

The Effect of Innovation, Creativity, and Employee Retention for Human Resource Development in North Sumatra's Ulos Industry

*Innovation and
Retention in Ulos
Industry HRD*

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ABSTRACT

The Ulos woven fabric industry in North Sumatra has faced a significant decline due to limited innovation and outdated designs, impacting business sustainability. This study aims to analyze the influence of innovation and creativity on human resource development in the Ulos industry, with employee retention as an intervening variable. A quantitative descriptive approach was used, collecting data from 294 Ulos business owners through questionnaires. Data were analyzed using structural equation modeling with SMART Partial Least Squares 4.0 software. The findings show that innovation and creativity significantly enhance human resource development by improving employee skills and business performance. Employee retention strengthens this relationship by ensuring skilled workers remain, contributing to sustained development. The study concludes that fostering innovation through new weaving techniques and creativity through unique motif designs can revive the Ulos industry. Business owners should implement training programs and retention strategies, such as fair compensation, to maintain a skilled workforce and enhance product competitiveness, addressing the industry's decline.

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Keywords: *Creativity, Employee Retention, Human Resource Development, Innovation, Textile Industry.*

ABSTRAK

Industri kain tenun Ulos di Sumatera Utara menghadapi penurunan yang signifikan karena inovasi yang terbatas dan desain yang ketinggalan zaman, yang berdampak pada keberlanjutan bisnis. Studi ini bertujuan untuk menganalisis pengaruh inovasi dan kreativitas terhadap pengembangan sumber daya manusia di industri Ulos, dengan retensi karyawan sebagai variabel intervening. Pendekatan deskriptif kuantitatif digunakan, mengumpulkan data dari 294 pemilik bisnis Ulos melalui kuesioner. Data dianalisis menggunakan pemodelan persamaan struktural dengan perangkat lunak SMART Partial Least Squares 4.0. Temuan menunjukkan bahwa inovasi dan kreativitas secara signifikan meningkatkan pengembangan sumber daya manusia dengan meningkatkan keterampilan karyawan dan kinerja bisnis. Retensi karyawan memperkuat hubungan ini dengan memastikan pekerja terampil tetap ada, berkontribusi pada pembangunan berkelanjutan. Studi ini menyimpulkan bahwa mendorong inovasi melalui teknik tenun baru dan kreativitas melalui desain motif yang unik dapat menghidupkan kembali industri Ulos. Pemilik bisnis harus menerapkan program pelatihan dan strategi retensi, seperti kompensasi yang adil, untuk mempertahankan tenaga kerja yang terampil dan meningkatkan daya saing produk, mengatasi penurunan industri.

Keywords: *Kreativitas, Retensi Karyawan, Pengembangan Sumber Daya Manusia, Inovasi, Industri Tekstil.*

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INTRODUCTION

Good human resources are individuals with superior abilities and positive attitudes in the workplace, capable of improving their own capacity and quality. These qualities allow them to express their true potential and demonstrate their skills effectively (Al-Tit et al., 2022). One critical ability of human resources is the capacity to innovate and enhance creativity, which is essential for developing products and sustaining business growth. Innovative and creative employees can create unique solutions, helping organizations stay competitive in dynamic markets (Appau et al., 2021; Ali et al., 2025). This is particularly important in industries facing challenges, such as adapting to changing consumer preferences or competing with modern designs.

Human resources with high innovation often have a long-term vision for managing organizations or companies. Someone with strong innovation skills typically shows greater creativity in designing products and shaping a company's vision to overcome challenges (Leavy, 2005; Dorst, 2015). High innovation enables individuals to develop unique products, distinguishing their business from competitors and enhancing both product quality and personal competence (Wolor et al., 2020). This ability supports the creation of a balanced organization while fostering self-development, allowing employees to improve their skills and adapt to new challenges.

Creative human resources are vital for finding solutions to sustain business operations. Creativity in a company drives business and product development, boosting productivity and encouraging employees to share innovative ideas (Cheng & Yang, 2019; Kremer et al., 2019; Nurhaeda et al., 2024). Creative individuals can build a reliable business chain, differentiating their products from competitors and improving company performance sustainably (Hongal & Kinange, 2020). By fostering creativity, businesses can create resources that support long-term growth and enhance employee development, ensuring they remain competitive in their industry.

Organizations often face challenges related to employee retention, which involves efforts to keep innovative and creative employees who contribute to productivity and growth. Retention strategies, such as providing career development opportunities and fair compensation, help ensure employees remain loyal and motivated (Sorn et al., 2025). Companies that prioritize employee needs, such as offering clear career paths and adequate rewards, can improve performance and support employee development (Urme, 2023; Nyoman, 2024; Quader, 2024). Effective retention not only prevents talent loss but also strengthens the organization's ability to achieve its goals and maintain a competitive edge.

North Sumatra is known for its creative businesses, ranging from small-scale home industries to larger enterprises. One prominent example is the Ulos woven fabric business, a traditional industry in North Tapanuli Regency that has been passed down through generations. However, this industry has experienced a significant decline, which details the decreasing number of Ulos weaving businesses from 2020 to 2025. This decline is largely due to a lack of innovation and creativity among employees, coupled with weak retention strategies, which have hindered human resource development and business sustainability (Wolor et al., 2020). According to Mahapatra et al. (2022), many traditional industries struggle to adapt to modern market demands due to limited innovation, highlighting a research gap in understanding how innovation and creativity can drive human resource development through effective retention in traditional textile industries like Ulos. Previous studies, such as Hongal and Kinange (2020), have explored innovation and Human Resource Development (HRD) in general business contexts, but few have focused on traditional industries facing decline, such as the Ulos weaving sector in North Sumatra. This study aims to analyze the influence of innovation and creativity on human resource development in the Ulos woven fabric business in North Sumatra, with employee retention as an intervening variable, to address this gap and provide practical solutions for reviving the industry.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

The Direct Effect of Innovation and Creativity

According to the componential theory of creativity, individual creativity depends on domain-relevant skills, creativity-relevant processes, and intrinsic motivation (Amabile, 2011). This theory implies that employees in the Ulos industry need specific weaving skills and a supportive environment to generate creative designs. The Resource-Based View (RBV) of the firm emphasizes that human resources with unique skills, such as innovation and creativity, are strategic assets for organizational success (Gerhart & Feng, 2021; Ployhart, 2021; Valaei et al., 2022). Additionally, self-determination theory explains how intrinsic motivation drives employees to innovate and remain committed, supporting retention efforts (Forner et al., 2021; Wang et al., 2021; Good et al., 2022). These theories collectively suggest that fostering innovation and creativity among employees can enhance HRD, enabling the Ulos industry to create varied designs and improve business performance.

Innovation and creativity are central to improving both HRD and employee retention. Innovation refers to the introduction of new ideas, technologies, or processes that enhance organizational effectiveness and competitiveness (Saunila & Ukko, 2012; Kahn, 2018). Innovation allows artisans to develop contemporary weaving techniques and designs that align traditional aesthetics with modern consumer preferences. Aina and Atan (2020) emphasize that innovative practices contribute to HRD by enhancing employee competencies, adaptive capacity, and technical proficiency. Creativity is the ability to generate novel and useful ideas (Wadhwa & Tripathi, 2018). Together, innovation and creativity foster a learning culture that improves productivity and encourages employees to develop their potential.

Moreover, creative and innovative work environments encourage employee commitment and satisfaction, which are vital for retention and performance improvement. According to Papa et al. (2020), organizations that cultivate innovation and creativity provide employees with intellectual challenges and autonomy, leading to higher engagement and stronger retention rates. Similarly, Hongal and Kinange (2020) found that when employees are involved in innovative processes, they feel a deeper sense of ownership over organizational outcomes, which reinforces loyalty. This condition is particularly relevant for small-scale industries where skilled labor is limited, as maintaining creative workers ensures both innovation continuity and HRD progression.

H1: Innovation has a positive effect on human resource development.

H2: Creativity has a positive effect on human resource development.

H3: Innovation has a positive effect on employee retention.

H4: Creativity has a positive effect on employee retention.

The Effect of Employee Retention on Human Resource Development

Employee retention is a crucial determinant of sustainable HRD, as it ensures that organizations can preserve and maximize their existing talent base. Retention involves strategies that motivate employees to remain committed through career advancement, fair compensation, and supportive work environments (Sorn et al., 2025). In the Ulos industry, retaining experienced and creative weavers enables the transfer of traditional craftsmanship while fostering ongoing learning and productivity. Urme (2023) notes that when employees feel secure and valued, they are more likely to invest in self-improvement and contribute to organizational growth. This dynamic strengthens HRD by maintaining institutional knowledge and skill diversity, both of which are essential for long-term performance and innovation capacity.

Additionally, employee retention enhances organizational stability by reducing turnover costs and maintaining continuity in operations. According to Rukunga and Nzulwa (2018), effective retention strategies prevent talent loss and sustain employee morale, directly improving human capital quality. Lin and Guo (2025) further highlight that trust and satisfaction in the workplace promote retention intention, which reinforces

HRD outcomes through ongoing collaboration and knowledge sharing. In traditional sectors like Ulos weaving, where training new artisans is time-intensive, retaining experienced workers is particularly strategic for ensuring production quality and innovation transmission. Thus, retention not only secures the workforce but also amplifies HRD by enabling employees to continually refine their skills and contribute to organizational resilience.

H5: Employee retention has a positive effect on human resource development.

The Mediating Role of Employee Retention

Employee retention acts as an intervening variable that mediates the relationship between innovation, creativity, and HRD. Retention involves strategies to keep valuable employees, such as offering training, recognition, or fair compensation (Rodríguez-Sánchez et al., 2020). In the Ulos industry, retaining creative and innovative employees is essential to sustain traditional weaving skills and develop new designs. According to Urme (2025), effective retention strategies, such as skill development programs, enhance employee loyalty and contribute to HRD by improving competencies. Innovative employees who feel valued are more likely to stay, allowing businesses to maintain a skilled workforce that drives HRD (Mohammed et al., 2019). Similarly, creativity fosters employee engagement, which strengthens retention and supports HRD by encouraging continuous learning (Othman & Khalil, 2020). Hamad (2019) argues that retaining creative employees enhances organizational intelligence, which is vital for industries like Ulos facing competitive pressures. In the Ulos context, retention ensures that employees with innovative and creative skills remain to develop new weaving techniques, enhancing HRD and business sustainability. This mediating role of retention is critical in traditional industries where skilled labor is scarce.

H6: Innovation has a positive effect on human resource development through employee retention.

H7: Creativity has a positive effect on human resource development through employee retention.

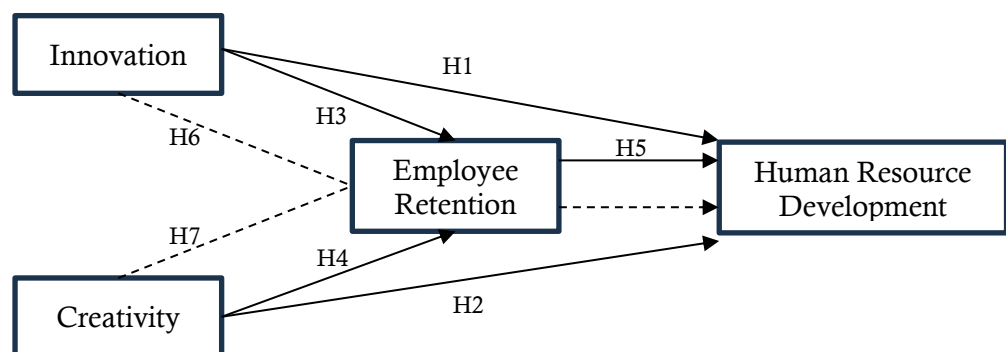


Figure 1. Research Framework

The research framework integrates innovation, creativity, employee retention, and HRD to explain their relationships in the Ulos woven fabric industry. Innovation and creativity are independent variables that directly influence HRD and employee retention, while retention acts as an intervening variable mediating the effects of innovation and creativity on HRD. According to Papa et al. (2020), a supportive work environment enhances creativity and innovation, which in turn fosters employee retention and HRD. This framework is relevant to the Ulos industry, where a lack of innovation and poor retention contribute to business decline. The framework posits that innovative and creative employees develop unique weaving designs, improving HRD by enhancing skills and organizational performance. Retention strengthens this relationship by ensuring

skilled employees remain, allowing continuous development (Venkat et al., 2023; Haque, 2023; Shinde, 2024). Figure 1 illustrates these relationships, showing innovation and creativity as predictors of HRD, with employee retention as the mediator. This framework addresses the research gap by focusing on how traditional industries like Ulos can leverage innovation and creativity to improve HRD and sustain business through effective retention strategies. By testing these relationships, this study provides practical insights for reviving the Ulos industry.

RESEARCH METHODS

This research employs a quantitative descriptive method with Structural Equation Modeling (SEM) to analyze the relationships between innovation, creativity, employee retention, and Human Resource Development (HRD) in the Ulos woven fabric industry in North Sumatra. The study uses SMART PLS 4.0 for data processing, as this software is suitable for analyzing complex relationships in small to medium sample sizes (Yusoff et al., 2024). The population consists of 1,015 owners of Ulos woven fabric businesses in North Sumatra, as reported by the North Sumatra SME Cooperative Agency in 2024. The sample was determined using the Slovin formula: $n = N / (1 + N e^2) = 1,015 / (1 + 1,015 \times 0.05^2) = 293.68$, rounded to 294 respondents. Simple random sampling was applied to ensure representativeness, allowing each business owner an equal chance of selection (Hongal & Kinange, 2020).

Data were collected through a structured questionnaire distributed to respondents between January and March 2025, using both online and in-person methods to ensure accessibility. The questionnaire comprised 25 items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), covering innovation (5 items), creativity (5 items), employee retention (7 items), and HRD (8 items). These items were adapted from validated instruments in prior studies and pre-tested with 30 respondents to ensure reliability and clarity (Yusoff et al., 2024). Innovation was operationally defined as the ability to develop new weaving techniques or designs, creativity as generating novel patterns, employee retention as strategies to maintain skilled workers, and HRD as improvements in employee skills and organizational performance. Primary data were gathered directly from respondents to capture their perceptions of these variables in their businesses.

The SEM approach was chosen to examine both direct and mediating effects, particularly the role of employee retention as an intervening variable. SMART PLS 4.0 was used to assess convergent validity, Average Variance Extracted (AVE), composite reliability, and path coefficients, providing a comprehensive analysis of the relationships. This method allows for testing the proposed hypotheses while accounting for the complexity of the Ulos industry context. The results from this analysis are presented in the subsequent section to provide insights into the factors influencing HRD in the Ulos woven fabric industry.

RESULTS

This study analyzes the relationships between innovation, creativity, employee retention, and HRD in the Ulos woven fabric industry in North Sumatra, using SEM with SMART PLS 4.0. The results, based on data from 294 business owners, provide insights into how these variables influence HRD and business sustainability. The findings are presented through descriptive analysis, convergent validity, AVE, composite reliability, path coefficients, and hypothesis testing. All tables summarizing these results are called out in the text for clarity.

Table 1. Descriptive Analysis of Variables

Variables	Item	Respondent Answer Score									
		SA		A		N		D		SD	
		F	%	F	%	F	%	F	%	F	%
Innovation	INV1	55	18.70	175	59.52	45	15.31	19	6.46	-	-
	INV2	57	19.39	178	60.54	46	15.65	13	4.42	-	-
	INV3	56	19.05	177	60.20	47	15.99	14	4.76	-	-
	INV4	58	19.73	179	60.88	48	16.33	9	3.06	-	-
	INV5	59	20.07	176	59.86	49	16.67	10	3.40	-	-
Creativity	CRV1	59	20.07	176	59.86	49	16.67	10	3.40	-	-
	CRV2	55	18.70	175	59.52	45	15.31	19	6.46	-	-
	CRV3	57	19.39	178	60.54	46	15.65	13	4.42	-	-
	CRV4	56	19.05	177	60.20	47	15.99	14	4.76	-	-
	CRV5	58	19.73	179	60.88	48	16.33	9	3.06	-	-
Employee Retention	ER1	57	19.39	178	60.54	46	15.65	13	4.42	-	-
	ER2	56	19.05	177	60.20	47	15.99	14	4.76	-	-
	ER3	59	20.07	176	59.86	49	16.67	10	3.40	-	-
	ER4	55	18.70	175	59.52	45	15.31	19	6.46	-	-
	ER5	58	19.73	179	60.88	48	16.33	9	3.06	-	-
	ER6	54	18.37	174	59.18	45	15.31	21	7.14	-	-
	ER7	60	20.41	180	61.22	50	17.01	4	1.36	-	-
Human Resource Development	HRD1	60	20.41	180	61.22	50	17.01	4	1.36	-	-
	HRD2	54	18.37	174	59.18	45	15.31	21	7.14	-	-
	HRD3	58	19.73	179	60.88	48	16.33	9	3.06	-	-
	HRD4	59	20.07	176	59.86	49	16.67	10	3.40	-	-
	HRD5	57	19.39	178	60.54	46	15.65	13	4.42	-	-

Note: SA=Strongly Agree, A= Agree, N= Neutral, D=Disagree, SD= Strongly Disagree, F=Frequency.

The descriptive analysis examines respondents' perceptions of innovation, creativity, employee retention, and HRD, measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Table 1 shows the distribution of responses for each variable's questionnaire items. For innovation, responses to five questions (INV1–INV5) indicate strong agreement, with 59.52%–60.88% of respondents selecting “agree” (score of 4), and 18.70%–20.07% selecting “strongly agree” (score of 5). For example, INV1 had 175 respondents (59.52%) agreeing, while INV4 had 179 respondents (60.88%) agreeing. Creativity (CRV1–CRV5) showed similar trends, with 59.52%–60.88% agreeing and 18.70%–20.07% strongly agreeing across items. Employee retention (ER1–ER7) had 59.18%–61.22% agreeing, with ER7 receiving the highest agreement at 180 respondents (61.22%). HRD (HRD1–HRD5) also showed strong agreement, with 59.18%–61.22% selecting “agree,” and HRD1 having the highest agreement at 180 respondents (61.22%). These results suggest that respondents generally perceive high levels of innovation, creativity, retention efforts, and HRD in their businesses, though some disagreement (1.36%–7.14%) indicates areas for improvement. No respondents selected “strongly disagree” for any item, suggesting a positive overall perception.

Table 2. Convergent Validity Test

Variable	Indicator	Outer Loading
Innovation (INV)	INV 1	0.845
	INV 2	0.875
	INV 3	0.865
	INV 4	0.805
	INV 5	0.865
Creativity (CRV)	CRV 1	0.866
	CRV 2	0.716
	CRV 3	0.846
	CRV 4	0.856
	CRV 5	0.876
Human Resource Development (HRD)	HRD 1	0.822
	HRD 2	0.832
	HRD 3	0.872
	HRD 4	0.842

Variable	Indicator	Outer Loading
Employee Retention (ER)	HRD 5	0.862
	ER 1	0.781
	ER 2	0.751
	ER 3	0.881
	ER 4	0.771
	ER 5	0.861
	ER 6	0.841
	ER 7	0.891

Convergent validity was assessed to ensure the questionnaire items accurately measure their respective constructs. Table 2 presents the outer loading values for all variables, with all indicators exceeding the threshold of 0.7, indicating validity (Gul & Khan, 2022). For innovation (X1), outer loadings range from 0.805 (INV4) to 0.875 (INV2). Creativity (X2) loadings range from 0.716 (CRV2) to 0.876 (CRV5), with CRV2 slightly below the ideal threshold but still acceptable. Employee retention (Z) loadings range from 0.751 (ER2) to 0.891 (ER7), and HRD (Y) loadings range from 0.822 (HRD) to 0.872 (HRD). These results confirm that the measurement model is valid, as all constructs meet the criteria for convergent validity, ensuring the items reliably measure their intended variables.

Table 3. AVE Test

Variable	AVE
Innovation (X ₁)	0.825
Creativity (X ₂)	0.774
Human Resource Development (Y)	0.756
Employee Retention (Z)	0.833

The Average Variance Extracted (AVE) test evaluates the construct validity by measuring the amount of variance captured by each variable. Table 3 shows AVE values for all variables exceeding the threshold of 0.5, indicating sufficient construct validity (Saleh & Atan, 2021). Innovation (X1) has an AVE of 0.825, creativity (X2) 0.774, HRD (Y) 0.756, and employee retention (Z) 0.833. These high AVE values confirm that the constructs explain a significant portion of the variance in their indicators, supporting the reliability of the measurement model.

Table 4. Composite Reliability Test

Variable	Composite Reliability
Innovation (X ₁)	0.778
Creativity (X ₂)	0.882
Human Resource Development (Y)	0.787
Employee Retention (Z)	0.855

Composite reliability assesses the internal consistency of the constructs. Table 4 shows that all variables exceed the threshold of 0.6, indicating reliable constructs (Aina & Atan, 2020). Innovation (X1) has a composite reliability of 0.778, creativity (X2) 0.882, HRD (Y) 0.787, and employee retention (Z) 0.855. These results demonstrate that the constructs are consistent and suitable for further analysis, ensuring the robustness of the measurement model.

The coefficient of determination (R²) measures how much the endogenous variables can be explained by the exogenous variables in the model. Based on the results of data processing using PLS 3.0, the R² values for each endogenous variable are presented in Table 5.

Table 5. R Square Test

Variable	R Square
Human Resource Development (Y)	0.742
Employee Retention (Z)	0.725

The R² value of human resource development (Y) is 0.742, indicating that 74.2% of the variance in human resource development can be explained by innovation (X1), creativity (X2), and employee retention (Z), while the remaining 25.8% is influenced by other factors not included in the model. Meanwhile, the R² value of employee retention (Z) is 0.725, meaning that 72.5% of its variance can be explained by innovation (X1) and creativity (X2). The remaining 27.5% is influenced by other variables outside the scope of this study. According to Chin (1998), an R² value of 0.67 is considered substantial, 0.33 moderate, and 0.19 weak. Thus, the R² values obtained in this study indicate that both endogenous variables have strong explanatory power, showing that the proposed model has good predictive accuracy.

Table 6. Hypothesis Testing

Hypothesis	Effect	t-statistics	p-value	Results
H1	Innovation → Human Resource Development	5.65	0.001	Accepted
H2	Creativity → Human Resource Development	4.435	0.015	Accepted
H3	Innovation → Employee Retention	5.310	0.028	Accepted
H4	Creativity → Employee Retention	4.655	0.002	Accepted
H5	Employee Retention → Human Resource Development	5.435	0.001	Accepted
H6	Innovation → Employee Retention → Human Resource Development	6.307	0.001	Accepted
H7	Creativity → Employee Retention → Human Resource Development	4.507	0.001	Accepted

Hypothesis testing evaluates the significance of the proposed relationships. Table 6 shows that all hypotheses are accepted based on T-statistics and p-values. H1 (innovation on HRD) has a T-statistic of 5.65 (p = 0.001), H2 (creativity on HRD) 4.435 (p = 0.01), H3 (innovation on retention) 5.310 (p = 0.028), H4 (creativity on retention) 4.655 (p = 0.002), and H5 (retention on HRD) 5.435 (p = 0.000). For the mediating effects, H6 (innovation on HRD through retention) has a T-statistic of 6.307 (p = 0.000), and H7 (creativity on HRD through retention) has a T-statistic of 4.507 (p = 0.000). These results confirm that innovation and creativity significantly influence HRD directly and through employee retention, with all p-values below 0.05 indicating statistical significance.

DISCUSSION

The findings of this study confirm that innovation in the Ulos woven fabric business in North Sumatra significantly influences human resource development. According to Aina and Atan (2020), increasing employee innovation in product development enhances organizational performance by creating diverse products, which aligns with the current study’s results. Employees who innovate by developing new weaving techniques or patterns contribute to improved skills and business growth. This is critical for the Ulos industry, which faces declining sales due to outdated designs. The significant effect of innovation suggests that Ulos business owners should invest in training programs to foster innovative thinking, enabling employees to create unique patterns that meet modern consumer demands (Halim et al., 2021).

Creativity also has a significant impact on human resource development in the Ulos woven fabric industry. Wadhwa and Tripathi (2018) argue that creativity in product design improves product quality and sales, which supports the finding that creative employees enhance human resource development. Creative employees can design varied motifs, attracting more customers and improving business performance. This creativity fosters a learning environment where employees develop new skills, contributing to human resource development. The Ulos industry’s decline, partly due to a lack of creative

designs, underscores the need for creativity-focused development programs to revive the sector.

Innovation significantly affects employee retention in the Ulos industry. According to Sahibzada et al. (2022), innovative employees are more likely to stay in organizations that value their contributions, which aligns with this study's findings. By fostering an innovative environment, Ulos businesses can retain skilled weavers, reducing turnover. Similarly, creativity influences retention by enhancing employee engagement. Urme (2025) notes that creative employees are retained through skill development and recognition, supporting the current results. Retaining creative employees ensures the Ulos industry maintains a skilled workforce capable of producing competitive designs.

Employee retention significantly impacts human resource development in the Ulos industry. According to Rukungu and Nzulwa (2018), retention strategies prevent talent loss and support human resource development by maintaining a skilled workforce. Retention ensures that innovative and creative employees continue to develop their skills, enhancing organizational capabilities. The study also finds that innovation and creativity influence human resource development through employee retention, aligning with Saleh and Atan (2021), who suggest that retention mediates the relationship between employee skills and organizational outcomes. This mediation effect highlights the importance of retention strategies, such as fair compensation and career development, in sustaining human resource development in the Ulos industry (Lin & Guo, 2025).

The decline in the Ulos industry is also influenced by external factors, such as competition from imported textiles with modern designs and changing consumer preferences, which were not fully explored in this study (Mahapatra & Dash, 2022). A limitation of this research is its reliance on business owners' self-reports, which may introduce response bias, and its focus on North Sumatra, limiting generalizability. Future studies should include employee perspectives and explore other regions to validate these findings.

The findings have important implications for both practice and theory. For Ulos business owners, implementing training programs to enhance innovation and creativity can improve product diversity and sales, while retention strategies like competitive wages and recognition can sustain a skilled workforce. This study contributes to human resource development literature by demonstrating the mediating role of retention in traditional industries. Policymakers can support the Ulos industry by providing innovation grants and skill development initiatives to address the decline and promote sustainability.

CONCLUSION

This study confirms that innovation and creativity significantly influence human resource development in the Ulos woven fabric industry in North Sumatra, both directly and through employee retention as an intervening variable. Innovative employees create new weaving techniques, while creative employees design unique motifs, both enhancing skills and business performance. These efforts help address the industry's decline by improving product diversity and competitiveness. By retaining skilled workers, businesses ensure continuous skill development, strengthening human resource development. The findings highlight that fostering innovation and creativity, alongside effective retention strategies, is crucial for reviving the Ulos industry and sustaining its growth.

The findings offer practical implications for Ulos business owners, who should implement training programs to boost innovation and creativity, such as workshops on modern weaving techniques and design trends, to attract more customers. Retention strategies, like offering competitive wages and career growth opportunities, can keep skilled weavers in the industry. However, this study has limitations, as it relies on business owners' self-reports, which may introduce bias, and focuses only on North Sumatra, limiting generalizability. External factors, such as competition from imported textiles, were not fully explored. Future research should include employee perspectives, cover other regions with similar traditional industries, and examine external market factors to provide a broader understanding of how to sustain the Ulos industry.

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*Innovation and
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5230