual framework to explain how IC as a strategic resource can drive innovation and sustainable growth in MSMEs. A strong and unique IC can drive innovation and contribute to MSMEs' SG.

2.1. Hypotheses and Relationships Between

MSMEs in the fashion sector have the potential to produce innovative products and services based on creative concepts. This is achieved by having a structured system with a competent and knowledgeable workforce. IC's relationship with Inn consists of human capital, i.e., employee skills and knowledge; structural capital, i.e., systems, policies, and procedures; and relational capital, i.e., good relationships with customers, suppliers, and business partners that enable valuable feedback and information that can drive innovation (Muchlisin Riadi September 20, n.d; Agostini & Nosella, 2023; Martínez-Falcó et al., 2024).

H1: IC is positively related to Inn

IC also plays an important role in supporting the sustainable development of MSMEs in the Fashion sector. Optimizing the use of knowledge and expertise, MSMEs can improve operational efficiency, reduce negative impacts such as waste, improve product quality, and, more precisely, adjust to customer expectations (Alkhatib & Valeri, 2024; Truong & Nguyen, 2024). On the other hand, the relationship of IC to SG in the Fashion sector MSMEs that invest in IC development for employees can create a more inclusive work environment, provide job development opportunities, and improve employee welfare, all of which drive SG (Kumar & Sharma, 2024; Shahbaz et al., 2024; Yulfiswandi & Alvin, 2024).

H2: IC is positively related to SG

New ideas are a determining factor in achieving sustainable growth for MSMEs in the Fashion sector, whether through developing environmentally friendly products or services, implementing more efficient energy technologies, or developing sustainable business models that reduce negative impacts on the environment and surrounding communities. Inn has a relationship with SGs to improve competitiveness, expand markets, create new jobs, and increase the overall business resilience of MSMEs in SG's (Maziliauske, 2024; Mokbel Al Koliby et al., 2024; Vo Thai et al., 2024; Xin et al., 2024).

H3: Inn is positively related to SG

IC indirectly has a relationship with SG. MSMEs in the Fashion sector's ability to generate innovation is driven by strong human, structural, and relational capital. The resulting innovations are products, processes, and business models that contribute to SG's achievement. IC has an indirect relationship with SG through the mediation of innovations produced by MSMEs in the Fashion sector (Martínez-Falcó et al., 2024).

H4: Intellectual Capital is positively related to Sustainable Growth mediated by Innovation.

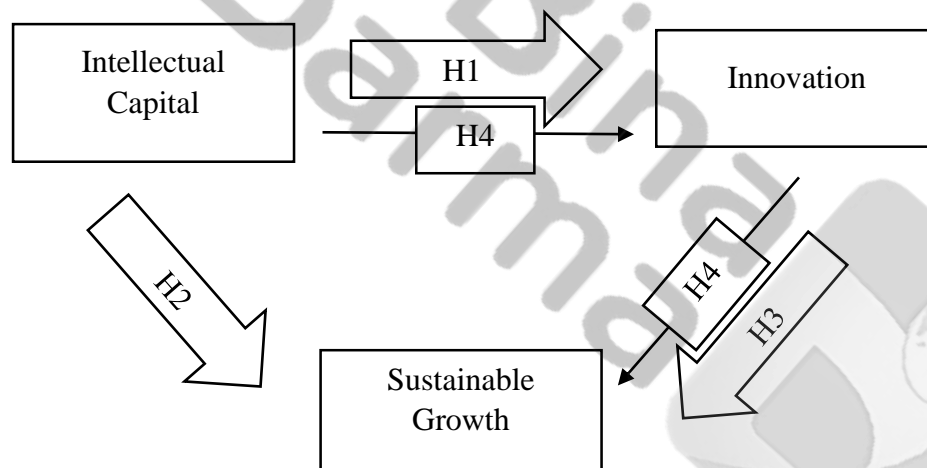


Figure 1 Research Framework

3. Research Methods

This study analyzes the relationship between IC, Inn, and SG in micro, small, and medium enterprises (MSMEs) in the Fashion Sector in Palembang City. The study used quantitative methods with a correlational approach involving MSME owners or managers as research subjects. Primary data was collected through an online Google Form questionnaire, with a 5-point Likert scale to measure responses (Slamet & Aglis, 2020; Sugiyono, 2019). The research population is the owner/manager of Fashion MSMEs in Palembang City, with a sample size of 5-10 times the number of indicators so that 39 question items are obtained based on the indicators, then $39 \times 5 = 195$ respondents (J. Hair & Alamer, 2022). However, researchers used 200 respondents determined through a non-probability sampling method with a quota and purposive sampling approach. Sample criteria include age <20 to <60 years and work experience of 1 to >15 years. The research variables consist of independent variables (IC), mediating variables (Inn), and dependent variables (SG). The operational definition of variables is presented in Table 1.

Table 1 Operational Definition of Variables

No	Variabel	Skala	Definisi	Indikator
1.	<i>Intellectual Capital</i> (Martínez-Falcó et al., 2024)	<i>Human Capital</i>	Knowledge, skills, and experience possessed by owners or managers of MSMEs	<ul style="list-style-type: none"> • Education level is seen from formal education levels such as elementary school, junior high school, high school, or college • Training and development of human resources • Work experience
		<i>Structural Capital</i>	Infrastructure, processes, and organizational culture that support MSME performance	<ul style="list-style-type: none"> • Information systems and technology • Innovative organizational culture • Efficient technology and business processes
		<i>Relational Capital</i>	External relationships built by MSMEs with customers, suppliers, and business partners	<ul style="list-style-type: none"> • Loyalty with customers • Cooperation with suppliers • Collaboration with business partners
		<i>Product Innovation</i>	Development and introduction of new products or improvement of existing products in MSMEs	<ul style="list-style-type: none"> • New products launched and the degree of product novelty • Speed of new product development
2.	<i>Innovation</i> (Zhang & Li, 2024))	<i>Process Innovation</i>	Implementation of new methods, technologies, or processes in MSME business operations	<ul style="list-style-type: none"> • Production process efficiency • Automation of production processes • Use of new technology
		<i>Economic Sustainability</i>	The ability of MSMEs to generate profits and long-term growth	<ul style="list-style-type: none"> • Profitability • Market share • Business growth
3.	<i>Sustainable Growth</i> (Su & Wu, 2024)	<i>Environmental Sustainability</i>	MSMEs' efforts to minimize negative impacts on the environment	<ul style="list-style-type: none"> • Practical green business
		<i>Sosial Sustainability</i>	Contribution of MSMEs to the welfare of employees and the surrounding community	<ul style="list-style-type: none"> • HR Welfare • Participation in community development • Business social responsibility

This research uses Structural Equation Modeling with the Smart Partial Least Square version 3.2.9 analysis tool. The analysis process includes evaluating the outer and inner models and hypothesis testing. Outer Model evaluation includes convergent validity tests (through factor loadings and AVE), discriminant validity, and composite reliability. The criteria used include loading factor >0.7 for confirmatory research, AVE >0.5 for good reliability, and composite reliability >0.7. Inner model evaluation involves analyzing the coefficient of determination (R²), effect size (f²), path coefficient, and model fit. Evaluation criteria include R² (0.67; 0.33; 0.19 indicates strong, moderate, weak model), f² (0.02; 0.15; 0.35 indicates low, moderate, high effect),

and path coefficient (0.02; 0.15; 0.35 indicates low, moderate, high effect) (Cahyawati et al., 2023; Gunarto & Tesa, 2023; Legate et al., 2023; Shahbaz et al., 2024; Xu et al., 2024). Researchers conducted hypothesis testing through bootstrapping analysis by observing the t-statistic and p-value. The correlation is considered significant if the t-value > 1.96 and the p-value < 0.05 for a significance level of 5%. Tests were conducted partially and simultaneously. Mediation effects were analyzed using the Upsilon (ν) effect size value, with the interpretation of high mediation >0.175, medium >0.075, and low >0.01. The mediation effect was analyzed to understand the role of the Inn variable in explaining the relationship between IC and SG. The interpretation of the mediation effect used the Upsilon (ν) effect size value, with the interpretation of high mediation >0.175, medium mediation >0.075, and low mediation >0.01 (J. Hair & Alamer, 2022; J. F. Hair et al., 2021; Legate et al., 2023). This study aims to present a comprehensive insight into the contribution of intellectual capital and innovation to sustainable growth in fashion sector MSMEs in Palembang City. The results of the study can be a reference for policymakers and MSME actors in developing strategies to improve competitiveness and business sustainability in the Fashion sector.

4. Results and Discussions

4.1. Respondent Characteristics

In this study, researchers conducted an in-depth analysis of the characteristics of Micro, Small, and Medium Enterprises (MSMEs) respondents in the Fashion sector in Palembang City, South Sumatra. The research sample consisted of 200 MSME owners or managers spread across the Ilir and Ulu areas of Palembang city. This sample was selected by purposive sampling, ensuring that the respondents met the predetermined criteria and were declared eligible to participate in the study. The characteristics of the respondents are shown in Table 2.

Table 2 Characteristics of Respondents

Characteristics	Amount	Percentage
Male	36	18,0%
Female	164	82,0%
<20	18	9,00%
21-30	133	66,5%
31-40	36	18,0%
41-50	9	4,50%
<60	4	2,00%
Junior high school	4	2,0%
Senior high school	165	82,5%
Higher Education	31	15,5%
1-5	165	82,50%
6-10	23	11,50%
>15	12	6,00%

Respondents by gender The data showed that most respondents were female, accounting for 82.0% (164 respondents), while males were only 18.0% (36 respondents). Most respondents were in the 21-30 age group, accounting for 66.5% (133 respondents) of the total sample. The rest of the age distribution is as follows: <20 years old: 9.00% (18 respondents), 31-40 years: 18.0% (36 respondents), 41-50 years: 4.50% (9 respondents) 60 years old: 2.00% (4 respondents). Most

respondents (82.5% or 165) had a high school/MA/equivalent educational background. The distribution of other education levels is junior high school 2.0% with four respondents and college 15.5% with 31 respondents. Most respondents (82.50% or 165 people) have worked for 1-5 years in the fashion MSME sector. Other distributions of the length of work are 6-10 years: 11.50% (23 respondents) and 15 years: 6.00% (12 respondents).

Based on the analysis of the respondents' characteristics, implications and recommendations can be proposed. Given their dominance in the industry, women's empowerment is the main focus. Given that most respondents have a secondary education background, human resource capacity building through managerial and technical skills training is needed. Mentoring programs from experienced business actors can help business sustainability, especially for those new to the industry. Finally, encouraging the adoption of digital technology and innovation in business processes is important to improve the competitiveness of fashion MSMEs in the digital era, given the dominance of young businesses. Implementing these recommendations is expected to encourage sustainable growth and improve the competitiveness of MSMEs.

4.2. Outer Model Test

The outer loading value indicates the validity of questionnaire items. An outer loading value exceeding 0.6 is still acceptable, but the value should exceed 0.7 for confirmatory research. To strengthen validity, the Average Variance Extracted (AVE) value needs to exceed 0.5. Meanwhile, reliability is assessed using a scale of 0 to 1. To be considered reliable, the Cronbach's alpha value must exceed 0.6, while the composite reliability value must exceed 0.7. (Gunarto & Cahyawati, 2022; J. F. Hair et al., 2021).

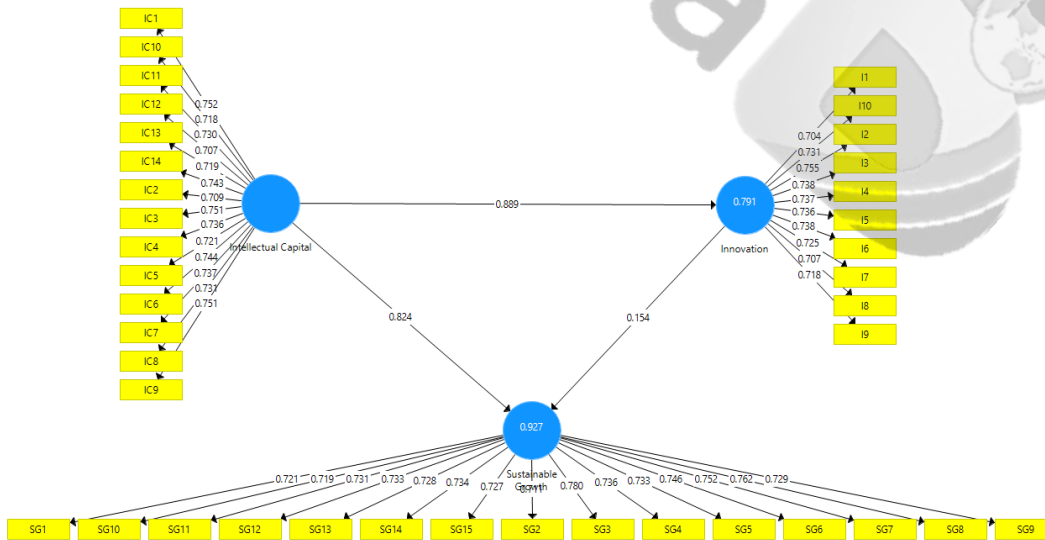


Figure 2 Relationship between Constructs through Smart-PLS Calculation Algorithm

Figure 2 shows the results of the PLS Algorithm calculation, which illustrates the transformation of the path diagram into an outer equation model by calculating each indicator between variables and the other variables displayed in Table 3.

Table 3 Outer Model Test (Validity and Reliability)

Variabel	Indikator	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability
Innovation	I1	0,704	0,531	0,902	0,919
	I2	0,755			
	I3	0,738			
	I4	0,737			
	I5	0,736			
	I6	0,738			
	I7	0,725			
	I8	0,707			
	I9	0,718			
	I10	0,731			
Intellectual Capital	IC1	0,752	0,536	0,933	0,942
	IC2	0,709			
	IC3	0,751			
	IC4	0,736			
	IC5	0,721			
	IC6	0,744			
	IC7	0,737			
	IC8	0,731			
	IC9	0,751			
	IC10	0,718			
	IC11	0,730			
	IC12	0,707			
	IC13	0,719			
	IC14	0,743			
Sustainable Growth	SG1	0,721	0,542	0,940	0,947
	SG2	0,711			
	SG3	0,780			
	SG4	0,736			
	SG5	0,733			
	SG6	0,746			
	SG7	0,752			
	SG8	0,762			
	SG9	0,729			
	SG10	0,719			
	SG11	0,731			
	SG12	0,733			
	SG13	0,728			
	SG14	0,734			
	SG15	0,727			

In this study, all items on the three variables (Inn, Intellectual Capital, and SG) meet the validity criteria with outer loading values ranging from 0.704 to 0.780. The analysis results of the Average Variance Extracted (AVE) value show that the IC variable has an AVE value of 0.536, Inn of 0.531, and SG of 0.542, all meeting the validity criteria. Instrument reliability was assessed using two methods. The three variables showed excellent reliability, with Cronbach's alpha values ranging from 0.902 to 0.940. The analysis of composite reliability values showed that all variables had very high values, ranging from 0.919 to 0.947.

Data analysis in Table 3 reveals that all variables meet the validity criteria, with outer loading exceeding 0.7 and AVE above 0.5. Reliability was also confirmed, with Cronbach's alpha and Composite Reliability values exceeding the threshold of 0.6 and 0.7, respectively. Consequently, all indicators were deemed suitable for further analysis.

4.3. Inner Model Test

The inner model evaluates the significance of the relationship between constructs or variables. This significance can be seen from the path coefficients in Figure 3 (J. Hair & Alamer, 2022; J. F. Hair et al., 2021; Legate et al., 2023).

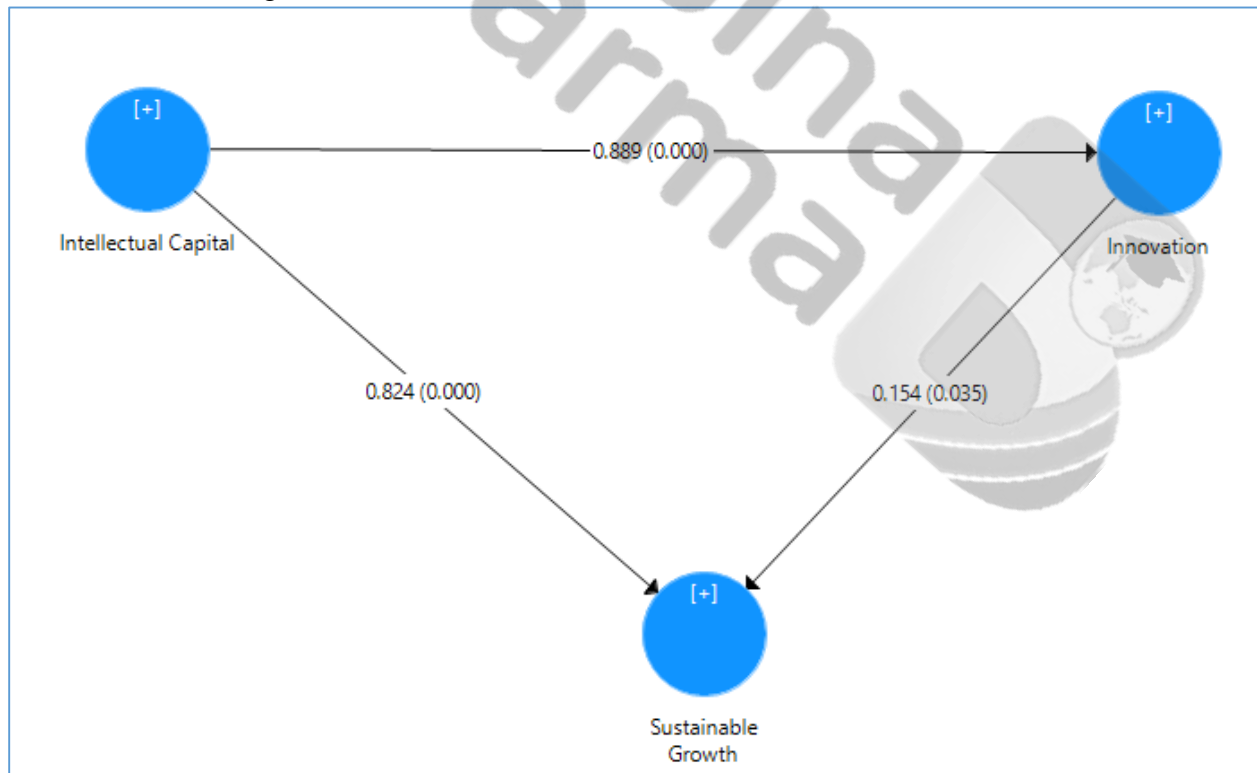


Figure 3 Estimation and Testing of the Outel Model

Table 4 presents the relationships between exogenous and endogenous latent variables, with path coefficients indicating the magnitude of direct influence between variables. In the full model-building stage, the focus shifts from indicator validity and reliability, but indicators can still be eliminated based on statistical significance or theoretical support. Model testing results using bootstrapping in SmartPLS include R-Square, F-Square, and NFI model fit tests.

Table 4 The f-Square test

Variabel	Innovation	Intellectual Capital	Sustainable Growth
Innovation			0,068
Intellectual Capital	3,783		1,952
Sustainable Growth			

IC is shown to have a very strong relationship with innovation (F-Square = 3.783). IC is also significantly related to sustainable growth (F-Square = 1.952). The relationship of innovation to sustainable growth is relatively small (F-Square = 0.068). R-Square measures the model's predictive ability and assesses how much of the endogenous variables can be explained by the exogenous variables in Table 5. The model showed strong predictive ability R^2 (Inn=0.791 and SG=0.927) and a good fit (NFI=0.432), indicating a fairly good model fit for understanding and strategic decision-making in developing fashion sector MSMEs

Table 5 R-Square and Model Fit Test (NFI)

Variabel	R Square	R Square Adjusted
Innovation	0,791	0,790
Sustainable Growth	0,927	0,927
NFI	Saturated Model 0,432	Estimated Model 0,432

4.4. Hypothesis Testing

This study uses path analysis, an extension of multiple regression analysis. Path analysis is used when there are mediating variables in the research model. In this context, Inn is a mediator variable between IC and SG. The relationship is considered significant and influential if it meets the conditions of t-statistic > 1.96 and p-value < 0.05 (J. Hair & Alamer, 2022; J. F. Hair et al., 2021; Legate et al., 2023).

Table 6 Path Coefficients and Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Description
H1. IC>Inn	0,889	0,890	0,031	28,441	0,000	Significant
H2. IC>SG	0,824	0,823	0,078	10,500	0,000	Significant
H3. Inn>SG	0,154	0,155	0,085	1,820	0,035	Significant
Indirect Effect						
H4. IC>SG>Inn	0,137	0,138	0,077	1,786	0,037	Significant

Tabel 6 menunjukkan hasil uji path coefficients dan indirect effect.

- The statistical analysis results show that the first hypothesis (H1), which states that there is a relationship between IC and Inn, can be accepted, resulting in a T-statistic of 28.441 > 1.96 , illustrating the magnitude of the relationship between IC and Inn. This very high value indicates that the relationship not only exists but is also very strong and convincing. While the P-value of 0.000 < 0.05 is considered highly significant between the variables as

- it is well below the 0.05 threshold. So, there is a high level of confidence that IC has a significant positive relationship with Inn.
2. The statistical analysis results show that the second hypothesis (H2) states a relationship between IC and SG with a T-statistic value of $10.500 > 1.96$ measuring how strong the relationship between IC and SG is. While the P-value is $0.000 < 0.05$, it is considered highly significant because it is far below the 0.05 threshold. So, IC has a high confidence level, and a significant and positive relationship with SG can be concluded.
 3. The statistical analysis results show that the third hypothesis (H3) states no relationship between Inn and SG because it produces a T-statistic of $1.820 < 1.96$. This indicates that the relationship between Inn and SG is not as strong as expected or not as strong as the previous hypothesis. While the P-value of $0.034 < 0.05$, the relationship is not very strong, with sufficient confidence that the relationship between Inn and SG is statistically significant. So, it can be concluded that Inn has a significant relationship with SG, although this relationship is not as strong or dramatic as expected.
 4. Statistical analysis results show that the fourth hypothesis (H4) can be known in the mediation relationship to IC and SG through the test results of indirect effects, the value of T-statistic $1.786 < 1.96$. This shows that the mediation effect of Inn has no relationship between the variables tested. While the P-value is $0.037 < 0.05$, the mediation effect is not very strong, with sufficient confidence that Inn significantly mediates the relationship between IC and SG. So, Inn acts as a mediator in the relationship between IC and SG.

4.5. Discussion

IC is a non-physical asset that includes the skills, insights, competencies, and abilities of human resources, as well as relationships with customers and other stakeholders consisting of human capital, structural capital, and relational capital (J. Xu & Wang, 2019; SamarawIC krama, 2024; Telles, 2024). The research results prove that IC is positively related to increasing Inn and SG, supporting H1 and H2. This finding is not relevant to the findings of (Aslam et al., 2024; Fitri et al., 2024; Hassan et al., 2024; Law & Law, 2024; Mansour et al., 2024; Shabeer et al., 2024; Shah et al., 2024). that MSMEs can increase Inn by implementing IC effectively and efficiently. Thus, this finding is also not in line with previous research that IC can improve SG (Afshan et al., 2024; Arzova & Şahin, 2024; Asghar et al., 2024; Das et al., 2024; Okoh, 2024; Saqib et al., 2024).

As it is known, when the research was conducted, most MSMEs understood and implemented IC as a whole, and this condition indicates an increasing awareness among MSME players about the importance of non-physical assets in driving business growth. Understanding and implementing IC, including human capital, structural capital, and relational capital by MSMEs. This condition creates a strong foundation for MSMEs to increase innovation capacity and drive sustainable growth. By understanding and implementing IC, MSMEs can better: Identifying new market opportunities and responding to changing customer needs, Optimizing internal processes to improve efficiency and productivity, Building stronger networks with various stakeholders, which can support access to new resources and knowledge (Demartini & Beretta, 2020; Saffitri & Maryanti, 2021; Shahbaz et al., 2024; J. Xu & Wang, 2019).

While Inn has no relationship with SG as it yields a T-statistic of $1.820 < 1.96$ and a P-value of $0.034 < 0.05$, the relationship is not very strong, with sufficient confidence that the

relationship between Inn and SG is statistically significant. Although the T-statistic value is slightly below the threshold, the significant P-value indicates a positive relationship. This suggests that innovation does play a role in driving the sustainable growth of MSMEs in the Fashion sector, but other factors may also be at play. This finding aligns with previous research from (Chaparro-Banegas et al., 2024; Huang, 2024; Ma et al., 2024; C. Yang et al., 2024) that innovation is important in promoting sustainable growth. However, it is important to note that external factors such as government policies, access to technology, and market conditions can also affect such outcomes. Therefore, despite innovation being a key element, a more holistic approach that considers various factors would be more effective in achieving the goal of sustainable growth in the Fashion MSME sector. Further research is needed to identify and analyze other factors that may influence this relationship to provide deeper insights and assist in formulating better strategies to support Inn and SG.

IC to SG has no relationship mediated by Inn with a T-statistic value of 1.786, although slightly below the conventional threshold of 1.96. This indicates no relationship between the tested variables, suggesting a weak mediation effect. More importantly, the P-value of 0.037, below the significance threshold of 0.05, provides confidence that this mediating effect exists and is statistically meaningful. This suggests that internal resources (IC) not only directly impact performance (SG) but also operate through dynamic capability development (Inn). This finding is in line with previous research from (Jordão & Novas, 2024; Salangka et al., 2024; Shahbaz et al., 2024; F. Yang et al., 2024) showing that dynamic capability development through innovation can strengthen the positive impact of intellectual capital on performance. Thus, MSMEs need to focus on IC development and integrate innovation into the strategy to maximize the potential for sustainable growth. This confirms that collaboration between internal resources and innovation is critical in achieving long-term sustainable goals (Alshahrani et al., 2024; Martínez-Falcó et al., 2024; Shahbaz et al., 2024; Zhang & Li, 2024).

5. Conclusion

This research reveals the crucial role of Intellectual Capital in driving Innovation and Sustainable Growth in MSMEs in the Fashion sector. These findings confirm that intellectual capital, which includes the collective knowledge, skills, and experience of the organization, becomes the main driver in creating value and competitive advantage for fashion MSMEs in the knowledge-based economy era. Intellectual Capital is proven to have a significant influence on Innovation, which is in line with the resource-based view (RBV) theory which states that the company's internal resources, especially those that are intangible, are key in creating innovation and competitive advantage.

In the context of fashion MSMEs, this can be seen from how knowledge of fashion trends, design skills, and a deep understanding of consumer preferences can drive innovation in products, production processes, or business models. Furthermore, this research also confirms the positive relationship between Intellectual Capital and Sustainable Growth. This reinforces the argument that sustainable growth does not only depend on physical or financial assets but also on the company's ability to manage and utilize knowledge effectively. For fashion MSMEs, this can mean that the ability to adapt to market changes, understand and respond to evolving consumer needs, and manage the supply chain efficiently become key factors in achieving long-term growth.

Innovation is proven to play a role as a mediator in the relationship between Intellectual Capital and Sustainable Growth. Organizational knowledge (as part of Intellectual Capital) is transformed into innovation, which in turn drives sustainable growth.

In the context of fashion MSMEs, this can be interpreted that the intellectual capital possessed needs to be manifested in the form of concrete innovation - be it product, process, or business model innovation - to be able to provide optimal impact on sustainable growth. The practical implications of this research emphasize the importance of strategic investment in the development of Intellectual Capital for MSMEs in the Fashion sector. This includes three main aspects: human capital, structural capital and relational capital. In addition, MSMEs need to be encouraged to continue to innovate in various aspects of business. This can include product innovation (for example, new designs or the use of sustainable materials), process innovation (such as the adoption of more efficient production technology), or business model innovation (for example, e-commerce integration or circular business models). This innovative approach must be in line with sustainability principles to ensure long-term growth that is aligned with social and environmental demands.

For future research, it is suggested to expand the scope of the study by adding new variables or indicators relevant to the latest developments in the fashion industry. For example, aspects of digitalization, environmental sustainability, or business resilience in facing global disruption can be interesting research focuses. In addition, making comparisons between MSME sectors (for example, comparing the fashion sector with the food or craft sector) can provide valuable insights into how the dynamics of Intellectual Capital, Innovation, and Sustainable Growth vary in various industry contexts. With this comparative approach, further research can produce a more nuanced and comprehensive understanding of the factors that drive the success and sustainability of MSMEs in various sectors so that it can make a more significant contribution to the development of policies and strategies to support MSMEs at the national and regional levels.

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