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A creative economy approach to women's empowerment for poverty reduction and the prevention of human trafficking in remote areas of Asahan

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ABSTRACT

This study examines the influence of poverty (POV), infrastructure (INF), and governance (GOV) on women's economic empowerment (MAN) and their effect on potential development (POT) within the context of women's empowerment through creative economy initiatives in Asahan Regency. The research adopts a quantitative approach using structural equation modeling (SEM) with LISREL and data collected from respondents participating in community-based empowerment programs. The results show that all direct relationships in the model are statistically significant, with t-values greater than 1.96 and p-values less than 0.05. Specifically, POV, INF, and GOV have positive and significant effects on MAN, and MAN has a positive effect on POT. Among these factors, GOV has the strongest influence on MAN, highlighting the importance of transparent, accountable, and effective governance in strengthening management capacity. The findings also indicate that better economic conditions, adequate infrastructure, and good governance can jointly enhance management capacity and support the optimal use of local creative economy potential. These results are consistent with empowerment theory, which emphasizes control over resources and decision-making ability as key factors for improving individual and community well-being. From a practical perspective, this study suggests that an integrated strategy combining economic development, infrastructure improvement, and governance reform can help prevent human trafficking in vulnerable areas. The proposed model provides a strategic framework for policymakers, NGOs, and other stakeholders to design participatory, sustainable, and locally based empowerment programs that not only increase income but also strengthen social resilience.

1. Introduction

Human trafficking remains a serious problem in remote areas, including Asahan Regency. The territory of Asahan Regency borders a sea transportation route (Bakti et al., 2024) and Asahan, which has the potential to become a route for human trafficking movements (human trafficking) (Armansyah and Sugiarto, 2024), with a primary focus on women and children in rural areas. The economic limitations of rural communities make them more at risk of exploitation in the form of illegal work (Lewis et al., 2015), including human trafficking. Poverty and limited access to information are factors that encourage women to accept work outside the region without knowing the risks of exploitation (Mercera et al., 2024; Sidun and Gibbons, 2024). Limited access to financial resources and skills development forces women into economic dependence, making them more vulnerable to human trafficking (Islam and Fay, 2024; Klabbers et al., 2023).

The creative economy in Asahan Regency offers opportunities for women's empowerment through the development of handicrafts, traditional foods, and other small-scale home industries (Aisyah et al., 2025). Through adequate empowerment, women can secure economic freedom and protect

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themselves from the dangers of human trafficking (Khadijah and Linda, 2022; Shin, 2017). The prevalence of human trafficking is largely driven by fragile economic conditions, with women being the most affected (Belaid et al., 2024). Without access to fair employment, numerous women become exposed to exploitation. Promoting women's empowerment via the creative economy is a strategic means of building economic autonomy and addressing the issue of human trafficking.

Asahan Regency faces significant socio-economic challenges. Poverty levels vary across districts, with Sei Kepayang recording the highest rate at 21.3%. On the other hand, women make a considerable contribution to the creative economy, especially in the handicraft (30%) and local culinary (24%) industries. Yet, the increasing number of human trafficking cases over the last three years, of which 90% of victims by 2024 are women, underscores the urgent need to strengthen protection and empowerment for vulnerable groups. Both the local government and social organizations have expressed concern about this issue, making this study essential for offering practical recommendations for sustainable, creative-economy–driven prevention strategies.

This study is significant to explore since human trafficking remains a serious concern in remote regions, including Asahan Regency, where economic hardships often serve as the primary factor pushing women into becoming victims. A women's empowerment model rooted in the creative economy offers a strategic pathway to strengthen economic independence, lower the risk of exploitation, and foster a safer, more sustainable community. This study aims to support the development of effective, locally grounded, and long-lasting strategies to combat human trafficking.

Human trafficking remains a critical issue in many regions, including the remote areas of Asahan Regency. The prevalence of poverty in these areas significantly increases women's susceptibility to trafficking. Economic hardships often compel women to accept employment offers without fully understanding the risks of exploitation involved. In addition, restricted access to education and information prevents them from gaining sufficient awareness of the dangers of trafficking and the availability of safer economic alternatives. Support from the government and social institutions, particularly through empowerment and protection programs, still needs strengthening to enhance women's capacities effectively. Meanwhile, the local creative economy, encompassing handicrafts, traditional culinary products, and home-based industries, has considerable potential to generate sustainable livelihoods. However, its development remains underutilized due to limited skills and financial resources.

Based on these conditions, this study seeks to examine the relationship between poverty levels, access to information and education, government and social institution support, and the potential of the local creative economy in increasing women's economic independence in remote areas. Furthermore, this study will also examine the role of financial freedom as a mediating variable linking these factors to human trafficking prevention efforts. With this approach, it is hoped that the research will provide a comprehensive overview of effective creative economy-based women's empowerment strategies to break the chain of vulnerability to human trafficking in Asahan.

Human trafficking remains a serious challenge in many regions, including the remote areas of Asahan Regency. Women are particularly vulnerable to exploitation because of poverty, limited access to information, and the lack of decent employment opportunities. This situation is further aggravated by inadequate skills and limited access to business capital, which often lead women to accept job offers without fully understanding the associated risks. Therefore, practical and sustainable strategies are needed to improve both the protection and economic empowerment of women in these vulnerable communities. The objectives of this study are to:

- Examine the impact of poverty on women's economic empowerment in the rural areas of Asahan Regency.
- Analyze how access to education and infrastructure contributes to improving women's economic independence.
- Assess the role of government agencies and social institutions in supporting women's participation in creative economic activities in remote communities.
- Identify opportunities within the local creative economy that can enhance women's financial independence.

Drawing on theoretical frameworks and prior research cited in various references, this study develops several hypotheses to explain the relationships among independent, intervening, and dependent variables. These hypotheses aim to examine how factors such as poverty levels, access to information and education, support from government and social institutions, and the potential of the local creative economy affect women's economic independence, as well as how economic independence contributes to preventing human trafficking in the remote areas of Asahan Regency.

Financial independence is crucial in reducing women's vulnerability to human trafficking, as it enables them to support their own needs without depending on others. Islam and Fay (2024) indicated that economically independent women are better positioned to decline risky employment offers. Klabbers et al. (2023) highlighted that strengthening economic capacity plays a key role in lowering the risk of exploitation.

This investigation is grounded in the Empowerment Theory developed by Rappaport (1981). Empowerment is a process that enhances individuals' or groups' capacity to take control of

their lives, gain access to resources, and make decisions that affect their well-being. Within the scope of this study, the theory illustrates how women in remote areas of Asahan Regency can strengthen their control over their economic conditions by establishing creative economy enterprises. The enhancement of skills, access to financial capital, government and institutional support, and the use of local resources are key elements in fostering economic self-reliance, which ultimately lessens dependence on external actors and decreases susceptibility to human trafficking.

H1: In the remote regions of Asahan Regency, women's economic empowerment (MAN) is negatively influenced by the poverty (POV) rate.

As a structural problem, poverty increases the vulnerability of women in rural areas to economic dependence, preventing them from becoming financially self-sufficient. Limited employment prospects and insufficient family income intensify the problem, driving women to engage in dangerous work. A study by Belaid et al. (2024) confirmed that weak economic conditions increase vulnerability to exploitation.

H2: The availability of infrastructure (INF) contributes to enhancing the economic independence of women living in remote areas of Asahan Regency.

The availability of infrastructure (INF) contributes to enhancing the economic independence of women living in remote areas of Asahan Regency. Adequate infrastructure—including access to transportation networks, communication facilities, digital connectivity, market facilities, and training centers—plays a critical role in enabling women to participate more effectively in economic activities. When women have adequate information, they are better equipped to identify business prospects and understand the risks involved, including the risk of human trafficking. Improving women's business management skills and confidence greatly depends on access to formal education and training. Mercera et al. (2024) asserted that education serves as a safeguard against social vulnerability, while Sidun and Gibbons (2024) highlighted that sufficient knowledge enables women to make safer and more rewarding economic choices.

H3: Government and social institution support positively influences women's economic empowerment in the remote areas of Asahan Regency.

Through empowerment programs, governments and social groups supply women with capital, education, and market access to grow their businesses in the creative economy sector. The participation of multiple stakeholders builds a supportive ecosystem that enhances business sustainability. Khadijah and Linda (2022) pointed out that government–community cooperation can build up local capacity.

H4: The local creative economy plays a significant role in strengthening Women's economic empowerment in the remote parts of Asahan Regency.

A creative economy rooted in local strengths, such as crafts and culinary products, can provide women with sustainable income when managed professionally. Leveraging these resources also enhances the value of local products, boosting both competitiveness and earnings. Aisyah et al. (2025) established a creative sector by utilizing local strengths, which has demonstrated positive impacts on community economies, while Shin (2017) underlined that participating in creative initiatives can improve women's standing in the labor market.

2. Research methods

The research was carried out in Asahan Regency, focusing on remote regions that face a high risk of human trafficking among women. A quantitative approach was applied using Structural Equation Modelling (SEM) and a covariance-based Linear Structural Relations (LISREL) analysis to examine the relationships among predefined variables. The study population consisted of women of productive age residing in the remote areas of Asahan Regency, with a sample of 245 respondents selected through proportionate stratified random sampling. Data was collected using a 5-point Likert scale questionnaire, and we used validity and reliability tests before the hypothesis testing.

The poverty (POV) construct reflects economic constraints experienced by women, measured through indicators capturing limited household income, restricted access to business capital, economic dependency, and vulnerability arising from the lack of safe and decent livelihood options. Infrastructure (INF) represents the availability of enabling facilities that support women's participation in the creative economy, including access to transportation, information and communication technology, training and education facilities, and market access for creative products. Governance (GOV) assesses the quality of governance and institutional involvement through indicators related to supportive public policies, transparency, and clarity of empowerment programs, coordination among government, NGOs, and community actors, as well as monitoring mechanisms that ensure program sustainability and protection against exploitative economic practices. Women's economic empowerment (MAN) is measured by indicators reflecting women's ability to manage creative economic activities independently, exercise economic decision-making power, build business networks and market confidence, and

access and utilize economic resources sustainably. Finally, potential development (POT) captures the extent to which local creative economic potential is realized, as measured by the utilization of local resources, innovation in creative products and services, improvement in household income, and the long-term sustainability of creative economy enterprises.

The study applied a two-stage method: Confirmatory Factor Analysis (CFA) to validate the measurement model and a structural model to assess the relationships among variables. The model's goodness-of-fit was assessed using the criteria $\chi^2/df \leq 3$, RMSEA ≤ 0.08, CFI ≥ 0.90, and GFI ≥ 0.90 (Hair et al., 2010). The mediation analysis of the economic independence variable was performed using the bootstrapping technique to assess the indirect effects of factors such as poverty levels, access to information and education, support from government and social institutions, and the potential of the creative economy on human trafficking prevention. All research activities adhered to ethical guidelines, including obtaining respondent consent, ensuring data confidentiality, and safeguarding vulnerable populations.

3. Findings

This section reports the research results derived from analyzing data using the LISREL-based Structural Equation Modeling (SEM) approach on 245 women of productive age residing in remote areas of Asahan Regency. The analysis was carried out in two stages: first, Confirmatory Factor Analysis (CFA) was conducted to assess the validity and reliability of the constructs; second, a structural model was employed to investigate the relationships among variables as outlined in the research hypotheses.

The findings presented include respondents' descriptive statistics, results of the measurement model test, goodness-of-fit assessments, path coefficient values, the significance of both direct and indirect relationships, and the influence of economic independence as a mediating variable on human trafficking prevention. These results form the foundation for drawing conclusions and offering strategic recommendations related to the empowerment of women through the creative economy in Asahan.

3.1. Validity

A convergent validity assessment was performed to verify that each indicator within the construct effectively reflects the latent variable it is intended to measure. The evaluation criteria applied were a standardized loading factor (SLF) greater than 0.50 and a t-value exceeding 1.96 (Hair et al., 2019). The model estimation results in LISREL provided the t-value. An indicator is deemed statistically significant at the 5% level if its t-value exceeds 1.96 (Table 1).

The LISREL results revealed that every indicator within the POV, INF, GOV, MAN, and POT constructs had t-values exceeding 1.96, ranging from 10.18 to 17.20. This demonstrates that all indicators are statistically significant and satisfy the criteria for convergent validity. Consequently, each indicator is considered valid for assessing its corresponding construct.

3.2. Reliability

Reliability testing is conducted to evaluate the internal consistency of the indicators used to measure a particular construct. Frequently applied methods include Composite Reliability (CR) and Variance Extracted (VE) or Average Variance Extracted (AVE). Construction is deemed reliable if it satisfies the thresholds of CR ≥ 0.70 and VE ≥ 0.50 (Hair et al., 2019). Additionally, convergent validity testing is used to assess the model's reliability. The validity of indicators was evaluated using a standardized loading factor (SLF) greater than 0.50 and a t-value exceeding 1.96. A high t-value suggests that the indicator significantly contributes to explaining the latent variable it represents (Table 2).

Based on the LISREL model estimation results, all indicators within the POV, INF, GOV, MAN, and POT constructs have t-values exceeding 1.96, ranging from 10.18 to 17.20. This demonstrates that all indicators are significant and consistently measure their respective constructs. Overall, the CR and VE values derived from the LISREL SLF output show that each construct possesses strong internal reliability. Therefore, all constructions satisfy the reliability criteria and are appropriate for use in subsequent structural model analysis.

Table 1: Reliability constructs and extracted variance

Variables	Result	Description
POV (poverty)	Valid (t > 1.96)	Good
INF (infrastructure)	Valid (t > 1.96)	Good
GOV (governance)	Valid (t > 1.96)	Good
MAN (women's economic empowerment)	Valid (t > 1.96)	Good
POT (potential development)	Valid (t > 1.96)	Good

Table 2: Validity of indicators

Construct	Indicator	t-value	Description
POV (poverty)	POV1	13.70	Good
	POV2	16.22	Good
	POV3	15.74	Good
	POV4	14.65	Good
INF (infrastructure)	INF1	10.45	Good
	INF2	10.18	Good
	INF3	10.28	Good
	INF4	10.86	Good
GOV (governance)	GOV1	13.93	Good
	GOV2	15.09	Good
	GOV3	15.84	Good
	GOV4	15.31	Good
MAN (women's economic empowerment)	MAN1	15.81	Good
	MAN2	16.21	Good
	MAN3	15.92	Good
	MAN4	17.20	Good
POT (potential development)	POT1	12.64	Good
	POT2	12.73	Good
	POT3	12.49	Good
	POT4	12.96	Good

3.3. Goodness of fit

Goodness-of-Fit (GoF) results are used to assess how well the research model fits the observed data. In this study, the GoF assessment was performed using several widely recognized model fit indices, including Chi-Square, RMSEA, GFI, AGFI, CFI, IFI, and RFI. Each of these indices has a threshold value, or cut-off, suggested in the literature, for instance, Hair et al. (2019), where a model is considered to exhibit a good fit if it satisfies the specified criteria in Table 3. The LISREL analysis results indicate that all Goodness-of-Fit indicators fall within the recommended threshold values. A p-value exceeding 0.05 suggests that the estimated model does not significantly differ from the observed data, indicating a good fit. A p-value exceeding 0.05 suggests that the estimated model does not significantly differ from the observed data, indicating a good fit. An RMSEA value below 0.08 reflects a low level of approximation error. Moreover, other fit indices such as GFI, AGFI, CFI, IFI, and RFI all exceed 0.90, demonstrating that the model explains the variance and covariance very well.

3.4. Structural model

Fig. 1 illustrates a model depicting the relationships among the exogenous latent variables POV (Poverty), INF (Infrastructure), and GOV (Governance), and the endogenous latent variables MAN and POT (Potential). Each latent variable is represented by multiple indicators (observed variables) displayed on the left and right sides of the model. This model was analyzed using Structural Equation Modeling (SEM) with LISREL. To assess the model, a Goodness-of-Fit (GoF) test was conducted to verify the alignment between the theoretical framework and the empirical data, along with validity and reliability tests to confirm that the indicators effectively measure the intended constructs. The results of the hypothesis testing are presented in Table 4, which provides a comprehensive summary of the relationships among the variables examined in this study. Table 4 presents the statistical results for each proposed hypothesis, including path coefficients, significance levels, and the decision criteria used to determine whether each hypothesis is supported.

Table 3: Goodness of fit index

Goodness of fit	Result value	Standard value	Result	Goodness of fit	Result value
p-value	0.05754	p-value ≥ 0.05	Good	p-value	0.05754
RMSEA	0.074	RMSEA ≤ 0.08	Good	RMSEA	0.074
Chi-Square/df	411.90	≤ 3.00	Good	Chi-Square/df	411.90
CFI (assumes)	0.91	CFI ≥ 0.90	Good	CFI (assumes)	0.91
GFI (assumes)	0.91	GFI ≥ 0.90	Good	GFI (assumes)	0.91

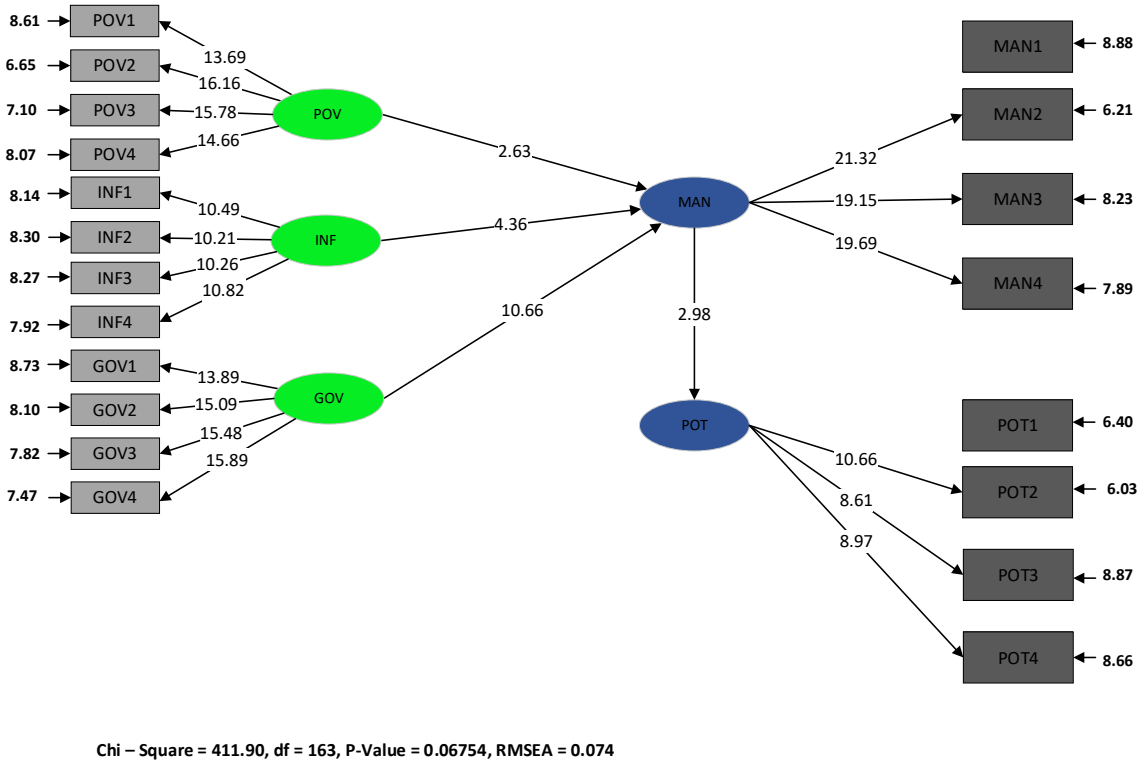

Fig. 1: Structural model results

Table 4: Hypothesis testing

No.	Hypothesis	Path	t-value	p-value	Conclusion
1	H1: POV has an impact on MAN	POV → MAN	2.63	0.0086*	Supported
2	H2: INF has an impact on MAN	INF → MAN	4.36	0.0000*	Supported
3	H3: GOV has an impact on MAN	GOV → MAN	10.66	0.0000*	Supported
4	H4: MAN has an impact on POT	MAN → POT	2.98	0.0029*	Supported

*: $p < 0.05$

According to the model estimation results, all indicators within the POV, INF, GOV, MAN, and POT constructs exhibit t-values exceeding 1.96. This demonstrates that each indicator is significant in representing its respective latent variable, thereby fulfilling the criteria for convergent validity. Moreover, most standardized loadings exceed 0.50, suggesting that each indicator makes a substantial contribution to its construction.

The model's connections between latent variables (paths) display t-values that mostly exceed 1.96, indicating that the relationships among the constructs are statistically significant. According to the Goodness-of-Fit test results, the research model is a good fit, as the p-value is greater than 0.05 and the RMSEA is below 0.08, indicating strong alignment with the empirical data. By satisfying both model fit and convergent validity criteria, this model is suitable for testing structural hypotheses that explore the effects of POV, INF, and GOV on MAN and POT in greater detail. According to the model estimation results, all indicators within the POV, INF, GOV, MAN, and POT constructs exhibit t-values exceeding 1.96. This demonstrates that each indicator is significant in representing its respective latent variable, thereby fulfilling the criteria for convergent validity. Moreover, most standardized loadings exceed 0.50, suggesting that each indicator makes a substantial contribution to its construction.

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The direct hypothesis testing results revealed that all variable relationships in the model were significant at the 5% level, as evidenced by t-values exceeding 1.96 and p-values less than 0.05. This suggests that POV, INF, and GOV positively and significantly affect MAN, and that MAN, in turn, positively and significantly affects POT.

The impact of POV on MAN is evidenced by a t-value of 2.63 and a p-value of 0.0086, suggesting that enhancements in POV can lead to improvements in MAN. The INF variable exhibits an even more substantial effect on MAN, with a t-value of 4.36 and a p-value of 0.0000, highlighting the significant role of infrastructure in management. Meanwhile, GOV has the most considerable influence on MAN, with a t-value of 10.66 and a p-value of 0.0000, indicating that effective governance is crucial to strengthening management. Additionally, MAN is shown to positively affect POT, with a t-value of 2.98 and a p-value of 0.0029, indicating that increasing management capacity directly enhances potential.

Therefore, empirical evidence supports all the hypotheses in this model, making it a reliable tool for explaining the relationships among variables. The findings also indicate that enhancements in POV, INF, and GOV will significantly improve MAN, thereby boosting overall POT.

3.5. Empirical discussion

The outcomes of the direct hypothesis testing show that every path between variables in the model is statistically significant, with t-values exceeding 1.96 and p-values less than 0.05. This suggests that poverty level (POV), infrastructure (INF), and governance (GOV) positively affect women's economic empowerment (MAN), which in turn positively impacts potential (POT). This result is consistent with the research by Belaid et al. (2024), who argued that enhancing economic conditions and providing systemic support can lessen the susceptibility of communities, especially women, to exploitation and human trafficking.

With a t-value of 2.63, the POV → MAN path indicates that although poverty often limits economic independence (Belaid et al., 2024), efforts to alleviate poverty can positively influence empowerment management. The INF → MAN pathway, which has a t-value of 4.36, supports the conclusions of Bakti et al. (2024), who reported that sufficient and accessible infrastructure can enhance the execution of empowerment programs in remote regions. This provision enables women participants to access the necessary resources to grow creative economy enterprises.

The impact of GOV on MAN, indicated by a t-value of 10.66, emerged as the strongest among the exogenous variables. This finding aligns with the study by Khadijah and Linda (2022), which highlights that sound governance—encompassing transparency, accountability, and institutional support—is crucial for enhancing management capacity and ensuring the sustainability of women's empowerment programs. By promoting effective coordination among local governments, NGOs, and communities, good governance helps establish a more resilient and adaptive ecosystem for empowerment initiatives.

The relationship between MAN and POT, reflected by a t-value of 2.98, suggests that a strong woman's managerial capacity plays a direct role in maximizing the potential of the local creative economy. This is consistent with findings by Aisyah et al. (2025) and Shin (2017), who emphasized that business management based on local resources, such as handicrafts and culinary products, can enhance women's economic independence and their leverage in the labor market. Consequently, advancements in the POV, INF, and GOV dimensions not only strengthen management capacity but also expand opportunities for women in rural areas to sustainably harness local potential, which may serve as an effective approach to prevent human

trafficking. Strong governance emerges as a pivotal mechanism through which women's economic empowerment functions as a pathway for preventing human trafficking in vulnerable and remote areas. The significant impact of governance (GOV) on women's economic empowerment (MAN) indicates that transparent institutions, accountable program implementation, and coordinated stakeholder involvement create safer economic environments for women. Good governance reduces trafficking vulnerability by formalizing economic participation, ensuring fair access to resources, and regulating labor and market systems that might otherwise expose women to deceptive recruitment or exploitative intermediaries. Existing literature consistently highlights that weak governance—characterized by limited oversight, corruption, and fragmented institutional roles—enables trafficking networks to operate with minimal resistance (Khadijah and Linda, 2022). In contrast, effective governance strengthens institutional safeguards, enabling empowerment programs to function not only as income-generating initiatives but also as protective mechanisms against exploitation.

Moreover, the quality of governance enhances the preventive dimension of empowerment by fostering cross-sectoral collaboration among local governments, NGOs, community organizations, and enforcement agencies. Such coordination enables economic empowerment initiatives in the creative economy to be integrated with social protection, labor regulation, and monitoring systems, thereby reducing women's reliance on informal, high-risk employment pathways. From a trafficking prevention perspective, governance-driven empowerment increases women's agencies and risk awareness while simultaneously improving institutional responsiveness in identifying and mitigating trafficking threats (Belaid et al., 2024). Consequently, the findings suggest that governance is not merely a facilitatory variable but a structural deterrent that transforms creative economy-based empowerment into a sustainable and secure strategy for reducing human trafficking risks and strengthening women's long-term resilience.

The uniqueness of this study lies in its combination of creative economy development with efforts to prevent human trafficking. Until now, most research on women's empowerment has concentrated primarily on enhancing economic independence, access to resources, or skills training. In contrast, human trafficking has typically been examined separately as a legal or social concern. This study introduces a novel approach by directly connecting creative economy-driven empowerment with strategies to prevent human trafficking, especially in vulnerable and remote communities. Through this framework, women gain not only skills and economic opportunities but also resilience against exploitation networks. Consequently, this research makes an original contribution to the field by positioning the creative economy as a dual-purpose strategy: advancing women's well-being while safeguarding them from human trafficking risks.

4. Conclusion

These findings suggest that improving economic conditions, ensuring adequate infrastructure, and strengthening integrated governance can enhance management capabilities, thereby maximizing the potential of the local creative economy. The results are consistent with prior studies that highlight the importance of coordination between structural and managerial factors in promoting sustainable empowerment. In practice, this research indicates that government strategies to prevent human trafficking in vulnerable areas can be implemented by boosting economic capacity and developing local potential through the creative economy. The proposed model can also guide local governments, NGOs, and other stakeholders in creating targeted, participatory, and sustainable empowerment initiatives. Consequently, the empowerment framework based on POV, INF, and GOV, strengthened through MAN, has proven both relevant and practical for fostering women's creative economic potential, focusing not only on income growth but also on enhancing quality of life and reducing social vulnerability.

List of abbreviations

AGFI	Adjusted goodness of fit index
AVE	Average variance extracted
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CR	Composite reliability
GFI	Goodness of fit index
GoF	Goodness of fit
GOV	Governance
IFI	Incremental fit index
INF	Infrastructure
LISREL	Linear structural relations
MAN	Women's economic empowerment
NGO	Non-governmental organization
POT	Potential development
POV	Poverty
RFI	Relative fit index
RMSEA	Root mean square error of approximation
SEM	Structural equation modeling
SLF	Standardized loading factor
VE	Variance extracted

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Compliance with ethical standards

Ethical considerations

The study was conducted in accordance with accepted ethical standards for research involving human participants. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, anonymity was maintained, and all information was kept confidential. Special care was taken to protect vulnerable participants and to ensure that no identifying information was collected.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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