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Assessing Photovoice in Architectural Research: A Methodological Review

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ABSTRACT

Architectural research has emphasized the lived experiences and perspectives of space users. Photovoice has emerged as a participatory visual method that positions users as producers and interpreter data. This article examines of its role, advantages, limitations, and effectiveness of Photovoice in architectural research through a methodological literature review. Scholarly studies published between 2010 and 2025 were reviewed to identify how photovoice has been applied. The analysis focuses on participant involvement, visual data collection and interpretation, ethical considerations, and the integration of Photovoice with qualitative and mixed-method approaches. The review indicates that photovoice can generate contextual, affective, and experiential knowledge that is difficult to capture through conventional methods. However, its effectiveness depends on how participant involvement, ethical considerations, analytical procedures, and researcher reflexivity. Photovoice is most productive when photographs are treated not as objective forms of spatial knowledge. The study positions photovoice as a complementary methodological approach in architectural research, particularly for understanding lived spatial experiences and strengthening user-oriented and participatory architectural research.

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1. INTRODUCTION

The understanding of space in built environment studies is increasingly shifting from mere physical representation to lived experiences, interpreted, and negotiated in everyday practice. Space is understood not only as material configurations but also as an arena of social relations, perceptions, and affections (Reckwitz, 2012). This shift represents a methodological approach capable of capturing the implicit, situational, and contextual nature of spatial experiences, which are often difficult to articulate through instruments such as surveys or observations.

In this context, visual approaches have developed as a way to bridge the gap between experience and scientific representation. Visual methods such as drawings or photographs allow experiences that are not always easily verbalized to be articulated through the medium of images. One frequently used visual approach is photovoice, a method that positions participants as producers of visual data and primary interpreters of their own experiences (C. Wang & Burris, 1997). By doing so, photovoice creates opportunities for the production of knowledge rooted in the experiences and perspectives of the space users, rather than simply the results of analytical classifications by researchers.

Historically, photovoice was first developed in the field of public health in the early 1990s. C. Wang & Burris (1997) developed this method in the context of health advocacy in rural Yunnan, China, when conventional survey approaches were deemed incapable of representing the lived realities of communities with limited literacy. By placing cameras in the hand of participants in the visual recording process, daily experiences including environmental conditions, daily practices, and social relations became sources of reflection and knowledge production. Conceptually, this approach is based on the idea of critical consciousness, which views lived experience as an important foundation in the formation and production of knowledge (Freire et al., 2018).

Over time, photovoice has been widely adopted in various socio-humanitarian research contexts. During the 2000s, this method was increasingly adopted in sociology and education to highlight the experiences of groups underrepresented in conventional text-based research, such as refugees, the homeless, and minority groups (Hergenrather et al., 2009). This development coincided with the growing adoption of participatory approaches in social research in response to critiques of researcher-centered research forms of inquiry that tended to ignore the perspectives of research subjects.

Over the past two decades, the use of photovoice has expanded to studies focusing on place, space, and the built environment, including in urban planning, human geography, and architecture (Bennett & Dearden, 2013). Researchers in these fields increasingly recognize that the quality of space and the built environment cannot be understood solely through technical or formal spatial indicators, but also through the way these spaces are experienced, valued, and interpreted by their users. In this context, photovoice is used as a tool for exploring spatial experiences that complements other qualitative approaches such as ethnography, phenomenology, case studies, and mixed-methods research.

However, the development of photovoice in the study of space and the built environment also raises a number of methodological issues that require further study. Architecture and urban planning are disciplines steeped in formal spatial analysis and technical data, while photovoice produces subjective and interpretive visual data. Numerous studies have emphasized that photographs do not constitute objective representations of reality, as photographs are influenced by participant choice, cultural norms, social desirability bias, and the power relations embedded within the processes of image production and interpretation (Golden, 2020). Furthermore, the use of visual data raises ethical challenges, particularly

regarding privacy, confidentiality, and the representation of individuals or spaces captured in photographs (Ng et al., 2024).

This situation raises methodological issues regarding the effectiveness of photovoice as a tool used in spatial and built environment research, particularly regarding its ability to capture the complexity of spatial experience without simplifying or fragmenting the reality being studied. Based on this issue, this article critically examines the use of photovoice as a methodological tool through a literature review, highlighting the types of spatial knowledge it may produce. It also aims to evaluate its advantages, limitations, potential representational biases, and the ethical challenges that accompany it. Specifically, this article will answer the following questions: (1) what is the role of photovoice in architectural research? (2) what are the advantages of photovoice in architectural research? (3) what are the limitations of applying photovoice in architectural research? and (4) what is the effectiveness of applying photovoice in architectural research? Using a literature study approach, this article seeks to clarify the position of photovoice as a tool in the methodology of architectural research and broader spatial studies, without limiting it to a particular thematic approach or qualitative strategy.

2. CONCEPTUAL FOUNDATIONS, PROCEDURES, AND INTERPRETATIVE PRACTICES OF PHOTOVOICE

Photovoice is a participatory visual method that enables communities to communities to actively engage in research by documenting and reflecting on their lived realities through photography (Brückner et al., 2022; C. Wang & Burris, 1997). This method reconfigures the role of the researcher by positioning participants, particularly vulnerable or marginalized groups who typically struggle to communicate their views, as experts on their own lived experiences and co-researchers (Brückner et al., 2022; Hagerup et al., 2025). Theoretically, photovoice is based on three main pillars, namely (1) critical pedagogy that emphasizes the development of individual critical consciousness (Brückner et al., 2022; Freire et al., 2018); (2) feminist theory that focuses on decentralizing power, ensuring marginalized voices are heard, and recognizing that knowledge is subjective and shaped by political context ; and (3) documentary photography that uses the power of visuals as material evidence to tell the truth to policymakers in order to trigger social change.

Photovoice implementation generally follows a systematic procedure. The first step begins with identifying and recruiting participants based on the specific issues that will be raised in the research (Nagl-Cupal et al., 2025). Next, participants receive guidance, often in the form of training sessions, covering camera use, image composition, and ethical considerations in visual research (Naghshbandi, 2022; Nagl-Cupal et al., 2025; San-Juan-Escudero et al., 2025). Participants are then asked to capture photographs in accordance with the agreed objectives and instructions (D. Davis et al., 2020; Nagl-Cupal et al., 2025). Next is selecting photos that are considered the most meaningful by participants and explaining the meanings and motivations underlying their photographic choice through focused group discussions and interviews (D. Davis et al., 2020; Nagl-Cupal et al., 2025; C. Wang & Burris, 1997). The subsequent stage involves developing narratives, participant quotations, and analytical interpretations to enrich the meaning and contextual understanding of each photograph in accordance with the research objectives (Guinand et al., 2021). This sequence of steps emphasizes that photovoice is not simply the activity of taking photos, but rather a series of methodological processes designed to ensure participant involvement, quality of visual data, and depth of interpretation. The principal stages of photovoice implementation are summarized in Figure 1.

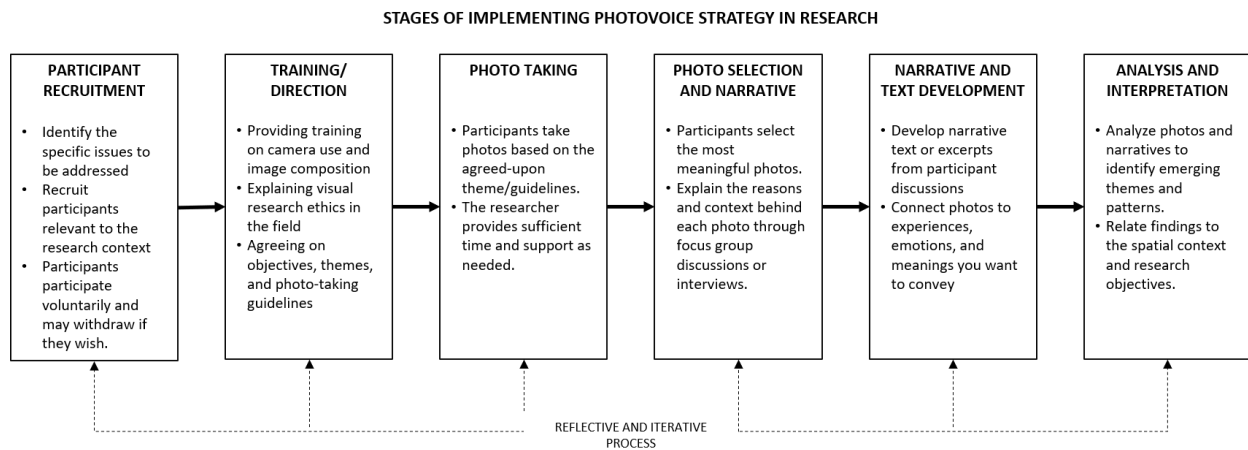


Figure 1 Stages of Implementing Photovoice Strategy in Research
(Source: Authors' synthesis based on the selected studies included in the review)

The method used to interpret photos taken by participants usually uses the SHOWeD method, which is a standard interpretation technique that explores image information based on five critical questions (B. Davis et al., 2024; San-Juan-Escudero et al., 2025; C. Wang & Burris, 1997). The five critical questions are What do you see here? (2) What is really happening here? (3) How does this relate to our lives? (4) Why does this situation way/exist?, and (5) What can we do about it?. Apart from these methods, thematic and content analysis can also be carried out by coding participant narratives to find main patterns, themes and categories, as well as calculating the frequency of appearance of certain visual elements in photo collections (Naghshbandi, 2022; Tarakci & Colucci, 2025). Interpretation is then carried out by connecting the physical features in the photo with the emotions and meanings described by the participants in their narratives (Chinkondenji & Changamire, 2025; B. Davis et al., 2024). Overall, photovoice data analysis does not rely on a single technique, but rather utilizes a combination of interpretive approaches that place participant narratives at the center of visual meaning. This combination of reflective and analytical approaches emphasizes that photovoice is dialogical and contextual, while requiring caution in placing data as a medium of experience represented by participant narratives.

3. METHODS

This study employs a systematic methodological review approach to examine the role and effectiveness of photovoice as a methodological tool in the study of architecture and the built environment. The methodological review guided by the PRISMA framework was chosen to ensure that the process of searching, selecting, and evaluating literature takes place systematically and transparently. The literature search was conducted using the Scopus database as the primary source, supported by a search through Google Scholar to capture interdisciplinary publications relevant to spatial studies. The keyword "photovoice" was used as the main keyword and combined with terms representing the architectural and spatial domains, including "architecture," "built environment," "urban design," "housing," "spatial experience," and "place." The search focused on the title, abstract, and keywords of the articles.

Included articles met the following criteria: published between 2010 and 2025, written in English, from the fields of architecture, the built environment, or urban planning, and explicitly applying photovoice in their research design. The types of publications analyzed included journal articles and conference proceedings. Conversely, articles were excluded if

photovoice was only discussed conceptually without methodological application or had no direct connection to spatial studies. The initial search phase yielded 123 articles after removing duplicates; however, not all were directly related to architecture. An initial screening process through reading titles and abstracts left 49 articles. The selection process then continued with full-text reading, taking into account the clarity of photovoice's positioning, spatial relevance, and depth of methodological reflection. This process resulted in final sample of 21 articles for in-depth analysis, including 12 articles that reflected on the use of photovoice. Figure 2 details the article selection steps based on the PRISMA framework.

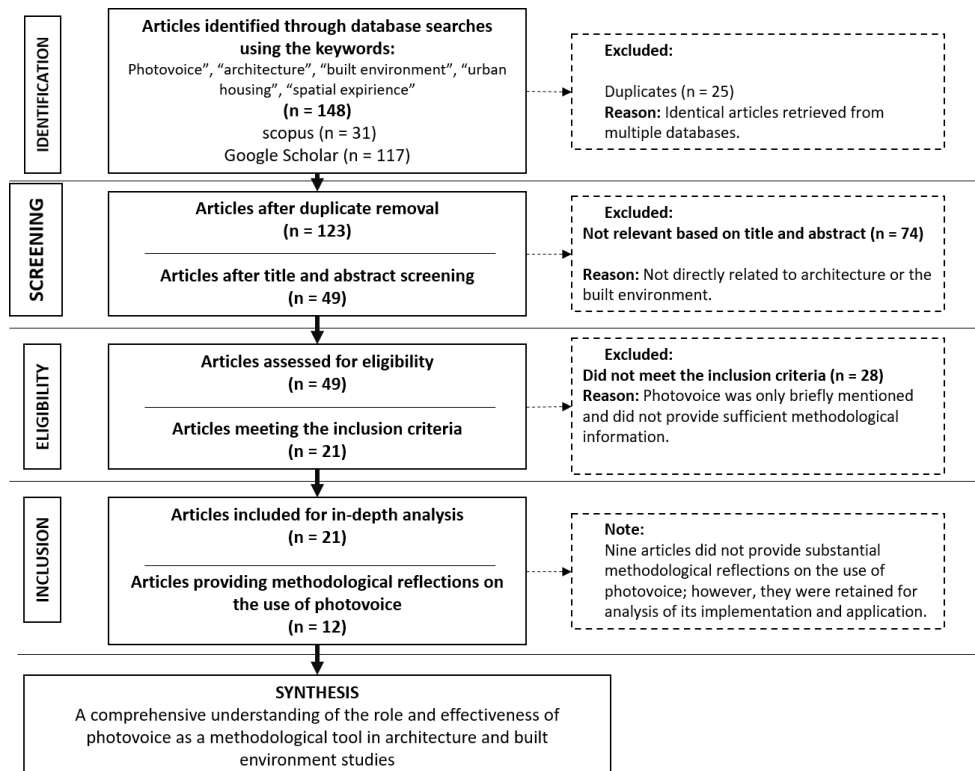


Figure 1 PRISMA Flow Diagram of the Literature Selection Process

Source: Adapted from the PRISMA 2020

The analysis was conducted using a thematic and comparative approach to identify how photovoice is positioned within research design, as well as to examine its methodological strengths and limitations in architectural research. Recurring methodological themes were identified and compared to uncover patterns in the application and contributions of photovoice within architecture and built environment studies. The findings were subsequently synthesized to develop a conceptual understanding of the epistemological orientation of photovoice in the production of spatial knowledge.

4. THE POSITION AND USE OF PHOTOVOICE IN ARCHITECTURAL RESEARCH

4.1. Research Context and Issues

Based on a literature review, issues frequently explored using photovoice in studies of space and the built environment can be grouped into several research focus. The most area of inquiry relate to health, well-being, and therapeutic design, focusing on built environments that actively support the mental and physical health of users (Brückner et al., 2022; Hagerup et al., 2025). Studies within this area explore issues such as biophilic design, as well as the comfort of home environments and healthcare facilities, which influence well-being,

particularly for vulnerable groups (Hagerup et al., 2025). Similarly, the themes of place identity, place attachment, and belonging are also widely discussed. These topics generally focus on the emotional connection between humans and space through memory, meaning, and everyday experiences (Ruggeri, 2014). In these studies, physical space is regarded not merely as a setting for activities but also an integral part of self-identity and the social stability of communities (Greene et al., 2018; Ruggeri, 2014).

Another prominent theme relates to social justice, exclusion, and marginalization, which takes a critical approach to the role of design and spatial policy in producing social inequality (Walimbe et al., 2025). Issues such as hostile architecture towards the homeless, inequitable access to green space for minority groups, and the impact of gentrification that erases traces of local culture have become central to studies in the fight for the right to a more equal city (Hassen, 2025). At the institutional level, photovoice is also used in studies of education, learning spaces, and school inclusion to examine the relationship between the physical configuration of the educational environment and the social and pedagogical dynamics within it (Naghshbandi, 2022; Walimbe et al., 2025)). These studies often highlight the importance of informal or liminal spaces (such as corridors or stairwells) as sites of social negotiation and community building for students, as well as how connections with nature in the school environment can enhance student engagement and well-being (Jørgensen & Allan, 2025; Naghshbandi, 2022; Walimbe et al., 2025).

Beyond thematic issues, some literature also explicitly utilizes photovoice to develop design and spatial research methodologies. This theme positions photovoice as a tool to democratize knowledge production by making participants co-researchers, while exploring technical innovations such as integration with geographic information systems (GIS) and digital mapping to capture richer and more contextual spatial narratives (Brückner et al., 2022; García-esparza & Nikšič, 2024; Naghshbandi, 2022). Another, more specific theme concerns spatial safety and risk. Studies within this theme examine individuals' subjective perceptions of potential hazards in the physical environment based on their experiences and social backgrounds. They also explore differences in perceptions across age and social groups to identify micro-environmental factors that contribute to feelings of insecurity and to inform the design of safer and more inclusive public spaces (D. Davis et al., 2020; K. Wang et al., 2025). Furthermore, studies on urban mobility and physical activity highlight the influence of urban form on the movement behavior and physical health of city residents. The main focus is on the design variables of streets, sidewalks, and public spaces that can encourage or inhibit physical activities such as walking and cycling, including how conflicts in the use of space between transportation modes can impact residents' mobility comfort (Köckler et al., 2024; San-Juan-Escudero et al., 2025).

Based on the literature mapping, it can be seen that the most dominant use of photovoice is directed at issues related to human experiences of space in various social and built environment contexts. The theme of health and well-being emerged as the main focus, followed by studies of place identity and spatial attachment, both of which emphasize the role of the physical environment in shaping psychological conditions, sense of belonging, and quality of life. The themes of social justice, exclusion, and marginalization demonstrate the use of photovoice as a critical tool to reveal spatially manifested power relations, while studies of education, security, and urban mobility emphasize the sensitivity of this method in capturing subjective perceptions and everyday practices that are often overlooked by technical analysis. The inclusion of studies on design methodology and cultural heritage, although more limited in number, indicates an expansion of photovoice's function from a tool for exploring experience to methodological reflection and reading the symbolic and historical

meaning of space. Overall, the distribution of reserach topics suggest that photovoice is most frequently employed to investigate issues that require a deep understanding of meaning, emotions, and social relations in space, rather than in structural or technical spatial analysis.

Thematic Orientations of Photovoice Applications in Architectural Research



Figure 3 Thematic Orientations of Photovoice Applications in Architectural Research

Source: Authors' synthesis based on the selected studies included in the review

4.2. Integration of Photovoice In Architectural Research Strategies

In the various studies reviewed, photovoice is generally not treated as a self-contained research method. Instead, it is more commonly used as visual method embedded within broader qualitative research strategies, including ethnography, phenomenology, case studies, and mixed approaches, particularly in the context of architectural and spatial studies.

4.2.1. Photovoice as a Tool In Ethnography Reserach

Ethnography is a qualitative research approach that seeks to understand social life from the perspective of the people being studied through direct engagement and in-depth observation in their natural contexts (Neuman, 2014). Neuman emphasizes that ethnography seeks to capture the meanings, practices, and patterns of social interaction as experienced and interpreted by members of a group, rather than as interpreted externally by the researcher. In line with the ethnographic goal of understanding social meanings and practices from the perspective of the actors being studied, photovoice is used as a visual tool that allows these experiences to be recorded and reflected upon more contextually by participants.

However, literature findings indicate that the integration of photovoice in ethnographic research is still very limited and methodologically underdeveloped. Existing studies tend to position photovoice as an observational tool for investigating large and geographically dispresed research settings where the researcher's continuous presence is difficult to maintain. In this context, photovoice serves as a partial substitute for participant observation, based on the assumption that participant-generated visual narratives can authentically represent everyday practices and foster cross-cultural empathy. Methodologically, this situation suggests that photovoice in ethnographic research is better understood as a complementary tool rather than a substitute for the core of ethnography. The limited number of studies that integrate photovoice deeply into ethnographic reserach design points to a methodological gap. At the same time, it highlights opportunities for developing more reflactive hybrid approaches that combine participant observation, the visualization of lived experience, and the interpretation of social meaning.

4.2.2. Photovoice as a Tool in Phenomenological Reserach

Phenomenology, as defined by Neuman (2014), is a qualitative approach that seeks to understand the meaning of lived experiences as interpreted by individuals, through their conscious engagement with the world, whiile placing the subject's perspective at the center of analysis. In line with phenomenology's goal of understanding experiences from the internal perspective of social actors, the integration of photovoice allows participants

to record and reflect on spatial experiences that are often emotional, sensory, and difficult to articulate verbally. The reviewed studies show that photovoice within a phenomenological framework is generally combined with interpretive analysis approaches, such as Interpretative Phenomenological Analysis (IPA) or hermeneutic phenomenology, to interpret the subjective meanings inherent in participants' visuals and narratives.

Several studies utilize photovoice to uncover marginalized groups' experiences of built environments that exclude or render them invisible. Davis et al (2020), in their study of Black women's safety and well-being, emphasized the role of photovoice in enabling participants to determine which experiences were most relevant and how those experiences should be interpreted. In the context of urban transformation, photovoice is also used to visualize the impact of gentrification on place identity and collective memory, using a phenomenological approach that seeks to capture the nuances of loss of meaning and emotional attachment to space (B. Davis et al., 2024). Meanwhile, recent studies in healthcare architecture demonstrate that photovoice can be integrated with hermeneutic phenomenology to uncover the bodily, sensory, and affective dimensions of patients that are often overlooked in design evaluations based solely on technical indicators (Hagerup et al., 2025).

Methodologically, these studies demonstrate that photovoice in phenomenological research functions as a tool for articulating experiences, not as a phenomenological method in itself. Participant-generated visual are treated as a medium of reflection, which is then interpreted through a phenomenological framework. Meaning is therefore not assumed to reside in the photographs themselves but is constructed through a process of in-depth interpretation of the narratives and contexts of the subjects' lived experiences. This approach reinforces phenomenology's goal of understanding how space is subjectively experienced, while also expanding the ways in which those experiences can be expressed. However, the limited literature also suggests that the use of photovoice in phenomenology remains selective and contextual. Reliance on visual interpretation may shift the focus of phenomenological inquiry from description of lived experience toward the symbolic representation of experience, particularly when photographs are treated as starting points for analysis rather than as triggers for reflection. Furthermore, not all aspects of phenomenological experience, such as temporality, ambiguity of meaning, or pre-reflective awareness, can be fully captured through the visual medium. Thus, within phenomenological research, photovoice is best understood as a complementary methodological tool that enriches the process of reflection and interpretation, rather than as a substitute for in-depth interviews and sustained phenomenological analysis.

4.2.3. Photovoice as Part of Case Study Research

According to Neuman (2014), a case study is a qualitative research strategy that examines one or more cases in depth to understand social phenomena in their natural context, with the goal of generating rich contextual understanding rather than statistical generalizations. In this context, photovoice is used to deepen understanding of specific spatial cases, whether at the institutional, community, or domestic scale, by generating visual evidence grounded in users' experiences. Several studies have utilize photovoice to bridge the relationship between physical space and its accompanying social dynamics, such as research on campus spaces that links building design to community formation through "student voices" as visual evidence of everyday spatial experiences.

In case studies focusing on urban environments and regional planning, photovoice is used to facilitate participant-centered interpretations of spatial and territorial qualities.

Research in newly developed urban neighborhoods in Vienna demonstrates that resident-generated visuals can help reveal aspects of planning and design that are difficult to capture through technical planning discourse (Guinand et al., 2021). In domestic and work contexts, photovoice plays a crucial role in uncovering spatial relations that are ambiguous and difficult to operationalize quantitatively. Studies on the home as a workplace have shown that photographs and visual narratives can reveal the physical and psychological boundaries between “home” and “work” spaces that are not easily captured through standard questionnaires. Similarly, cross-national research on physical activity in public spaces uses photovoice to collect data from a variety of local cases to identify conflicts over the use of public space in different cultural and policy contexts (Köckler et al., 2024).

In case studies involving children, adolescents, and young people, photovoice is used to challenge institutional and adult perspectives on space. Research on children's right to the city shows that photovoice fosters emotional closeness between researchers and child subjects, while also opening up new perspectives for formulating more inclusive cities. A child-centered approach has also been used to reveal students' connections with nature in school environments through child-centered perspective, revealing the hidden spatial language of school design (Walimbe et al., 2025). A study on the spatial inclusion of adolescents in British schools even gave students full control of the topic to challenge adult assumptions about the use of educational space (Jørgensen & Allan, 2025). A study of young women in Kampala slums integrated smartphone photos with GPS coordinates to map the spatial distribution of urban stressors impacting mental health (Swahn et al., 2025). Meanwhile, research on domestic violence and immigration used photovoice to break the “culture of silence” on taboo issues by visualizing culturally safe spaces of refuge (Tarakci & Colucci, 2025). Furthermore, research on experiences of family care and distance learning during the pandemic demonstrated that photovoice can reveal spatial tensions and inequities occurring in private spaces that often escape policy attention (Chinkondenji & Changamire, 2025; Nagl-Cupal et al., 2025).

Critically, while case studies demonstrate the flexibility of photovoice in a variety of spatial contexts, the method's use tends to focus on enriching narratives and illustrating experiences. Without an explicit analytical framework, there is a risk that visuals function merely as descriptive representations rather than as components of a broader conceptual argument. Furthermore, the contextual nature of case studies limits the transferability of findings, particularly when photographs are separated from the narratives and social contexts surrounding them. Therefore, the literature suggests that photovoice is most effective in case studies when positioned as a supporting tool to deepen contextual and relational understanding of space, and combined with other qualitative methods of analysis to prevent findings from being reduced to mere visual illustrations.

4.2.4. Photovoice As A Tool In Mixed-Method Research

Mixed methods is a research design strategy that pragmatically combines qualitative and quantitative approaches to gain a more comprehensive understanding of social phenomena (Neuman, 2014). A literature review shows that in mixed methods approaches, photovoice is consistently positioned as a complementary qualitative component that serves to deepen, explain, or interpret quantitative findings. This use aligns with the understanding of mixed methods as a pragmatic strategy for addressing the complexity of spatial phenomena that cannot be fully explained by a single type of data. Several studies use photovoice within a methodological triangulation framework,

either sequentially or in parallel, to connect statistical measurements with participants' experiences and meanings of space (Brückner et al., 2022; Morgan et al., 2025).

In many studies, photovoice is used after surveys or questionnaires to reach implicit or tacit dimensions of experience. A study of doctoral student study spaces demonstrated that photovoice can reveal users' ecological and spatial understandings not captured in closed-ended instruments, thus serving as a further exploratory phase in research design (Naghshbandi, 2022). A similar approach was applied in studies of seniors' place attachment and residential experiences, where participant photographs were used to validate or enrich findings from Likert-based scales and online surveys (Nikam et al., 2025). These findings emphasize the role of photovoice in mixed-methods research as an interpretive tool that answers the "why" questions behind quantitative patterns.

Some studies also integrate photovoice with technical and spatial data to generate more comprehensive analyses. Research on the well-being of post-renovation apartment residents combined environmental sensor data with residents' visual narratives to uncover socio-psychological dimensions not captured by technical indicators alone (Morgan et al., 2025). Other studies combine photovoice with GIS mapping, GPS data plots, and street views to analyze perceptions of safety, place attachment, and sense of belonging in a city more precisely (Burgos-Thorsen et al., 2024; San-Juan-Escudero et al., 2025; K. Wang et al., 2025). This integration demonstrates that photovoice can serve as a bridge between subjective experiences and data-driven spatial analysis.

In the context of policy evaluation and built environment impacts, photovoice is used to complement impact assessments and quantitative audits with participants' affective and emotional dimensions. Studies on cultural walking trails and the attractiveness of historical sites show that combining visual narratives with descriptive statistics allows for a more holistic evaluation of spatial quality and architectural meaning. Similarly, research on sanitation and physical activity has used photovoice to accelerate theoretical saturation, uncover physical environmental factors that influence behavior, and increase stakeholder engagement (A. Davis et al., 2018; San-Juan-Escudero et al., 2025).

Critically, however, the literature also shows that the effectiveness of photovoice in mixed-methods approaches depends heavily on the clarity of the data integration design. When the relationship between quantitative and visual findings is not explicitly formulated, photovoice risks serving only as a confirmatory narrative illustration. Furthermore, reliance on visuals to explain statistical findings can oversimplify structural complexity if photographs are treated as direct representations of reality. Thus, these studies confirm that photovoice in mixed-methods approaches is most effective when designed as an analytical tool consciously integrated into a triangulation strategy, rather than simply as a symbolic complement to quantitative data.

5. METHODOLOGICAL REVIEW OF PHOTOVOICE IN ARCHITECTURAL RESEARCH

Photovoice has emerged as a strategy that offers a different way of understanding space through participants' everyday experiences. Through visual data produced by space users, this strategy enables a more contextual and reflective understanding of the built environment. However, its implementation also presents several challenges that need to be mitigated. Figure 4 illustrates the relationship between photovoice's strengths and limitations and how its effectiveness is influenced by the management of the participatory process and the reflexivity of the research.

CO-PRODUCTION OF SPATIAL KNOWLEDGE THROUGH PHOTOVOICE

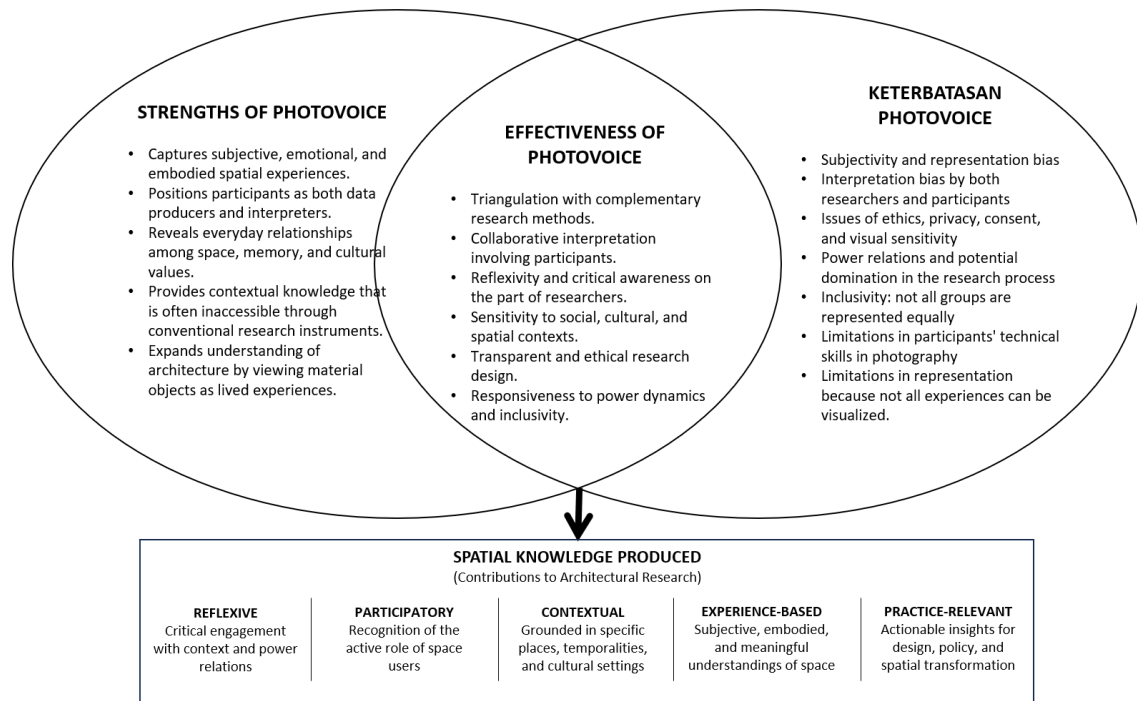


Figure 4 Co-Production of Spatial Knowledge Through Photovoice

Source: Authors' synthesis based on the selected studies included in the review

5.1. Advantages of Using Photovoice

Based on a literature review, the main advantage of photovoice lies in its ability to capture subjective, affective, and contextual spatial experiences, which are difficult to capture using conventional text-based methods, questionnaires, or technical measurements. Several studies have shown that photovoice effectively records users' direct interactions with the built environment in situ, allowing for the documentation of emotions, perceptions, and spatial meanings during the experience, rather than merely as retrospective reflections (Brückner et al., 2022). Another prominent advantage is photovoice's ability to uncover latent and tacit knowledge. Through visuals and accompanying narratives, participants can express their daily practices, imaginations, and spatial aspirations that are often not articulated in closed-ended interviews or surveys. This is evident in studies of doctoral students' learning spaces, residential experiences, and refugee housing aspirations, where photovoice successfully uncovered design failures, cultural incongruities, and spatial needs hidden behind formal verbal responses (Naghshbandi, 2022; Nikam et al., 2025).

From an epistemic perspective, photovoice grants interpretive agency to participants, enabling them to determine what is relevant, meaningful, and worthy of discussion. Several studies confirm that this mechanism not only generates richer data but also deconstructs power relations between researchers and subjects, particularly in the context of marginalized groups such as Black women, migrant youth, children, and long-standing communities impacted by gentrification (A. Davis et al., 2018; B. Davis et al., 2024). In this context, photovoice functions as a tool for telling truth to power, centering the voices of lived experience in planning and design discourse.

Methodologically, photovoice also excels in its flexibility in integration with other approaches, both qualitative and quantitative. Numerous studies have shown that photovoice can be combined with GIS, environmental sensors, Likert scales, and large-scale qualitative and quantitative analysis to build a more holistic spatial understanding (Burgos-Thorsen et al.,

2024; Morgan et al., 2025). This integration allows for the addition of dimensions of meaning and experience to spatial data that were previously technocratic or abstract.

Another consistently emerging advantage is photovoice's ability to capture the embodied and sensory dimensions of space. Numerous studies in health, education, and care have shown that photovoice can reveal how the body, senses, and emotions interact with architectural elements, including spatial atmosphere, spatial transitions, and microenvironmental details often overlooked by adult designers or standard clinical evaluations (Hagerup et al., 2025; Walimbe et al., 2025; K. Wang et al., 2025). Thus, photovoice expands the understanding of architecture beyond mere physical configuration to a lived, bodily experience. The literature also demonstrates that photovoice is effective as a projective and reflective tool, not only for understanding existing conditions but also for imagining possible future designs. In the context of education, healthcare facilities, and community spaces, photovoice allows participants to project ideal spaces, uncover overlooked environmental potential, and identify cultural and philosophical assets that shape place identity (García-esparza & Nikšič, 2024; McLaughlan, 2025). These advantages make photovoice relevant not only as a diagnostic tool but also as a medium for critical reflection in user-oriented design processes.

While the synthesis of 21 articles demonstrates photovoice's excellence in capturing affective and contextual spatial experiences, the literature also reveals methodological limitations that warrant attention. The visual power of photovoice has the potential to produce a confirmatory effect if photographs are treated as direct representations of reality, without critical reflection on the selection processes, direction, and power relations that shape the production of visual data. Furthermore, in mixed methods designs, photovoice often stops at an illustrative function when the integration between visual and quantitative data is not explicitly formulated, so that its contribution to strengthening conceptual arguments is limited. This finding confirms that the effectiveness of photovoice is not only determined by the richness of the data produced, but also by the clarity of the methodological design and the reflexivity of the analysis in interpreting visuals as mediated artifacts of experience.

5.2. Disadvantages Of Using Photovoice

The literature synthesis reveals that the primary issue with photovoice lies in the subjective nature of visual data and its implications for epistemic validity. Various studies have shown that photographs, as a medium for capturing experiences, are heavily influenced by participants' individual perceptions, making the resulting knowledge difficult to generalize or translate into comparable indicators across research contexts (Naghshbandi, 2022; Ruggeri, 2014). In certain contexts, a strong focus on personal experiences can even obscure the political, structural, and intersectional dimensions of space, particularly when photovoice is applied to issues of security, marginalization, and spatial justice (B. Davis et al., 2024; D. Davis et al., 2020). The risk of analytical bias also increases because the interpretation of photos and narratives is highly dependent on the researcher's positionality, particularly when the process is not balanced with reflexivity practices and adequate cross-validation mechanisms (Nikam et al., 2025).

Beyond epistemic issues, the literature also notes various operational and technical challenges in implementing photovoice. Several studies report high time and resource requirements for both participants and researchers, particularly related to repeated image capture, managing large volumes of visual archives, and complex and time-consuming manual analysis processes, which can lead to participant attrition (B. Davis et al., 2024; Naghshbandi, 2022; Nikam et al., 2025). Technical factors such as limited digital literacy, GPS inaccuracy,

weather conditions, and the quality and availability of devices also impact the quality of the resulting visual data (Brückner et al., 2022). These barriers are particularly pronounced for certain groups, such as the elderly, children, and patients in healthcare facilities, where physical limitations, attention spans, and institutional regulations limit the flexibility and completeness of the photo-taking process (Hagerup et al., 2025; K. Wang et al., 2025).

Ethical dimensions and power relations also emerge as recurring issues in the literature. Although photovoice is often claimed to be a participatory method, several studies have shown that final control over photo selection, publication decisions, and narrative framing often remains with the researcher or institution, substantially limiting participant agency (Hagerup). Furthermore, the use of visual media inherently excludes certain groups, such as those with visual impairments or those with limited digital technology, risking the reproduction of ableism in the knowledge production process (Burgos-Thorsen et al., 2024). Emotional tension, participant fatigue, and conflict dynamics across age and social groups have also been reported as challenges during long-term research (D. Davis et al., 2020).

Furthermore, the literature highlights the limitations of photovoice in fully representing the complexities of space. Two-dimensional visual representations are not always capable of capturing the temporal, multisensory, and dynamic character of space, so spatial experiences risk being simplified into mere visual symbols (McLaughlan, 2025). Factors such as time constraints for shooting, overly specific research directions, and the physical conditions of the location also influence the types of visuals produced and the environmental aspects ultimately represented in the data (Morgan et al., 2025; Walimbe et al., 2025). Overall, these findings confirm that while photovoice is effective in revealing the meaning and experience of space, this method has inherent limitations that require caution in claims of its effectiveness and the need to combine it with other methodological approaches.

5.3. Mitigating Obstacles

Several strategies can be implemented to mitigate methodological barriers in the use of photovoice, without eliminating the method's inherent limitations. To anticipate participation challenges and participant fatigue, the literature demonstrates the importance of designing photo-taking as part of participants' daily practices, rather than as an additional task separate from their routines (Lee et al., 2025). Simplifying the burden of participation, limiting the number of photos, and paying attention to participants' emotional well-being can help maintain sustained engagement, particularly when participants are children and vulnerable groups (Lee et al., 2025). Furthermore, building trusting relationships through sustained researcher engagement has been shown to increase participants' depth of reflection and willingness to share their experiences meaningfully (Anderson et al., 2023). These various approaches emphasize that mitigation efforts in photovoice are not solely focused on increasing efficiency, but rather on maintaining the quality of the participatory relationships and the depth of the data obtained. Therefore, the effectiveness of photovoice is determined more by the sensitivity of the research design to the participants' circumstances and capacities, rather than by the intensity or quantity of visual material collected.

Mitigating interpretive bias and analytical complexity is primarily achieved through triangulation and collaborative analysis. Combining photovoice with semi-structured interviews or questionnaires allows for cross-data verification while enriching the context of visual meanings (Tsang, 2020). Group discussions and shared meaning-making processes with participants also play a crucial role in contextualizing photographs and reducing the researcher's one-sided assumptions. Analytical strategies that involve interpreting photographs from both the researcher's and participant's perspectives simultaneously can enhance the credibility and depth of findings. Using a matrix of analytical questions that

considers multiple dimensions of photo production and audience also helps broaden the analytical lens and avoid reproducing power biases (Q. Wang & Hannes, 2020). In reporting, presenting detailed and contextualized descriptions allows findings to remain analytically relevant for similar contexts, even if they are local and specific (Yang, 2023)

Mitigating ethical and inclusion challenges requires careful planning, particularly in sensitive research contexts such as healthcare facilities or minority communities. Assistance during the photo-taking process can help maintain participant privacy and safety, while the use of a local mediator or translator plays a role in ensuring informed and voluntary consent (Ng et al., 2024). This approach emphasizes that mitigation is not merely a technical issue, but rather part of a methodological design that reflects on power relations and the limits of visual representation. Researchers also need to consider power dynamics, fair representation, and protection against potential risks to participants, including in the process of disseminating research results. Sustained community engagement and the application of inclusive participation principles can strengthen trust and empower participants as true collaborators. Furthermore, a robust ethical framework and cultural awareness are key to safeguarding participant well-being and the credibility of photovoice research (Ng et al., 2024).

6. EFFECTIVENESS OF USING PHOTOVOICE IN ARCHITECTURAL RESEARCH

From the results of the selected literature analysis that discusses in-depth reflections on the use of photovoice, the effectiveness of photovoice strategies in architectural research can be revealed. The effectiveness of photovoice in architectural research lies not in its ability to replace established spatial or technical analysis methods, but rather in its capacity to expand the types of knowledge that can be generated about space (Nikam et al., 2025). Photovoice functions as an interpretive tool that adds a dimension of "place" with subjective, affective, and relational meanings, to the understanding of space that has been dominated by objective and technical depictions. In various residential contexts, healthcare facilities, and urban environments, this strategy effectively reveals how space is experienced, perceived, and interpreted in everyday practice, including revealing atmosphere, sense of safety, place attachment, and the tension between design and actual use, which are often reduced to plans, sections, or purely technical parameters (Hagerup et al., 2025; Morgan et al., 2025).

The effectiveness of photovoice is also evident in its ability to bridge the gap between professional knowledge and user experience through participatory photographs and narratives that reveal individuals' perceptions of their environment (Lu et al., 2023). In various studies of architecture and the built environment, photovoice allows participants to articulate spatial qualities that are not easily translated into technical language, while challenging designers' normative assumptions about what constitutes a "good" or "inclusive" space. In this context, photovoice is used as a means to evaluate and reflect on the misalignment that occurs between everyday life practices and existing policies and planning structures.

However, the literature also consistently shows that the effectiveness of photovoice in architectural research is conditional and dependent on its methodological design. Photovoice has proven effective when positioned as an analytical tool integrated with other research strategies, such as in-depth interviews, observation, or mixed-methods approaches, which can provide richer and more comprehensive data. Conversely, when used in isolation or solely as a visual illustration, photovoice's contribution tends to be limited to enriching narratives without strengthening conceptual arguments (Tsang, 2020; Q. Wang & Hannes, 2020). Several reflections also point to risks to the credibility of visual data, such as participants' tendency to capture symbolic and aesthetic moments rather than everyday experiences, and the

potential for a mixture of real and imagined experiences, particularly in research involving children (McLaughlan, 2025).

In architectural studies, the photovoice method is effective for reexamining common assumptions and normative standards regarding the interaction between humans and space. By emphasizing the subjects' empirical experiences, this method provides a critical perspective on design labels that have traditionally been claimed to be universal, neutral, or purely technical. However, this critical dimension can only be realized if researchers are able to manage the dynamics of power relations, maintain a deep sense of reflexivity, and consciously understand the limitations of visual representation. Photovoice risks becoming trapped merely as a documentation tool, rather than a reflective process capable of expanding the foundation of knowledge and our understanding of the world of architecture (Switzer, 2019). Therefore, photovoice is most effectively understood not as an evaluative method that produces standardized measures of spatial quality, but rather as a reflective tool that broadens the epistemological perspective of architectural research. This method supports collaborative knowledge production by engaging community members in the process of meaning-making, uncovering the intangible aspects of place attachment, power relations, and social dynamics.

Overall, the literature suggests that the effectiveness of photovoice in architecture is not an inherent or absolute property, but rather a product of the interplay between the study's objectives, the method's design, and its context. While considered capable of uncovering dimensions of spatial experience often overlooked in technical documentation, this method requires in-depth analytical integration. Without critical reflection on its visual limitations, photovoice risks becoming merely a collection of narratives without a strong conceptual foundation. Thus, its success depends heavily on how the method is situated and accounted for within the research framework.

7. CONCLUSION

This study confirms that photovoice has a strategic methodological position to enrich the breadth of knowledge about space. The literature synthesis demonstrates that this method is capable of uncovering the emotional dimensions of experience, directly felt by the body, and tied to specific contexts. These human elements are often not represented in standard architectural documents such as floor plans, sections, or the physical parameters of buildings. Through this approach, understanding architecture expands beyond mere material objects to a lived experience deeply interpreted through a social and cultural lens. However, the effectiveness of photovoice depends heavily on the researcher's awareness of inherent limitations such as subjectivity, interpretive bias, and issues of ethics and inclusivity. While these barriers cannot be completely eliminated, their impact can be mitigated through careful and transparent research design. Steps such as data triangulation, participant involvement in the analysis process, and sensitivity to power dynamics are key factors. This is crucial for maintaining the credibility of the research without reducing the complexity of the subjects' experiences it seeks to uncover. Ultimately, photovoice reaches its full potential when logically integrated with other research techniques such as in-depth interviews, case studies, or mixed methods. Its primary value lies not in absolute objectivity or standardization of space, but rather in its ability to generate specific and contextual knowledge. Thus, photovoice is not intended to replace established technical analysis, but rather to complement the body of architectural research through a more critical and reflective perspective.

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