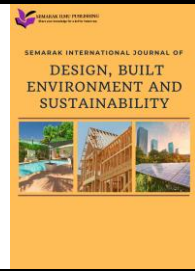




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The Significance of Pedestrian Pathways as Place Identity in an Urban Environment

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ABSTRACT

In an urban environment, pedestrian pathways are an essential physical structure that contributes significantly to establishing place identity. This review investigates the role of pedestrian pathways in shaping place identity, highlighting their physical and social importance. It explores how these pathways generate social attributes, such as place identity, within the urban context, addressing the often-overlooked significance of these structures. The undervalued physical and social significance of these pathways is an inquiry that the research aims to address. A comprehensive review of databases specializing in pedestrian pathways and place identity was conducted to examine this, focusing on books, peer-reviewed journal articles, and other relevant materials from the past five years. The findings demonstrate that pedestrian pathways are crucial in defining a place's identity through physical features, creating meaningful connections between people and their environment. By enhancing the physical characteristics of urban spaces, pedestrian pathways help foster a sense of belonging and identity among residents. Hence, pedestrian pathways significantly improve an urban environment's physical characteristics while nurturing place identity. This research offers new perspectives into the relationship between physical features and social ramifications and approaches to urban design that strengthen physical and social significance. Furthermore, it suggests approaches to urban design that recognize and strengthen the physical and social significance of pedestrian pathways, offering a framework for creating more meaningful and cohesive urban environments.

1. Introduction

Pedestrian pathways are more than ordinary spaces for walking in an urban environment; they serve as vital physical structural elements that greatly aid in creating a place identity. Creating a place identity has become increasingly important within the popular conception of urban design in industrialized nations [1]. As an essential means of encouraging social interaction and community growth, pedestrian pathways' functionality in urban environments can extend to impact an area's identity and its qualities. This is due to the movement's visual elements that can spark curiosity,

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resulting in the creation of memories and identities [1]. For instance, by extracting elements from Indian urban forms, cultural features and symbols play a significant role in visual attractiveness and can effectively communicate place identity [1]. Similarly, these cultural elements and symbols can be integrated into the urban environment through pedestrian pathways. Hence, this review investigates the role of pedestrian pathways in shaping place identity, highlighting their physical and social importance. It explores how these pathways generate social attributes, such as place identity, within the urban context, addressing the often-overlooked significance of these structures. The undervalued physical and social significance of these pathways is an inquiry that the research aims to address. It is accepted that beyond just serving a practical purpose, pedestrian pathways also possess significance, considering their existence is fundamental to the social fabric of the urban environments.

Despite their significance, pedestrian pathways' social and physical value, mainly towards place identity, is often overlooked in urban design. Prior research has mostly concentrated on these pathways' functional features, mostly on their layout and effect on urban mobility. Nonetheless, there is a noteworthy gap concerning pedestrian pathways' role as place identity in an urban environment. This research offers new perspectives on the relationship between pedestrian pathways' physical features and social ramifications. Furthermore, it suggests approaches to urban design that recognize and strengthen pedestrian pathways' physical and social significance, offering a framework for creating more meaningful and cohesive urban environments. Consequently, examining how pedestrian pathways aid in creating place identity in urban environments is the primary objective of this research conveyed through the literature review.

2. Methodology

The paper employs a content analysis of literature reviews to explore the significance of pedestrian pathways in establishing place identity within urban environments. By highlighting pedestrian pathways' physical and social importance, the review aims to synthesize the body of research published in the last five years. Academic databases like Google Scholar, JSTOR, Emerald Insight, and others, together with relevant books, were used in the literature search. "Pedestrian pathways," "place identity," "urban design," "social significance," and "physical features" were among the search terms used. Peer-reviewed books, conference papers, and articles produced in English during the previous five years emphasizing pedestrian pathways and urban environments required for inclusion.

Following an initial screening of abstracts and titles, full-text reviews of the chosen articles were conducted as part of the selection process. A standardized form was used to extract the data, which included the research design, important findings, and conclusions. Thematic analysis was used to synthesize the findings and find recurring themes on the significance of pedestrian pathways as place identity.

3. Results

This section provides a theoretical basis for comprehending the function of pedestrian pathways as place identities in urban environments. By reviewing many perspectives concerning place identity and pedestrian pathways, this section seeks to contextualize the importance of pedestrian pathways in establishing solid and significant urban spaces.

3.1 Place Identity

Place identity is a fluid concept that is the foundation for numerous psychological theories regarding interactions between humans and their surroundings [1,4]. Environmental and social psychologists Proshansky *et al.*, (1983) introduced the term "place identity," defining it as a part of self-identity shaped by cognitive and everyday interactions with the environment [1,2]. "Identity" in this context refers to "place" and denotes a collection of traits that ensure a location's continuity and uniqueness over time [3]. Representing the essence of "place identity," the concept of "genius loci" refers to a location's distinct character, which is widely acknowledged but challenging to fully comprehend [3]. While the meanings of place identity are still debated, it is clear that "place identity" has positively served as a bridge between physical reality and social cognition [1]. The social constructivist notion of place identity highlights people's subjective perceptions of geographical spaces [1]. Place identity refers to an emotional bond with a place, emphasizing its symbolic significance as a repository for the feelings and connections that give life meaning and purpose [4,5]. It is defined as the aspects of individual and social identity that stem from feeling a sense of belonging to a particular place [5]. Therefore, place identity can only be gained if people interact with the area. This is supported by Shah Khaidzir and Ahmad Kamal [4], who concluded that place identity is shaped by a significant interaction with a place, which influences self-identity formation. Their study also showed that people's self-identity (Place Identity) is shaped by their emotional attachment to the place (Place Attachment), which is cultivated by their practical relationship with it (Place Dependence) [4]. Consequently, these interactions are facilitated by pedestrian pathways, essential components of urban environments and provide areas for people to engage with their surroundings. The discussion on how practical and emotional relationships build place identity underscores the importance of pedestrian pathways in helping urban residents develop a sense of belonging and identity. Pedestrian pathways strengthen a place's continuity and distinctiveness by allowing for regular and meaningful interactions with the urban environment.

Place identity can be seen as the personality of a place [1]. The development and maintenance of place identity is a reciprocal, dynamic, and cyclical process, much like the connection between people and a place, which is continuous, dynamic, and reciprocal [1]. Social and place-related interactions contribute to forming place identity among residents, which has been studied in earlier environmental social psychology research [6]. Either a place's or people's place identities serve as the foundational concepts for place identity [7]. Ali *et al.*, [7] specified the quadrantal dimensions of place identity in their study, as shown in Figure 1. The study anticipated that the four dimensions of place identity would assist researchers in identifying their positions when exploring research questions in this field [7]. A location's physical and symbolic elements are included in the external look, which is essential for establishing a visually harmonious and socially significant space. As physical features, pedestrian walkways significantly improve urban environments' visual appeal and functional connectivity. They act as distinguishing visual indicators that help identify a location's continuity and character, giving it a unique identity by incorporating symbolic elements. One or more of these physical components are typically described as parts of a place's identity in its commands [1]. Internal thoughts, on the other hand, deal with people's unique perspectives and feelings about a location. One aspect of a person's private self-identity that a location influence is their inner thoughts that show their connections to it [1]. Regular and meaningful encounters with the environment are made easier by pedestrian walkways, which promote attachment and a sense of belonging. The community's emotional and psychological environment is influenced by these paths, which turn into places where individual and group memories are formed and create a deeper connection towards the

surrounding environment. Therefore, this dual approach ensures that the study captures the physical and social elements that define place identity.

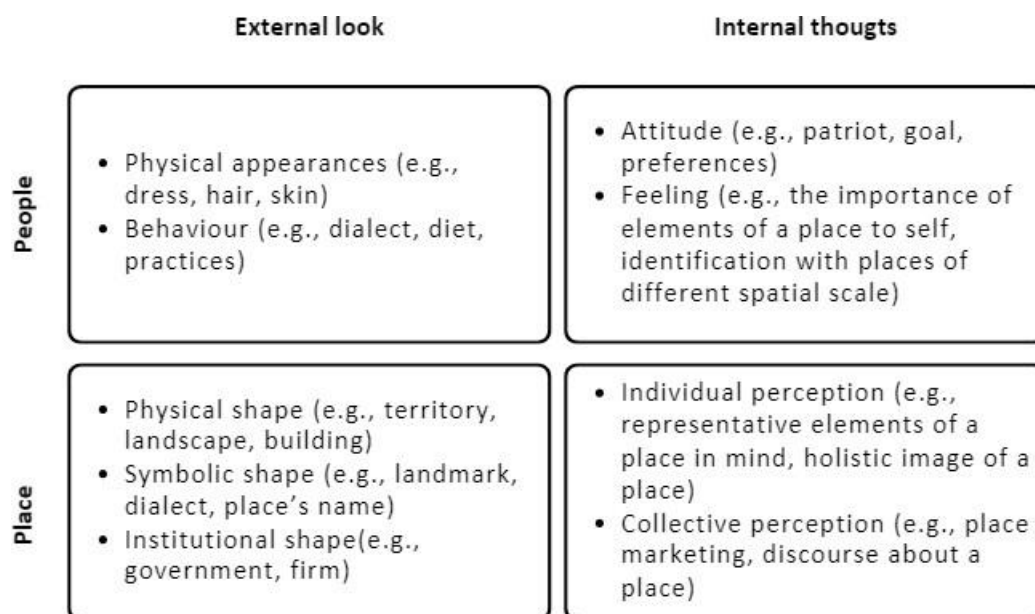


Fig. 1. Quadrantal dimensions of place identity by Ali *et al.*, [7]

In general, initiatives to strengthen a place's identity can also strengthen the place identities of its residents and vice versa [1]. Place identity is a vital concept in urban social and cultural life, with its continuity closely tied to place attachment and a sense of belonging [8]. Identification impacts emotional outcomes, perceptions, and behaviours [9]. Identity principles shape how individuals evaluate information and influence self-identity development through accommodation, assimilation, and environmental evaluations [9]. Individuals must feel they belong in a group or place, physically separate or differentiate themselves from others, and feel what it is like to step into a space [8]. Consequently, people are most at ease in locations corresponding to their place identity [10]. In other words, their social, cultural, and psychological fulfilment are influenced by their location identities [10]. A pedestrian walkway can play a critical role in forming and maintaining a place's identity by giving people a social and physical area to interact with their surroundings and strengthen their sense of attachment and belonging. For example, design features like local materials, traditional themes, or community-focused areas can set the pathway apart from others and promote continuity and individuality with the surrounding area. As a result, the walkway continues to be a vibrant and alive component of the urban identity by promoting social interactions, which are behaviours that strengthen community identification.

3.2 Pedestrian Pathways

One of the most basic and ancient forms of transportation is walking, and since every trip starts and ends with a walk, pedestrian pathways are vital for ensuring walkability [11-13]. According to current facts, walking is more complex and takes more preparation than driving a car [12]. The Latin *pedesterpedestris* is the source of the English term pedestrian, meaning "people who walk" [13]. Another definition of a pedestrian includes someone who moves from one location to another primarily on foot and is not operating a vehicle [13]. The concept of a pedestrian pathway is best exemplified by passages where pedestrians dominate, and automobiles are used only for maintenance purposes [14]. In an urban environment, a pedestrian pathway is a system of connected

routes incorporating accessibility and connectivity features [15]. An urban environment should allow people to freely roam around and observe their surroundings, which is the most crucial indicator of that civilization's viability [16]. The primary function of pedestrian pathways is to give people the freedom to move around and go from one place to another on foot [15]. For instance, the at-grade pedestrian system in Hong Kong was established in the 1970s, connecting the various indoor and outdoor pedestrian zones to provide a continuous moving experience and foster a sense of communal urban identity [15]. Each person has the right to fully access, utilize, and comprehend the constructed environment to engage in the community's life [17]. Hence, this supports the idea that pedestrian pathways are not just functional elements but also crucial for cultivating social interaction and place identity. The idea that pedestrian pathways contribute to urban areas' social and physical fabric is reinforced by historical context and real-world examples, demonstrating how well-designed pathways can enhance urban connectivity and foster place identity. This foundational understanding sets the stage for exploring the specific amenities and features that make pedestrian pathways essential in urban environments.

Pedestrian pathways, crossovers, and other walking-specific road amenities are among the unique road conveniences that pedestrians are entitled to [14]. The design of pathways should be low-risk, economical, accessible to a wide range of people, and convenient [12]. The state of the pathways significantly influences the number of walking trips made by pedestrians who seek high standards of comfort, security, and protection [14]. By providing safe and convenient movement for both cyclists and walkers, pedestrian pathways are essential for tying communities together [18]. Promising pathways, free from physical hazards, ensure that pedestrians are unlikely to be struck by cars or trucks, while excellent pathways are physically comfortable, as concluded by Ghadzie *et al.*, [12]. Despite the influence of the local climate, comfort remains crucial when designing pedestrian facilities, considering elements like surface quality, size, cleanliness, weather, city amenities, and circulation [13]. A well-planned built environment without pedestrians loses its vibrancy and livability, as it fails to serve as a vibrant social connector with a strong sense of community [13]. Table 1 shows the factors of pedestrian needs that will impact walking comfort, as summarised by Irafany *et al.*, [13], and its implications towards this study. The table emphasizes the value of thoughtfully planning for a comfortable pedestrian pathway in establishing an identifiable and lively urban environment. In addition to improving urban environments' physical characteristics, pedestrian pathways enable residents to feel a sense of belonging and place identity by focusing on mobility, continuity, safety, attractiveness, supporting elements, and cleanliness. Hence, the availability of these pedestrian needs that lead to a comfortable pathway will therefore attract people to use it, creating social connection. Consequently, this aligns with the study's emphasis on pathways' social and physical significance in establishing a place's identity. It supports the claim that pedestrian pathways are essential to fostering place identity by outlining their practical advantages, such as safety and comfort. By enhancing the physical attributes of urban environments, these pathways contribute to the development of profound connections between people and their surroundings. This, in turn, nurtures residents' sense of belonging and place identity.

Table 1

The factors pertaining to pedestrian needs that will impact walking comfort as concluded by Irafany *et al.*, [13] together with its implications

Factors	Elements	Implications
Mobility	Pathway's width, surface, and no obstacles	Promoting continuous walking activities and integrating them into daily life, thereby contributing to a strong place identity.

Continuity	Able to carry out walking activities in a sustainable manner, not cut into pieces or stop.	Improves mobility, resulting in a unified and identifiable urban area.
Safety	Information signs, pedestrian traffic light signals, and traffic control signals will all be used to provide a secure environment.	Provides a secure environment, encouraging walking and reinforcing the area's pedestrian-friendly identity.
Beauty	Streetscapes, parks along the pedestrian path, trees, and the surrounding landscape are what entice individuals.	Improves aesthetic appeal, adding to the area's charming identity while rendering walking more pleasurable.
Supporting elements	Lighting, signs, bollards, seats, shade plants, sculptures, telephones, kiosks, shelters and canopies, clocks, garbage cans, stops, utilities, and paving	Their distinctive qualities add to the place's overall personality and character.
Cleanliness	A clean, dirt-free condition that also enhances the area's appeal	Creates a pleasant impression, promoting foot traffic and highlighting the area's well-kept identity.

On the other hand, social interactions are crucial for spiritual and physical growth and achieving excellence, and these relationships are essential for both spiritual and social development [15]. The urban environment benefits significantly from pedestrianization in terms of the environment, society, economy, health, and transportation [19]. By enhancing social engagement and relationship development, pedestrian pathways improve livability standards and foster a sense of security, freedom, responsibility, and belonging [18]. The foundation of social interactions and pedestrian movement is urban space, which consists of three features: social interactions, confinement, and geometric order [16]. Hence, a pedestrian pathway can be considered an urban space since it encompasses all three features. This integration of social and physical elements is vital for maintaining urban vitality. A decline in urban vitality, which stems from reduced social interactions, can diminish the sense of belonging in a city [16]. Therefore, pedestrianization is a strategy that helps a city develop its identity, taking diverse forms in different places and cities [19]. According to social psychology studies, strangers can form and share a social identity during emergencies and disasters, such as a sense of solidarity, psychological togetherness, and groupness [20]. Social identification can encourage camaraderie with strangers and allow pedestrians to recognize one another as members of a psychological group, leading to mutual assistance and collaboration [20]. This demonstrates the profound impact of well-designed pedestrian pathways on fostering community and resilience in urban environments. Consequently, it will lead to the development of place identity within the urban environment.

3.3 Case Study

A case study on place identity was conducted by Isa *et al.*, [8] involving selecting two waterfronts in Penang, Malaysia, and surveying 300 users using a convenience sampling method. Data was collected through a face-to-face questionnaire that included 31 statements on place quality, place identity, and user satisfaction, rated on a 5-point Likert scale. Structural equation modelling (SEM) and partial least squares (PLS) analysis were used to test the proposed hypotheses and analyze the data. They concluded that when more elements of place quality are met, user satisfaction and identity increase, leading to higher overall satisfaction with the places [8]. Building design, activities, personal value, and maintenance are just a few components to improve place quality, identity, and user satisfaction [8]. These elements should be handled skillfully and creatively to set these waterfronts apart from others, as they are crucial for fostering users' satisfaction [21]. Hence, using the same concept by prioritizing the design and maintenance of pedestrian pathways can foster a

stronger place identity and higher user satisfaction, making these pathways more attractive and enjoyable for visitors.

Furthermore, another case study in China was done by Wang *et al.*, [21], the methodology of the study involved qualitative research methods, including participatory observation and in-depth interviews with 17 residents of Cuandixia Village, Beijing. Data collection took place from February to June 2019 and August 2022. The research team conducted field visits to gain a subjective understanding of the village's social and cultural phenomena, such as architectural layout, daily life, and interactions between residents and tourists. The interviews focused on residents' perceptions of tourism's impact and their sense of place and identity. Thematic analysis was used to analyze the interview data, ensuring reliability through independent coding by two researchers and thorough discussions to reach a consensus on divergent themes. The study aimed to explore the impacts of tourism on place identity construction, focusing on space reconstruction, livelihood changes, social relations restructuring, and cultural changes. The study found that tourism significantly impacts the construction of place identity among residents of traditional villages, with both positive and negative effects. Tourism leads to space reconstruction, transforming village spaces from purely residential to mixed-use areas, reducing residents' self-efficacy and enhancing their recognition of the village's distinctiveness [21]. Cultural changes include the loss of traditional customs and the positive integration of external cultural influences, which can enhance residents' pride and self-efficacy [21]. Pedestrian pathways in urban environments, like tourism in traditional villages, play a crucial role in shaping place identity. By thoughtfully designing and maintaining these pathways, they can create spaces that enhance accessibility, foster social interactions, stimulate local economies, and celebrate cultural diversity. This holistic approach can lead to a stronger sense of place and identity for urban residents, making cities more livable and vibrant.

The literature review on place identity and pedestrian pathways emphasizes how important these pathways are to an urban environment. Environmental interactions influence place identity, which is a psychological theory-based notion that encompasses symbolic meaning and emotional ties. By offering areas for frequent and significant social engagement, pedestrian pathways strengthen a place's identity while promoting continuity and a sense of belonging. Table 2 discusses the summary of the articles reviewed.

Table 2
Summary of articles reviewed

Aspects	Details	Summary
Place identity	Theoretical perspectives	A component of self-identification that is influenced by daily interactions with the environment and cognitive processes which connect physical reality and social cognition.
	Concept	The idea of place identity is dynamic and ever-changing, and it serves as the foundation for several psychological theories on how people interact with their surroundings.
	Definition	It refers to the characteristics that guarantee a place's continuity and distinctiveness across time; these characteristics are sometimes summed up by the phrase "genius loci," which implies the place's spirit or distinctive character.
	Dimension Social perspectives	Place, people, external look, and internal thoughts People's subjective impressions and emotional connections to physical locations shape place identity, emphasizing the symbolic importance of locations.

	Role as a pedestrian pathway	Place identity development and maintenance depend on regular and meaningful encounters with the environment, which are made possible via pedestrian pathways.
Pedestrian pathway	Historical context	Walking is one of the oldest and most fundamental forms of transportation. Pedestrian pathways have always been essential for ensuring walkability and connectivity in urban environments.
	Design and impact	Effective pedestrian pathways are designed to be safe, convenient, and aesthetically pleasing.
	Practical advantages	Practical advantages including mobility, comfort, and safety are provided by these pathways. By making the area more accessible and pedestrian-friendly, they promote walking, which strengthens the area's unique personality.
	Urban vitality	Pedestrian routes promote social connections and a feeling of community, which in turn supports urban vitality. They contribute to the development of lively and pleasant urban settings, which are necessary to preserve place identity.
	Physical and social significances	Pedestrian pathways help to create deep connections between individuals and their environment by fusing social and physical components. People's feelings of place identity and belonging is fostered by this integration.
Case studies	User satisfaction	Enhancing place quality through thoughtful design, activities, personal value, and maintenance increases user satisfaction and place identity in waterfronts, which can be applied to pedestrian pathways to foster stronger place identity and higher user satisfaction.
	Tourism	Tourism impacts place identity in traditional villages through space reconstruction, livelihood changes, social relations restructuring, and cultural changes, suggesting that pedestrian pathways in urban environments can shape place identity by enhancing accessibility, social interactions, and cultural integration.

4. Key Findings and Discussions

This section discusses the key findings on the significance of pedestrian pathways in establishing place identity within urban environments. It highlights the diverse ways pedestrian pathways contribute to urban areas' social and physical dimensions, integrating various theoretical perspectives and empirical evidence.

4.1 Physical Features

In urban environments, pedestrian pathways are crucial physical features that provide comfort, safety, and aesthetic appeal. Adequate width, high-quality surfaces, appropriate lighting, cleanliness, and supplemental amenities are all important components of these pathways. The design of these pathways is fundamental to encouraging uninterrupted and barrier-free walking experiences, which enhance the aesthetic appeal and functional connectivity within urban environments. For instance, these areas can be made even more unique by incorporating local materials, traditional themes, or community-focused structures. These elements promote individuality and harmony with the surrounding environment, which a well-designed pedestrian pathway can facilitate. Therefore, in addition to facilitating journeys, the physical characteristics of the pathways enhance the overall

visual and operational quality of urban areas, making them more approachable and pleasurable for locals and tourists.

Furthermore, the number of walking trips pedestrians take is greatly influenced by the physical design of pedestrian pathways. Safety and supporting features such as benches, trees, sculptures, lighting, and convenient kiosks can improve usability and encourage frequent pedestrian use. This, in turn, enhances urban character, fostering place identity and a sense of belonging. Promising pathways are free from physical hazards and ensure that pedestrians are unlikely to be struck by vehicles, but excellent pathways are also physically comfortable. Without pedestrians, a well-designed architectural environment loses vitality and livability because it cannot function as a lively social hub with a strong sense of community. As a result, carefully planning pedestrian pathways is crucial for producing a recognizable and vibrant urban space that improves the physical attributes and overall excellence of the urban environment.

4.2 Social Significances

Pedestrian pathways are vital urban spaces that increase social contact, promoting both intentional and unintentional interactions among locals. These interactions have a profound emotional and psychological influence, fostering a sense of place attachment and belonging by building emotional ties between individuals and their surroundings. This, in turn, strengthens place continuity and distinctiveness. In addition to supporting social identity and mutual aid, particularly during emergencies, by fostering trust, these pathways facilitate social connections that promote community resilience and urban vitality.

Furthermore, urban spaces, which form the basis for social interactions and pedestrian movement, are characterized by three main features: social interactions, confinement, and geometric order. A pedestrian pathway qualifies as an urban space because it includes all these elements. With pedestrian pathways, livability increases, leading to a decline in urban vitality due to reduced social interactions, which diminishes the sense of belonging in a city. Pedestrianization, a tactic that can take multiple forms across various locations and cities, aids in a city's identity development. By increasing urban livability standards and vitality, pedestrianization promotes a sense of security and responsibility through enhanced social involvement and relationship development. Thus, pathways serve as vibrant spaces for social interaction, enhancing locals' quality of life by establishing a shared urban identity based on everyday experiences. Figure 2 shows the summary of how pedestrian pathways can provide place identity.

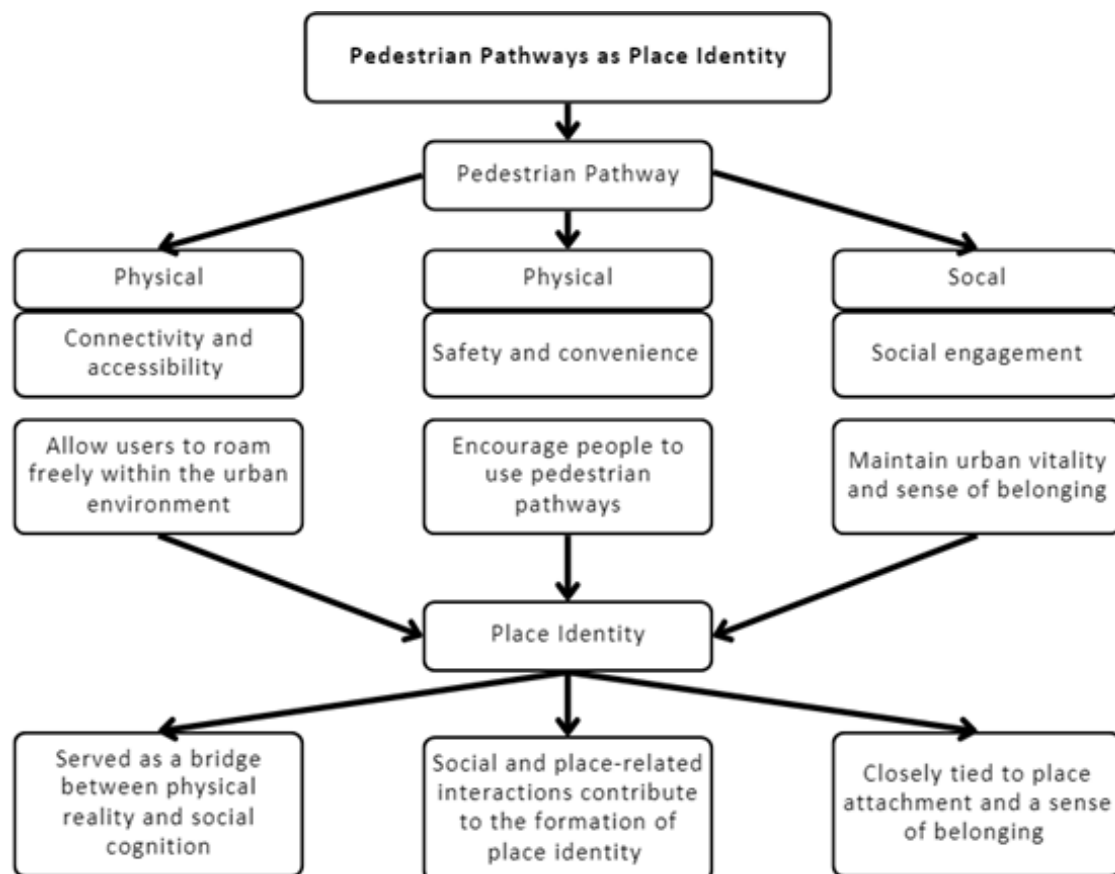


Fig. 2. Summary of pedestrian pathways as place identity

5. Conclusion

This study highlights the physical qualities, social significance, and contribution to place identity of pedestrian pathways in urban environments, underscoring their diverse role. It shows that pedestrian pathways are essential to the aesthetic and practical qualities of the urban environment, going beyond their original role as mere structures for mobility. The physical and social elements of urban environments are greatly improved by pedestrian pathways, which eventually aid in forming a place identity. Effective urban design should recognize, strengthen, and diversify the role of pedestrian pathways to create place identity and offer valuable social opportunities for residents. By integrating thoughtful design and promoting social interactions, these pathways create more meaningful and cohesive urban spaces, providing a sense of belonging and community among residents. Ultimately, this study concludes that pedestrian pathways are essential for forming place identity. It offers a paradigm for urban design that acknowledges and enhances pedestrian pathways' physical and social relevance, delivering insightful information about their significance in place identity. As such, pedestrian pathways are indispensable elements of the urban environment. This research bridges the gap in understanding the multifaceted roles of pedestrian pathways and provides a foundation for future urban planning initiatives. It paves the way for creating more resilient and identity-rich urban spaces by emphasising the dual importance of physical and social aspects. Therefore, when an urban environment acquires a strong place identity, it fosters place attachment and a sense of belonging among its residents, which preserves and enhances the stability and security of the urban environment.

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