

Industrial Culture Exposure, Local Wisdom-Based Human Capital, and Digital Adaptation: Toward Creative Economy Sovereignty in Greater Bekasi

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Abstract: Greater Bekasi, one of Southeast Asia's largest industrial regions, faces a socio-economic challenge in which rapid industrialization coincides with the gradual erosion of local Betawi and Sundanese cultural identities. This study examines the relationships among Industrial Culture Exposure (ICE), Local Wisdom-Based Human Capital (LWBHC), Digital Adaptation (DA), and Creative Economy Sovereignty (CES) among culture-based micro, small, and medium enterprises (MSMEs) in the Greater Bekasi region. Grounded in Human Capital Theory, the Resource-Based View, and Dynamic Capability Theory, this study employs a quantitative approach using Partial Least Squares Structural Equation Modeling (PLS-SEM). Data were collected from 200 MSME actors through purposive sampling. The findings indicate that Industrial Culture Exposure negatively affects Local Wisdom-Based Human Capital, whereas Local Wisdom-Based Human Capital positively influences Digital Adaptation. Digital Adaptation, in turn, significantly enhances Creative Economy Sovereignty. Significant indirect effects through Local Wisdom-Based Human Capital and Digital Adaptation provide evidence of the mediating mechanisms proposed in the model. Theoretically, this study extends the Resource-Based View by positioning local wisdom-based human capital as a culturally embedded strategic resource that can support dynamic adaptation within industrial societies. Practically, the findings provide policy insights for strengthening local cultural capabilities and digital adaptation to support sustainable creative economy development amid industrial transformation.

Keywords: Industrial Culture Exposure; Local Wisdom-Based Human Capital; Digital Adaptation; Creative Economy Sovereignty; Local Wisdom

INTRODUCTION

Industrialization has become a major driver of economic transformation in developing countries, generating employment, investment, and regional growth while also reshaping local social and cultural systems. Intensive industrialization may contribute to cultural homogenization, weaken local knowledge systems, and alter traditional patterns of community interaction. Consequently, industrial regions face not only the challenge of maintaining economic competitiveness but also that of preserving cultural identity and sustaining indigenous knowledge systems amid rapid modernization (Huggins et al., 2021).

Greater Bekasi provides a relevant context for examining this tension. As one of Southeast Asia's major industrial corridors, the region includes industrial estates such as Jababeka, MM2100, EJIP, and Delta Silicon that have shaped its economic and social development. In this study, industrial heritage refers to the historical and socio-spatial legacy of long-term industrialization, including industrial landscapes, institutional development, collective memories, and community patterns. Industrial Culture Exposure (ICE), in contrast, refers to the contemporary extent to which local actors and culture-based MSMEs are exposed to and influenced by industrial values, work orientations, and production practices. Local cultural heritage refers to intergenerational knowledge, traditional skills, collective memory, local values, and community-based practices associated with Betawi and Sundanese communities. These cultural resources are conceptualized in this study as Local Wisdom-Based Human Capital (LWBHC), representing culturally embedded capabilities that can be maintained, utilized, and developed by local enterprises.

Industrial development in Greater Bekasi has nevertheless created challenges for cultural sustainability. The dominance of industrial employment may reduce younger generations' interest in

traditional cultural occupations, while indigenous knowledge and cultural practices face risks of discontinuity. Cultural assets such as Batik Kali Bekasi, Gabus Pucung culinary traditions, and community-based values may become increasingly vulnerable when intergenerational transmission and local participation decline. At the same time, the creative economy offers an alternative pathway for combining cultural preservation with economic development. However, although local communities may participate in cultural production, important elements of value creation, including branding, design, market access, and capital ownership, may remain controlled by external actors (UNCTAD, 2024).

Digital transformation further creates both opportunities and challenges for culture-based MSMEs. Digital technologies can expand market access, strengthen branding, and facilitate direct engagement with consumers, but unequal digital capabilities may create new forms of exclusion. Digital adaptation therefore depends not only on technological access but also on knowledge, organizational capabilities, and the ability to integrate technological change with local cultural resources (Mikalef et al., 2016; Alrub & Sánchez-Cañizares, 2025). In this context, Creative Economy Sovereignty (CES) refers to the capacity of local communities to retain ownership of cultural assets, control value creation, capture economic benefits, and maintain strategic autonomy within increasingly digitalized markets (Shoker, 2022; Baldoni & Luna, 2025).

The role of LWBHC is particularly important in this context. Human Capital Theory emphasizes knowledge, skills, and competencies as productive assets, while contemporary perspectives recognize the importance of culturally embedded knowledge and community-based capabilities (Becker, 1964; Permatasari, 2024). From the Resource-Based View, local wisdom and cultural knowledge may constitute valuable and difficult-to-imitate resources because they are embedded in specific socio-cultural contexts (Barney, 1991). Meanwhile, Dynamic Capability Theory highlights the capacity to integrate and reconfigure resources in response to environmental change (Teece, 2025). Accordingly, this study conceptualizes LWBHC as a culturally embedded human resource and Digital Adaptation (DA) as a dynamic capability that can translate local cultural resources into economic and strategic value.

Despite increasing research on cultural sustainability, digital transformation, and the creative economy, several gaps remain. First, limited research explains how local wisdom-based human capital functions as a productive strategic resource that supports digital adaptation and economic sovereignty. Second, previous studies have focused more heavily on creative cities, tourism destinations, and technology-intensive firms than on culture-based MSMEs operating within highly industrialized regions. Third, empirical evidence remains limited regarding the sequential mechanism through which industrial culture exposure influences local wisdom-based human capital, digital adaptation, and creative economy sovereignty.

This study addresses these gaps by examining the relationships among Industrial Culture Exposure, Local Wisdom-Based Human Capital, Digital Adaptation, and Creative Economy Sovereignty among culture-based MSMEs in Greater Bekasi. The study contributes in three ways. First, it extends Human Capital Theory by conceptualizing local wisdom, cultural memory, traditional competencies, and community-based capabilities as culturally embedded human capital. Second, it extends the Resource-Based View by positioning LWBHC as a strategic cultural resource and Dynamic Capability Theory by examining Digital Adaptation as a mechanism for transforming cultural resources into economic value. Third, it develops and empirically tests an integrated sequential model linking Industrial Culture Exposure, Local Wisdom-Based Human Capital, Digital Adaptation, and Creative Economy Sovereignty in an industrialized regional context.

METHODS

This study employed a quantitative explanatory design to examine the relationships among Industrial Culture Exposure (ICE), Local Wisdom-Based Human Capital (LWBHC), Digital Adaptation (DA), and Creative Economy Sovereignty (CES) among culture-based MSMEs in Greater Bekasi. The framework was grounded in Human Capital Theory, the Resource-Based View (RBV), and Dynamic Capability Theory.

The unit of analysis consisted of culture-based MSMEs operating in Bekasi City and Bekasi Regency. Respondents were business owners, founders, or principal decision-makers because they possess direct knowledge of cultural resource management and digital adaptation. Greater Bekasi was selected because industrial expansion, local cultural transformation, and culture-based economic activities coexist within the region.

Purposive sampling was used to select respondents who (1) actively operated a culture-based MSME in traditional batik, local culinary products, handicrafts, cultural fashion, or related activities; (2) were located in Bekasi City or Bekasi Regency; and (3) had operated the business for at least one year. A total of 200 valid responses were obtained. This sample size was considered adequate for PLS-SEM and for estimating direct and indirect relationships among latent constructs (Sarstedt et al., 2022).

Data were collected from May to July 2026 through online and offline surveys. Online questionnaires were distributed via Google Forms, while offline surveys were conducted through field visits to MSMEs with limited digital access. Participation was voluntary, informed consent was obtained, and respondent confidentiality and anonymity were maintained.

The measurement instruments were based on the conceptual definitions of ICE, LWBHC, DA, and CES. ICE, DA, and CES were informed by previous literature and contextualized to culture-based MSMEs in Greater Bekasi, whereas LWBHC was newly developed to capture culturally embedded human capabilities. ICE covered industrial interaction, work orientation, production-related knowledge, and internalization of industrial values; DA covered digital technology use, learning, marketplace use, and content creation; and CES captured local competitiveness, resource autonomy, economic benefits, market preference, and future economic autonomy.

For ICE, DA, and CES, item wording was adapted from the underlying conceptual indicators while preserving their original meanings and contextualizing them to culture-based MSME activities in Greater Bekasi. Locally relevant examples were incorporated where appropriate. For LWBHC, the items were developed specifically for this study based on the proposed dimensions and contextualized to Betawi and Sundanese cultural knowledge, skills, values, cultural memory, and community-based capabilities.

LWBHC was operationalized through five dimensions: local cultural knowledge, traditional or cultural skills, local cultural values, cultural memory, and community-based capabilities. These dimensions were represented by five indicators (LWBHC1–LWBHC5), contextualized to the Betawi and Sundanese cultural environment of Greater Bekasi. As a newly proposed construct, LWBHC represents an initial operationalization subject to further empirical refinement.

All items were measured using a five-point Likert scale, with the complete wording, development basis, and conceptual dimensions presented in Table 1.

Table 1. Operational Definition and Measurement Items of the Constructs

Construct	Code	Complete Measurement Item	Development Basis / Source	Conceptual Dimension
Industrial Culture Exposure (ICE)	ICE1	Saya sering berinteraksi dengan karyawan/pengelola kawasan industri di lingkungan saya.	Informed by Eaton, (2016); contextualized to Greater Bekasi	Industrial interaction/exposure
	ICE2	Budaya kerja industri seperti disiplin waktu dan target sudah mempengaruhi cara saya bekerja.	Informed by Eaton, (2016); contextualized to Greater Bekasi	Industrial work orientation
	ICE3	Saya memahami proses produksi di pabrik-pabrik sekitar Bekasi.	Informed by Eaton, (2016); contextualized to Greater Bekasi	Production-related knowledge
	ICE4	Nilai-nilai dari lingkungan industri sudah menjadi bagian dari kehidupan sehari-hari saya.	Informed by Eaton, (2016); contextualized to Greater Bekasi	Internalization of industrial values
Local Wisdom-Based Human Capital (LWBHC)	LWBHC1	Saya menguasai pengetahuan tentang budaya Betawi/Sunda khas Bekasi seperti bahasa, makanan, kesenian.	Newly developed for this study; theoretically grounded in Becker, (1964) and Bourdieu, (1986)	Local cultural knowledge

	LWBHC2	Saya memiliki keterampilan membuat produk budaya lokal seperti batik Bekasi, dodol, atau kerajinan.	Newly developed for this study; theoretically grounded in Becker, (1964) and Bourdieu, (1986)	Traditional/cultural skills
	LWBHC3	Saya memahami nilai-nilai kearifan lokal Bekasi seperti gotong royong dan ngehargain tamu.	Newly developed for this study; theoretically grounded in Becker, (1964) and Bourdieu, (1986)	Local cultural values
	LWBHC4	Saya mampu menceritakan sejarah/asal-usul budaya Bekasi kepada orang lain.	Newly developed for this study; theoretically grounded in Becker, (1964) and Bourdieu, (1986)	Cultural memory
	LWBHC5	Jaringan pertemanan saya dengan sesama warga asli Bekasi membantu saya dalam usaha/kegiatan budaya.	Newly developed for this study; theoretically grounded in Becker, (1964) and Bourdieu, (1986)	Community-based capabilities
Digital Adaptation (DA)	DA1	Saya mampu menggunakan media sosial seperti TikTok, Instagram, Shopee untuk promosikan produk/budaya Bekasi.	Informed by Cenamor et al., (2019); contextualized to Greater Bekasi	Digital technology use
	DA2	Saya mudah belajar aplikasi digital baru yang mendukung usaha pelestarian budaya.	Informed by Cenamor et al., (2019); contextualized to Greater Bekasi	Digital learning
	DA3	Saya memanfaatkan marketplace online untuk menjual produk budaya Bekasi.	Informed by Cenamor et al., (2019); contextualized to Greater Bekasi	Digital marketplace use
	DA4	Saya membuat konten digital tentang budaya Bekasi untuk edukasi masyarakat.	Informed by Cenamor et al., (2019); contextualized to Greater Bekasi	Digital content creation
Creative Economy Sovereignty (CES)	CES1	Usaha/produk budaya Bekasi yang saya jalankan mampu bersaing dengan produk dari luar daerah.	Informed by Martínez-León et al., (2025); contextualized to Greater Bekasi	Local competitiveness
	CES2	Saya tidak bergantung pada modal/bahan baku dari luar Bekasi untuk menjalankan usaha budaya.	Informed by Martínez-León et al., (2025); contextualized to Greater Bekasi	Resource autonomy
	CES3	Pendapatan dari kegiatan berbasis budaya lokal cukup untuk memenuhi kebutuhan ekonomi saya.	Informed by Martínez-León et al., (2025); contextualized to Greater Bekasi	Economic benefit
	CES4	Masyarakat Bekasi lebih memilih membeli produk budaya lokal dibanding produk impor/buatan luar.	Informed by Martínez-León et al., (2025); contextualized to Greater Bekasi	Local market preference
	CES5	Saya yakin budaya Bekasi bisa menjadi sumber kemandirian ekonomi daerah di masa depan.	Informed by Martínez-León et al., (2025); contextualized to Greater Bekasi	Future economic autonomy

Source: Authors' development based on previous studies and theoretical foundations, contextualized to Greater Bekasi, 2026.

Data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software. PLS-SEM was selected because it is suitable for predictive and exploratory research, accommodates complex relationships among latent constructs, and does not require strict assumptions of multivariate normality (Sarstedt et al. 2022). Furthermore, the method is appropriate for examining mediation effects and theory extension within emerging research contexts.

Instrument Validation and Pre-Survey Procedures

Formal expert validation and a separate pilot study were not conducted before the main survey. Therefore, the study does not claim pre-survey content validation, pilot-based item purification, or preliminary reliability testing. Instead, item development was grounded in conceptual definitions and relevant theoretical and empirical literature, with contextualization to culture-based MSMEs in Greater Bekasi. This limitation is particularly relevant to the newly developed LWBHC construct, whose five indicators represent an initial operationalization. The 18 items were subsequently evaluated using the full sample of 200 valid responses.

Following the main survey, the measurement model was assessed using outer loadings, Cronbach's alpha, composite reliability, AVE, HTMT, and VIF. These assessments provide empirical evidence of measurement quality in the present sample but do not substitute for pre-survey expert validation or pilot testing.

The analysis was conducted in two stages. First, the measurement model was evaluated through indicator loadings, Cronbach's alpha, composite reliability, Average Variance Extracted (AVE), Heterotrait-Monotrait Ratio (HTMT), and collinearity assessment (VIF). Common method bias was assessed using the full-collinearity VIF approach in addition to the assessment of inner collinearity. The full-collinearity assessment was conducted by examining the VIF values associated with the latent constructs, using 3.3 as a commonly applied diagnostic threshold. This procedure was used as a diagnostic indicator of potential common method bias rather than as definitive proof of its absence or presence. Inner VIF values were separately examined to assess collinearity among structural predictors in the proposed model. The structural model was evaluated using direct path coefficients, coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and bootstrapped indirect effects. To assess the proposed mediation mechanisms, the model simultaneously estimated the direct paths among the constructs and the specific indirect effects. This specification allowed the study to distinguish indirect-only mediation from complementary partial mediation and to examine alternative indirect pathways.

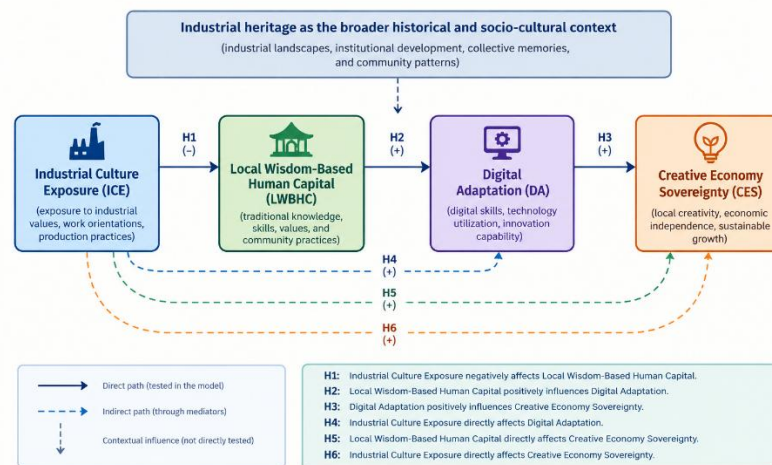


Figure 1. Research Framework

Figure 1 presents the conceptual framework developed in this study. The framework proposes that Industrial Culture Exposure influences Local Wisdom-Based Human Capital, which subsequently enhances Digital Adaptation and ultimately contributes to Creative Economy Sovereignty among culture-based MSMEs in Greater Bekasi. In this framework, industrial heritage is treated as the broader contextual background of the study, reflecting the historical and socio-cultural legacy of industrialization in Greater Bekasi. Industrial Culture Exposure, rather than industrial heritage itself, constitutes the empirical construct examined in the structural model. The model therefore focuses on how contemporary exposure to industrial values, work orientations, and production practices may influence the preservation and productive utilization of local cultural knowledge and competencies.

RESULTS AND DISCUSSION

RESULT

A total of 200 culture-based MSME actors participated in this study. Female respondents accounted for 55% of the sample, while males represented 45%. Most respondents were between 25 and 40 years old (65%), indicating the dominance of productive-age entrepreneurs. Regarding educational attainment, 80% had completed at least secondary education, while 20% possessed higher education qualifications. In terms of business type, traditional culinary enterprises constituted the largest proportion (35%), followed by batik and fashion businesses (25%), handicrafts and souvenirs (20%), and other cultural products (20%). Regarding business experience, 45% had operated their businesses for 1–5 years, 35% for 6–10 years, and 20% for more than 10 years.

These characteristics suggest that the respondents possess sufficient entrepreneurial experience and cultural-business engagement to provide reliable insights into the relationships among industrial culture exposure, local wisdom-based human capital, digital adaptation, and creative economy sovereignty. Furthermore, the dominance of productive-age entrepreneurs indicates a relatively favorable environment for technology adoption and business innovation among culture-based MSMEs in Greater Bekasi. Table 2 presents the detailed demographic characteristics of the respondents.

Table 2. Profile of Respondents

No	Attributes of Participants	Information	Rate
1	Gender	Male	45%
		Female	55%
2	Age	25–40 years	65%
		> 40 years	35%
3	Educational Level	Secondary Education or Equivalent	80%
		Higher Education	20%
4	Business Type	Traditional Culinary	35%
		Batik and fashion	25%
		Handicrafts and Souvenirs	20%
		Other Cultural Products	20%
5	Business Experience	1–5 Years	45%
		6–10 Years	35%
		>10 Years	20%

Source: Processed Data, 2026

The measurement model was evaluated to assess the reliability and validity of the indicators and constructs used in this study. Table 3 presents the outer loading values of all measurement items. The results indicate that all indicators exceeded the recommended threshold of 0.70, indicating satisfactory indicator reliability.

The Creative Economy Sovereignty (CES) construct demonstrated outer loading values ranging from 0.914 to 0.926. These consistently high values indicate that the indicators strongly reflect respondents' perceptions regarding economic autonomy, cultural ownership, and control over cultural value chains. Similarly, the Digital Adaptation (DA) construct exhibited outer loading values ranging from 0.920 to 0.941, suggesting that all indicators effectively capture the capability of culture-based MSMEs to adopt and utilize digital technologies.

The Industrial Culture Exposure (ICE) construct recorded loading values between 0.924 and 0.946, indicating that the indicators successfully represent the influence of industrial values, production orientation, and work culture within the Greater Bekasi industrial environment. Likewise, the Local Wisdom-Based Human Capital (LWBHC) construct demonstrated loading values ranging from 0.925 to 0.947, indicating strong indicator reliability for the dimensions of local cultural knowledge, traditional or cultural skills, local cultural values, cultural memory, and community-based capabilities.

Overall, the outer loading values ranged from 0.914 to 0.947, substantially exceeding the recommended threshold. These findings indicate satisfactory indicator reliability, and all indicators were retained for subsequent structural model analysis. Table 3 presents the complete outer loading results.

Table 3. Outer Loadings of Measurement Items

	CES	DA	ICE	LWBHC
CES1	0.914			
CES2	0.925			
CES3	0.926			
CES4	0.916			
CES5	0.916			
DA1		0.940		
DA2		0.930		
DA3		0.941		
DA4		0.920		
ICE1			0.946	
ICE2			0.925	
ICE3			0.924	
ICE4			0.924	
LWBHC1				0.947
LWBHC2				0.931
LWBHC3				0.935
LWBHC4				0.934
LWBHC5				0.925

Source: Processed Data, 2026

The reliability and validity of the constructs were further assessed using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). As presented in Table 4, all constructs exceeded the recommended thresholds of 0.70 for Cronbach's Alpha and composite reliability, and 0.50 for AVE.

The AVE values ranged from 0.846 to 0.874, indicating that each construct explained more than 84% of the variance in its indicators. These results provide evidence of satisfactory convergent validity, while the Cronbach's alpha and composite reliability values indicate strong internal consistency across all constructs. Furthermore, Cronbach's alpha values ranged from 0.948 to 0.964, while composite reliability values ranged from 0.962 to 0.972, indicating excellent internal consistency across all constructs.

The highest reliability was observed for Local Wisdom-Based Human Capital (LWBHC), indicating strong internal consistency across its five initial dimensions: local cultural knowledge, traditional or cultural skills, local cultural values, cultural memory, and community-based capabilities. However, the elevated HTMT value between LWBHC and ICE indicates that high internal consistency does not by itself establish clear empirical discriminant validity. Accordingly, the LWBHC measurement results should be interpreted as promising initial evidence that requires further refinement and validation. Collectively, these findings provide evidence that the measurement model meets the recommended reliability and convergent validity criteria in the present sample. Detailed results are presented in Table 4.

Table 4. Construct Reliability And Validity

Variable	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (Ave)
Creative Economy Sovereignty (Ces)	0.954	0.955	0.965	0.846
Digital Adaptation (Da)	0.950	0.951	0.964	0.870
Industrial Culture Exposure (Ice)	0.948	0.948	0.962	0.864
Local Wisdom Based Human Capital (Lwbhc)	0.964	0.964	0.972	0.874

Source: Processed Data, 2026

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). As shown in Table 5, most HTMT values were below the commonly used threshold of 0.90. However, the HTMT value between Industrial Culture Exposure and Local Wisdom-Based Human Capital was 0.917, indicating a

potential concern regarding empirical discriminant validity. This result prompted a reassessment of the conceptual and item-level boundaries between the two constructs. ICE is intended to capture respondents' exposure to and internalization of industrial work orientations, production practices, and industrial values, whereas LWBHC captures culturally embedded local knowledge, traditional or cultural skills, local cultural values, cultural memory, and community-based capabilities. Particular attention was given to the potential conceptual proximity between industrial-value internalization in ICE and local-value dimensions in LWBHC. Because the available results do not provide sufficient evidence to attribute the elevated HTMT value to a single item, no item was removed solely on the basis of the HTMT statistic. The two constructs were therefore retained in accordance with their theoretically distinct definitions, while the elevated HTMT value is treated as a measurement limitation that warrants further item refinement and independent content validation in future studies.

Table 5. Heterotrait-Monotrait Ratio (HTMT)

Construct	CES	DA	ICE	LWBHC
CES	-			
DA	0.882	-		
ICE	0.710	0.795	-	
LWBHC	0.702	0.829	0.917	-

Source: Processed Data, 2026

Collinearity diagnostics were assessed using Variance Inflation Factor (VIF) values. As shown in Table 6, all inner VIF values were equal to 1.000, substantially below the recommended threshold of 3.3. These findings indicate that multicollinearity among the structural predictors is unlikely to be a concern.

Table 6. Collinearity Diagnostics

Panel A. Inner Collinearity VIF

Structural Path	VIF
ICE → LWBHC	1.000
LWBHC → DA	1.000
DA → CES	1.000

Source: Processed Data, 2026

Panel B. Full-Collinearity VIF

Construct	VIF
ICE	4.604
LWBHC	5.282
DA	5.020
CES	3.466

Source: Processed Data, 2026

Since all variables were collected through a self-administered questionnaire from a single respondent representing each MSME, potential common method bias was assessed using the full-collinearity VIF approach. The full-collinearity VIF values were 4.604 for Industrial Culture Exposure, 5.282 for Local Wisdom-Based Human Capital, 5.020 for Digital Adaptation, and 3.466 for Creative Economy Sovereignty. These values exceed the commonly applied diagnostic threshold of 3.3, indicating that potential common method bias and construct-level collinearity cannot be completely ruled out. Therefore, the full-collinearity results are interpreted as a diagnostic limitation, and the magnitude of the structural relationships should be interpreted with appropriate caution.

Following the assessment of measurement model adequacy, the structural model was evaluated to examine the relationships among the proposed constructs. Figure 2 illustrates the structural model generated using SmartPLS.

Figure 2 presents the bootstrapped structural model with both the hypothesized sequential relationships and the additional direct paths used to assess alternative mediation mechanisms. Industrial Culture Exposure significantly influences Local Wisdom-Based Human Capital, Digital Adaptation, and Creative Economy Sovereignty, while Local Wisdom-Based Human Capital significantly influences Digital Adaptation but does not have a significant direct effect on Creative Economy Sovereignty. Digital Adaptation significantly influences Creative Economy Sovereignty with a coefficient of 0.800.

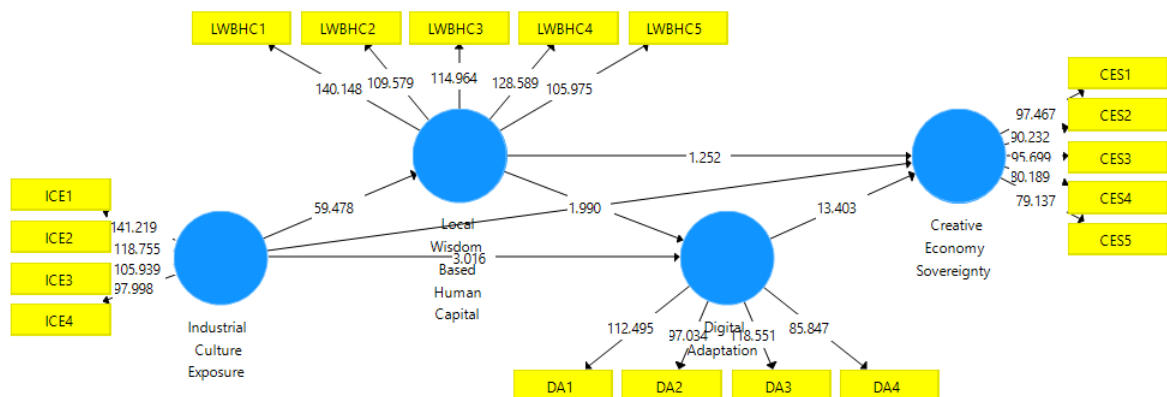


Figure 2. Structural Model of Industrial Culture Exposure, Local Wisdom-Based Human Capital, Digital Adaptation, and Creative Economy Sovereignty.

The final model explains 76.9% of the variance in Local Wisdom-Based Human Capital ($R^2 = 0.769$), 64.4% in Digital Adaptation ($R^2 = 0.644$), and 71.4% in Creative Economy Sovereignty ($R^2 = 0.714$), indicating substantial explanatory power across all endogenous constructs. Detailed results are presented in Table 7.

Table 7. Coefficient of Determination (R^2)

Endogenous construct	R square	R square adjusted
Creative economy sovereignty	0.714	0.709
Digital adaptation	0.644	0.641
Local wisdom based human capital	0.769	0.768

Source: Processed Data, 2026

Table 8. Effect Size (f^2)

Exogenous construct	Creative economy sovereignty	Digital adaptation	Industrial culture exposure	Local wisdom based human capital
Creative economy sovereignty	—	—	—	—
Digital adaptation	0.795	—	—	—
Industrial culture exposure	0.022	0.042	—	3.328
Local wisdom based human capital	0.008	0.211	—	—

Source: Processed Data, 2026

The effect-size results show a very large contribution of Industrial Culture Exposure to Local Wisdom-Based Human Capital ($f^2 = 3.328$) and of Digital Adaptation to Creative Economy Sovereignty ($f^2 = 0.795$). Local Wisdom-Based Human Capital has a medium effect on Digital Adaptation ($f^2 = 0.211$), whereas the additional direct paths show small or negligible effects (Table 8).

Table 9. Predictive Relevance (Q^2)

Endogenous construct	Sso	Sse	Q^2
Creative economy sovereignty	1000.000	409.194	0.591
Digital adaptation	800.000	358.685	0.552
Industrial culture exposure	800.000	800.000	—
Local wisdom based human capital	1000.000	333.380	0.667

Source: Processed Data, 2026

All endogenous constructs show positive Q^2 values, indicating predictive relevance of the final structural model: 0.667 for Local Wisdom-Based Human Capital, 0.591 for Creative Economy Sovereignty, and 0.552 for Digital Adaptation (Table 9).

Bootstrapping was used to assess the specific indirect effects, including the proposed sequential pathway and alternative mediation paths (Table 10).

Table 10. Particular Indirect Effects

Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (Stdev)	T Statistic	P Value
Industrial Culture Exposure → Digital Adaptation → Creative Economy Sovereignty	-0.203	-0.204	0.066	3.070	0.002
Local Wisdom Based Human Capital → Digital Adaptation → Creative Economy Sovereignty	0.456	0.454	0.076	6.000	0.000
Industrial Culture Exposure → Local Wisdom Based Human Capital → Digital Adaptation → Creative Economy Sovereignty	-0.400	-0.399	0.068	5.911	0.000
Industrial Culture Exposure → Local Wisdom Based Human Capital → Creative Economy Sovereignty	0.094	0.091	0.075	1.244	0.214
Industrial Culture Exposure → Local Wisdom Based Human Capital → Digital Adaptation	-0.500	-0.499	0.070	7.098	0.000

Source: Processed Data, 2026

Industrial Culture Exposure indirectly affects Digital Adaptation through Local Wisdom-Based Human Capital ($\beta = -0.500$, $t = 7.098$, $p < 0.001$), while its direct effect on Digital Adaptation remains significant ($\beta = -0.254$, $t = 3.016$, $p = 0.003$). The significant effects in the same direction indicate complementary partial mediation.

Local Wisdom-Based Human Capital has a significant indirect effect on Creative Economy Sovereignty through Digital Adaptation ($\beta = 0.456$, $t = 6.000$, $p < 0.001$), whereas its direct effect is not significant ($\beta = -0.107$, $t = 1.252$, $p = 0.211$), indicating indirect-only mediation.

For the proposed sequential mediation, Industrial Culture Exposure has a significant indirect effect on Creative Economy Sovereignty through Local Wisdom-Based Human Capital and Digital Adaptation ($\beta = -0.400$, $t = 5.911$, $p < 0.001$). The direct effect of Industrial Culture Exposure on Creative Economy Sovereignty remains statistically significant ($\beta = -0.167$, $t = 1.990$, $p = 0.047$). Because the direct and sequential indirect effects are both statistically significant and have the same negative sign, the sequential mediation is interpreted as complementary partial mediation rather than full mediation.

The alternative indirect pathway from Industrial Culture Exposure to Creative Economy Sovereignty through Local Wisdom-Based Human Capital alone was not statistically significant ($\beta = 0.094$, $t = 1.244$, $p = 0.214$). In contrast, the sequential pathway incorporating Digital Adaptation was statistically significant. This result suggests that Digital Adaptation is an essential component of the proposed mediation mechanism linking Industrial Culture Exposure, Local Wisdom-Based Human Capital, and Creative Economy Sovereignty.

The significance of the proposed hypotheses was evaluated using path coefficients, t-statistics, and p-values obtained through the bootstrapping procedure. A structural relationship is considered statistically significant when the t-statistic exceeds 1.96, and the p-value is below 0.05. The results of hypothesis testing are presented in Table 11.

Table 11. Outcomes of Hypothesis Evaluation and Direct Effects

Relationship	Original sample (β)	T statistic	P value	Conclusion
Industrial culture exposure → local wisdom-based human capital	-0.877	59.478	< 0.001	Supported
Local wisdom-based human capital → digital adaptation	0.570	7.230	< 0.001	Supported
Digital adaptation → creative economy sovereignty	0.800	13.403	< 0.001	Supported
Industrial culture exposure → digital adaptation	-0.254	3.016	0.003	Supported
Local wisdom-based human capital → creative economy sovereignty	-0.107	1.252	0.211	Not supported
Industrial culture exposure → creative economy sovereignty	-0.167	1.990	0.047	Supported

Source: SmartPLS Output, 2026

The first hypothesis examined the influence of Industrial Culture Exposure on Local Wisdom-Based Human Capital. The results indicate a path coefficient of -0.877 , a t-statistic of 59.478 , and a p-value of 0.000 . Since the p-value is below 0.05 and the t-statistic exceeds the recommended threshold of 1.96 , the hypothesis is supported. The negative coefficient indicates that greater exposure to industrial culture is significantly associated with lower levels of Local Wisdom-Based Human Capital among culture-based MSMEs in Greater Bekasi.

The second hypothesis investigated the influence of local wisdom-based human capital on digital adaptation. The results reveal a path coefficient of 0.570 , a t-statistic of 7.230 , and a p-value of 0.000 . These findings provide empirical evidence supporting the proposed theoretical relationship. Therefore, the second hypothesis is supported. The positive coefficient indicates that stronger local wisdom-based human capital is associated with greater digital adaptation among culture-based msme in Greater Bekasi.

The third hypothesis examined the effect of digital adaptation on creative economy sovereignty. The results show a path coefficient of 0.800 , a t-statistic of 13.403 , and a p-value of 0.000 . Since the p-value is below 0.05 and the t-statistic exceeds 1.96 , the hypothesis is supported. This finding demonstrates that higher levels of digital adaptation significantly strengthen creative economy sovereignty by enabling culture-based msme to expand market access, enhance cultural product visibility, and maintain greater control over cultural value creation within digital environments.

Additional direct-path analysis was conducted to assess the proposed mediation structure and alternative pathways. Industrial culture exposure has a significant negative direct effect on digital adaptation ($\beta = -0.254$, $t = 3.016$, $p = 0.003$), while the direct effect of local wisdom-based human capital on creative economy sovereignty is not statistically significant ($\beta = -0.107$, $t = 1.252$, $p = 0.211$). Industrial culture exposure also has a significant negative direct effect on creative economy sovereignty ($\beta = -0.167$, $t = 1.990$, $p = 0.047$). These results indicate that the mediation mechanisms cannot be uniformly interpreted as full mediation.

The indirect-effect analysis further shows that local wisdom-based human capital partially mediates the relationship between industrial culture exposure and digital adaptation ($\beta = -0.500$, $t = 7.098$, $p < 0.001$), because the corresponding direct effect remains significant. Digital adaptation provides an indirect-only mediation pathway between local wisdom-based human capital and creative economy sovereignty ($\beta = 0.456$, $t = 6.000$, $p < 0.001$), given that the corresponding direct effect is not significant. Most importantly, the sequential indirect effect of industrial culture exposure on creative economy sovereignty through local wisdom-based human capital and digital adaptation is significant ($\beta = -0.400$, $t = 5.911$, $p < 0.001$), while the direct effect of industrial culture exposure on creative economy sovereignty remains significant ($\beta = -0.167$, $t = 1.990$, $p = 0.047$). This pattern indicates complementary

partial mediation rather than full mediation. The alternative pathway from industrial culture exposure through local wisdom-based human capital directly to creative economy sovereignty is not significant ($\beta = 0.094$, $t = 1.244$, $p = 0.214$), further highlighting the role of digital adaptation in the sequential mediation mechanism.

DISCUSSION

The Influence of Industrial Culture Exposure on Local Wisdom-Based Human Capital

Industrial Culture Exposure has a strong negative effect on Local Wisdom-Based Human Capital ($\beta = -0.877$), suggesting that intensive industrial environments may weaken indigenous knowledge, traditional skills, and local cultural values among culture-based MSMEs in Greater Bekasi.

The HTMT value between Industrial Culture Exposure and Local Wisdom-Based Human Capital (0.917) indicates potential empirical overlap despite their conceptual distinction. In the Greater Bekasi context, industrial exposure and changes in local cultural capabilities may be closely experienced by respondents. Therefore, the strong negative relationship should be interpreted with caution alongside this measurement limitation.

Given the unusually large coefficient and t-statistic for the ICE $\rightarrow$ LWBHC relationship ($\beta = -0.877$; $t = 59.478$), this finding should be interpreted cautiously. Its magnitude may partly reflect construct overlap, common method effects, or model-specification issues, consistent with the elevated ICE–LWBHC HTMT and full-collinearity VIF results. The present data do not permit these potential explanations to be separated empirically.

This finding is consistent with Human Capital Theory, which views knowledge, skills, and competencies as productive assets (Becker, 1964). In highly industrialized environments, however, human-capital priorities may shift toward technical and manufacturing competencies, potentially reducing the relevance and transmission of indigenous knowledge and traditional skills. From the Resource-Based View, this erosion may weaken culturally embedded resources that differentiate local creative enterprises and support their long-term competitiveness (Barney, 1991).

The finding is particularly relevant to Greater Bekasi, where extensive industrial development has created strong incentives for employment in manufacturing and other formal sectors. These opportunities may reduce younger generations' participation in family-based cultural enterprises and weaken intergenerational knowledge transfer. Thus, the strong negative relationship between Industrial Culture Exposure and Local Wisdom-Based Human Capital suggests that industrial development should be accompanied by cultural regeneration mechanisms that preserve and strengthen local cultural capabilities.

The Influence of Local Wisdom-Based Human Capital on Digital Adaptation

The results show that Local Wisdom-Based Human Capital positively influences Digital Adaptation ($\beta = 0.570$), indicating that culturally embedded knowledge, values, and skills can support MSMEs in adopting and integrating digital technologies. Rather than opposing digital transformation, local wisdom may provide a foundation for preserving and commercializing cultural products through digital channels.

This finding is consistent with Dynamic Capability Theory, which emphasizes the integration and reconfiguration of resources in response to change (Teece, 2007). It also extends digital-transformation research by showing that culturally embedded knowledge can function as a capability alongside technological and organizational resources (Nambisan, 2020; Kraus et al., 2022).

In Greater Bekasi, this suggests that digital-literacy programs for culture-based MSMEs should be combined with cultural preservation and knowledge-transfer initiatives so that digital adoption strengthens, rather than displaces, local cultural resources.

The Influence of Digital Adaptation on Creative Economy Sovereignty

The findings reveal that Digital Adaptation has a significant positive effect on Creative Economy Sovereignty. This result indicates that higher levels of digital adaptation strengthen the ability of culture-based MSMEs to maintain economic autonomy, control cultural value chains, and expand market access within increasingly digitalized economic environments.

This finding supports both the Resource-Based View and Dynamic Capability Theory. Digital adaptation can be understood as a strategic capability that enables MSMEs to transform unique cultural resources into sustainable economic value. Through digital technologies, local entrepreneurs gain direct access to consumers, reduce dependency on intermediaries, strengthen product branding, and increase control over distribution and marketing activities.

The result is consistent with contemporary research emphasizing that digital platforms contribute to the democratization of market access and strengthen the bargaining position of local producers within creative industries (UNCTAD, 2024). Digital technologies allow small-scale cultural enterprises to reach broader markets while retaining ownership of their cultural products and intellectual assets. Consequently, digital adaptation becomes a critical mechanism for strengthening economic sovereignty within local creative ecosystems.

While previous studies have generally focused on the contribution of digital technologies to organizational performance, market expansion, and innovation outcomes, the present study demonstrates a broader impact of digital adaptation. The findings suggest that digital adaptation not only improves business efficiency but also strengthens the ability of local communities to maintain ownership, control, and economic benefits derived from cultural resources. Consequently, digital technologies should be viewed not merely as operational tools but also as strategic mechanisms that support economic autonomy and cultural sustainability.

An important contribution of this study lies in extending the emerging discourse on digital sovereignty through the concept of Creative Economy Sovereignty. Unlike conventional perspectives that evaluate digital transformation primarily through efficiency, innovation, and financial performance, the present findings demonstrate that digital adaptation also enhances local communities' capacity to retain ownership of cultural assets, control value creation processes, and capture economic benefits within increasingly digitalized markets. This finding broadens the scope of digital transformation research by demonstrating that digital capabilities contribute not only to competitiveness and performance but also to cultural ownership, local autonomy, and long-term economic sovereignty.

The findings further suggest that digital sovereignty is not merely a matter of technological access or platform utilization. Rather, digital sovereignty depends on the capacity of local communities to control, utilize, and derive value from digital technologies while preserving cultural ownership, identity, and economic autonomy. In industrial regions such as Greater Bekasi, digital adaptation therefore becomes a strategic pathway through which local communities can maintain control over their cultural resources despite increasing pressures from industrialization and globalization. This condition is particularly relevant in Greater Bekasi, where rapid industrial expansion and digital transformation simultaneously create opportunities for economic growth and challenges for the preservation of local cultural identities.

The strong positive effect of Digital Adaptation on Creative Economy Sovereignty ($\beta = 0.800$) indicates that digital capabilities may strengthen market access, customer engagement, branding, and local control over cultural value creation among culture-based MSMEs. In Greater Bekasi, digital technologies provide opportunities for local entrepreneurs to access broader markets while maintaining greater control over branding, storytelling, and cultural representation.

The mediation results further indicate that Local Wisdom-Based Human Capital and Digital Adaptation operate as interconnected mechanisms linking industrial exposure to Creative Economy Sovereignty. Local cultural capabilities support digital adaptation, while digital adaptation enables these cultural resources to generate economic and strategic value. This finding extends the Resource-Based View and Dynamic Capability Theory by positioning local cultural resources as productive capabilities that can support, rather than merely preserve, cultural economic development.

Overall, the findings suggest that sustainable creative economy development in industrial regions requires the integration of cultural regeneration, digital empowerment, and industrial development rather than treating these domains separately

CONCLUSION

This study investigated the relationships among Industrial Culture Exposure, Local Wisdom-Based Human Capital, Digital Adaptation, and Creative Economy Sovereignty within culture-based MSMEs in

Greater Bekasi, Indonesia. The findings demonstrate that Industrial Culture Exposure significantly weakens Local Wisdom-Based Human Capital, while Local Wisdom-Based Human Capital positively enhances Digital Adaptation. Furthermore, Digital Adaptation exerts a strong positive influence on Creative Economy Sovereignty. These results indicate that although industrialization may reduce the transmission of indigenous knowledge and traditional competencies, local cultural resources remain capable of generating economic value when supported by adaptive digital capabilities.

The mediation analysis identifies differentiated pathways within the model. Local Wisdom-Based Human Capital provides complementary partial mediation between Industrial Culture Exposure and Digital Adaptation, while Digital Adaptation provides an indirect-only pathway between Local Wisdom-Based Human Capital and Creative Economy Sovereignty. The sequential pathway from Industrial Culture Exposure through Local Wisdom-Based Human Capital and Digital Adaptation to Creative Economy Sovereignty is also supported through complementary partial mediation.

Theoretically, this study reconceptualizes local wisdom-based human capital as a culturally embedded strategic resource that can support digital adaptation and creative economy sovereignty. The findings extend Human Capital Theory, the Resource-Based View, and Dynamic Capability Theory by linking indigenous knowledge and capabilities with digital transformation and economic value creation. The study also introduces Creative Economy Sovereignty as an outcome emphasizing local ownership, control of value creation, and retention of economic benefits.

Practically, industrial development policies should be complemented by cultural regeneration, intergenerational knowledge transfer, digital literacy, and market-access programs for culture-based MSMEs.

Despite its contributions, this study has several limitations. The cross-sectional design limits assessment of long-term changes, while the focus on culture-based MSMEs in Greater Bekasi may limit generalizability to other cultural and industrial contexts. Future research may examine the applicability of Creative Economy Sovereignty across different cultural and industrial settings.

An additional limitation concerns measurement development and discriminant validity. The instruments were not subjected to formal expert content validation or a separate pilot study before the main survey. In addition, the HTMT value between Industrial Culture Exposure and Local Wisdom-Based Human Capital was 0.917, indicating potential empirical overlap between the two constructs despite their theoretically distinct definitions. Although no item was removed solely on the basis of this statistic, the finding highlights the need for more systematic item refinement and content assessment. This limitation is particularly important for the newly developed Local Wisdom-Based Human Capital (LWBHC) construct. Future research should conduct expert assessment, pilot testing, item-level diagnostic analysis, and further scale refinement to establish stronger content and discriminant validity across different cultural and industrial contexts.

A further limitation concerns potential common method bias. The study relied on self-administered questionnaire responses obtained from a single respondent representing each MSME, which creates the possibility of shared measurement-method effects. Although inner VIF values did not indicate collinearity among the structural predictors, the full-collinearity VIF assessment produced values above the commonly applied 3.3 diagnostic threshold for ICE, LWBHC, DA, and CES. Thus, common method bias and construct-level collinearity cannot be completely ruled out. Future research should incorporate procedural remedies such as multiple respondents per organization, temporal separation of measurements, and the use of complementary objective or archival indicators where feasible. Additional statistical diagnostics should also be applied to further assess the robustness of the relationships.

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