

## Review Article

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## Family in the urban context: a conceptual framework for shaping family-friendly urban environments in iran

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### Abstract

Cities, beyond being physical containers, serve as arenas for shaping family relationships, caregiving support, and social interactions. In Iran, however, urban planning remains largely infrastructure-oriented, with limited attention to the needs of women, children, older adults, and multi-generational households—a neglect that undermines well-being, increases psychosocial stress, and exacerbates gender inequalities. Spatial justice and safe access to services, green spaces, and walkable routes can enhance family cohesion and health. Following PRISMA guidelines, this study conducted a systematic review and content analysis of scientific and policy documents (2008–2025). Out of 450 records, 153 eligible sources were quality-assessed and coded in MAXQDA. Data analysis revealed a causal framework in which physical structure and governance, through variables such as accessibility, safety, aesthetics, and sense of belonging, are linked to outcomes including livability, spatial–gender justice, and resilience. The findings highlight the need to reduce car dependency, create intergenerational spaces, and improve environmental quality, while noting that weak intersectoral coordination, bureaucracy, and the gap between policy and practice remain significant barriers. Families must shift from passive consumers of space to active co-designers. To this end, three practical indices are introduced: the Family Accessibility Index (FAI), Family Density (FD), and Care-Gender Justice (CGJ), which are applied to evaluate and guide urban interventions. This toolkit outlines pathways for translating theory into practice, monitoring policies, and institutionalizing family-oriented urban planning. Overall, the results provide a foundation for developing policies and urban designs that prioritize families in Iran and comparable contexts.

### Keywords

Conceptual Model  
Family  
Family-Friendly City  
Family-Friendly Urban Environment

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## 1. Introduction

In recent decades, the city has become a hub for residence and the primary stage for the reproduction of social and cultural relations, as well as the redefinition of fundamental social institutions. The family, as the first and most stable context for socialization and the transfer of social and cultural capital, is more than ever affected by the spatial structure of the city and macro-economic and cultural trends. Giddens (1992) and Beck and Beck-Gernsheim (2002) argue that the family in late modernity has entered a phase of “individualization,” with some caregiving responsibilities being transferred to public policies. Bourdieu (1986) also demonstrated, through the concept of social capital, that the family serves as the engine for the reproduction of social and cultural capital, and disruption in this process threatens social cohesion. From the perspective of social reproduction theory (Fraser, 2016), urban spaces serve as the setting for the production of power relations, the division of labor in caregiving, and the reproduction of gender inequalities. Neglecting these dimensions in urban design and governance can intensify social gaps.

From this perspective, the central question is how the city can support the family’s caregiving and supportive functions. At the level of design and planning, numerous studies have demonstrated that the dominant logic governing cities remains male-centric, with caregiving needs of women and vulnerable groups receiving less attention (Kern, 2021; Wekerle & Kern, 2025). The findings of Brooks et al. (2025) indicate that the inappropriate design of spaces increases the mental load on parents and leads to caregiving burnout. Koen et al. (2021) also showed that the lack of safe public spaces reduces mothers’ social participation. Urban health research (WHO, 2021) emphasizes that the lack of green spaces and safe walking routes weakens physical health, undermines social cohesion, and affects the quality of family relationships. In this regard, the literature on spatial justice (Soja, 2010) emphasizes the equal distribution of spatial opportunities. It considers inequality in access to public spaces as a factor for the reproduction of gender and class discrimination.

Additionally, evidence from social medicine and environmental psychology also highlights the significance of the urban environment for the physical and mental well-being of families. Research shows that high urban density, noise pollution, and a lack of green spaces are associated with anxiety, sleep

disorders, and depression in parents and children (Evans, 2003; Maas et al., 2009; Sugiyama et al., 2021). Family sociology studies have also confirmed that spatial support for caregiving roles strengthens social capital and collective cohesion (Wampler, 2007). In Iran, recent research in urban health has revealed a direct correlation between spatial deprivation, the prevalence of non-communicable diseases, and a decline in household quality of life (Ministry of Health and Medical Education, 2023; National Institute for Health Research, 2022). Simultaneously, environmental psychology approaches and urban studies emphasize the importance of multigenerational spaces in strengthening emotional bonds, reducing isolation among the elderly, and increasing the sense of social belonging (Scannell & Gifford, 2010; Raymond et al., 2017; Manzo & Perkins, 2006; Rosbrook-Thompson & Armstrong, 2019). Domestic evidence has also emphasized the role of such spaces in the cohesion of multigenerational families in Iranian urban contexts.

A critical review of the literature reveals that a unified and indigenous framework for a “family-centric city” in Iran has yet to be presented. This study, with a combined and multi-level approach, seeks to fill this gap and provide a set of applicable indices and components for urban policymaking and planning. The importance of this issue is doubled given the country’s upstream documents, including the Document on Population Transformation and Family Excellence (Supreme Council for the Cultural Revolution, 2021), the National Spatial Planning Program of the Islamic Republic of Iran (Ministry of Roads and Urban Development, 2020), and the General Family Policies (Government of Iran, 2016). In fact, addressing family-centric urban environments not only fills a theoretical gap but can also be a strategic tool for improving the quality of life for households, social resilience, and achieving Sustainable Development Goal 11 (SDG 11)—“Sustainable Cities and Communities” (United Nations, 2015; UN-Habitat, 2020).

Ignoring the family in urban design has consequences, including increased parental stress, social isolation of the elderly, a decline in social capital, and reduced civic participation (Soja, 2010; Wang et al., 2019). While the country’s macro-policies emphasize comprehensive support for the family, the lack of an indigenous conceptual framework and executive indicators for family-friendly cities is a serious gap in urban governance. This study, through a systematic review of

domestic and international scientific sources and content analysis of official documents, provides a comprehensive framework for the family-friendly urban environment in Iran that links physical and spatial dimensions such as accessibility, safety, and the quality of public spaces with software dimensions including supportive policies, spatial justice, and opportunities for social participation (Carmona et al., 2021; Kabisch et al., 2017; Lennon et al., 2022).

Accordingly, the main research questions were formulated as follows:

1. What are the components and indicators of family-friendly urban environments in the global literature?
2. What gaps exist in domestic studies regarding the link between family and the urban environment?
3. How can an indigenous and integrated framework for family-friendly urban environments in Iran be designed?

## 2. Theoretical foundations

### 2.1. Review of International research background

A review of the research background indicates that in recent years, numerous studies have been conducted focusing on "Family-Centered Urbanism." These studies emphasize the importance of urban design and planning with a family-centered approach, demonstrating its key role in improving family life quality and increasing social interactions. Darainda (2018) examined the concept of a "Family-Friendly City" in their research, highlighting its positive effects on family social interactions and consumption needs. This research shows that urban spaces designed for families contribute to increased social satisfaction and a sense of belonging.

Thomas (2019) also investigated high-density urban designs and their impacts on families, showing that urban policies in this area can improve the urban living experience for families by creating safe spaces and providing access to amenities. On the other hand, Gur (2019) emphasized the importance of considering family needs in urban design in a study on family urbanism in Turkey, demonstrating the way family-friendly spaces help strengthen social and cultural bonds. In another study, Willacox (2011) focused on the city of Toronto, examining strategies to encourage the development of residential complexes suitable for families and highlighting the importance of creating complete and balanced communities for families. Gutierrez et al. (2009) conducted a comprehensive study on family-friendly urban planning, using qualitative assessment techniques to show that this

approach has positive effects on the welfare and social interactions of residents.

Similarly, Alston (2023), focusing on New Zealand, presented a framework for assessing and designing family-friendly cities. This research suggests that cities designed with families in mind can be particularly effective in enhancing social satisfaction and welfare. Karsten (2022) examined vertical and family-friendly housing in another study, concluding that this type of housing can enhance the quality of urban life by addressing the needs of families in large cities. Gill (2021), in his book *Urban Playground*, discussed the importance of designing appropriate spaces for children and families, emphasizing that urban planning with a child-centered approach can contribute to the sustainability and salvation of cities. Finally, McAslan (2022) developed assessment tools to measure child-friendly cities, highlighting the importance of neighborhood sustainability for families and emphasizing the need to create spaces that meet their needs.

In addition to the aforementioned studies, Peterson (2020) investigated the impact of public play spaces on family interactions. He demonstrated that access to suitable and safe public spaces for children enhances family social interactions and improves the quality of urban life. This research highlights that cities that prioritize creating and maintaining play spaces are more appealing to families and foster a stronger sense of belonging. Johnson & Reeves (2019) demonstrated, through an examination of the role of urban green spaces in family well-being, that parks and urban gardens not only provide a recreational environment for children but also serve as a space for interaction and strengthening family relationships. This research has shown that green spaces have a direct impact on the psychological and social well-being of families, reducing stress and increasing feelings of peace. Morris (2021), in a study on the impact of flexible urban designs on families, stated that flexibility in space design, including the ability to change uses and utilize multi-functional public spaces, allows families to adapt these spaces to various needs and respond to diverse family requirements. This research suggests that family-friendly cities should create spaces adaptable to the varying needs of families. Scott (2023) also investigated the impact of urban security on family satisfaction, showing that the presence of safe infrastructure, such as proper walking and cycling paths, increases the feeling of calmness and security in families and encourages them to engage in more social

interactions in the urban environment. These findings demonstrate the key role of security in family-centered urban design.

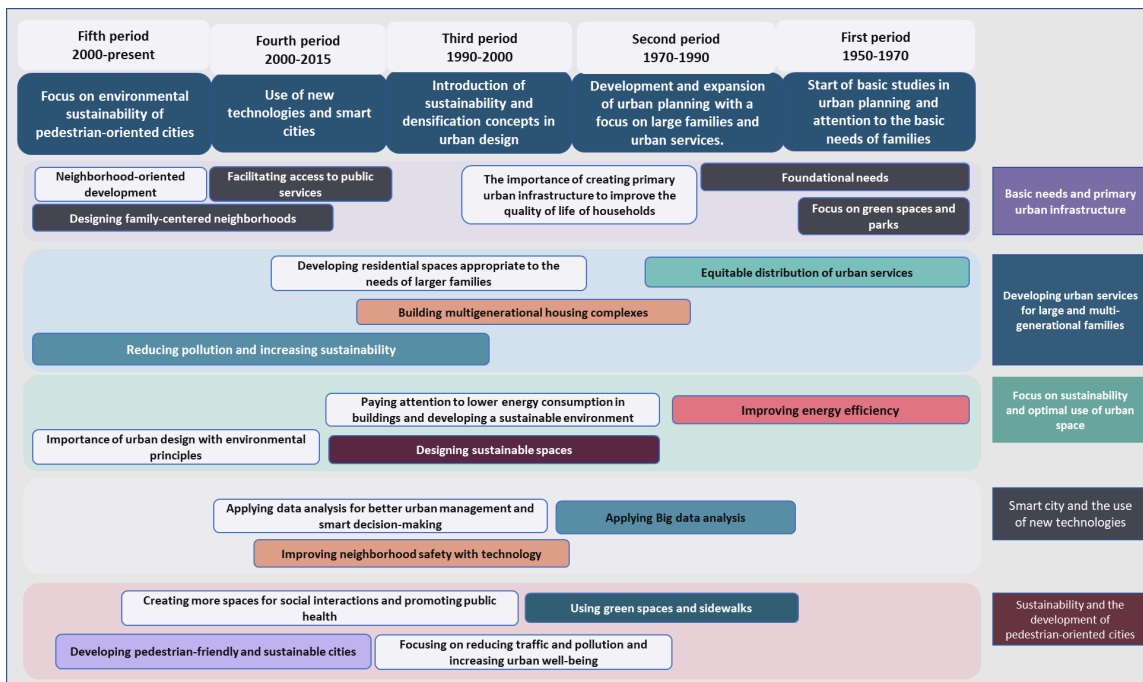


Figure 1. The evolution of urbanism and the family: from basic infrastructure to sustainability and walkable cities.

The research background in the field of urbanism and the family, based on the evolutionary process shown (Figure 1), reflects fundamental shifts in urban approaches tailored to family needs across five time periods. Period one (1950–1970): The focus was on creating basic infrastructure and meeting the primary needs of households. Efforts were directed towards improving the quality of urban life through access to green spaces and essential services. Period two (1970–1990): With population growth and urbanization, attention shifted to the specific needs of larger and multi-generational families. Equitable access to urban services and the design of family neighborhoods were identified as key necessities in urban planning. Period three (1990–2000): This period is marked by the introduction of concepts of sustainability and energy efficiency in urban design. Efforts focused on the optimal use of urban resources and the creation of sustainable, multifunctional spaces. Period four (2000–2015): Technological advancements and the emergence of smart cities created a new vision for urbanism. Utilizing big data for analyzing urban patterns and optimizing resource management has been introduced as a modern tool to improve access to public services and enhance urban security. Period five (2015–Present): The focus on environmental

sustainability and the creation of walkable cities reached its peak. Urban design strategies were adjusted to enhance the quality of life for households by reducing car dependency and increasing access to green spaces.

This evolutionary path indicates that urban approaches in each period have been guided towards more comprehensive and responsive solutions for family life due to their specific social, economic, and environmental conditions (Anderson, 2003; Brown & Smith, 2007; Chen, 2010; Davis et al., 2015; Evans & Jones, 2018; Ford, 2004; Garcia, 2009; Hall, 2012; Johnson & Lee, 2016; Kim, 2019; Lewis, 2005; Miller et al., 2020; Nelson & Carter, 2011; O’Connor, 2013; Patel, 2017; Roberts, 2008; Sanchez, 2014; Taylor & Green, 2006; Walker et al., 2021; Zhang, 2015).

On the other hand, in reviewing the research background concerning “The Family in the Urban Context: A Conceptual Framework for a Family-Friendly Urban Environment in Iran,” an extensive analysis of domestic texts was conducted to clarify the position of family-related studies in architecture and urbanism. This review provided a solid basis for identifying achievements, shortcomings, and areas for development concerning spatial family-centricity in Iran.

In Iran, an extensive analysis of the research literature reveals that, over the past two decades, efforts have been made in areas such as child-friendly, elderly-friendly, or family-centered cities; however, these efforts are scattered and are mainly single-component. For instance, Fani's (2019) research titled "Assessment of Sustainable City with Emphasis on Pregnant Women in District 19 of Tehran" emphasized spatial inequality in the presence of mothers and their special need for safe and accessible public spaces. Although these findings demonstrate the necessity of providing basic services and infrastructure, they have not offered a comprehensive analytical framework for addressing the family structure as a dynamic social unit in the urban space. Additionally, another article reviewing neighborhoods in Isfahan highlighted the pathology of physical distance between home and neighborhood, noting a decline in social capital in newly developed areas. Still, its analysis was more focused on family behavior without a deep connection to urban policymaking.

In the field of family-related studies with an emphasis on children, research such as Rashidkolavir (2020) in Bandar Anzali examined the impact of environmental flexibility on children's creativity and sense of belonging, while studies in Mashhad and Ahvaz focused on indicators and children's sports spaces. Although these works have helped to understand aspects of children's lives in the city, they are often limited to the child dimension, and their connection to the needs of parents or the elderly is less explored.

In the field of elder-centricity, studies such as the article on explaining the physical pattern of an elderly-friendly city in Tehran District 2 (Fani & Hoseinzade, 2017) show a significant spatial weakness in indicators like urban open spaces and public places, with older women being in a more unfavorable situation. Furthermore, research on elderly-friendly cities in Iran until 2050 has shown that the socio-cultural needs and social participation of this group have received less attention.

In summary, domestic literature has focused on various themes such as child-centricity, elder-centricity, women-centricity, or housing; however, a single analytical model that considers the family as a multi-generational system in urban spaces is missing. Upstream documents, including the comprehensive plan, detailed plan, and national family document, have, in some instances, emphasized the importance of the family; however, without being translated into executive policy or an urban design tool, and without

executive or GIS data, they remain at the level of rhetoric. The strengths of domestic studies include an emphasis on security, access, mental health, and the role of play, cultural, or sports spaces; however, these are often examined at the level of individual tools and components, and their combination into a comprehensive family system is often absent. The main weakness is the lack of a native and multi-dimensional conceptual-analytical framework that can simultaneously and integrally examine the physical, social, cultural, gender, generational, and economic dimensions of the Iranian family in the design and measurement of the urban environment.

#### **Family's position in urban studies theory**

In contemporary urban theories, the family is recognized not merely as a space user but as a central actor in the urban experience—a social institution through which daily actions, service consumption, support network formation, and cultural transmission occur. The first indirect reference was made in the 1960s by urban theorists like Jane Jacobs (1961) in "The Death and Life of Great American Cities," who emphasized that lively streets, accessible collective spaces, and intergenerational interactions can create a safer and more humane environment for family life. Bronfenbrenner's "Human Ecology Theory" (1979) is based on the principle that the family is shaped by constant interaction with its surrounding environment, from micro to macro levels. The city's physical and social environment is considered part of the "human development ecosystem." Research by Cuellar and Jones (2015) in the United States revealed that factors such as neighborhood insecurity, a lack of social infrastructure, and inadequate access to educational and recreational services can weaken family cohesion and increase social harm. The "Family Stress Model" (Conger & Elder, 1994) emphasizes the role of the urban environment as a source or factor of psychological pressure for parents. It suggests that economic inequality, occupational stress, and the lack of support services can lead to a reduction in the quality of intra-family relationships. Based on this, urban environments should be designed to reduce the psychological and social pressures on families (Kern, 2021; Brooks et al., 2025).

Modern studies show that high-quality urban design (safe sidewalks, family parks, efficient public transport, and easy access to schools and healthcare) has a direct relationship with increased household satisfaction and improved physical and mental health for parents and

children (Wekerle & Kern, 2025; UN-Habitat, 2020; WHO, 2021). Calthorpe's (2010) work on sustainable living demonstrated that focusing on urban compactness and mixed-use leads to increased interactions among family members and reduces the feeling of isolation among stay-at-home mothers. The "Space and Society" theory (Soja, 1989) critically examines the role of urban spaces in reproducing social inequalities, where lower social classes are often confined to urban areas with limited access to facilities and lower-quality services, which severely impacts their mental health, educational opportunities, and social interactions. The concept of the "Family-Centered Neighborhood" (Talen, 2008) refers to designing environments that meet the diverse needs of families across welfare, education, recreational, and social aspects. The "Supportive Space" theory (Moore, 1986) posits that urban environment design should consider the psychological and social needs of families to provide a suitable context for children's psychological development, reduce parental stress, and strengthen family relationships. Contemporary research suggests that urban planning should be based on inclusive and multidimensional models that consider household diversity, cultural differences, and evolving needs (Sandercock, 2003).

### **The concept of a family-friendly city**

The concept of a "Family-Friendly City" is a modern urban development approach that moves beyond the traditional "Child-Centered City" to address all the diverse needs of family members within a comprehensive and multi-dimensional framework. It emphasizes designing the urban environment to facilitate and enhance the daily lives of families across various dimensions, including economic, social, cultural, and environmental aspects. In essence, a family-friendly city provides the necessary conditions for the healthy and comprehensive growth of family members, creating equal and easy access to required services, spaces, and infrastructure (UN-Habitat, 2020; WHO, 2021). According to Izrael & Warner (2008), a family-friendly city ensures sustainable family welfare by providing key components, such as suitable and affordable housing, quality health and educational care, safe walking paths, extensive green spaces, efficient schools and educational centers, and physical and psychological security. Complementary studies emphasize the importance of environmental design in improving family life quality. Access to green spaces near residences, reduced daily commute time, and the use of multi-functional spaces are key strategies for

reducing stress and increasing household satisfaction (Rukus & Warner, 2013; Kern, 2021). Shadkam & Moss (2021) focused on the quality of walking paths, emphasizing their role in promoting social interactions, a sense of belonging, and mental health beyond their impact on traffic. Urban planning approaches such as the "15-Minute City," "Biophilic Urbanism," and "Smart Growth" emphasize that the urban environment should be organized to provide access to essential services, education, recreation, safe transportation, and green spaces within a short, walkable distance for all family members. Globally, the view has evolved from the "Child-Friendly City" to the "Family-Friendly City," recognizing parents and other family members as primary stakeholders (Smith et al., 2019).

In summary, a "Family-Friendly City," according to prominent experts, is one that:

1. Responds simultaneously to the diverse economic, social, cultural, and psychological needs of family members through smart policymaking and spatial design.
2. Provides suitable and affordable housing, quality health and education services, safe, open, and recreational spaces, and efficient transport infrastructure.
3. Guarantees easy and safe access to educational, care, recreational, and social centers for all age groups.
4. Strengthens opportunities for social interaction, participation in urban decision-making, and a sense of belonging to the place.
5. Aims to improve the physical and mental health of families and fosters sustainable social and economic development.

### **3. Methodology**

The current research employed a systematic review approach to provide a comprehensive, evidence-based overview of the existing literature on the concept of a "family-friendly urban environment." The methodological design was based on the PRISMA 2020 guidelines to ensure that the stages of identification, screening, assessment, and final inclusion of sources were entirely transparent and reproducible. Three main tools were used in this process:

EndNote (for source management and duplicate removal).

Microsoft Excel (for documenting the screening process and quality scoring of sources).

MAXQDA (for maintaining the database of texts and extracting indicators).

### 3.1. Designing the search strategy

The systematic search was designed to cover the maximum number of relevant resources and was conducted over the period from 2008 to 2025, encompassing both contemporary theories and up-to-date policy studies. The search strategy included three principal axes:

1. Family axis: terms related to the structure and function of the family domain (Family, Families, Parenting, Intergenerational, Aging)
2. City and space axis: terms related to the spatial context (Urban, City, Public Space, Neighborhood, Built Environment)

3. Design and policy axis: concepts related to supportive policies and urban design (Family-Friendly City, Family-Oriented Design, Social Infrastructure, Inclusive Urbanism)

Boolean operators AND and OR were used to combine keywords, maintaining the comprehensiveness of the search on the one hand and increasing the accuracy of the results on the other. Additionally, the NOT operator was employed to eliminate common terms, such as “family of curves” or “protein family” in international databases and “plant/animal family” in Persian databases.

**Table 1. Detailed search codes in databases**

Database	Search Code	Explanation and Analysis
Scopus	(TITLE-ABS-KEY (“Family-Friendly City” OR “Family Oriented Urban Design” OR “Urban Family” OR “Multigenerational Spaces”) AND (TITLE-ABS-KEY (Urban OR City OR “Public Space” OR Neighborhood OR “Built Environment”)) AND PUBYEAR > 2007 AND PUBYEAR < 2026 AND NOT TITLE-ABS-KEY (“protein family” OR “family of curves”))	Scopus was selected as the most comprehensive database for the social sciences. The keyword combination was designed to encompass three main themes. Time limits and document type (article and review) filters were applied to ensure quality. The use of NOT eliminates results from basic sciences and increases search precision.
Web of Science	TS= (“Family-Friendly City” OR “Family Oriented Urban Design” OR “Urban Family” OR “Multigenerational Spaces”) AND TS= (Urban OR City OR “Public Space” OR Neighborhood OR “Built Environment”) AND PY= (2008-2025) AND DOCUMENT TYPES= (Article OR Review)	In WoS, the TS field was used to search titles, abstracts, and keywords. The Research Areas filter was used to limit the results to Urban Studies, Sociology, and Public Health disciplines, thereby removing noise from basic science fields.
Google Scholar	“Family-friendly city” OR “family oriented urban design” “public space” urban with year filter 2008–2025 and using negative operators like -biology -“protein family”	Scholar was used for its coverage of grey literature and policy reports. The site operator was used to focus on sources from international organizations (UN-Habitat, WHO, UNICEF). After extraction, results from Scholar were imported into EndNote and deduplicated to prevent the inclusion of duplicate references.
Noormags	“Family-Friendly City” OR “Family-Oriented Design” AND (“City” OR “Neighborhood” OR “Public Spaces”) NOT (“Plant” OR “Animal” OR “Biology”)	Noormags covers Persian resources related to urban planning and sociology. Biological terms were excluded to control for noise. The results primarily comprise domestic scientific research articles.
SID	“Family” AND (“Public Spaces” OR “Neighborhood” OR “City”) AND (“Urban Policy” OR “Social Infrastructure”)	SID was used to retrieve policy-oriented research and valid scientific articles. The document type filter was set to “scientific research articles.”
Civilica	(“Multigenerational” OR “Intergenerational”) AND (“Park” OR “Urban Square” OR “Pedestrian Walkway”) AND (“Family” OR “Parents”)	Civilica was used to gather conference papers; however, only papers with a scientific method and theoretical framework were selected to maintain the quality of the review.

Table 1 illustrates that the search strategy for each database was tailored to its technical capabilities. The use of precise thematic filters and Boolean operators minimized the probability of noise. It ensured that the final results accurately reflect the literature related to “the family in the urban context.”

### 3.2. Article inclusion and exclusion criteria, and selection process

#### a. Theoretical and operational rationale for the criteria

In this systematic review, the “inclusion” of a study was assessed not merely by the presence of keywords, but by the simultaneous fulfillment of three conditions:

(1) an explicit link between family and urban space in the research question or hypothesis, (2) possession of a valid and citable theoretical framework or analytical model, and (3) a specific and evaluable methodology (qualitative, quantitative, or mixed) accompanied by sufficient data. Conversely, “exclusion” was applied when any of the following conditions held: (a) lack of an explicit family-space link (even if both terms were mentioned separately), (b) absence of a theoretical framework or methodology, or (c) insufficient scientific quality (lack of peer review, lack of full text, or lack of adequate evidence/data). This rationale makes the selection concept-led rather than merely keyword-led, thereby reducing the risk of selection bias.

#### **b. Analytical text on inclusion criteria – rationale, operationalization, and implications**

The inclusion criteria for this systematic review were designed to move beyond the co-occurrence of keywords and focus on testable analytical relationships between the family and the urban environment. Accordingly, only studies that met three fundamental conditions were accepted: (1) the presence of a clear conceptual-analytical link between spatial-urban constructs (e.g., accessibility, safety, or spatial quality) and family-oriented outcomes (e.g., well-being, cohesion, or health); (2) reliance on a valid theoretical framework or analytical model to explain the mechanisms; and (3) a transparent and reproducible methodology for assessing the strength of evidence. Furthermore, the adequacy of data relative to the level of claim, the potential for extracting policy or design implications, the appropriateness of scale (from home to city), and attention to the diversity of family structures were also requirements for inclusion. The timeframe 2008–2025 and both Persian and English sources were considered to cover global and local evidence simultaneously; in cases of data duplication, only the more comprehensive version was selected. The entire process was controlled through documentation and parallel review. Thus, the final body of evidence is both conceptually and methodologically valid and transferable, and also possesses practical capacity for generating indicators, policy guidelines, and strengthening implementation applications.

#### **c. Exclusion criteria – precise definition, rationale for omission, and examples**

The exclusion criteria in this systematic review were designed to maintain the precise scope of the study, prevent the inclusion of low-quality or irrelevant evidence, and simultaneously remain sensitive and

fair towards borderline cases. Our approach is concept-led, not merely keyword-led; the presence of the words “family” and “city” in a text is insufficient—there must be a testable analytical relationship between spatial/urban constructs and family-oriented outcomes. Furthermore, to safeguard the validity of the review, sources had to meet minimum methodological standards (design, tools, and analysis) and scientific publication standards (peer reviewability and access to full text).

### **3.3. Timing and application stage of the criteria**

The criteria were applied at three levels:

1. Title: Removal of evident semantic noise and clearly irrelevant items.
2. Abstract: Assessment for the presence of a family-space link, a minimal framework/method, and indications of data adequacy.
3. Full Text: Evaluation of theoretical-analytical coherence, methodological rigor, data adequacy/validity, and policy translatability.

To ensure decision consistency, 20% of the cases were screened in parallel by a second reviewer, and discrepancies were resolved by consensus. All decisions were recorded in an Excel file (Master Log) with the following fields: “Criterion Code,” “Application Level,” and “Reason for Exclusion/Inclusion.”

The resource inclusion process in this systematic review was based on five principles: First, the requirement for a clear analytical relationship between a spatial-urban construct (e.g., accessibility, spatial quality, safety, or greenness) and a family-oriented outcome (well-being, cohesion, health, or work-life balance); mere lexical co-occurrence was insufficient. Second, the necessity of having a theoretical framework or analytical model, as well as a transparent research method; texts lacking theoretical foundations or methods were excluded, except for policy documents that contained operational indicators. Third, scientific adequacy and quality, including valid data, reliable/valid instruments, and appropriate analytical procedures in both quantitative and qualitative studies, in a manner that prevents weak inferences. Fourth, studies with a single-group focus, excluding those with a family perspective, were excluded. This meant that studies focused solely on children or the elderly were only accepted if they involved family or intergenerational interactions. Fifth, control of semantic noise from vocabulary, such as the use of “Family” in biology, was performed through

filtering and manual inspection. The entire process was conducted according to PRISMA guidelines for the 2008–2025 period, including data transfer to EndNote, removal of duplicates, title/abstract/full-text screening, and the documented recording of decisions in an Excel spreadsheet. To ensure consistency, 20% of the sample was reviewed in parallel by a second reviewer, and discrepancies were resolved by consensus. This approach guaranteed the precision, transparency, and reproducibility of the source selection.

In accordance with the PRISMA 2020 guideline, the source selection process was conducted transparently and reproducibly. During the identification phase, a total of 450 records from eight databases were collected for the period from 2008 to 2025. Duplicates based on title/year/DOI were removed using EndNote (72 records), resulting in 378 unique records for screening. To reduce the risk of erroneous exclusion, title screening was performed inclusively, with primary refinement at the abstract level: by applying the inclusion criteria (presence of a testable analytical link between spatial-urban constructs and family-oriented outcomes, reliance on theory/conceptual model, transparent methodology, and indications of data adequacy/validity), 160 records were excluded, and 218 proceeded to full-text assessment. In the eligibility phase, the focus was on theoretical-analytical

coherence, methodological rigor, data adequacy/validity, alignment of data scales, and the translatability of policy and design. Additionally, single-group studies lacking an explicit link to the concept of “family institution/intergenerationally” were excluded. In this stage, 65 records were excluded, resulting in a final corpus of 153 eligible sources selected for analysis. All decisions and reasons for exclusion/inclusion were recorded using standard codes in an Excel file (Master Log). A 20% sample was reviewed in parallel by a second assessor, with finalization achieved by consensus. The inclusion of 2025 items results from a planned search update and is aligned with the “last update date.” Furthermore, all search query strings, date/time of each search execution, and filter settings were recorded and documented in the methodological appendix; to reduce semantic noise, NOT filters were used at the title/abstract level, and domain restrictions (e.g., site:unhabitat.org, who.int, unicef.org) were applied to retrieve valid policy documents. Screening consistency was monitored by calculating inter-rater agreement (Cohen’s  $\kappa = 0.78$ ), indicating a satisfactory level of agreement. This statistic was derived from a sample of 120 coded cases. In cases of discrepancy, discussion between the two coders was undertaken first, and if disagreement persisted, a third arbiter provided the final decision (Figure 2).

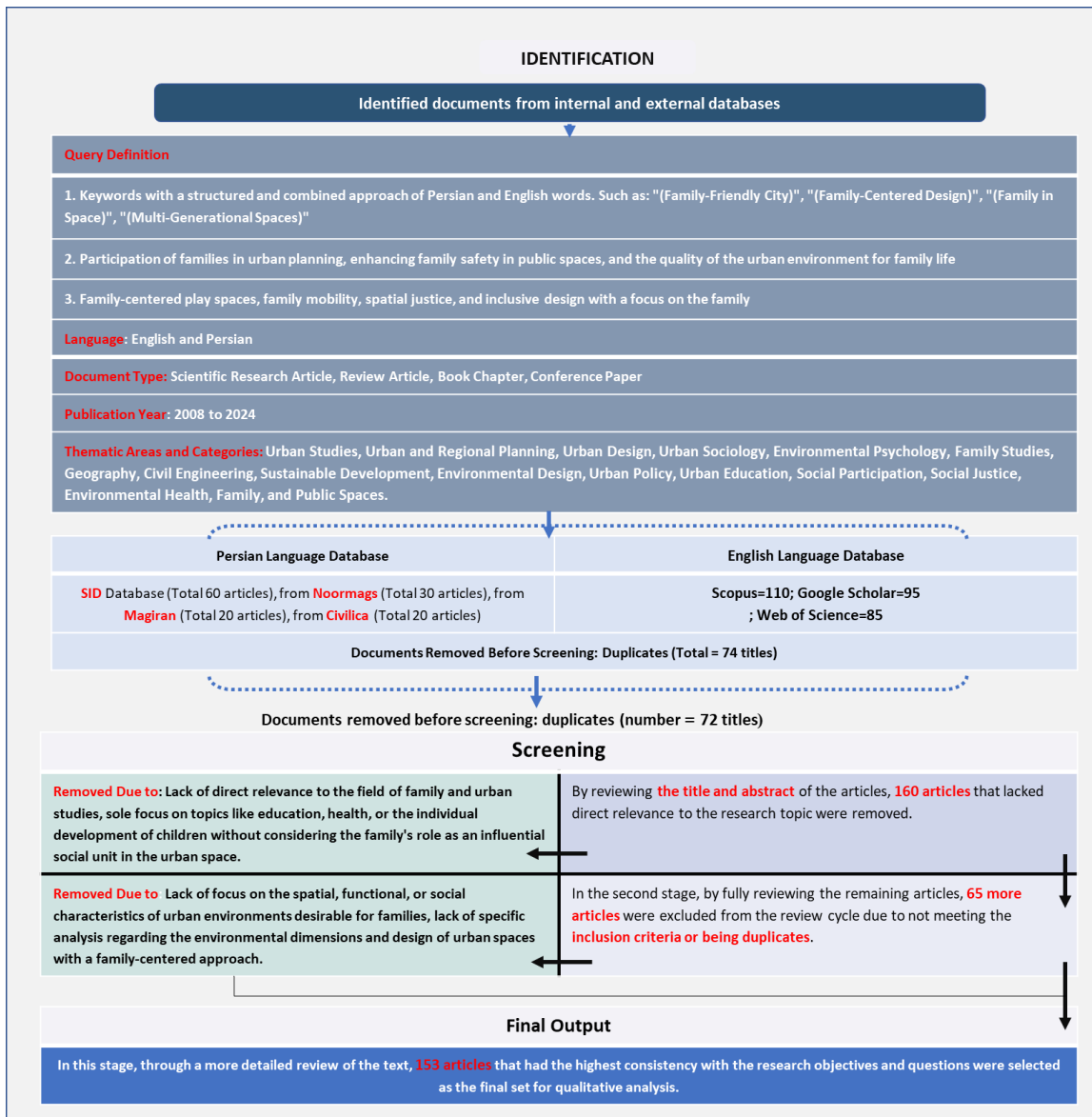


Figure 2. Selection and screening process of study sources based on the prisma model in the field of family-friendly urban environments

#### 4. Research findings

To ensure the validity and trustworthiness of the review and content analysis process, a set of complementary procedures was employed. First, an audit trail was systematically maintained, recording all search strings, inclusion/exclusion decisions (with criterion codes and decision levels), successive versions of the codebook (Codebook v1–v3), and analytical notes, which were timestamped in Excel, EndNote, and MAXQDA. Second, for inter-coder reliability, two researchers independently pilot-coded 15% of the corpus; after calibration and revision of code definitions, inter-coder agreement was calculated

using Cohen's  $\kappa$  (Overall  $\kappa \geq .78$ ; for frequently used nodes,  $\kappa$  ranged from .71 to .85). Discrepancies were resolved through analytical discussion, and the final version of the codebook was ratified; the entire corpus was then re-coded using the stabilized codebook. Third, instead of member checking with participants (which is less relevant for documentary reviews), expert validation was utilized: summaries of categories and operational definitions were sent to a group of experts in urban planning, family studies, and social policy; feedback on conceptual fit, overlap, and gaps was collected systematically and incorporated via MAXQDA memos and codebook revisions. Fourth, for

triangulation of evidence, the convergence/divergence of findings between domestic/international sources, as well as between peer-reviewed articles/policy documents, was examined. Discrepant cases were flagged as negative instances and analyzed separately. Fifth, for temporal stability of coding, a random 10% sample of texts was re-coded after a two-week interval, and the resulting stability coefficient indicated that code assignment was consistent over time ( $\kappa$  stability at an acceptable level).

For instance, to code appropriately, the category of “Perceptual Aesthetics” was iteratively extracted from the texts during the analysis process and documented with verbatim evidence. Short excerpts from the corpus (internal IDs: Q-FA-17, Q-EN-42, Q-EN-58) include: “A visually appealing public space invites families to stay and converse,” “Legible pathways and soft lighting reduce parental anxiety,” and “The presence of greenery and calm water enhances the quality of parent-child interaction.” In MAXQDA, these excerpts were initially tagged with the parent code “Perceptual Aesthetics” and later, during re-coding and codebook calibration (v1 → v3), were differentiated into three sub-codes. Inter-coder reliability for this category in the re-coded sample was  $\kappa = 0.78$ . This body of evidence (documented quotes, code evolution, frequencies, and co-occurrences) demonstrates that the attribution of this concept to the data is auditable, replicable, and analytically stable.

#### 4.1. Historical distribution of articles based on annual average and thematic content

Analysis of the temporal trend in Family-Friendly City research from 2008 to 2025 reveals that attention to family-oriented components has gradually increased, and in some areas, has shown a sharp rise. During the initial period (2008–2010), approaches were primarily descriptive and focused on cultural dimensions. However, from 2010 onwards, topics such as the design of multigenerational spaces and family-oriented urban services experienced significant growth, indicating a shift from a symbolic perspective to a functional design approach. During 2015–2020, foci like family-oriented urban policymaking and affordable housing became prominent, linked to concerns about social justice and housing inequality. In the recent period (2020–2024), nearly all components have experienced growth, particularly psychosocial safety, gender and parenting in space, and age-friendly coexistence—signaling the maturation of the family-oriented city discourse and a growing attention to intersectional and interdisciplinary dimensions. Finally, the emphasis on themes such as spatial justice and the role of culture and religion underscores the necessity for contextualizing theoretical frameworks, especially in countries like Iran.

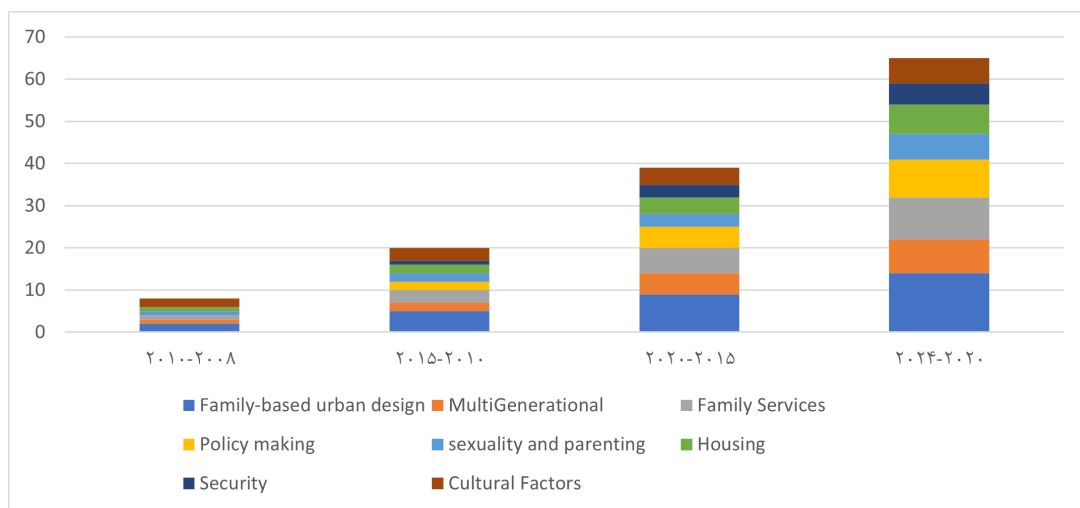


Figure 3. Trend in the evolution of key topics in family-friendly city studies (2008 – 2025)

#### 4.2. Geographic distribution of study sources

An examination of the geographical distribution of “Family-Friendly City” studies between 2008 and 2025 reveals that approximately half of the sources originate

from Iran and the Persian-speaking world. This signifies both the relative richness of the domestic literature and the shared concern of Iranian academics and policymakers.

Among international sources, Europe and North America hold the largest share. Northern Europe has primarily focused on social welfare and participatory design, while North America has concentrated on inequality, urban policy, and the diversity of family

structures. Non-Iranian Asian studies have emphasized culture and familial changes in densely populated cities, and research from Australia and New Zealand has stressed human-centered and neighborhood-centric design (Figure 4).

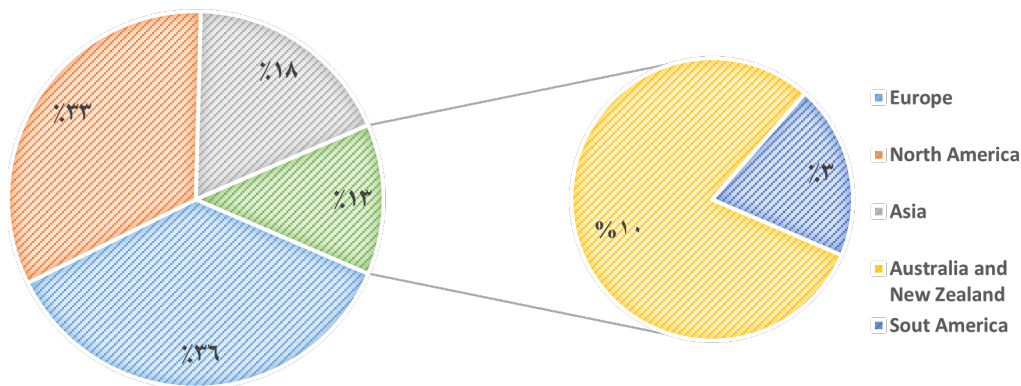


Figure 4. Geographic distribution of family-friendly city studies in scientific sources (2008 – 2025)

#### 4.3. Systematic content analysis of academic and policy sources in the field of family-friendly cities

In recent years, the concept of a “Family-Friendly City” has evolved beyond scattered recommendations into an integrated framework that simultaneously encompasses physical and accessibility dimensions, socio-cultural networks, equity and safety, housing economics, and local governance. In the global literature, intergenerational design, neighborhood-based services, and reducing “time poverty” by consolidating functions are prominent. In contrast, the Iranian local interpretation emphasizes translating values such as privacy (Mahramiyat), dignity (Veghar), and nature-orientation (TabiatGherayi) into the language of design and the role of local institutions. The synergy of these two perspectives yields a framework that facilitates safe daily interactions, intergenerational care, and the meaningful utilization of public spaces.

The article’s innovation lies in proposing “Family Accessibility Indicators” as an alternative to purely technical measures, and in emphasizing institutional requirements such as family-centered budgeting, Family Impact Assessment (FIA) for projects, assigning roles to parents, and translating cultural values into design principles. This approach, by filling the gap in Iranian literature, outlines the path from symbolic solutions to coordinated and sustainable actions in daily life. This comparative analysis provided a deeper understanding of the theoretical origins of the family-centered city, allowing for the recognition of both

overlaps and research gaps. Furthermore, the diversity of thematic areas in the reviewed articles, ranging from urban policy and spatial justice to architectural design and social services, demonstrates the multi-dimensional nature of the Family-Friendly City concept. This conceptual breadth underscores the necessity of a cross-sectoral and integrated approach to analyzing and formulating family-centered policies within the urban context.

The open codes extracted in this section provide a comprehensive and multifaceted picture of the factors influencing the formation of a Family-Friendly City, organized based on diverse domestic and international studies in the fields of urban planning, architecture, health, and sociology. These codes indicate that achieving a suitable urban environment for families requires simultaneous attention to physical, social, psychological, and policy dimensions. From the perspective of physical dimension, key components include public spaces that are compatible with cultural and religious values, flexible and context-sensitive architectural design, ensuring security, appropriate daylighting, and creating recreational and sports facilities in neighborhoods. The adaptability of residential spaces to the varying needs of family members across different ages and conditions is also of particular importance. In the Socio-Cultural Dimension, Cohesion and interaction among family members and neighbors, collective participation in urban planning, support for family relationships, and strengthening the social and cultural capital of families

play a prominent role. A notable point is the attention to gender dimensions, cultural identity, and the redefinition of family roles in contemporary cities, which increases the resilience and stability of family structures. From the Psychological and Health Dimension perspective, the urban environment must provide a setting that fosters peace, mental security, and physical health for all family members, especially pregnant women, children, and the elderly. This dimension emphasizes psychological support and the creation of low-risk, supportive spaces that enhance the quality of family life. In the field of Policymaking, facilitating access to suitable housing, promoting social equity, designing support programs for vulnerable families, and establishing service infrastructures aligned with family needs are highly important. Urban policies specifically focused on preserving family structure, increasing family participation in local decision-making, and creating safe and accessible public spaces can play a crucial role in developing a Family-Friendly City.

In this research, the body of literature was collected through a systematic and auditable procedure and then transformed into a network of base codes using open coding in the MAXQDA software. At the next level, these codes were converged within the framework of axial coding, focusing on mediating mechanisms and moderating conditions. Finally, through selective coding, they were formulated into a unified ecosystemic model where the relationship between physical and policy variables, on the one hand, and perceptual experience, family actions, social capital, and livability outcomes, on the other, is represented in a causal and testable manner. Trustworthiness measures, including an audit trail, inter-coder agreement, and expert review, prevented the analysis from halting at the level of scattered propositions while enabling the precise connection of literature and data within specified mechanisms.

The theoretical framework is based on the integration of three layers: the Structural Layer of design and planning (form, density, land-use mix, standards for accessing care nodes), the Perceptual-Experiential Layer as a mediator (perceived safety and aesthetics, legibility of routes, sense of place attachment), and the Behavioral-Social Layer at the family and neighborhood scale (parent-child interaction, intergenerational bonds, participation, and collective efficacy), which leads to outcomes such as spatial and gender equity, resilience, and life satisfaction. The

moderating roles of the family life cycle, gender, and economic-spatial status are also specified in the intensity and direction of these pathways. Thus, the present framework is not a juxtaposition of propositions but an explanatory system that simultaneously incorporates mechanisms, measures, and policy levers.

#### Research Innovation and Operational Metrics

The innovation of this research lies in the fact that the link between urban physical form and governance, as well as family life, has not remained at the level of normative recommendations but has been translated into measurable and applicable indicators. The three operational metrics are:

##### A) Family accessibility index (FAI)

This index measures the ratio of the number of urban services accessible to the household (such as green spaces, educational, and care centers) to the total defined needs within a 10 to 15-minute walking radius.

- Required data: Spatial information (GIS) of service distribution and household demographic data.

- Example: If a household in a neighborhood needs four types of essential services and only three are available within the standard access radius, the FAI value will be 0.75.

- Validity check: Comparison of results with field data on household perception of accessibility.

$FAI = (\text{Number of Accessible Services for the Household}) \div (\text{Total Required Services})$

##### B) Family density index (family density)

This index represents the ratio of the number of resident households per unit area (e.g., hectare or urban block) to the capacity of supportive services and infrastructure within the same area.

- Required data: Population and household statistics, service capacity (schools, care centers, parks).

- Example: If 200 households live in a neighborhood, and the service capacity is designed for 100 households, the Family Density Index will be 2 (indicating double pressure).

- Validity check: Comparison with congestion and service quality indices in urban surveys.

$\text{Family Density} = (\text{Number of Households per Unit Area}) \div (\text{Existing Family Service Capacity})$

##### C) Care-gender justice index (CGJ)

This index measures the relative share of women and men in performing family care duties and their ratio to equal opportunities in utilizing urban spaces and services.

- Required data: Household Time Use Survey data and access to urban spaces (GIS/Perception Survey).

- Example: If women perform 70% of the care duties and men perform 30%, the CGJ value is 0.60 (indicating high inequality).

- Validity check: Comparison with official gender equality indices (such as the Gender Gap Index) at the city or national level.

$CGJ = 1 - \left| \frac{\text{Share of Women's Care Time} \div \text{Total Care Time} - \text{Share of Men's Care Time} \div \text{Total Care Time}}{2} \right|$

1. Spatio-social ecosystem of the family-centered city: This core category establishes a structured link between spatial form/organization, density regimes, land-use mix, and family accessibility metrics on one side, and the perceptual experience of space—perceived safety and aesthetics, route legibility, and sense of belonging—on the other. Its rational basis rests on the ideas of legibility/imageability and the urban economics of attention: reducing the “time-cognitive cost” of accessing care nodes and collective spaces increases “dwell time” and “quality co-presence,” thereby strengthening opportunities for parent-child interactive actions and intergenerational bonds (Lynch, 1960; Gehl, 2010; Carmona et al., 2021). The intensity and direction of these effects are systematically moderated by the family life cycle, gender, and economic and spatial status (Rossi, 1955; Clark & Onaka, 1983; Lewicka, 2011).

2. Relational, family-based governance: The micro-social capital within families—trust, emotional support, and mutual care—when translated to the inter-organizational scale through parental representation, neighborhood institutions, and participatory budgeting, transforms into neighborhood cohesion, collective efficacy, and decision legitimacy (Coleman, 1988; Putnam, 2000; Wampler, 2007; Cabannes, 2004). In this analytical system, social capital is not just an outcome; it is a governance lever that reinforces the mediating effect of perceived safety/aesthetics on the collective maintenance of space, participation, and public problem-solving (Sampson et al., 1997; Forrest & Kearns, 2001).

3. Context-congruent architecture of family life experience: Micro-spaces that facilitate socialization at the unit-building-block scale—monitorable semi-public seating areas, green balconies, and shared kitchens—multiply micro-contacts by regulating emotions and reducing care-related stress, translating the sense of place attachment into comprehensive satisfaction with life quality and family cohesion

(Oldenburg, 1999; Whyte, 1980; Scannell & Gifford, 2010). The restorative quality/psychological renewal derived from views and greenery also feeds this pathway (Kaplan & Kaplan, 1989; Hartig et al., 2014; Twohig-Bennett & Jones, 2018).

4. Environmental crime prevention design linkage: Applying CPTED principles with family-centered sensitivity—lighting continuity, legible signage, edge-to-edge visibility—reduces the “environmental surveillance burden” on parents and mitigates “fear of crime,” consequently increasing dwell time and intergenerational use of space, turning school routes, playgrounds, and care nodes into safe territories for interaction (Newman, 1972; Cozens & Love, 2015; Jacobs, 1961; Pain, 1997).

5. Life-cycle aligned and flexible housing harmonization: Security of tenure, typological flexibility, and proximity to care services, integrated as a policy, turn “Family Density”—instead of persons/hectare—into the decision variable for aligning service capacity with family life stages. The outcome is reduced care costs and increased collective presence in the neighborhood (Rossi, 1955; Glaeser & Gyourko, 2018; Desmond, 2016). This logic is reinforced by land-use mixing and accessibility standards (Cervero & Kockelman, 1997; Ewing & Cervero, 2010).

6. Organization of socialization-oriented collective spaces: Smart territoriality, sacred-natural signs such as light, water, and plant life, and the home/nature connection in organizing intermediary spaces, reinforce brief encounters, informal surveillance, and good neighborliness, embedding family culture/meaning into the physical form (Gehl, 2010; Carmona et al., 2021). The continuity of private-public gradients and local patterns of sitting and talking are prerequisites for the effectiveness of this mechanism (Whyte, 1980).

7. Participatory budgeting and co-production of services: Continuous family participation in the cycle of understanding, planning, implementation, and monitoring enhances procedural justice and the sustainability of space maintenance. Institutionalizing a “Family Seat” in the neighborhood council and linking it to participatory budgeting creates a feedback loop that reinforces the quality of space experience, service satisfaction, and institutional responsiveness (Wampler, 2007; Baiocchi & Ganuza, 2014).

8. Care-gender justice: Gender acts as a structural moderator in patterns of spatial utilization. The proximity of care services, increased perceived safety during varied hours, and the removal of regulatory

discrimination enhance the social participation of women—especially mothers—and improve the quality of parental relationships (Kern, 2020; Ceccato, 2012; UN Women, 2017). These changes are auditable through the Care–Gender Justice Index.

9. Sustainable family housing-economy: The ratio of housing cost to income determines the intensity of the effect of perceptual and accessibility mediators on family satisfaction and participation. Market regulation, targeted facilities, and connection to the local economy curb rental pressure and enable the actualization of the positive effects of physical form and services (Glaeser & Gyourko, 2018; Desmond, 2016).

10. Relational, family-centered smartening: The city’s digital layer is value-adding when it becomes an “infrastructure for coordinating care and the spatio-temporal alignment of activities”: local online services,

on-demand mobility, and peer-support platforms, contingent on digital inclusion, data protection, and algorithmic neutrality, reduce the time cost of care and increase family participation in local decision-making (Townsend, 2013; Kitchin, 2014; van Dijk, 2020).

Alongside these categories, the perceptual mediators of safety, aesthetics, and belonging, as well as the moderators of the family life cycle, gender, and economic-spatial status, are the axes connecting the literature and evidence to the integrated conceptual model. From this perspective, the proposed framework is not merely an aggregation of propositions but an explanatory system with clear causal relationships and operational metrics that are ready for embedment in urban policy and practice (UN-Habitat, 2020; WHO, 2015; UNICEF, 2018).

**Table 2. Qualitative content analysis table: identifying categories and subcategories related to family in urban policymaking**

Dimension	Subcategory	Category	Frequency	Repetition Percentage
Physical-Spatial Dimensions	Redefining public spaces as reproducers of family values	Family-Centric Socio-Spatial Ecosystem	1	0.003
	Multi-generational sports and recreational centers focus on family interaction.		2	0.007
	Neighborhood planning based on the family as the fundamental unit of planning		3	0.01
	Parent-accompanied play in the design of children’s spaces		1	0.003
	Intergenerational coexistence in the organization of urban spaces		2	0.007
	Family accessibility index in urban environment assessment		1	0.003
	Housing appropriate to the family life cycle		2	0.007
	Family attachment to place in spatial identity		1	0.003
	Perceptual aesthetics as a mediator of family relationships		3	0.01
	Family-centric urban form as an organizer of social relations		4	0.01
	Flexible spaces adaptable to changing family structures		3	0.01
	Green spaces as a factor for family social cohesion		1	0.003
	Morphological design integrated with family needs		2	0.007
	Urban privacy centered on family needs		3	0.01
	Family density as a new urban planning indicator		4	0.01
	Interactive playgrounds for children and parents		1	0.003
	Integrated support services specific to families		2	0.007
	Family-centric interior design for enhancing quality of life		1	0.003
Redefining public spaces as reproducers of family values	2	0.007		
				Total Percentage: 12.30%

Dimension	Subcategory	Category	Frequency	Repetition Percentage	
Family and Social Capital	Strengthening social capital in the context of family relationships		3	0.01	Total Percentage: 15.10%
	Empowerment and social cooperation of women in urban space		2	0.007	
	Recreation and sustainability of kinship relations in the urban environment		4	0.01	
	Interactions between households as a factor in neighborhood cohesion		2	0.007	
	Sustainability of family structure in the face of urban developments		3	0.01	
	The place of the family in urban decision-making processes		5	0.01	
	Strength of parental relationships and educational function	Relational Family-Based Governance	2	0.007	
	Intergenerational communication in social bonds		8	0.02	
	Family resilience against urban challenges		1	0.003	
	Family participation in supervision and child-rearing		3	0.01	
	Kinship networks in housing selection and location		2	0.007	
	Mutual emotional support within families		7	0.02	
	Accumulation and transmission of family cultural capital		5	0.01	
	Strengthening members' self-esteem through urban environmental quality		1	0.003	
	Mutual support between generations in urban life		2	0.007	
Reduction of family conflicts and tensions in the urban environment		3	0.01		
Quality of Life and Lifestyle	Lifestyle styles compatible with the social context	Context-Conscious Family-Centric Experience Architecture	1	0.003	Total Percentage: 12.30%
	Joy, tranquility, and meaning in the family living experience		2	0.007	
	Satisfaction with the comprehensive quality of urban life		4	0.01	
	Strategic attention to the needs and expectations of the new generation		5	0.01	
	Responsiveness of the housing system to family requirements		3	0.01	
	Flexible family structure in the face of social changes		6	0.01	
	Multi-functional spaces centered on the family		4	0.01	
	Efficient living environment for all age groups		2	0.007	
	Compatibility of urban design with the daily needs of families		1	0.003	
	Physical diversity in residential units suitable for families		1	0.003	
	Preservation and reproduction of fundamental family values		6	0.01	
	Use of cheerful colors as enhancers of family relationships		2	0.007	
	Coexistence of families in connection with nature		1	0.003	
	Sense of place belonging within the framework of family identity		7	0.02	
	Feeling of individual satisfaction within the context of family life		6	0.01	

Dimension	Subcategory	Category	Frequency	Repetition Percentage	
Family-Centric Policy and Planning	Comprehensive safety in urban public spaces		2	0.007	
	Systematic reduction of family risk factors		1	0.003	
	Enhancement of safety-enhancing lighting and visual cues		3	0.01	
	Design of crime and injury-detering environments		1	0.003	
	Exceptional protection and care for children in urban spaces		4	0.01	
	Sustainable security in families' access to services		3	0.01	
	Application of environmental protection patterns in urban design	Integration of Preventive Environmental Design	2	0.007	Total Percentage: 10.40%
	Establishment of spatial order in the city's physical structure		1	0.003	
	Creating a balance between risk levels and environmental opportunities		1	0.003	
	Ensuring social security for women and mothers		2	0.007	
	Resilient urban planning in crisis conditions		1	0.003	
	Structural support for high-stress families		1	0.003	
	Design of structures resistant to pressure and stress		2	0.007	
	Strengthening social structures as a protective shield		2	0.007	
Islamic Architecture and Iranian Culture	Housing policy aimed at strengthening family foundations	Alignment of Lifecycle-Oriented and Flexible Housing	4	0.01	Total Percentage: 05.90%
	Structural support for multi-child families		5	0.01	
	Creation and expansion of comprehensive childcare facilities		2	0.007	
	Development of transportation infrastructure with a family-oriented approach		3	0.01	
	Equitable access of families to social services		2	0.007	
	Urban planning is compatible with diverse family lifestyles.		1	0.003	
	Increasing active family participation in the urban design process		4	0.01	
	Creating a balance between the realms of work and family life		3	0.01	
	Flexibility of housing models in the family life cycle		5	0.01	
	Promotion of family livability indicators in the city		2	0.007	
Participation and Urban Decision-Making	Targeted support for families in central urban areas		8	0.02	
	Pattern making in Islamic architecture with a family-oriented approach		2	0.007	
	Preservation of human values in the urban physical fabric		1	0.003	
	Recreating Islamic identity in the spatial structure		1	0.003	
	Strengthening good social interaction (husn-e mo'asherat) in the organization of collective spaces	Organization of Socialization-Friendly Collective Spaces	4	0.01	Total Percentage: 05.60%
	Introverted architecture as a supporter of family cohesion		1	0.003	
	Strength and continuity in the family-centric spatial structure		2	0.01	
	Manifestation of spirituality in the design and form of buildings		1	0.003	
	Application of Islamic motifs in family living spheres		2	0.007	
	Use of Quranic verses and natural symbols in environmental design		1	0.003	
The connection between house and nature in family living patterns		4	0.01		

Dimension	Subcategory	Category	Frequency	Repetition Percentage
Spatial and Gender Justice	Active family participation in the urban design process	Participatory Budgeting and Co-production of Services	1	0.003
	Urban planning based on family needs and functions		1	0.003
	Presence of parents in local decision-making processes		3	0.01
	Role-playing of neighborhood institutions in the urban decision-making process		2	0.007
	Family cooperation in shaping and organizing public spaces		1	0.003
	Effective participation in urban regeneration processes		4	0.01
	Strengthening urban social capital through family participation		1	0.003
	Constructive interaction of the family with the spatial structure and organization of the city		3	0.01
				Total Percentage: 04.30%
Family and Urban Economy	Gender justice in benefiting from urban spaces	Care-Oriented Gender Justice in the City	1	0.003
	Creating equal opportunities at the neighborhood level for all groups		2	0.007
	Facilitating mothers' access to local services and infrastructure		1	0.003
	Responsiveness of urban design to the needs of women and children		3	0.01
	Physical and institutional support for the role of motherhood in urban spaces		1	0.003
	Elucidating the impact of gender on patterns of space utilization		2	0.007
	Reduction of structural discrimination in spatial policy		1	0.003
Strengthening women's independence and agency in urban environments	2	0.007		
				Total Percentage: 04.60%
Technology and Smart City	Providing low-cost housing for family sustainability	Alignment of Supportive Household Economic Policies with Market Regulation and Provision of Low-Cost Housing	4	0.01
	Supportive economic policies in the family domain		5	0.01
	Creating household economic balance in the urban context		2	0.007
	Management of family resources in urban migration processes		1	0.003
	Equitable family access to housing appropriate to their budget		1	0.003
	Strengthening the local economy through housing policies		1	0.003
Role-playing in the housing market in consolidating the family foundation	6	0.01		
				Total Percentage: 01.00%
Technology and Smart City	Smart city as a platform for enhancing family quality of life	Family-Centric Relational Smartification	2	0.007
	Impact of the virtual city on the dynamics of family relationships and functions		1	0.003
				Total Percentage: 08.30%

## 5. Discussion and conclusion

The findings of this research suggest that the relationship between urban form/governance and family life is mediated through perceptual and experiential mechanisms. Specifically, "perceived safety and aesthetics," "pathway legibility," and "sense of place attachment" act as mediators, reducing the

temporal and cognitive costs for families to access care nodes and collective spaces, thereby increasing "dwell time" and "quality co-presence." This formulation goes beyond describing the co-occurrence of codes to the level of causal explanation: the arrangement of form, density, and mixed uses only leads to family cohesion and neighborhood social capital when aligned with

family accessibility indicators and a perceived experience of safety and desirability. Theoretically, the results align with the tradition of urban legibility and imageability but extend it to the family domain: legibility is not merely a visual quality but also reduces the “environmental monitoring burden” on parents and enhances parent-child interaction. Furthermore, the relationship between the results and the literature on “living in public spaces” becomes clear: presence and activity in space translate into meaningful family life when, at the micro-scale of a unit-building block, they are translated into sub-spaces that are socialization-friendly, monitorable, and multifunctional. On the other hand, social capital literature, emphasizing trust and networks, typically takes the neighborhood or city level as the unit of analysis; this research, by showing the familial roots of

social capital, formulates the “family” as the micro-foundation of collective efficacy and shows the path of its transmission to the institutional scale of the neighborhood through parental representation and participatory mechanisms. The relationship between the results and urban safety is also not confined to the crime prevention framework; by adding a family-sensitive lens, perceived safety becomes an intermediate variable that enhances dwell time and intergenerational use of space. In this regard, the findings do not refute but rather complement and reinforce prevalent patterns of “family-centric” urban legibility, where urban legibility becomes “care-based legibility,” public life becomes “family co-presence,” social capital becomes “relation-based family-centric governance,” and CPTED is elevated to “family-centric CPTED” (Figure 5).

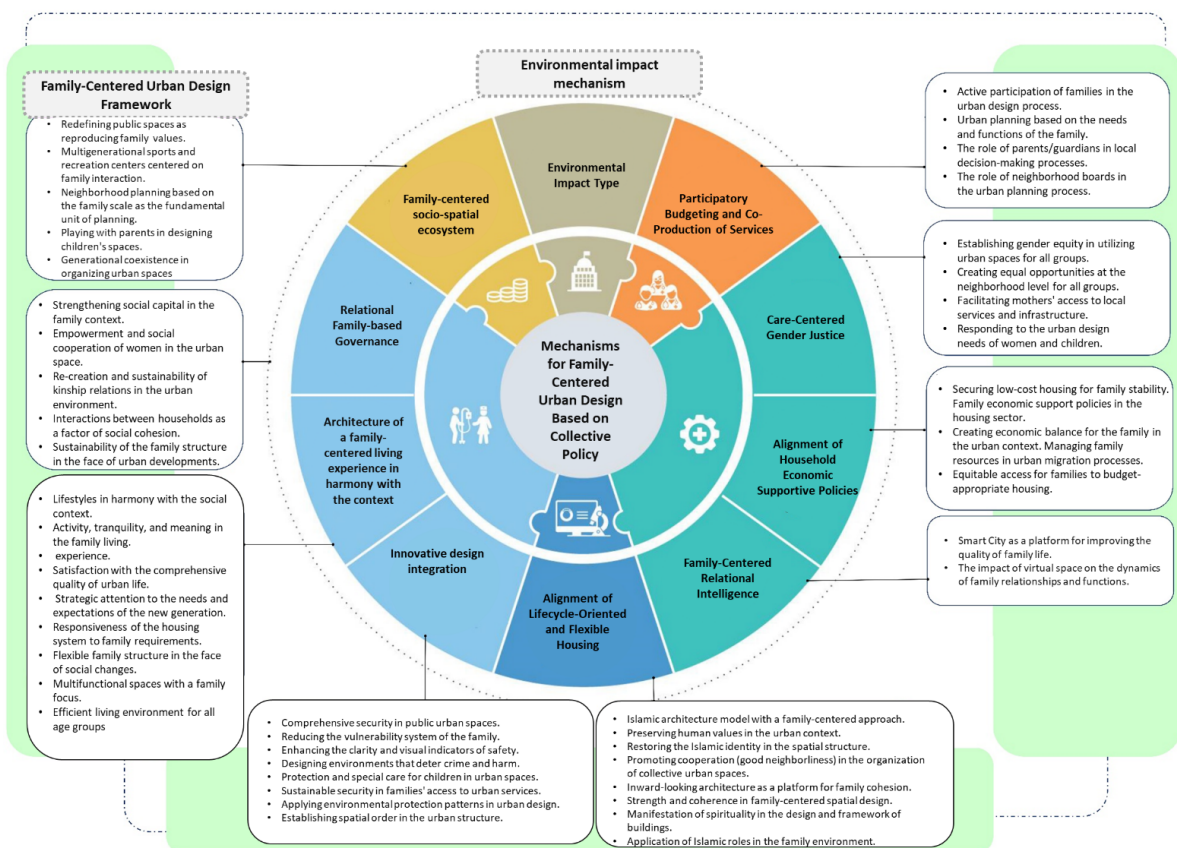


Figure 5. A Conceptual framework for shaping family-friendly urban environments in Iran

The innovation of the article can be summarized at three scientific and executive levels. First, at the theoretical level, instead of accumulating scattered propositions, the research provides an explanatory ecosystem model where form/policy connects to

family actions and bonds through perceptual mediators, and from there to outcomes of livability, spatial/gender justice, and resilience, specifying the moderating roles of family life cycle, gender, and economic status on the intensity and direction of

these pathways. Second, at the methodological level, the integration of literature was not done merely as a juxtaposition of references but through a critical synthesis of evidence and a systematic transition from open coding to axial and selective coding; in other words, the “categories” result from theoretical articulation, and the selection of the “core category” is justified based on a data-grounded causal logic. Third, at the application level, the research provides three operational measures for translating theory into practice: the Family Accessibility Index for ranking and siting care services and collective spaces within 5-10-15 minute radii, Family Density instead of persons per hectare for aligning service capacity with the household life cycle, and the Care-Oriented Gender Justice Index for auditing plans regarding the access and safety of women and children at different times of day. These measures can be embedded in detailed plans, neighborhood regeneration, participatory budgeting, and market and housing regulations, thereby converting scientific added value into implementable advantage.

In terms of critique and comparison with the literature, three key distinctions are prominent. First, the focus on perceptual mediators as the neglected bridge between urban form and family behavior, extending classical explanations of legibility/imageability from the level of spatial perception to the realm of care and family action. For example, compared to Lynch’s legibility, which mainly deals with the organization of urban perception, the concept of “care-based legibility” in this research shows how school routes with continuous signage and edge-to-edge visibility reduce the “environmental monitoring burden” on parents and increase parent-child dwell time and dialogue (Lynch, 1960; Gehl, 2010). Additionally, extending landscape restoration frameworks, perceived desirability, and aesthetics are linked not only to individual restoration but also to increased “family co-presence” in neighborhood green spaces (Kaplan & Kaplan, 1989; Hartig et al., 2014). Second, positioning the “family” as a multi-generational unit of analysis fills the gap between single-group approaches, such as child-friendly or age-friendly cities. More precisely, compared to “child-friendly city” or “age-friendly city” programs, each covering part of the needs spectrum, the present family-centric approach formulates care networks and intergenerational interactions integrally and shows how a single physical intervention can be livable for different stages of the family life cycle simultaneously (UNICEF, 2018; WHO,

2015). Third, the systematic linkage of categories with policy levers and monitoring measures elevates the model from the level of normative recommendation to that of decision-making tools. For example, compared to classical criteria of transport efficiency or persons/hectare density, the Family Accessibility Index and Family Density align the logic of location and land use/unit mix with “care time” and “service capacity”; also, compared to classical CPTED versions, the family-centric version, by emphasizing peak care hours and school routes, turns perceived safety into an intermediate variable for collective participation and maintenance (Newman, 1972; Ewing & Cervero, 2010; Cozens & Love, 2015). These distinctions collectively show that the present formulation, not as an accumulation of propositions but as an explanatory and executable apparatus, has the capacity to enhance family-centric livability, justice, and resilience simultaneously.

The direct policy applications of this model are clear. At the planning level, a “Family-Centric Neighborhood Agenda” can be formulated with three operational pillars: hierarchical siting of care nodes based on the Family Accessibility Index, regulating residential unit typology and composition based on Family Density and life cycle, and embedding participatory mechanisms with family representation seats in neighborhood councils linked to participatory budgeting. At the design level, it is necessary to codify the principles of family-centric CPTED, legible school routes, active edges, and socialization-friendly sub-spaces at the unit-building block scale into executive regulations. Additionally, the Care-Oriented Gender Justice audit should be applied as a prerequisite for permits at various times of day. At the governance level, establishing a family panel and data architecture for monitoring the measures completes the policy-implementation-monitoring feedback loop and enables institutional learning.

Limitations: This study is based on a body of scientific texts and did not directly collect behavioral or experimental field data. Although expert validation and inter-coder agreement were used to enhance validity, the lack of longitudinal observational measures leaves room for potential error in estimating the effect size of the mediators. The heterogeneity in source quality and differences in their cultural-institutional contexts increase the risk of bias in the transferability of findings, especially given that a significant portion of the international literature is produced in different governance contexts. Language

and publication bias are also likely, as non-English or non-Persian sources and grey literature may be underrepresented in the searched databases. Additionally, the proposed measures have been operationalized at the conceptual level; however, their convergent and discriminant validity, as well as context sensitivity, still require empirical testing. Finally, causal inference in this research relies on the juxtaposition of evidence, whereas proving definitive causality requires quasi-experimental and longitudinal designs. Furthermore, the findings face generalizability limitations due to the primary focus on texts and studies from a specific geographical area and require re-evaluation for testing in more diverse contexts. The new indicators proposed, although theoretically coherent, have not yet been tested in the field under real-world conditions, and assessing their efficacy will depend on future research.

Suggestions for Future Research are based on these limitations. First, designing longitudinal household-neighborhood studies to measure the dynamics of “dwell time,” “quality co-presence,” and “social capital,” and test the role of perceptual mediators over time is essential. Second, employing quasi-experimental designs in projects improving lighting, signage, and active edges is recommended to estimate the causal effect on parent-child behaviors and intergenerational space use. Third, developing and conducting multidimensional validation of the three measures—Family Accessibility Index, Family Density, and Care-Oriented Gender Justice Index—using psychometric methods, structural equation modeling, and multilevel analyses, paves the way for standardization and generalizability. Fourth, integrating spatio-temporal data (mobility trackers, transport data, real-time population density) with experience sampling surveys can help reconstruct the “family’s temporal-cognitive cost” and measure the “golden periods of co-presence,” revealing the mechanisms more precisely. Fifth, comparative research between central historical fabrics and new peripheral developments, as well as studying underrepresented groups (such as single-parent families and families with members with special needs), is crucial for the quality of the model’s generalizability. Sixth, studying the digital realm—from digital inclusion to algorithmic bias—in connection with care justice and family participation elevates the layer of “relational smartification” from claim to empirical measurement. Finally, socio-economic cost-benefit estimates of implementing

family-centric policy packages (at the neighborhood scale) can provide a foundation for public decision-making regarding financial feasibility and intervention prioritization.

In summary, the present discussion demonstrated that the propositions extracted at the initial coding level were systematically transformed into a theoretical categorization and then integrated into a conceptual model. Through critique and comparison with prior literature, it both enriches the theoretical understanding of the “space-family” link. It provides executable pathways and monitoring measures for family-centric urban policymaking in the Iranian context. This duality—theoretical explanatory power and policy executability—forms the basis of the article’s value-added and serves as the starting point for a future research agenda.

### Authors’ Contributions

The first author contributed 40%, the second author 40%, and the third author 20%.

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### Conflict of Interest

The authors declare that there is no conflict of interest in this research.

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