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Enhancing Tourist Experience through Active Creative Mobility (ACM): Placemaking as an Engaging Environment Concept to Historic Mining District

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ABSTRACT

This study examines tourists' perceptions of Active Creative Mobility (ACM) in a historic mining district to determine how it affects their heritage site experiences. Although ACM has been examined in contemporary urban settings, its significance in historically important regions such as ex-mining districts remains insufficiently studied. The research addresses this gap by investigating how tourists' perceptions and responses shape their engagement with ACM in the context of historic mining district. A survey of 254 tourists visiting Sawahlunto, a historic mining district in Indonesia, was conducted. The data were analysed using factor analysis and regression models to identify key variables influencing visitor engagement. The findings highlight that factors such as accessibility, historicity, community involvement, and cultural movement play crucial roles in motivating tourists to engage with the district's heritage. These factors strengthen experiential engagement by connecting movement through space with cultural and historical interpretation. The study contributes to the literature on Active Creative Mobility and phenomenological tourism by emphasizing the dynamic relationship between tourists and the heritage sites they visit. In conclusion, promoting ACM in historic mining districts can significantly improve the tourist experience, increase engagement, and contribute to the sustainable development of heritage tourism.

Keywords: active creative mobility, historic mining district, tourist engagement, placemaking, heritage tourism

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INTRODUCTION

In recent years, there has been growing interest in understanding the role of mobility in shaping tourist experiences within heritage environment (Gargiulo & Sgambati, 2022). Among emerging perspectives, Active Creative Mobility (ACM) has been recognized as an approach that connects physical movement with

cultural engagement, allowing visitors to interact more meaningfully with tourism destination (Aragão et al., 2022; Beretić & Plaisant, 2019; Papageorgiou et al., 2019). Historic mining districts such as Sawahlunto hold cultural significance due to their industrial history, with many of these areas being recognized for their role in the development of regional economies and their rich cultural narratives (Kawashima & Thompson, 2017). Sawahlunto, once a thriving coal mining town, now stands as a UNESCO World Heritage site, attracting tourists interested in its colonial-era architecture, mining history, and vibrant local culture (LOCALISE SDGs, 2023). As these districts transition into tourist destinations, it is essential to understand the ways in which tourists engage with both the heritage and the mobility infrastructure available. However, despite its cultural richness, challenges remain in enhancing visitor engagement with these heritage environment. In many cases, tourism development focuses primarily on heritage preservation while mobility systems remain largely functional rather than experiential.

ACM within historical districts has the potential to not only improve the quality of the tourist experience but also may include various form of mobility such as, heritage-themed transport systems or interactive spatial experiences that connect visitors with historical narratives (Calvi & Hover, 2021). These quality contribute to the sustainability of the destination (Papageorgiou et al., 2019). According to Rehman et al. (2023) perceived price reasonableness, and regenerative tourism involvement variables and tourist satisfaction by taking into account the moderating effects of tourist destination loyalty and destination image. The survey was circulated among international tourists visiting the Ha'il region of Saudi Arabia. This study used structural equation modeling (SEM), in other way, tourism in heritage site such historic mining district highly assured by the destination's long-term stability where tourists or visitor is the main variable. However, the potential of ACM initiative to act as an interpretive and participatory component of the visitor experience is often underutilized. This gap highlights the need to examine how ACM functions within heritage tourism settings and how it contributes to meaningful visitor experiences.

In addition, through placemaking notion, the concept of "engaging environments," often referred to as unique subject settings, encompasses a diverse range of spaces, including special districts, thematic towns, historical areas, heritage sites, post-industrial regions, marginalized communities, and former special-purpose zones (Salzman & Yerace, 2018). Hence, each of these settings carries distinct social, cultural, and physical characteristics, which provide invaluable opportunities for targeted Active Creative Mobility initiatives that leverage these unique attributes. Hence, research on placemaking within historic mining district can foster the potential synergy between engaging environment and mobility to achieve stronger emotional connections with visitors and the special setting.

Therefore, this study investigates the reciprocal relationship between tourists' motivations, mobility experiences, and their engagement with heritage sites, specifically in the context of Sawahlunto's historic mining district. Understanding how mobility and place interact will not only expand the literature on placemaking theory but also inform practical strategies for tourism management in post-industrial heritage sites. The research aims to explore how tourists perceive and respond to Active Creative Mobility within historic mining districts, and how these mobility experiences contribute to placemaking and visitor satisfaction.

The objectives of this study are:

i. To examine the factors influencing tourists' decisions to engage with Active Creative Mobility (ACM) in historic mining district.

ii. To assess the relationship between Active Creative Mobility (ACM) and tourist satisfaction in historic mining district

iii. To explore the role of Active Creative Mobility (ACM) in enhancing placemaking within historic mining district.

LITERATURE REVIEW

Transformative Role of Placemaking

Placemaking is a multifaceted approach to creating quality spaces that foster a strong sense of identity, community engagement, and environmental sustainability (Costa et al., 2021; Afsari Bajestani et al., 2022). As a theoretical framework, placemaking not only refers to the design and arrangement of physical spaces but also how individuals interact with those spaces emotionally, culturally, and socially. Moreover, as a regenerative strategy, placemaking aim to revitalize areas, particularly historic districts, by enhancing their livability, inclusivity, and economic vitality, while safeguarding their historical importance (Christy et al., 2021).

Placemaking, focused on revitalizing historic areas, can yield enduring advantages by cultivating a sense of ownership, belonging, and contuinity for both residents and visitors (Arroyo, 2017). This necessitates transcending short-term solutions and concentrating on strategies that foster sustainable growth, adaptive resource utilization, and dynamic engagement between individuals and their constructed surroundings (van Renswouw et al., 2023). Creative endeavour in placemaking theoretical framework, then, play pivotal roles, particularly within the context of heritage tourism (Vaz de Freitas et al., 2022). The creative act of space-making therefore requires the simultaneous weaving together of experience and perception, allowing individuals to perceive the space as an integral part of their daily lives, much like an unforeseen, serendipitous event (Tan, 2021).

Placemaking Theory and its Relevance to Heritage Tourism

In heritage tourism, placemaking becomes a crucial tool in preserving cultural and historical legacies while offering opportunities for sustainable tourism development. Placemaking encourages visitors to engage actively with historical environments rather than merely observing them (Delconte et al., 2016). According to Project for Public Spaces, (2018), placemaking is more than just architecture; it involves designing environments where people feel a sense of belonging and connection. This engagement can occur in a historical towns, with their historical significance, which become particularly rich sites for placemaking, as they are often marked by unique cultural narratives, historical structures, and participatory activities (Ellery & Ellery, 2019).

Furthermore, placemaking supports sustainable tourism that enhances the experience by fostering emotional connections to a place, leading to long-term engagement (Mou et al., 2024). For heritage towns, the focus on preserving cultural identity and promoting local engagement with tourists is vital for sustainability (UNESCO World Heritage Centre, 2020). The interaction between tourists and the environment can lead to more responsible tourism, aligning with the Sustainable Development Goals (SDGs) of promoting sustainable cities and communities (United Nations Department of Economic and Social Affairs, 2023). This dynamic relationship is increasingly important in an era where heritage conservation and tourism development must balance the needs of local communities, environmental sustainability, and economic growth..

Active Creative Mobility (ACM): Definition and Concept

Active Creative Mobility (ACM) refers to the use of innovative, creative, engaging, and sustainable methods of moving through spaces, often reflecting the cultural, historical, or artistic essence of a place, consistent with broader efforts to encourage active travel behaviour as a sustainable alternative to motorised transport (Rosetia, 2025). Unlike conventional transportation systems that prioritize efficiency in infrastructure, ACM initiative fosters an immersive experience for tourists, encouraging them to actively engage with the environment, which enhances their emotional and cultural connection to the heritage site (Bornioli et al., 2019). They encourage visitors to explore places through experiential and participatory movement (Ashley, 2021).

ACM as an Implementative Strategy in Historic Mining District

In heritage tourism settings, ACM can include cultural walking tours through street arts, heritage-themed transportation choices, or immersive participatory cultural trails that guide visitors through historically significant environment (Gallagher & Ehlman, 2019; Ashley, 2021). These forms of ACM allow tourists to interact directly with urban settings, landscape, architecture nuance, and local communities, creating richer and more

memorable visiting experiences. Integrates with accessibility of historic mining districts, it is crucial to improve mobility systems that highlighted the role of creativity as an implementative strategy. Ensuring that the historically significant sites remain functional, culturally vibrant, and economically sustainable by integrating art, cultural narratives, and heritage interpretation into transportation infrastructure (Garau & Annunziata, 2022).

Within historic mining district, such approaches can be enhanced by converting former industrial railways and mining routes into multimodal transit corridors, incorporating electric shuttle systems, and employing adaptive reuse strategies for neglected infrastructures (Zhou et al., 2021). Transforming obsolete mining tunnels into subterranean pedestrian or cycling routes can yield distinctive, efficient, and sustainable transportation alternatives while maintaining historical features. Not only they enhance the attractiveness and experiential quality of urban environment, but also contribute to urban regeneration by transforming ordinary mobility networks into cultural assets (Cheris & Rosetia, 2022).

Such repurposed mining equipment, including obsolete carts and conveyor belts, can be incorporated into public seating areas or playgrounds, enhancing the interactive and educational aspects of urban spaces (Lane & Wallengren-Lynch, 2020). Integrating open-air markets, artisanal workshops, and interactive exhibitions within preserved mining structures can foster a vibrant street culture that merges history with modern urban life (Daglio et al., 2021). Through implementation of adaptive reuse in the industrial infrastructure, ACM not only improve accessibility but also preserve historical structures while creating distinctive tourism experiences.

Moreover, heritage-inspired transportation solutions, including tram systems designed after historical mining carts or electric trolleys, can revive historical narratives while addressing modern requirements (Lunardon et al., 2023). Adaptive streetscapes, which convert roads into pedestrian zones at designated times, can invigorate public spaces for community-oriented events such as cultural festivals, artisanal markets, and live performances, thereby enhancing the economic viability of the district (Soedarsono et al., 2021). By combining physical movement with cultural storytelling, ACM enables visitors to experience historical environment in ways that are both educational and engaging.

Engaging Environment for Tourism Process in Historic Mining District

The concept of an engaging environment highlights the dynamic relationship between visitors and the spaces they experience. In tourism context, tourists do not merely consume the space, they also contribute to its activation, reinterpretation, and continual reinvention through their presence, behaviors, and expectations (Rehman et al., 2023) perceived price reasonableness, and regenerative tourism involvement variables and tourist satisfaction

by taking into account the moderating effects of tourist destination loyalty and destination image. The survey was circulated among international tourists visiting the Ha'il region of Saudi Arabia. This study used structural equation modeling (SEM). Conversely, the environment responds by shaping visitor experiences, offering educational and immersive opportunities that transform passive sightseeing into meaningful engagement. In this case, the specific environment with the evolving entity leaves deep traces and memories on generations. They adapt and cultivate memories, whether beautiful or dark, into their daily way of life, shaping these evolving memories into an identity (HaghighatBin et al., 2024). This is when the environment they live in becomes very thick with identity.

In heritage tourism, engaging environments are created when historical landscapes encourage interaction, exploration, and interpretation. Such distinctive environments have the opportunity to attract people to visit them. These landscapes contain physical traces of industrial history, including ex-mining infrastructure, railways, worker settlements, and public open spaces. When interpreted effectively, these elements can communicate powerful narratives about labor, technology, unique culture and community daily hustle.

Moreover, when heritage tourism is consciously integrated into placemaking, it fosters a two-way dynamic: visitors gain deeper cultural understanding, while the space itself evolves through their interaction, hence, sustaining its relevance and adaptive use over time (Costa et al., 2021). The attractiveness of a place comes from people's perspective and perceived ways of reminiscing. Those who have positive memories of a place accentuate its distinctive elements. While they consume its resources or to enjoy its uniqueness, visitors can help to bring out the place's best resources (Brosius & Michaels, 2020).

The complexity of the relationship between humans and nature is one factor that contributes to the development of a transactional connection between people and their environment (Ogborn, 1996). This connection describes the process by which the identity of a space becomes apparent through interaction and experience. Thus, the stimulative relationship between people and the environment changes after visitation. Those who engage with the town's layered narratives, walk its historically significant routes, and participate in community-led activities become co-creators of the place (Mou et al., 2024). Their economic contribution supports local livelihoods, while their experiential feedback can inform adaptive design and interpretation strategies.

MULTI-METHOD RESEARCH METHODOLOGY

This study employed a multi-method research design combining quantitative and qualitative approaches in order to obtain a comprehensive understanding of tourist behaviour and mobility experiences within the historic mining district of Sawahlunto.

The study follows an exploratory sequential design, where qualitative data is collected and analysed first to inform the development of quantitative instruments, and the quantitative phase follows to confirm or generalize the qualitative findings. This approach allowed the study to capture both statistical trends and detailed experiential insights, consistent with established guidance on mixed-methods research design (Creswell, 2013).

Quantitative Technique: Survey Questionnaire

The quantitative component involved a survey administered to 254 tourists visiting Sawahlunto. Targeted respondents were limited only to tourist or visitor of Sawahlunto old town, where approached at key locations such as transportation nodes, museums, market, and other heritage attractions. A convenience sampling strategy was adopted, whereby tourists present at these locations during the data collection period were invited to participate voluntarily; this approach was considered appropriate given the absence of a complete sampling frame for transient visitor populations, although it is acknowledged that this non-probability approach may limit the statistical generalisability of the findings beyond the sampled context. Thus, the questions will be structured into four sections:

i. Demographic Information: This includes age, gender, educational background, nationality, and prior knowledge or familiarity with the historic mining district.

ii. Tourist Motivation and Experience: This section will focus on understanding the factors driving tourists' decisions to visit the district, including cultural, historical, and recreational motivations. Respondents will be asked to rate their agreement with statements regarding aspects such as accessibility, historical significance, and community involvement, using a Likert scale ranging from 1 strongly disagree to 5 strongly agree.

iii. Active Creative Mobility and Engagement: This section will explore the level of engagement with active mobility, including walking, cycling, and the use of heritage-themed transport services, such as shuttle buses or historical trains. Respondents will rate their frequency of using these mobility options and their satisfaction with the ease of movement and transportation facilities in the district.

iv. Satisfaction and Re-Visitation Intentions: Tourists will also be asked about their overall satisfaction with the district and their likelihood of returning or recommending it to others.

Prior to full deployment, the questionnaire was pilot-tested with a subset of respondents to assess item clarity and construct reliability. Internal consistency for each multi-item construct was evaluated using Cronbach's alpha using data from the pilot study (N = 50). The results demonstrated satisfactory internal reliability across all constructs, with motivation ($\alpha = 0.78$), mobility engagement ($\alpha = 0.84$), and satisfaction ($\alpha = 0.76$),

all exceeding the commonly accepted threshold of 0.70 (Pallant, 2020). These findings indicate that the measurement items exhibited acceptable internal consistency and were therefore considered reliable for use in the main survey. Minor wording adjustments were made to several items following the pilot phase to improve clarity and reduce respondent ambiguity.

Qualitative Technique: Semi-Structured Interviews and Observations

To complement the survey data, semi-structured interviews will be conducted with a smaller subset of targeted informants. To conduct this technique needed to be planned in a structured and purposeful way. More importantly, sample selection required informants to be directly involved and able to provide perspective and authorative information on the data to be processed. The protocol objective is to develop new strategies and understand the genuine environmental context, it was essential to consider their acceptance of the historical narratives that were pertinent to their biological ancestors, transformations, cultural acculturation, and adaptation to new ideas as credible and reliable data source. A total of ten key informants were purposively selected based on three criteria: (1) long-term residency in Sawahlunto, (2) direct occupational or custodial involvement with the district's heritage assets (e.g., municipal infrastructure staff, tour guides, and community elders), and (3) demonstrated ability and willingness to articulate first-hand narratives concerning the district's mining history and its transformation into a tourism destination (Table 1). Interviews were audio-recorded with informants' consent, transcribed verbatim, and analysed using thematic content analysis, whereby transcripts were manually coded into categories aligned with the study's placemaking and mobility constructs; emerging themes were then triangulated against the quantitative survey findings to strengthen interpretive validity.

Table 1
Criteria of each informant

Informant category	**1st Category: Officials**	**2nd Category: Cullural initiators**	**3rd Category: Local residents**
Description	District officials or directly appointed teams for the restoration of the old town of Sawahlunto	Initiators of arts and culture in the old town of Sawahlunto	Native residents who live in the old town of Sawahlunto
Sampling strategy	Purposive sampling	Purposive sampling	Purposive sampling
Criteria	• Involved from the start of the restoration of the old town of Sawahlunto • Actively monitoring and still relevant in the current development	• Directly involved in advancing an and culture in the old town of Sawahlunto •Actively performing and compassionate towards the diversity of arts and culture	• Actively associated with acculturation and assimilation throughout the years in the old town of Sawahlunto

Data Analysis

Quantitative data were analysed using descriptive statistics, factor analysis, and regression analysis, following standard procedures for social science data analysis in SPSS (Pallant, 2020). Descriptive statistics summarised respondent characteristics and tourist motivation, while factor analysis identified key dimensions influencing tourist engagement. Regression analysis was conducted to examine the relationship between independent variables, namely education, motivation, familiarity, visitation pattern, and commuting options and the dependent variable of Active Creative Mobility. Qualitative data from interviews and observations were analysed through content analysis, allowing patterns and themes to be identified and triangulated with quantitative findings. Factor analysis was selected to reduce the set of motivational attributes into a smaller number of underlying dimensions comprising of Access and Linkages, Sociability, Uses and Activities, and Comfort and Image), with sampling adequacy confirmed through the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity (Pallant, 2020). Multiple regression analysis was subsequently applied because it is well suited to testing the relative contribution of several independent variables to a single continuous outcome, allowing the study to identify which predictors most strongly influence Active Creative Mobility while controlling for the others. This combined approach strengthened the reliability and interpretive depth of the research results, as depicted in diagram below.

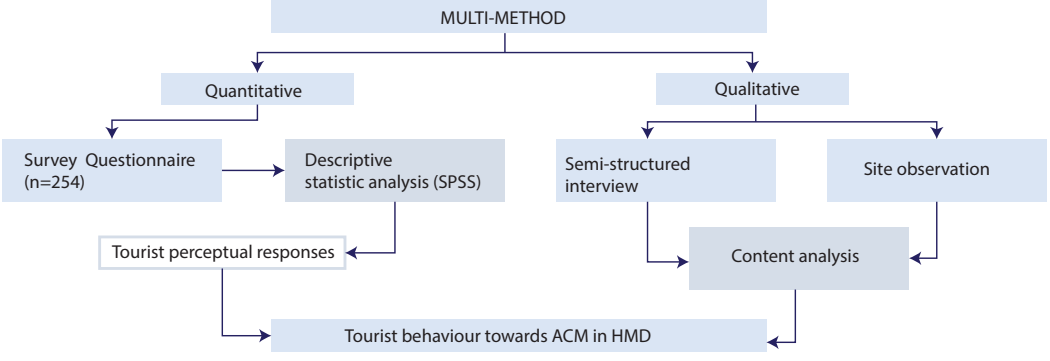

Figure 1. Conceptual diagram of multi-method research design

RESULTS

Tourist Motivation towards Active Creative mobility (ACM) in Sawahlunto

These results present the primary factor driving tourist responses: motivation. The data collected reveals the various elements that influence tourists' decisions to visit Sawahlunto, a historic mining district. The study explored these influences through placemaking attributes specific to the historical context of the district. Respondents were asked to rate their preferences and reasons for visiting Sawahlunto on a scale from 1 to 4. The findings

indicate that tourists' motivations are primarily shaped by key factors, categorized as Access and Linkages, Sociability, Uses and Activities, and Comfort and Image. Each of these factors plays a significant role in shaping the overall tourist experience and their decision to visit.

Table 2
Attributes of historic mining district occur to respondent motivation to visit

Categorization		**Mean value**
		n= 254
Access and Linkages	Walking distance place	3.57
	High accessibility	3.50
Sociability	Local community stewardship	3.52
	Multi-diversity ethnic and culture	3.28
Uses and Activities	Tourism attraction	3.51
	Thematic activities	3.01
	Annual event	3.20
Comfort and Image	Reliable facilities and amenities	3.50
	Proud on historical background	3.47

In terms of Access and Linkages, tourists highly value the town's walkability (Mean: 3.57), which facilitates easy exploration of its attractions on foot. Furthermore, the town's accessibility (Mean: 3.50), characterized by well-maintained roads and an effective transportation system, contributes to a smoother and more enjoyable travel experience. However, the potential for further enhancing visitor satisfaction exists in the areas of public transportation alternatives and clearer signage(Wan Ismail et al., 2020)

The Sociability category emphasizes the importance of local community engagement and cultural diversity in attracting tourists. Visitors place significant value on local community stewardship (Mean: 3.52), appreciating interactions with residents who preserve and share the town's heritage. The multi-ethnic cultural diversity of Sawahlunto (Mean: 3.28) also stands out as a unique attraction, offering enriching experiences through local cuisine, performances, and cultural traditions. However, there is potential for further enriching cultural exposure by increasing the number of events and exhibitions that encourage greater visitor participation (Duxbury et al., 2021).

Historical attractions continue to serve as a major motivator for visitation, as reflected in the Uses and Activities category. The accessibility of key tourism sites, such as museums and heritage structures (Mean: 3.51), is an essential factor in attracting visitors. However, thematic activities (Mean: 3.01), such as heritage walks and interactive mining experiences, appear to have a more limited impact, potentially due to limited accessibility or inadequate promotion. Similarly, annual events (Mean: 3.20) hold some appeal, but

they do not significantly influence the majority of tourists, suggesting that there is an opportunity to improve the promotion and engagement of heritage festivals.

Comfort and Image play a vital role in shaping tourists' perceptions of Sawahlunto. Tourists appreciate the reliability of facilities and amenities (Mean: 3.50), which contribute to a comfortable and satisfying experience. While well-maintained accommodations, dining options, and public services enhance the overall visit, there is room for improvement, particularly in the areas of public rest areas and transportation services. Furthermore, the town's pride in its historical heritage (Mean: 3.47), particularly its UNESCO World Heritage status and well-preserved colonial architecture, serves as a powerful motivating factor for visitors.

In conclusion, the primary motivations for tourists to visit Sawahlunto are its historical sites, accessibility, community involvement, and cultural diversity. However, there are clear opportunities for enhancing the visitor experience by improving thematic activities, expanding annual events, and upgrading public amenities. These improvements could significantly elevate the appeal of Sawahlunto as a heritage destination.

The interplay between tourist familiarity, commuting ease, and motivational factors in enhancing Active Creative Mobility in historic mining district

This section assesses the validity of each assumed variable concerning the dependent variable. In this study, the independent variables are Education (formal educational attainment), Background (respondents' disciplinary or occupational field), Residency, Familiarity, Visitation, Commutability, and Motivation; these seven variables are used consistently throughout the Methodology, Results, and Discussion sections below. While the dependent variable is Active Creative mobility (ACM). The factors were selected for their potential influence on tourist behavior, specifically regarding decision-making, interest level, and probability of return visits. Educational background may influence tourists' appreciation and comprehension of historical sites, whereas residency may dictate accessibility and visit frequency (Mou et al., 2024).

Visitation patterns reveal whether tourists regard the location as a primary or secondary attraction, influencing overall engagement (Fan et al., 2024). Commutability, denoting the ease of transit to and from a destination, is essential for improving the visitor experience. Ultimately, motivation, shaped by individual interests, cultural values, or social influences, acts as a principal catalyst for tourist belongness (Porfyriou & Sepe, 2017). Data gathered from the survey indicated that these variables collectively influence tourist stimulative relationship upon visitation, affecting satisfaction levels, and ultimately, the decision to revisit the historic mining district which commences place stability to Sawahlunto.

Table 3
One-way regression analyses on all variable to active creative mobility

Model	*n*	Std Sig.	F	Sig.
Regression	254	0.05	15.816	.000[b]

Note. n = sample size; Std Sig. = the conventional significance threshold (α = 0.05) against which the model was tested; F = the F-statistic from the ANOVA; Sig. = the observed p-value for the model; superscript b denotes p < .05.

The F-test results from the ANOVA analysis indicate that the independent variables, which are Motivation, Education, Familiarity, Visitation, Commutability, and Residency, have a statistically significant effect on the dependent variable, Active Creative Mobility (ACM). The analysis reveals a significance value below 0.05, signifying that the association between these independent variables and the dependent variable is not attributable to chance. This indicates that tourists' educational attainment, residence, familiarity with the destination, alongside their motivation, visit frequency, and commuting convenience, collectively influence their propensity for Active Creative Mobility. These findings underscore the necessity of enhancing accessibility, fostering cultural awareness, and upgrading tourism-related infrastructure to cultivate a more immersive and dynamic visitor experience in the historic mining district.

The regression analysis identified the relative contribution of each predictor to Active Creative Mobility. The results demonstrated that Motivation was the strongest predictor (t = 12.808, p < .001), followed by Commutability (t = 2.688, p = .008), Background (t = 2.435, p = .016), and Education (t = 2.062, p = .040), all of which exerted statistically significant positive effects on Active Creative Mobility. In contrast, Visitation (t = 1.764, p = .079), Residency (t = 0.386, p = .700), and Familiarity (t = 0.928, p = .354) were not statistically significant predictors. The regression results are presented in Table 3, enabling comparison of the statistical significance and relative contribution of each predictor to Active Creative Mobility.

Furthermore, upon the analyses, the data show which variables carry the most and least influence towards active and creative mobility in historic mining districts. The data are analyzed using multiple regression analysis in SPSS software, where t test holds a value of ±1.969. The t-test results indicate that the independent variables of Motivation (t = 12.808, p = 0.000), Education (t = 2.062, p = 0.040), Commutability (t = 2.688, p = 0.008), and Background (t = 2.435, p = 0.016) exhibit significance values below 0.05, confirming their statistically significant influence on Active Creative Mobility, with Motivation showing by far the strongest effect. Conversely, the variables of Visitation (t = 1.764, p = 0.079), Residency (t = 0.386, p = 0.700), and Familiarity (t = 0.928, p = 0.354) present significance values above 0.05, indicating that these three variables do not have a statistically significant influence on Active Creative Mobility in this sample.

Table 4
The most to the least influenced variable towards active creative mobility

Variable	n	Std t	t	Std Sig.	Sig.
Motivation	254	±1.969	12.808	0.05	0.000
Education	254	±1.969	2.062	0.05	0.040
Commutability	254	±1.969	2.688	0.05	0.008
Background	254	±1.969	2.435	0.05	0.016
Visitation	254	±1.969	1.764	0.05	0.079
Residency	254	±1.969	0.386	0.05	0.700
Familiarity	254	±1.969	0.928	0.05	0.354

Note. n = sample size; Std t = the critical t-value at $\alpha = 0.05$ (two-tailed, df = 247); t = the observed t-statistic for each predictor; Std Sig. = the conventional significance threshold (0.05) against which each predictor was tested; Sig. = the observed p-value for each predictor. Predictors with Sig. < 0.05 (Motivation, Education, Commutability, Background) are statistically significant; predictors with Sig. > 0.05 (Visitation, Residency, Familiarity) are not. Unstandardised coefficients (B), standard errors, and 95% confidence intervals for each predictor should be reported alongside these values in the final SPSS output [author to insert].

Motivation (t = 12.808, p = 0.000) is the predominant factor, indicating that tourists with elevated intrinsic or extrinsic motivation, such as historical interest, cultural appreciation, or recreational intent, are more inclined to actively explore the area. This underscores the necessity for immersive tourism experiences, including historical narratives, interactive displays, and cultural events, to maintain visitor engagement. Education (t = 2.062, p = 0.040) significantly influences tourists, indicating that those with a higher educational background are more likely to engage meaningfully with the site. This necessitates tourism initiatives that include informational programs, guided tours, and heritage interpretation to augment visitor education and exploration.

Commutability (t = 2.688, p = 0.008) demonstrates a moderate effect, suggesting that although accessible transportation options are significant, they are subordinate to intrinsic motivation and education in shaping mobility patterns. Infrastructure enhancements should prioritize pedestrian-friendly pathways, sustainable transportation, and guided tours instead of depending exclusively on transport accessibility. Similarly, Background (t = 2.435, p = 0.016), referring to respondents' disciplinary or occupational field, also shows a statistically significant, moderate influence, suggesting that tourists whose professional or educational background relates to heritage, culture, or the built environment engage more readily with Active Creative Mobility. In contrast, Visitation (t = 1.764, p = 0.079), Residency (t = 0.386, p = 0.700), and Familiarity (t = 0.928, p = 0.354) demonstrate negligible impact, indicating that mere awareness or proximity to the

location does not inherently promote active mobility. This indicates that attracting tourists solely through familiarity is inadequate; tourism must conclude with creative strategies that focus on developing vibrant and evolving visitor experiences to maintain stability in the place (Christy et al., 2021).

DISCUSSIONS

The Role of Placemaking Theory in Understanding Accessibility and Linkages in Sawahlunto's Historic Mining District

The findings of this study underscore the profound relationship between tourist motivation, accessibility, and creative mobility in the historic mining district of Sawahlunto, Indonesia. By analyzing the factors influencing tourists' decisions to visit Sawahlunto and their subsequent engagement with active creative mobility, the results reflect key elements of the Placemaking Theory, which emphasizes the importance of creating vibrant, accessible, and meaningful spaces that foster connections between people and places (Stedman, 2002; Hes & Hernandez-Santin, 2019). In this discussion, the interplay between accessibility, image, and placemaking within Sawahlunto's tourism experience is explored, with a focus on the theoretical and practical implications for sustainable tourism practices in heritage sites (Brosius & Michaels, 2020)it is shown that, contrary to usual assumptions, the reconstruction was not only concentrated on the prominent, strongly internationally promoted and financed world cultural heritage sites, but took also place at smaller sites—especially at arcaded platform.

Accessibility and Placemaking

Accessibility has been a core attribute in tourist motivation, specifically under the "Access and Linkages" category. The study revealed that the walkability of Sawahlunto (Mean: 3.57) and high accessibility (Mean: 3.50) significantly influence tourists' decisions to explore the district. Placemaking theory highlights that successful tourism destinations are those that offer convenient and engaging means of access to key attractions (Richards, 2020). For Sawahlunto, this means creating spaces that are not only physically accessible but also enriched with pathways that invite tourists to engage meaningfully with its historical sites. The design and maintenance of walkable routes throughout the district, alongside well-constructed transportation systems, can foster a sense of ease and inclusion among visitors, reinforcing the idea that mobility should be part of the visitor experience (Arranz-López et al., 2021) the paper proposes combining two accessibility measures that is, real and potential respectively.

The city is aware of the issue of connectivity and comprehends that well-connected pedestrian routes should be the primary concern of the current strategy, as explained by an employee from the city's infrastructure department:

> For now, PU at the infrastructure department is primarily concerned with pedestrians. The existing pedestrian design was supported in 2006. In the 2021 city master plan, there is already a new pedestrian design, all signage has been updated, and everything is more connected.

This interviewee emphasised the municipality's increasing focus on pedestrian infrastructure as a strategic component of urban development in the heritage district. The informant noted that while the initial pedestrian paths were established in 2006, recent updates in the 2021 city master plan have introduced a more connected and user-oriented design. This includes not only physical upgrades but also the integration of modern signage systems, improving navigability and accessibility for both residents and visitors. These developments align with broader goals of spatial transformation and heritage-sensitive urban management, as discussed by Wu et al. (2022), reinforcing walkability as a foundational attribute of place attachment, narrative discovery, and active mobility. Therefore, the city's prioritisation of pedestrian-friendly environments reflects a move toward inclusive and immersive experiences in heritage tourism, where walking becomes a meaningful way to engage with the layered history and unique spatial character of ex-mining Sawahlunto. Moreover, creating pedestrian-friendly areas or cycling routes where tourists can directly interact with heritage sites supports the development of a lively, immersive environment as the key tenets of placemaking (Toolis, 2021) market-based models of community development to more sustainable and human-centered approaches that emphasize inclusion and participation. Yet processes of privatization in the era of neoliberalism threaten these efforts by concentrating profits for elites while impoverishing everyday people and the environments they inhabit, resulting in profoundly uneven access to resources, inclusion, and participation. This analysis examines the psychosocial processes that produce and are produced by these unequal and segregated settings, as well as the causes and correlates of this imbalance in the context of the United States. Then, empirical literature is reviewed exploring the harmful consequences that inequality entails for individual and societal wellbeing, arguing that inequality.

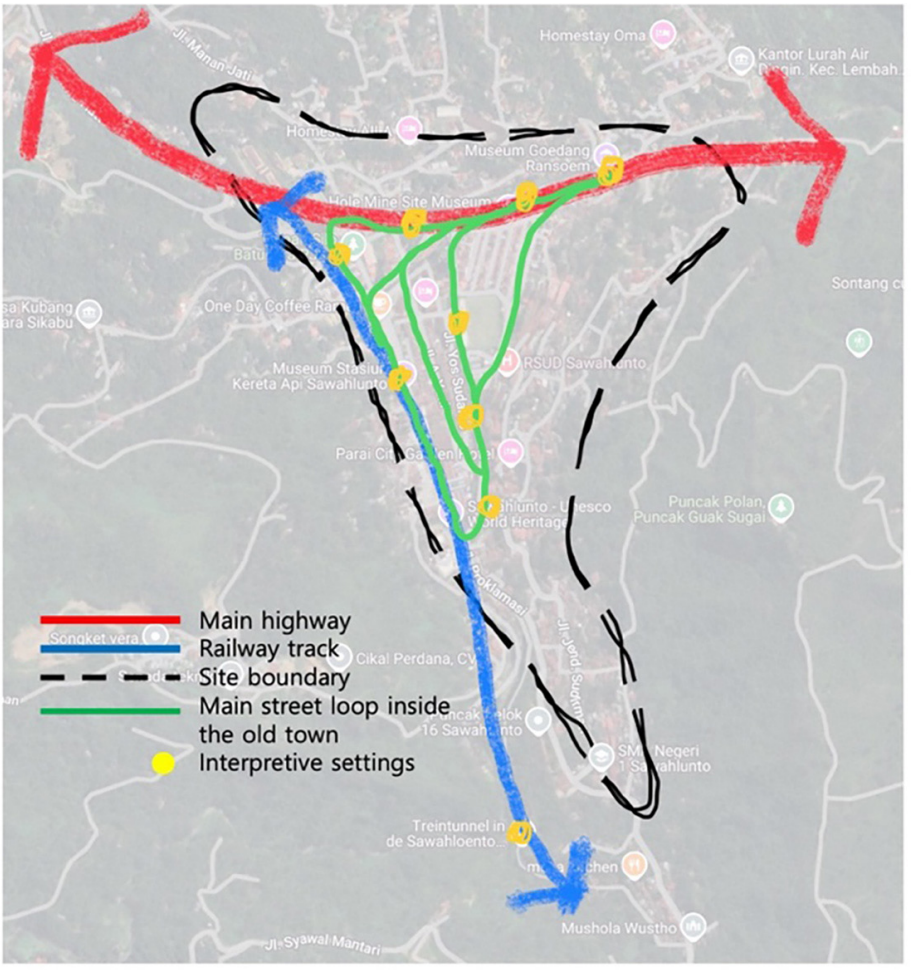

Figure 2. A loop diagram approach to be potential Active Creative Mobility observed

The loop diagram of accessibility in the historic mining district highlights a strategic approach to enhancing Active Creative Mobility by integrating diverse transportation networks, while preserving the area's historical integrity. Within this boundary, green lines outline the principal street loop in the historic district, highlighting a focus on pedestrian and cycling traffic to encourage non-motorized transportation. Further, enhancing accessibility to cultural and historical attractions, particularly through better signage, infrastructure for pedestrians, and public transport alternatives, would contribute to a more holistic tourism experience. Placemaking principles stress the importance of fostering an environment that encourages exploration and discovery, aligning with findings that tourists value ease of movement and convenient access to the district's heritage structures (Anagnostopoulos, 2024). This enhanced accessibility not only improves the tourist experience but strengthens the identity of the town as a destination, supporting the image of Sawahlunto as an accessible and engaging heritage site.

Image of Sawahlunto: Building a Strong Sense of Place

The image of a destination is a crucial component of placemaking, as it contributes to how a place is perceived and how tourists emotionally connect to it. Sawahlunto's image is shaped by its colonial-era architecture, local community stewardship (Mean: 3.52), and the pride that locals take in their historical heritage (Mean: 3.47). These elements play a significant role in attracting tourists, as the town's status as a UNESCO World Heritage site adds prestige and appeals to visitors' desire for authentic, culturally rich experiences. As the survey results indicate, tourists with a high level of motivation, such as those driven by historical interest or cultural appreciation, are more likely to engage with the town's heritage through Active Creative Mobility (Fan et al., 2024).

Figure 3. Heritage architecture contains a lot of historical material to be preserve into participative activity

The historical image of Sawahlunto is critical in fostering a sense of place, which is central to placemaking theory. A place's identity is often cultivated through both its tangible characteristics such as architecture and landmarks and the intangible elements such as local culture and community interaction (Whyte, 1980). Sawahlunto's image as a mining town with a rich history invites tourists to connect not only with the physical heritage but also with the stories embedded in the town's culture. The findings suggest that visitors are motivated by the opportunity to engage with Sawahlunto's cultural diversity (Mean: 3.28) and its heritage, yet the data also reveals a potential gap in the town's marketing and promotion of thematic activities. A resident employed as a tour guide at a hotel confirmed that most tourists visiting Sawahlunto are unaware of tour packages and instead choose their destinations based on familiar locations:

> So far, the tour packages reserved for tourists are still one-to-one. If there are tourists who ask, we provide them ... because those who come here usually already have other destination outside Sawahlunto.

According to this respondent's experience, most tourists arrive without knowledge of structured tour packages, often defaulting to familiar or well-publicised locations outside the city. According to Richards (2021), the current system, where tour packages

are arranged on a case-by-case basis upon visitor inquiry, reflects a reactive rather than a proactive tourism model, limiting opportunities for deeper engagement with the city's rich mining heritage. This insight underscores a need for improved narrative clarity and destination imageability, where the city's unique historical value is clearly communicated and spatially linked through curated experiences.

Sustainable Tourism Practices: Placemaking and Creative Mobility

The integration of creative mobility into Sawahlunto's tourism infrastructure plays an essential role in supporting both sustainable tourism practices and placemaking efforts. Placemaking not only aims to improve the quality of public spaces but also seeks to develop sustainable, community-oriented tourism experiences (Hes & Hernandez-Santin, 2020). By incorporating sustainable mobility solutions. Such as promoting walking, cycling, or heritage-themed transportation in Sawahlunto can reduce its environmental footprint while simultaneously enhancing the visitor experience. These mobility options are not just functional but serve as experiential pathways that connect tourists to the town's rich heritage in meaningful ways (Beretić & Plaisant, 2019)we proposed an interpretative framework for sustainable development planning and management of low urbanized spatial settings and accessibility for the Iglesiente Geo-mining heritage in Sardina, Italy.

The study found that motivation and education were the most influential significant variables, with commutability and background also contributing a smaller but statistically significant effect, in shaping tourists' engagement with Active Creative Mobility (ACM) ($t = 12.808$, $p = 0.000$ and $t = 2.062$, $p = 0.040$, respectively). This highlights the need for educational and immersive tourism programs that emphasize the historical context of Sawahlunto's mining past. Placemaking efforts should include the development of walking or cycling routes that allow visitors to experience the town's heritage firsthand, such as interactive mining experiences or guided tours that deepen understanding of the historical significance (Richards, 2011; Arcos-Pumarola et al., 2023). By enhancing these experiences, Sawahlunto could transform from a passive heritage site to a dynamic and engaging destination.

Moreover, the findings suggest that enhancing transportation infrastructure, including providing better rest areas and public amenities, would further contribute to the comfort and image of Sawahlunto as a tourist-friendly destination. This aligns with sustainable tourism goals, particularly SDG 11 (Sustainable Cities and Communities), which promotes the creation of inclusive, safe, resilient, and sustainable urban environments (United Nations Department of Economic and Social Affairs, 2023). For Sawahlunto, this means developing an integrated transport system that connects different heritage sites, ensuring that tourists can explore the town conveniently while minimizing environmental impact.

Implications for Placemaking and Sustainable Tourism in Sawahlunto

Placemaking is about creating spaces that allow for both emotional and physical engagement, and the results from this study suggest that Sawahlunto has significant potential to enhance its placemaking efforts. Accessibility and the town's historical image already provide a strong foundation for tourism development (Beretić & Plaisant, 2019)we proposed an interpretative framework for sustainable development planning and management of low urbanized spatial settings and accessibility for the Iglesiente Geo-mining heritage in Sardinia (Italy. However, by focusing on creative mobility and developing sustainable tourism strategies, Sawahlunto could foster a stronger sense of place and community connection among tourists.

One key implication of the findings is the need for enhanced marketing and promotion of thematic activities that highlight Sawahlunto's unique historical narrative. Engaging with tourists through interactive and educational experiences will encourage deeper connections with the town's heritage and history (Novacevski, 2023). Additionally, investments in sustainable infrastructure, such as eco-friendly transportation options and pedestrian routes, can enhance the overall visitor experience while ensuring that the town remains environmentally sustainable.

Figure 4. Historical urban element (path & nodes) to be engaged as role in narrative tourism development

Ultimately, the research suggests that Sawahlunto, by embracing active creative mobility and integrating it into its placemaking strategy, can enhance both the sustainability and the appeal of its heritage tourism offerings. By focusing on accessibility, strengthening its image, and promoting sustainable mobility, Sawahlunto can position itself as a leading example of long-term stable tourist destination within a heritage site, contributing to both local economic development and the preservation of its cultural identity.

CONCLUSIONS

This research is significant for several reasons. First, it addresses the growing need for sustainable mobility solutions within heritage tourism. The integration of creative mobility into heritage districts can provide tourists with more engaging, environmentally friendly, and authentic experiences, aligning with the goals of Sustainable Development Goal (SDG) 11: Sustainable Cities and Communities, which aims to promote inclusive, safe, resilient, and sustainable cities. By encouraging sustainable mobility alternatives, such as walking, cycling, and heritage-themed transport, this study supports the development of more sustainable tourism practices in historic mining districts.

Second, this research contributes to the placemaking literature by demonstrating how mobility infrastructure can foster a stronger sense of place in heritage environments. Placemaking, as a process of designing and managing spaces that facilitate community and visitor engagement, is critical for the sustainable development of tourism in historic areas. The findings of this study will provide practical insights for local authorities and tourism managers in revitalizing historic mining districts while preserving cultural heritage. By understanding how creative mobility influences tourists' emotional and cognitive connections to a place, this research can inform the creation of more meaningful and sustainable tourism experiences.

Theoretical frameworks for this study are rooted in Placemaking Theory, which emphasizes creating meaningful, accessible spaces that foster connections between people and places. It underscores the importance of physical, emotional, and social engagement in tourism. Practically, the study applies the Sustainable Tourism Framework, focusing on environmentally responsible, community-inclusive tourism development. Key strategies include enhancing accessibility, promoting local cultural heritage, and implementing sustainable mobility solutions. The integration of active creative mobility (e.g., walking and cycling) and heritage-based experiences contributes to a dynamic tourism model, supporting both cultural preservation and sustainable urban development in heritage sites like Sawahlunto.

In conclusion, this study will provide valuable insights into the intersection of active creative mobility (ACM), heritage tourism, and placemaking, contributing to both

academic knowledge and practical applications for the development of sustainable tourism in historic mining district.

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