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Retraction

Retracted: Research on the Design of Public Space in Urban Renewal Based on Multicriteria Cluster Decision-Making

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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[1] H. Bian and H. Su, "Research on the Design of Public Space in Urban Renewal Based on Multicriteria Cluster Decision-Making," *Advances in Meteorology*, vol. 2022, Article ID 7186946, 8 pages, 2022.

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Research Article

Research on the Design of Public Space in Urban Renewal Based on Multicriteria Cluster Decision-Making

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Urban design is a critical technical tool for shaping and intervening in urban space, but it is also developing into a critical governance tool for guiding the orderly development of urban renewal, thereby contributing significantly to its effectiveness. This paper examines the design of public space in urban renewal through the lens of multicriteria group decision-making, introduces urban design governance theory, develops a theoretical framework for instrumentalizing urban design governance to respond to various levels of urban renewal, and investigates strategies for assisting urban renewal through the innovation of governance subjects and semiformal governance tools, in addition to the formal path of combining urban design and planning. Simultaneously, a multicriteria decision-making algorithm is proposed that combines theoretical concepts from the fields of computational intelligence and multicriteria decision-making, adopts a normalization fundamental model to standardize the attribution function, selects valid data information function values to combine into an aggregation function, and then establishes a multicriteria approach to deal with heterogeneous information based on the aggregation function. The experimental results demonstrate that the proposed algorithm is capable of coping with and representing the imprecision and uncertainty inherent in the input data.

1. Introduction

While urban design has always been an important technical instrument for shaping and intervening in urban space, during the course of the twentieth century and post-Fordism, it has progressively evolved into an important governance tool for guiding the orderly development of urban redevelopment. China's urban renewal work has long been hampered by difficulties in element coordination, a lack of policy supply, insufficient departmental coordination, implementation cost constraints, and a lack of social participation [1–5]. As a result, the country's urban renewal work has tended to be focused on elements such as development capacity, property rights, and functions, with insufficient attention and discussion given to how to play and ensure the beneficial role of urban design in urban renewal projects [1]. Urban regeneration is complicated by the fact that social, tenure, and capital interactions in historic spaces are difficult to coordinate through the use of a single bottom-line planning technique [6, 7]. New avenues for urban design to play a part in urban renewal are predicted to emerge as a result of the maturing and implementation of urban design governance theory, which will serve to complement formal planning.

Some academics argued for design-led urban regeneration during the end of the twentieth century, and the concept helped to establish the national practice of design-led urban regeneration in the United Kingdom in the early twenty-first century. Others have stressed the importance of urban design as a global leader in urban renewal, stating that the qualities of urban design are a precondition for urban renewal to develop and function effectively [8, 9]. Some researchers go on to say that the improvement in spatial quality brought about by urban design is a source of value

that helps to strike a balance between the costs and benefits of urban redevelopment when faced with severe restrictions [10–14].

Urban design and urban renewal should be part of a broader governance framework, according to increasing numbers of academics in recent years. This is necessary for truly effective urban design and urban renewal. Following this development, new studies have begun to expose the impact of urban design on urban renewal from many perspectives, as well as to investigate the requirement of integrating institutional structures between urban design and urban regeneration [15, 16]. In urban renewal, some academics propose that urban design can serve as a technical hub for optimizing the allocation of public spatial resources and connecting macrolevel planning with the implementation of urban spatial planning at the medium- and microscale levels. They also argue that future development of urban design in the stock will be focused on a collaborative governance model that integrates technical, policy, and social attributes [17, 18]. The use of urban design in urban renewal, according to some scholars, should shift from the creation of physical space environments to the management of urban space, which should include both planning and management. They also propose that formal and informal systems be integrated through the use of an urban design governance system [19].

Using the theory of urban design governance as a starting point, this paper develops a theoretical framework for the instrumentalization of urban design governance to respond to different target levels of urban renewal, and it investigates semiformal paths for urban renewal in addition to the formal path of combining urban design and statutory planning to achieve urban renewal objectives [20–24].

At the same time, we use the empirical object of the practical exploration carried out in Beijing in recent years to comprehensively evaluate the applicability and advantages of the new urban design governance path in order to meet the real challenges, and we make recommendations for the deep integration of urban renewal and urban design work in China [25, 26]. Also included is an investigation into the design of public space in urban renewal based on multicriteria group decision-making, as well as a proposal for a multicriteria decision-making algorithm that is capable of dealing with and representing the imprecision and uncertainty that is inherent in the input data [27].

2. Related Work

2.1. Characteristics of Traditional Urban Public Spaces and Human Behavior. In his research, sociologist Zimmer discovered that the link between people and the relationship between place and space are interrelated. It is the demands of people that govern the construction of public space, and the manner in which people interact with one another defines how space is represented. Throughout history, the shape of urban public space has been influenced by three factors: the breadth of social interaction, the form of engagement, and the substance of interaction at that particular point in time. It is the author's intention to evaluate and condense the fundamental characteristics of human social interaction behavior in traditional civilizations into three parts in order to gain a more complete understanding of the essence that lies behind the physical design of traditional urban public spaces.

(1) The inclination for people to congregate in order to communicate is referred to as gathering. The creation and growth of early towns and cities are inextricably linked to their ability to attract and gather people. A market square was the birthplace of early democracy during the ancient Greek period (800 BCE-146 BCE) when people assembled in large groups. Currently, such aggregation is more frequently exhibited in public space as a group activity that occurs in specific places or in response to specific occurrences, rather than as individual conduct.

(2) The instinctive desire to avoid damage as a result of human perception is referred to as avoidance. It is common for people's conduct to be restricted by instincts that have been programmed in advance, which allow them to assess whether they are comfortable in an area or whether they need to take measures against a specific place or object. People will always try to avoid or leave a physiologically and psychologically harmful environment as soon as they can and will seek out a more secure or more pleasant environment place.

(3) The term "experiential" refers to the property that humans obtain relevant information about their daily spatial surroundings through their bodies' perception of space. Space cognition is founded on the perception of one's own body, which serves as both the medium for receiving information and the most direct reference during the cognitive process. The ability to perceive and form impressions of the space and environment in which they are present is a fundamental characteristic of traditional space. People in traditional space are able to recognize and form perceptions of the space and surroundings they are in because they are physically present in the space and environment.

As a result of these characteristics of human behavior in traditional space, the public space of the city is forced to present a spatial representation that corresponds to them. The square became the focal point of traditional urban public life as a result of this congregating. This core type of public space was characterized primarily by a central enclosed form with clearly defined boundaries and obvious emphasis, which served to limit and influence crowd activities while also adapting to the behavioral characteristics of people who tend to obtain information through gathering and activities (i.e., information gathering). Piazza San Marco in Venice and Piazza del Campo in Siena, two famous examples of such public areas, date back to the Middle Ages (476-1492) and the Renaissance (14th–17th centuries).

People have a tendency to create single-purpose spaces in traditional cities, limiting the range of functions and activities that can be carried out while also making them exclusive and limited, such as designated areas for children's activities in cities or designated rest areas for people in traditional parks. Due to the experiential nature of people's behavior in traditional urban public space, a greater emphasis is placed on direct personal physical participation and sensory experience in order to perceive the meaning implied by the space, such as the large scale and symmetrical design of St. Peter's Square in the Vatican and the National Mall in Washington, DC, which have an impact on people's senses, leaving a lasting impression on those present and providing space carrier.

To summarize, whether it is the market square as a place for civic activities and deliberations in ancient Greece, the square with religious, municipal, and commercial functions in the Middle Ages, the open park and city square providing daily leisure and sports space for citizens in the twentieth century, or the "hybrid public space" supported by information and communication technology in the Internet era, all of them can demonstrate the direct influence of people's evolving social neoliberal values on public space.

2.2. Innovation Zones with a Focus on Spatial Design. Because we live in an era of knowledge-innovation economy, businesses are transitioning from internal innovation to open innovation, and people are transitioning from meeting basic needs to seeking richer experiences and more diverse lifestyles. As a result, the changing needs of users have prompted new requirements for the spatial design of innovative areas. With reference to the research on new-generation innovative areas and the study of the motivation mechanism, it can be concluded that there are five priorities of spatial design in urban areas, which are brand display, innovation concentration, spatial permeability, accessibility, and facility wisdom. These priorities are necessary to respond to the innovation development trend and realize the successful cultivation and sustainable development of urban areas, which can be summarized as IDEAS.

2.2.1. Brand Visibility. The desire for place quality expressed by the creative class indicates a reevaluation of the value of urban space in the context of global localization. Global localization is the result of local conditions feeding back into globalization, and the two processes of universalization and particularization are merging at the same time as they do in other areas of the world. This effect is achieved by integrating localized ecological, humanistic, and rural aspects into urban environments, which, when combined with internationalization and industrialization, brings forth the distinct value of the new ecological-humanistic economy. The number of urban regions that have developed a positive image through local natural or cultural branding, highlighting their special appeal and attracting innovative clusters, is in no short supply.

Los Angeles Silicon Beach, for example, is a typical exemplar of nature branding. Santa Monica, Venice, and Marianel Bay are three technology hubs with the highest concentration of innovative companies along the 7-kilometer long coastline, with 20 percent of all startups located within one kilometer of the beach. The coastline is famous for its sunny beaches, and three technology hubs with the highest concentration of innovative companies are adjacent to the beach, including Santa Monica, Venice, and Marianel Bay.

The London Knowledge District, for example, is a cultural brand. This region has an abundance of cultural resources, including more than seven universities, thirteen cultural institutes, and twenty-one museums and galleries. Following the establishment of the innovation platform, the University of the Arts London was the first institution to be invited to reside in the area, which is the source of further building cultural landmarks, attracting food festivals, music festivals, and commercial brands with a cultural image, such as Louis Vuitton, to reside in the area, preserving a large number of old industrial districts and historical buildings, and through renovation and transformation, implanting cultural and creative elements into the environment.

2.2.2. Innovation Concentration. According to the open innovation model of enterprises, the design of innovation areas must take into account the possibility of bringing together the greatest number of different types of enterprises, institutions, and facilities within a given spatial scope. The high concentration of multiple elements makes the networked connection among innovation subjects more convenient and solid, thereby inducing more open innovation behaviors.

Silicon Alley in New York City is a classic example of a highly concentrated innovation network in action. Originally, the term "Silicon Alley" refers to a concentration of Internet and mobile information technology companies centered around Fifth Avenue and the Ironman district in Manhattan, New York, where they were founded. As a result of the constant entry of technology and innovation firms, the spatial scope has increasingly grown to include the DUMBO district in Manhattan and Brooklyn, resulting in the formation of various inventive and active neighborhoods, such as the Ironman neighborhood. In part because of the high concentration of elements, the dense networking among Silicon Alley companies has prompted innovative companies to combine New York's traditional strengths in fashion and media with innovative technologies. These companies are tapping into new growth points on the Internet such as new media such as BuzzFeed and Tumblr; financial technology and e-commerce companies such as Betterment; and Internet life services and business services such as eHarmony and eHarmony International. For example, within a 0.5 km^2 radius of the ironmongery district, there are 1,737 professional services, 927 commercial services, 221 financial services, and 136 media services.

2.2.3. Spatial Permeability. Good spatial permeability is seen to contribute to the publicness of urban space; that is, a well permeable place might encourage more interpersonal

contact and a greater variety of uses, so producing more chances and conditions for communication and even urban development. Building overheads where closed and open spaces interpenetrate, third spaces where residential and workplace spaces interpenetrate, and mixed or flexible use areas where different purposes interpenetrate are examples of such spaces.

In 2015, Boston completed the construction of the world's first freestanding public innovation center. The building, which measures 1,100 square meters and includes a 250-seat dining area open to the public, as well as a gathering area with lounges and work tables and several telescoping spaces known as pods that can be configured to serve a variety of purposes such as pop-up retail stores, meeting rooms, classrooms, and showrooms, is a nonprofit project that anyone can utilize. It was the venue for the 2017 World Cup. In addition to hosting nearly 100,000 attendees at more than 1,000 events and meetups, the distinctive space has evolved into an open office space as well as a meeting, social, and business venue, helping to open up the region's innovation climate and increase the region's space for growth. It has also become a key facility in Boston's Innovation District.

2.2.4. Transportation Accessibility. The district's ability to attract the attention of the creative and development classes is also influenced by its ability to provide easy access to a variety of facilities. Highly dense road network neighborhoods and slow-moving friendly streets make it easy and comfortable to communicate between elements within a district, which can improve the use of facilities, increase the sense of access of creative people, consolidate the networked connections that stimulate innovation, and improve the development potential of the city, among other things.

Several open spaces in Kendall Square, a prominent innovation neighborhood near the Massachusetts Institute of Technology, were found to be the most frequently used by the innovation crowd, including Tech Square Lawn, Genzyme Square, the expansive Canal Walk, and the Marriott Hotel plaza and lobby, according to a study of the efficiency of space use in the neighborhood. Good access to these spaces is ensured by the linking of the plazas to one another to form a continuous two-way pedestrian flow, as well as by the orientation of the facility entrances to the connected public realm. This is considered an important factor in the efficient use of the plazas themselves and the facilities surrounding them, with sufficient traffic flow to make the spaces more dynamic and, as a result, encourage more frequent visits and access

2.2.5. Facility Intelligence. Because the pioneering and experimental nature of cutting-edge technology both highlights and fulfills the creative class's desire for novel experiences, smart infrastructure and governance platforms not only ensure the orderly operation of modern cities but also have the potential to trigger their sense of identification with the area. This is because the creative class's taste in where to live and their desire for novel experiences are both satiated by the pursuit of novel experiences.

Smart city construction has been widely implemented in cities around the world, including Helsinki, Finland, Copenhagen, Denmark, Amsterdam, the Netherlands, Eindhoven, the Netherlands, and Barcelona, Spain. In these cities, a model known as living labs has been widely implemented, where cities are used as testing grounds for technological advancements and smart technologies are more closely integrated with everyday life. In one example, a sports field with attractive playground facilities is set up to encourage residents to exercise and relax while monitoring equipment records data such as users' movement information and interactive use of facilities, allowing for a more accurate understanding of citizens' health status and usage requirements on the one hand and the product development of innovative companies in the sports equipment category on the other hand.

3. Method

As a result, we propose a multicriteria fuzzy information fusion decision-making algorithm (MCFIFDM) that combines concepts from computational intelligence domains with multicriteria decisions. The algorithm generates reference compliance graphs, where each pixel is represented by two values, the table index and the criterion value for each criterion decision, reference, and its respective rating value. MCFIFDM It is also possible to customize and alter the selected parameters to better illustrate the relative importance of standardization due to the adaptability of the system.

(1) The goal of the MCFIFDM algorithm is not simply to select alternatives but to effectively fuse information on the basis of the selection scheme

(2) MCFIFDM can fuse the target information in time k and does not include the spatial-temporal aggregation process of feedback

(3) MCFIFDM is not limited by the two phases of the previous dynamic model, data preparation at the beginning and decision evaluation at the end

(4) MCFIFDM can fuse the target information in time k and does not include the spatial

(5) The multicriteria decision-making framework incorporates the aggregation approach into the dynamic model, which will combine the hybrid operator and the weighting function to manipulate any type of information using qualitative and quantitative methods, including the processing of imprecise information

The ability to choose from a set of prospective solutions that are sufficient to satisfy one or more goals is achievable when dealing with multicriteria decision-making. Because of the uncertainty surrounding the standardization of findings or options, there will be certain issues during the decision-making process stage. When dealing with any type of information aggregation, aggregation operators will use

appropriate methods to select operators, and the most common selection methods are max–min methods, generalized mean methods, distance-based methods, pairwise comparison methods, and so on.

This paper focuses on the generalized hybrid operator, also known as the mean operator, which penalizes low normalized performance and rewards high normalized performance by using a weighting function, where instead of assigning individual values to weights, a function of normalized satisfaction is represented accordingly, and this aggregation method extends the weighted average to some extent, so the mathematical representation of the hybrid operator is as follows:

$$W_i(x_i) = \sum_{i=1}^{n} w_j(x) x_{ij}, \tag{1}$$

where W_i is the aggregated value of alternative, and x_{ij} and X_{ij} are the satisfaction values of the alternative x_{ij}.

$$W_j(x_i) = \frac{f_j(x_{ij})}{\sum_{j=1}^{n} f_j(x_{ij})}. \tag{2}$$

According to the results of the previous analysis, it is known that the operator is divided into two types: the first is a linear weight generating function, and the second is a quadratic weight generating function. As a result, the linear function that follows is as follows:

$$l(x) = \alpha \frac{\beta x + 1}{1 + \beta}, \quad 0 \le \alpha, \beta \le 1. \tag{3}$$

For a family of fuzzy functions $(\xi_i)_{i \in J}$ becomes a frame, if $A > 0, B < \infty$, then for f in space H, we have

$$A\|f\|^2 \le \sum_{i \in J} \left|\langle \xi_i, f \rangle\right|^2 \le B\|f\|^2, \tag{4}$$

where A, B are, respectively, subframes of the range of values and ξ_i of the dual-frame center $\widehat{\xi}_i$ is a series of frames in the space H. For all f in the space H, we have

$$\frac{1}{B}\|f\|^2 \le \sum_{i} \left|\langle \widehat{\xi}_i, f \rangle\right|^2 \le \frac{1}{A}\|f\|^2. \tag{5}$$

If $A = B$, then such a frame ξ_i can be called a dense frame, and in the dense frame, for all $f \in H$, we have

$$\sum_{i \in J} \left|\langle \widehat{\xi}_i, f \rangle\right|^2 = A\|f\|^2,$$

$$\widehat{\xi} = \frac{1}{A}\xi, \tag{6}$$

$$f = \frac{1}{A} \sum_{i} \langle \xi_i, f \rangle \xi_i.$$

Figure 1 depicts the fundamental framework structure of the proposed MCFIFDM, which serves as a starting point for further development.

This is seen in Figure 1, where the unpredictability of the step filtering is primarily used to demonstrate assignment

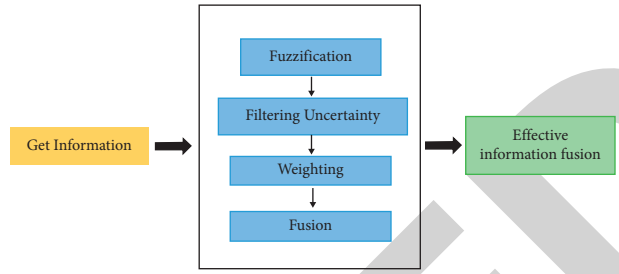

Figure 1: The structure of MCFIFDM.

normalization that is independent of relative priority. However, in MCFIFDM, it is necessary to perform the fusion of valid information using a weighting function of hybrid operators, primarily because it allows to reward or penalize the presence of hybrid operators that do not satisfy the normalization within the system by extending the normalization dagger operator to transition the uncertainty of the step filtering, as described above. As a result, the following description of the exact steps will be chosen to demonstrate that any other suitable aggregation operator can be selected and that the four steps of MCFIFDM are required in order to create a successful fusion of data. In this case, the four main steps of the proposed MCFIFDM algorithm are as follows:

(1) The normalization procedure, which is primarily concerned with the change of the fuzzy adventure mechanism in order to ensure the merging of numerical and similar information, is described in the following. It is required to do the normalizing process before fusing the information through the comparison of numerical functions when dealing with a heterogeneous matrix such as the risk mechanism's matrix.

When it comes to normalization, it will apply the fuzzy attribution function, which is also known as the normalizing procedure. Other benefits of the normalization method include the ability to express data using semantic concepts such as low slope or low variation, in addition to guaranteeing that data is uniform and comparable.

(2) Filtering uncertain input data from information containing inaccuracies is a common practice. Given the potential inherent uncertainty in the input information system, it is necessary to find an effective fusion of verbal information, and in any given alternative, it is necessary to adjust the normalization by the lack of confidence and inaccuracy in the corresponding input data. This requires the use of a double filtering function operation, which is required for this step. The first combines standardization to deal with both input value uncertainties and the decision-maker's attitude, and the second deals with both input value uncertainties and the decision-maker's attitude. Having a lack of trust in the decision-maker has an impact.

For all membership values entered, intervals of divergence from the initial values are produced on the left and right sides of the graph. Choosing this function for MCFIFDM was primarily motivated by the fact that it has the capability of adapting the attribution function to account for embedded input information uncertainty. According to the formal definitions of the accuracy and confidence parameters (a_{ij} and wc_j, resp.), the expression for altering the uncertainty of an attribution function value is as follows:

$$fu_{ij} = w_j\left(1 - \lambda \max_{x\in[a,b]}\left\{\left|\mu(x) - \mu\left(x_{ij}\right)\right|\right\}\right)\mu\left(x_{ij}\right), \quad (7)$$

where x_{ij} is the j-th normalized value of node, $\mu(x)$ is the affiliation measure in the fuzzy set, wc_j is the confidence level associated with the normalization, and $[a, b]$ is the inaccuracy interval and is defined as follows:

$$a = \begin{cases} \min(D), x_{ij} - a_{ij} \le \min(D), \\ x_{ij} - a_{ij}, x_{ij} - a_{ij} > \min(D), \end{cases}$$
$$b = \begin{cases} \max(D), x_{ij} + a_{ij} > \max(D), \\ x_{ij} + a_{ij}, x_{ij} + a_{ij} \le \max(D). \end{cases} \quad (8)$$

(3) Assign a relative priority to each standardization in relation to the weighting function, which will be based on how well the standardization meets or is suitable for the given option. MCFIFDM uses a linear weighting function to represent the standardized relative importance where the primary idea of the weighting function is to affect the predetermined relative importance by the satisfaction value of the standardization, as is the case in many other applications. It is proposed that the MCFIFDM algorithm be implemented using a modified linear function $L(fu_{ij})$ in order to increase computational efficiency and understanding.

$$L\left(fu_{ij}\right) = \alpha\frac{1 + \beta fu_{ij}}{1 + \beta}, \quad (9)$$

where $0 \le \alpha \le 1, 0 \le \beta \le 1$.

(4) To integrate all normalized pattern matrices into a single composite pattern matrix, the aggregation/fusion method (i.e., the aggregation operator) will be utilized in the fourth step. The emphasis in this step is on merging the changed input information from several sources into one cohesive whole. The hybrid role of operators serves as the foundation for the proposed operator fusion strategy. The general formula for the weighting function is denoted by the following symbol:

$$w\left(fu_{ij}\right) = \frac{L\left(fu_{ij}\right)}{\sum_{k-1}^{n} L\left(fu_{ij}\right)}. \quad (10)$$

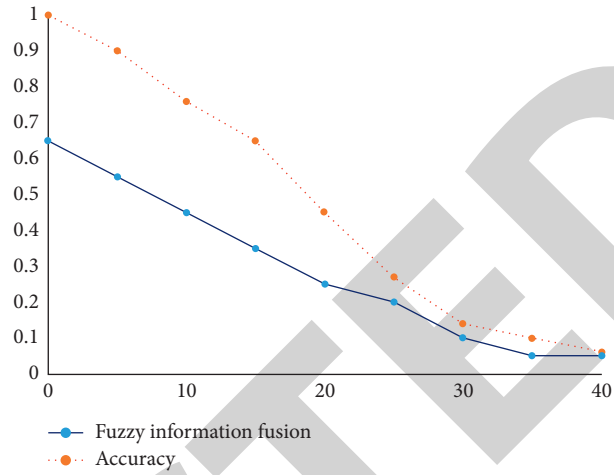

Figure 2: The curves of low texture with uncertainty.

4. Evaluation Result

From the perspective of the MCFIFDM algorithm, we have the following:

(1) MCFIFDM fuzzy rule-based approach (FRBM) is more adaptive because it does not require resetting the data information base, it is not affected by the before and after steps of the system during the application, and it is tested only by standardized evaluation.

(2) MCFIFDM fuzzy rule-based approach (FRBM) is more adaptive because it does not require resetting the data information base.

(3) It is not necessary to train the algorithm with a training set in order to fine-tune the algorithm. Furthermore, it is applicable to any environment and does not necessitate any special training. Apart from that, MCFIFDM is capable of dealing with unpredictability in the input data, whereas other approaches are typically unstable in rapidly changing contexts.

In addition, MCFIFDM is capable of dealing with and representing the imprecision and uncertainty inherent in the input data, in contrast to FRBM, which requires prior preconditioning. In addition, FRBM is not designed to support multiple normalization targets; hence, in these situations, some form of prior aggregation is required before normalization can take place. Because each type has its own advantages and they can work together to produce superior data outcomes, it is obvious from this comparison that hybrid approaches will almost surely contribute to the enhancement of information fusion.

The graphs of all of the values in the low-texture input matrix are depicted in Figures 2 and 3. Its topology is utilized to define the many attribution functions that are associated with it. Two separate fuzzy input matrix modes are represented by two different simulation plots, the first of which is the mode with an expertise fuzzy input matrix and the

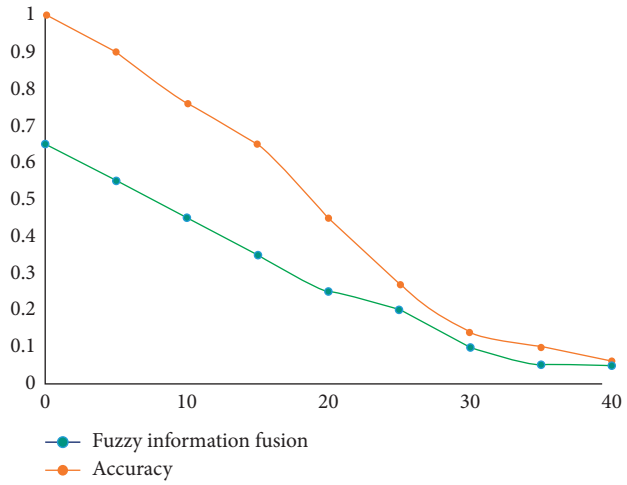

Figure 3: The smoothed curves of low texture with uncertainty.

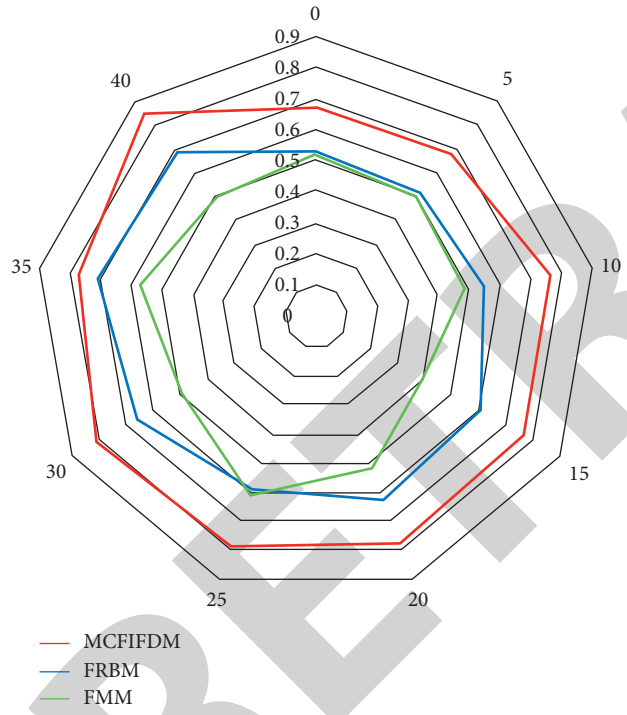

Figure 4: Comparison of different algorithms.

second of which is the mode with a suitable form of the fuzzy input matrix, both represented by curve plots.

Based on the results of the two previous figures, it can be observed that the optimal measure is obtained by employing the suitable attribution function. When using information fusion, the goal is to receive the outcomes of the combined measure value data for each choice without having to perform the decision job of selecting the best alternative.

To further illustrate the superiority of the MCFIFDM algorithm, we compare the MCFIFDM algorithm with the FRBM algorithm and FMM algorithm, which is as shown in Figure 4.

From Figures 3 and 4, we can see that our method performs well. Further, our method significantly outperforms FRBM and FMM.

5. Conclusion

The traditional practice of relying on the replacement of high-end functions for low-end functions to balance the cost of urban renewal is very likely to cause an imbalance in the urban functional structure. In the long run, improving the quality of public space design can bring sustainable returns to multiple subjects. A safe and convenient street environment, or a community plaza that promotes interaction, is undoubtedly an integral part of the land value. Based on multicriteria group decision-making, this paper studies public space design in urban renewal, introduces urban design governance theory, builds a theoretical framework for urban design governance to deal with different target levels of urban renewal, and explores urban renewal strategies. At the same time, a multicriteria-based decision-making algorithm is proposed to handle and represent the imprecision and uncertainty involved in the input data. In the future, we will enrich the multicriteria principle and try our best to consider multiple indicators.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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