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Editor's Message

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ
Rahmân ve Rahîm olan Allah'in ismiyle

In the Name of Allah—the Most Compassionate, Most Merciful, and with profound pleasure, humility, and anticipation that we celebrate the First Issue of International Digital Journal of Architecture, Arts and Heritage (JAH) with this first official issue. On behalf of the JAH Editorial Team, I would like to extend a very warm welcome to the readership of JAH. I take this opportunity to thank our authors, editors, and anonymous reviewers, all of whom have volunteered to contribute to the success of the journal. I would also thank Prof. Dr. Ibrahim Aydınlı, Rector of Ankara yıldırım Beyazıt University (AYBU), and Prof. Dr. Arif Ankaralı, Vice rector of AYBU and dean of the faculty of Architecture and Fine Arts for their support in establishing JAH.

International Digital Journal of Architecture, Arts and Heritage (JAH) is a thematic multidisciplinary, not traditional scientific journal. The topics covered by the journal are mainly related to architecture, design, planning, technology, art, heritage and related fields. The journal is published every two months specialized in one of the main three themes (Architecture, Art, Heritage) with the editorship of internationally recognized and respected experts in their fields.

JAH is dedicated to the rapid dissemination of high-quality research papers, art works, digital media research, in three languages; English, Turkish and Arabic. Although English is the main language of the journal, accepting submission with Turkish and Arabic made higher the responsibility and complexity to manage all the received submissions. Thus, I would present my thanks and gratitude to the language editors, proofreaders, and special thanks to the copy and layout editor for the enormous effort and time they invested to prepare and produce the papers according to our standards and templates.

Finally, we encourage contributions from the scientific communities to ensure the continuity of a successful scientific multidisciplinary digital journal. Authors, reviewers, and guest editors are always welcome. The authors of JAH have total freedom to express their ideas and views (which not necessarily represents the journal view) since they respect the research ethics and policies of the journal. We also welcome comments and suggestions that could improve the quality of the journal.

Prof. Dr. Salah HAJISMAIL
Issue Editor

Digital International Journal of Architecture, Arts & Heritage (JAH) is a scholarly peer-refereed journal serving the needs and goals of development and resilience in Architecture, Arts and Heritage-related fields, which is published each two months (6 issues per year) and digitally. Our journal is open access and accepts articles in English, Turkish and Arabic. Submissions from the fields Industrial Design, Interior Architecture, Architecture, Landscape Architecture, Urban and Regional Planning, Traditional Turkish Arts, Plastic Arts, Design, Movable Cultural Heritage/Art Works Restoration and Conservation are accepted to our journal. JAH publishes original research papers, state-of-the-art review papers, novel industrial applications, and insightful case studies in a broad scope of topics related to these disciplines.

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Camps of NW Syria and Winter Floods

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ABSTRACT
In light of the great number of displaced people in the camps of northwest Syria, and the sudden disasters that occur in these camps -such as floods resulting from heavy rains and strong winds in winter- it seems that the future of the displaced people is uncertain and great challenges are facing them to complete their life cycle ordinary and in living conditions that ensure their protection, safety and preserve their dignity. The necessity of highlighting this problem came in this paper by examining; the history of the disaster and the most important causes of it; the methods and strategies of humanitarian fieldwork response and; the diversity of interventions to it in the region to avoid this disaster and mitigate its danger to the affected population in the future. The problem investigates three case studies through the analysis of experts' opinions working in the field of emergency response to repeated displacement situations in the region. The need for analytical study including community participation regarding the annual winter flood disaster that the region has experienced and is still going through, concludes with discussing the inducted results, suggesting recommendations, and suggesting future work to apply.

KEYWORDS
Northwest Syria; Flood; Disaster; Response; Disaster Risk Reduction.

INTRODUCTION

The Syrian crisis has caused the destruction of housing, loss of life and physical damage, which forced the Syrians to be displaced internally in an effort to escape death, which claimed the lives of 312,000 - 470000 individuals until 2017 and led to a large demographic dispersal in the region (STEBBINS & EL KHALIL, 2017). The continuation of this crisis will exacerbate the problem and deteriorate the results, and this is evident today in the displacement camps (Figure 1).

And this is what was confirmed by Filippo Grandi, UNHCR High Commissioner "Syria is the biggest humanitarian and refugee crisis of our time, a continuing cause of suffering for millions which should be garnering a groundswell of support around the world" (UNHCR, 2018).

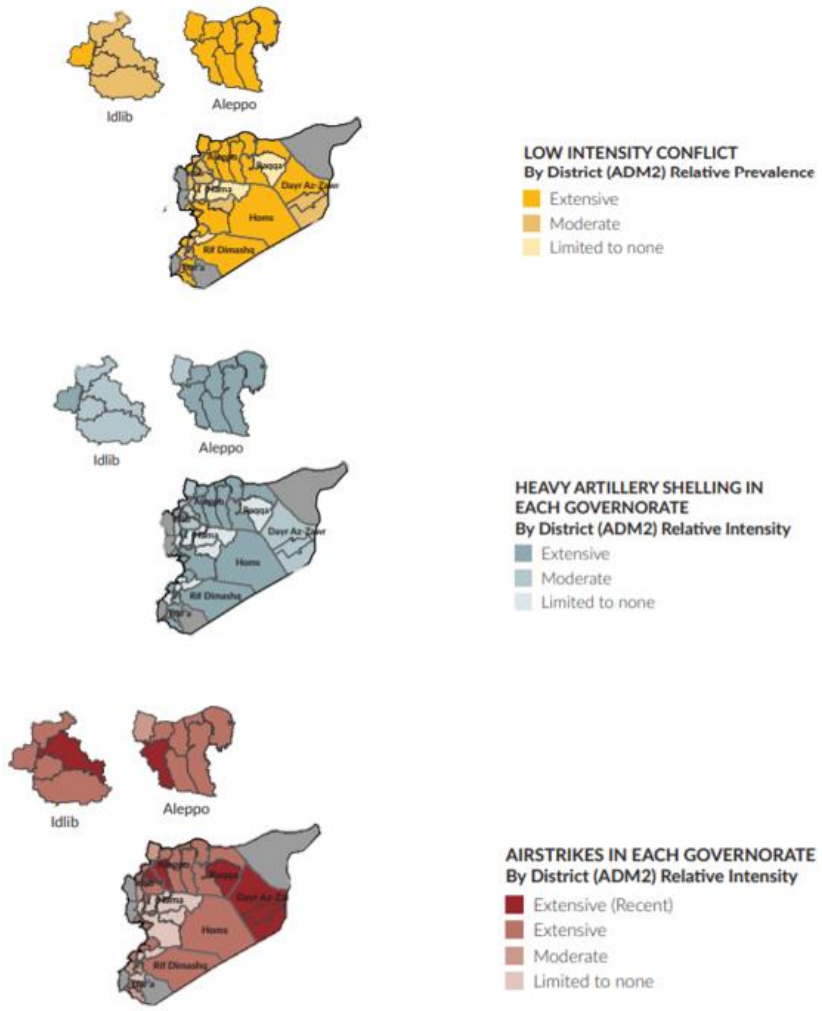

Figure 1: *Incidence of Conflict, 2011–2017(STEBBINS & EL KHALIL, 2017)*

Displacement camps were established in Syria to accommodate displaced people from the Syrian crisis. Some of them live in official camps and others in informal and random camps or collective shelters. Humanitarian support and assistance targeting these camps are coordinated by Shelter Cluster and Camp Coordination and Camp Management (CCCM) Cluster, but the

response does not cover the entire gap due to occasional difficulty of access, the constantly increasing number of displaced people and the continuation of disasters that increase the size of the gap and need such as fires in the camps and heavy winter rains that cause floods and torrents leading to constant damage of tents and infrastructure (WIKIPEDIA, 2021).

CONTEXT

More than 10 years after the beginning of the Syrian crisis, which included the destruction of infrastructure, displacement, asylum, deaths, etc., it can be said that this crisis has reached a state of despair throughout Syria. Moreover, the winter season and harsh weather conditions increase the suffering of the displaced in the camps and the aid provided by humanitarian organizations does not cover the need and the gap in the region due to continuation of increase in the number of displaced people and their instability (RELIEFWEB, 2020).

In NW Syria, 407 internally displaced people sites were recently exposed to heavy rains and strong winds, in which 141,729 internally displaced people reside who suffered from the flood and the sinking of tents (RELIEFWEB, 2021A).

The recent floods occurred between January 13-14 2021, which made the camp residents search for any safe haven during this disaster such as schools, mosques and nearby camps. But it is worth noting that this was not the first time that this disaster occurred in these camps, as it is a repetitive series of the same disaster that occurred previously in November 2016, December 2018, March 2019 and in June 2020, which usually leaves negative impact, such as death, destroying tents, putting sewage facilities out of service and damaged infrastructure (RELIEFWEB, 2021A).

PURPOSE AND STRUCTURE OF THE REPORT

This report purposes to conduct a study and analysis of the annual recurring flood disaster in the northwest Syrian camps by highlighting the most important causes of the disaster, and the methods and strategies of humanitarian fieldwork in the region to avoid this disaster and mitigate its danger to the affected population. Moreover, the article studies and analyses the views and suggestions of the affected population to form a deep and comprehensive understanding of the history of the disaster, the needs of

residents of the region and the general situation, to develop a plan and strategy to mitigate the impact of this disaster and its avoidance in the Idleb camps. The research consists of eight parts:

- **Introduction**: It includes the introduction, the context, the purpose and structure of the report, figures, maps, in addition an inspection of the history of the disaster by reviewing the international reports of the humanitarian response in the region to understand the timeline of the development of the disaster, the factors that affected it, and the diversity of response types to it to understand the reality that can help in solving future problems.
- **Project Definitions**: Deals with the problem limits, the aim of the project, and the methodology and data collection used in the study.
- **Case Studies**: Studying three case studies through the analysis of the opinions of experts working in the field of emergency response regarding repeated displacement situations in the region and the need resulting from the annual winter flood disaster that the region has experienced -and is still going through-, their experience in construction, shelter and infrastructure repair projects in the Syrian context in general and Idleb camps in particular.
- **Community Participation**: Analytical study for the community participation through analysis and discussion of the residents' opinions and suggestions for solutions from their point of view by interviewing them individually in the targeted camps' gatherings.
- **Results and Discussion**: Discuss the inducted results of the study, according to three main axes: observation, experts' feedback and community feedback.
- **Conclusion and Future Work**: This study will culminate in recommendations, future work and proposals that must be taken into account in the future response.

FLOOD DISASTER

Definitions

Recently, the frequent use of terms related to disasters and natural disasters and their management and reduction of their risks have been observed -especially on (social) media- after the recent disasters and wars in the world. But it can be noted that the general and specialized literature shows that these terms have different definitions from one researcher to another according to

their scientific meaning, so it is necessary to emphasize the concepts used in this study and their scientific meaning.

Natural hazards are: "generally considered to be processes of the potential destruction of natural origin, which may lead to losses in human lives, injuries, economic or social damages, and/or to the environmental degradation" (VILÍMEK & SPILKOVÁ, 2009).
Disaster is: "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental loss and impacts, which exceeds the ability of the affected community or society to cope using its own resources" (SAHA ET AL., 2009).
Flood is: "A body of water that inundates normally dry land resulting in water remaining on the surface for some time. Observes that floods occur when peak discharges exceed channel capacity which may be brought about naturally by heavy rainfall" (IGUDALADAN & SAULAWA, 2021).
Flash flooding is: "An unprecedented situation that occurs in hilly regions and sloping lands where torrential heavy precipitation, thunderstorm, or cloud burst commonly occurred without any prior warning. This sometimes causes huge loss of lives and damage to properties" (RANJAN, 2017).
Flood disaster is: "A sudden, calamitous flood event that seriously disrupts the normal functioning of a community or society and causes human, material, and or environmental issues that exceed the community's or society's ability to cope using its own resources" (IGUDALADAN & SAULAWA, 2021).
Disaster management is: "To conserve the lives of people and their property during the natural disaster or man-made disaster" (DEBBARMA & DEEN, 2020).
Disaster risk reduction is: "The concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters. Reducing exposure to hazards, lessening vulnerability of people and property, wise management of land and the environment, and improving preparedness for adverse events are all examples of disaster risk reduction" (UNISDR, 2012).
The response is: "Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected" (UNDRR, 2017).

Literature Review

Flood disaster spreads in many and wide areas in the world and differs from each other in their severity, type and dimensions. In the period between 2010-2019, more than 673 million people were affected by floods, with floods accounting for 46% of the total natural disasters. The number of floods increases annually, with an average of 128 floods per year, in contrast to the number of people affected, which decreased recently (HAGON ET AL., 2021).

Views on the flood and its effects differ among stakeholders. It means loss of life, destruction, starvation, destruction of property, infrastructure, and sewage systems for the general public and may be considered by some as a disturbance in the normal course of their lives.

As for governments and officials, floods are considered a factor in delaying their development planning for the state or city, with the addition of economic, relief and other burdens. When studying the flood, two different concepts of the phenomenon are observed; the first is the emergence of large excess water from rainwater and/or rivers in a particular place, and the second is that this water will not cause a disaster if it is managed quickly and easily. The dimensions of the flood differ from one country to another, for example, the flood the annual Nile River is considered as a source of life and an important reason for irrigating crops in Egypt, but this same phenomenon causes a disaster in Sudan, and other similar natural phenomena cause disasters in other places such as India. The main factors causing floods can be summed up in heavy rains accompanied by storms, river channels and changes in their carrying capacity, absence of early warning systems, poor design and implementation of sewage systems, climate change, poor planning, and management, etc. (RANJAN, 2017).

Flooding, whether it is the result of heavy rain or the flood of a river, is a natural phenomenon, and its conditions and dimensions are known through previous experiences, so it should not cause shock and emergency response solutions should not be dealt with when it occurs, but rather it should be prevented from reaching a disaster situation, through the correct use of lands, preparing for it in advance and adopting a scientific approach to disaster risk reduction.

HUMANITARIAN RESPONSE TO THE FLOOD DISASTER

Floods are considered as one of the natural phenomena that humans cannot prevent, but by improving response strategies and developing a method to mitigate their impact, humans can prevent them from reaching a state of disaster (GHOSH, 2014).

Noteworthy is that the measures to respond to the flood disaster are limited in some countries to provide urgent response and adequate relief to the affected communities at the time of the disaster. However, these measures must be planned in advance, determine the size of the required response and distribute roles to more than one party of stakeholders (such as the government, organizations, and field teams) with deep coordination between them. In India, for example, as it is frequently exposed to flood disasters, the response varies according to the different intensity of the flood. Between 1954-2004, 22 flood management agencies were formed, but the implementation of the recommendations made by these formed committees/working groups remained slow (RANJAN, 2017).

The state of Assam in India suffers from a natural flood disaster as a result of heavy rains associated with strong monsoons. This disaster affects the rural areas of the state, whose population mainly depends on agriculture, which makes the disaster harm the state's economy by damaging agricultural crops, private property and infrastructure. After the flood disaster in 1954, short-term and long-term procedures were announced by the government, such as improving sewage systems, constructing dams, directing rivers and dividing flood areas. However, after redressing the disaster by implementing short-term measures, the long-term measures that protect the state from the recurrence of the disaster and/or contribute to mitigating its severity. Until 2020, only short-term measures are dealt with when the disaster recurs (DEBBARMA & DEEN, 2020).

In order to determine the response and precautionary measures for heavy rains causing floods in Peru, "The Peruvian National Red Cross Society" implemented the EPA Action Plan, which deals with heavy rains causing floods during the period between December and April. This program will determine spatial and temporal scales of the disaster before it occurs by studying the forecasts of the "Multi-Sectoral Commission for the Study of the National El Niño" and the forecasts of meteorology and hydrology, and thus will give stakeholders time to intervene before the disaster.

The EPA program will determine the risks in five consecutive days according to the weekly, monthly and seasonal forecasts of precipitation, which helped in drawing historical impact maps through which high-priority areas are identified in order to intervene and implement precautionary measures. This experience is considered one of the best practices in support of the "Sendai Framework" in the management of disasters caused by rain and floods (KRUCZKIEWICZ ET AL., 2021).

PROJECT DEFINITIONS

PROBLEM LIMITS

The camps targeted in this study are located in northwest Syria, northwest of Idlib, and north of Aleppo, which was established during the Syrian war in 2011. Some of them are still classified to this day as unofficial camps.

These camps have witnessed a significant escalation in displacement cases since the end of April 2019, as they today host more than 2.8 million internally displaced people (REACH, 2020).

The study will address the winter flood disaster resulting from heavy rains, winds, and storms in these camps, as data was collected from experts in the area and camp residents, including designs and construction plans. (Figure 2, Figure 3, Figure 4)

Figure 2: *Idlep and Aleppo governorates map*

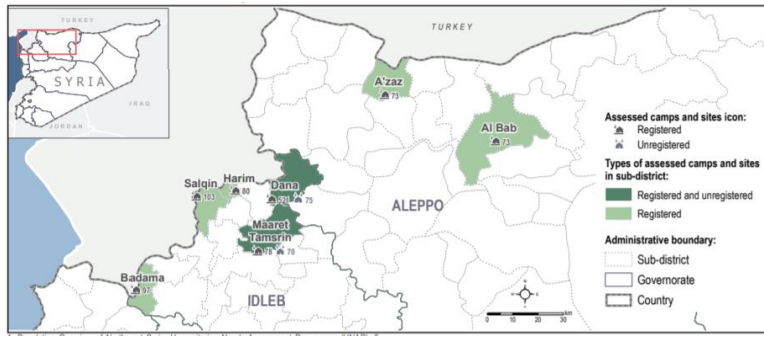

Figure 3: *Locations of IDP Camps and Sites (REACH, 2020)*

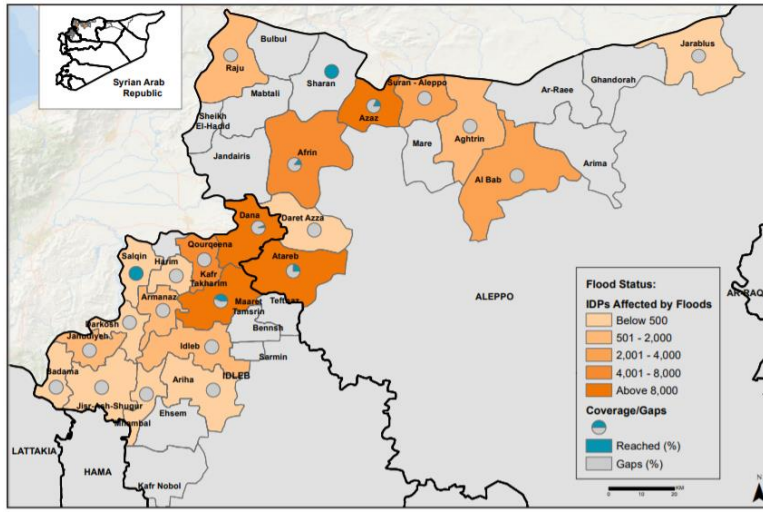

Figure 4: *Flood Affected Locations of IDP Camps and Sites and Emergency Response (RELIEFWEB, 2021B)*

AIM OF THE PROJECT

Upper Target: Improving living conditions for IDPs who are living in NW Camps in Syria.

The project aims to reach alternative solutions or strategies to implement, which ensures to provide the most important infrastructure and shelter needs in the region, as well as ensuring continuous access to the facilities or life-saving services, which ultimately aims to provide the service required for the

beneficiary to live and his family in a decent life considering this difficult living conditions, through:
Finding a solution to the problem of floods resulting from heavy rains and tents being torn every winter of every year due to winds and storms.
Propose alternative solutions based on the experiences of experts and the participation of the residents of the targeted camps, which are compatible with the Syrian context, the Syrian culture and the sensitivity of Syrian society.
Contribute to reducing deaths due to high temperatures and polluted water as a result of housing in unhealthy living conditions.

METHODOLOGY AND DATA COLLECTION

The research uses an Inductive Analytical Methodology. Data were collected based mainly on international reports, other research related to the subject, expert interviews for the three cases studied and interviews with the targeted community for the social survey. Data cleaning and analysis have been applied to reach conclusions and recommendations based on discussion and studied observation.
Regarding Community Participation, the methodology of data collection includes conducting individual interviews with 384 residents in Idleb camps on 1 - 5 June 2021, with a 95% confidence level and a 5% margin of error. The data collector verified that all questions were obvious and answered by the respondent.

CASE STUDIES

ATAA HUMANITARIAN RELIEF ASSOCIATION – EXPERT A – NIZAR BUSTANI

About ATAA Humanitarian Relief Association Projects

Ataa started its humanitarian response to the Syrians in northern Idleb in 2013, where it constructed temporary camps in the Atma area in 2013, established and managed 12 camps according to SPHERE standards in establishing camps to be a model for organized camps (dimensions and planning - facilities - infrastructure camp), so Ataa got extensive administrative experience in organizing and training residents to manage their camps. In 2014, Ataa shifted from construction camps to construction some housing for the most vulnerable families to be an alternative to tents and it was free with the provision of facilities and basic needs (BUSTANI, 2021).

Successes, Challenges, and Improvement

While discussing ATAA's successes, the CCCM & SNFI Program Coordinator Nizar Bustani said that they started with the construction and camp development projects because they believed that people should not stay in a tent after all these years.

In 2014, they started with the idea of 100 housing units in the Atma camps, where the design and implementation were very simple (18 m^2). But in 2015, they developed the design to a one-story housing unites with two rooms, a bathroom and a kitchen and constructed the first ATAA housing complex through building 520 housing units with 35 m^2 within the Atma camps as well, with the provision and repair of the infrastructure completely, and the construction of service buildings and facilities such as mosque, administration unite, school, clinic, police station, gardens, internal market, and external market, and the total budget of this project was $1,560,000 (Figure 5).

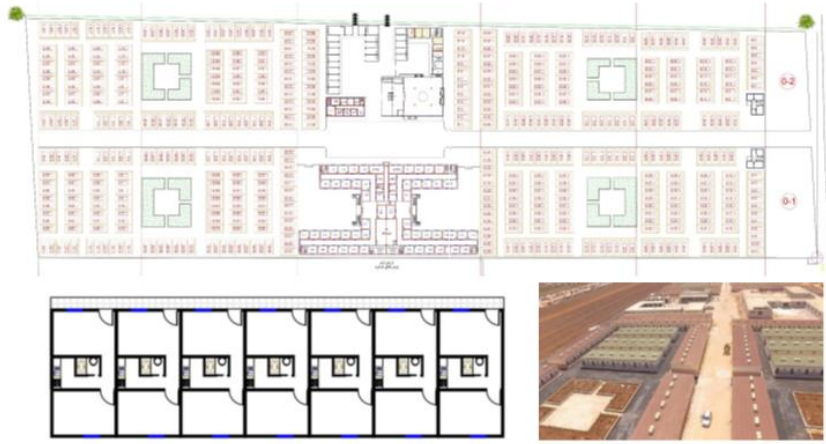

Figure 5: *First ATAA housing complex (BUSTANI, 2021)*

In 2016, the second ATAA housing complex in Atma had started consisting of 748 apartments in 65 multi-story buildings with 38 m^2 and a total budget of $3,141,000 (Figure 6).

Figure 6: *Second ATAA housing complex (BUSTANI, 2021)*

In the third ATAA housing complex in Jarablus, which began the implementation in 2019 in coordination with AFAD, the budget was $2,420,000. The project divided into two phases; phase A includes the construction of two types of residential buildings, 138 apartment with a total area of 37 m^2 for each unit in the first type and 60 apartment with a total area of 60 m^2 for each unit in the second type. Phase B includes the construction of two types of residential buildings too; the first one is 12 residential building with 12 apartment's with total area for each building 271 m^2 and different areas for each apartment to suit the number of family members and the second type is 5 residential building with 18 apartments with total area for each building 307 m^2 and different areas for each apartment. In addition to the mosque with 470 m^2, a school with 615 m^2, a clinic centre with 248 m^2, 17 shops with 562 m^2 and the residential management building with 18 m^2 (Figure 7).

Figure 7: *First ATAA housing complex (BUSTANI, 2021)*

Finally, in 2020 they developed and started the construction of the fourth ATAA housing complex in Atma with low-cost units $350,000. This design developed by the ATAA shelter team reduced the cost and minims the duration of implementation as a recent response to the huge numbers of IDPs in the last period (Figure 8).

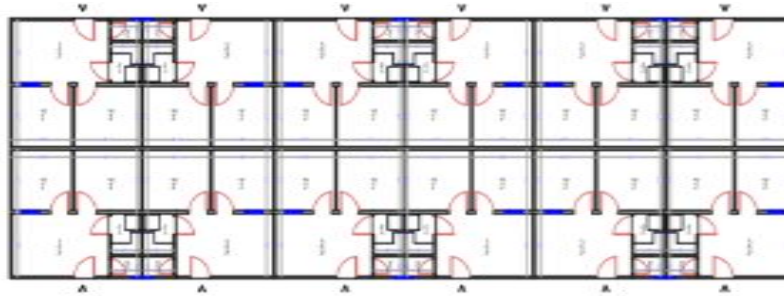

Figure 8: *Fourth ATAA housing complex (BUSTANI, 2021)*

Nizar Bustani focused in this part on the fact that since the implementation of these projects, there have been no accidents related to protection or floods in the project's locations. Although these projects are not encouraged and popular, they succeeded in these projects since 2015. But what helped them in this success was that the finance was through donations from individual donors and not through donor organizations, which allowed them to be

flexible in design and implementation. The success of these projects lies in the fact that they preserve human dignity, providing privacy and security. The grade of beneficiaries' satisfaction is very high due to the actual need after long years, as well as that the design is very compatible with the culture and sensitivity of the community, where they encourage the beneficiaries to live and increase their income by working in the markets that have been established within the projects areas or even working outside it.

He also summarized the challenges in three points. Firstly, the housing land property HLP, where the displaced settled in privately owned lands in large numbers and some of the owners are not in the area, so they faced difficulties in obtaining approvals. Accordingly, they developed and implemented a due diligence strategy to avoid this challenge and then they signed an agreement or memorandum of understanding between the owner of the land and the responsible authority in the region and the organization to avoid any future problems. This challenge was also avoided through donations, where the land is purchased and becomes an endowment for the organization. In both cases, the process was legally established as much as possible through local authorities and documented contracts. There are proofs of legal identity and available documentation (e.g. tabu, court decision, power of attorney, sale contract). Secondly, the selection of beneficiaries due to the large number of displaced people in the area, the frequent displacement movements and the great need, this challenge is avoided through coordination between organizations and clusters. Thirdly, the problems of sanitation and infrastructure in the camps in NW Syria, where there is great pressure on them and they are not equipped for this number of users, which has led to their deterioration., each organization can contribute to the solution, but the problem cannot be solved individually, so coordination between organizations pushes the region a step towards development.
With regard to the strategies of improvement, Nizar Bustani mentioned that their development in designing projects from a tent to a room, to a residential unit with a small area, to multi-story buildings, to the design of housing units whose size and design are matches with the number of family members and the cultural sensitivity of the community, contributed significantly to improving the quality of work and gaining the trust of the beneficiaries, and led to their participation in the technical working group for establishing the Guideline to build residential units with the group. They also developed planning and design strategies related to graveling and the tent isolation projects, where they started their projects by isolating the tents inside the

camps without roads maintenance. But the result did not meet their expectations on the ground, so they moved to repair and maintenance of the roads and then isolate the tents. Therefore, coordination and cooperation between organizations working in the region contribute to providing a full service to the displaced beneficiaries, such as the implementation of multi-sectoral projects (WASH, Shelter, Early Recovery). In addition to their seeking constant development of projects planning, design, and work mechanisms, they rely on the Syrian code, the Guideline from the Technical Working Group, SPHERE Standards, and UNHCR Standards in their projects, in addition to their reliance on needs assessments they carry out before projects and assessments of other organizations that are published or shared with them.

Discussion

The expert from ATAA stated that in one of their projects they targeted the displaced widows and their children only, but the rest of the projects have been developed as a result of previous social experiences and the avoidance of the residents' feelings of isolation to avoid the so-called "ghetto society impact" so that these projects are more connected to the surrounding society and influenced by the fabric of Syrian society. The method of housing based on community diversity and the creation of a suitable environment for all groups of society within certain ratios governed by access to the largest and most vulnerable segment of society, with the emphasis on the social diversity that includes the beneficiaries of different regions, cultures, and backgrounds, scientifically, professionally and economically to build a community has the character of the fabric Syrian community before the crisis, which leads to a balanced society and able to integrate with the surrounding environment.

ATAA, like many other active organizations in northwest Syria, is responding to the winter flood disaster in the camps and they have also developed a rapid response mechanism RRM of their own. But this response is not sufficient, because it should be before the disaster and not after it to avoid damage and loss of life, I also see that the gap and need in the region needs high cooperation and coordination between organizations and donors, because individual work will not work in this case, and this is what the SCHF OCHA is seeking, as it allocated about 10 million dollars to repair the infrastructure in the camps in 2021, which is a highly appreciated step that pushes the region

towards development, but the camp residents need a radical solution to get them out of the tent after about 10 years of displacement.

Concerning the demographic change issue, Nizar Bustani do not agree with this idea, even if there is a demographic change, he think that it has already occurred during the previous 10 years, and the most important here is people's mental health, and it cannot be denied the fact that the displaced were forced to move and live in cities other than their cities, therefore, all parties must stand by them and support them.

The interviewed expert suggested several strategies to reduce the risk of a flood disaster for the affected population, such as infrastructure repair, maintenance and reorganization, transferring people from the sites where the disaster recurs, and closing the camps located in the mouths of rivers and torrents and transferring their residents to other sites, where this solution was implemented in Atma, but the solution was not reached in the Ma'arrat Tamasrin camps gatherings, work on replacing tents into housing units in a technical and hierarchical manner to preserves the dignity of the IDPs.

I see that responding to people's needs resulting from the Syrian crisis, in general, is taking a large part of the humanitarian response in the world, and sudden disasters such as floods in camps have increased the burden on humanitarian workers, as they do not stop thinking about strategies, solutions, and services that can raise the living conditions of the displaced people. On the other hand, their limited capabilities do not enable them to implement everything that is planned, and accordingly, this gap and its size must be highlighted and the response volume that covers only a small part of the gap must be clarified, to work on effective strategies that provide a full service and unconditional benefit to the displaced to ensure their protection, safety, and preservation of their dignity.

MOLHAM VOLUNTEERING TEAM PROJECTS – EXPERT B – BARAA BABULI

About Molham Volunteering Team

Molham Volunteering Team is an independent non-profit organization founded in 2012 by a group of Syrian students and is registered in Canada, Germany, Jordan, France, Sweden, Turkey, and Norway. Today, the team includes 180 volunteers from different parts of the world (MOLHAM TEAM, N. D.).

"With every storm, every winter, and every tragedy that the camp residents suffer, there are many voices asking, "Why don't you build homes?" and

"Why don't you try to start with permanent solutions?" Despite the difficulty and cost of implementing these solutions, but they are the only way to end the suffering remains. After years of its orbits and mitigating its results by instantaneous methods. Throughout the years of our relief work, the scene of the tents was unbelievably sad, and we were drowning thinking for hours and days, individually and in groups, to find an alternative that would spare the families unbearable hardships. This is a family whose things have been destroyed because of the rain, and all her children were sick, and another lost her tent due to a storm, and other stories that are repeated without losing their miserable character" (BUSTANI, 2021).

Successes, Challenges, and Improvement

The shelter department manager Al Baraa Babuli in the team summed up their **successes** with providing protection, provide privacy, Provide partial stability for families in their projects. By targeting the residents of random camps who are threatened with permanent relocation according to the circumstances surrounding them and considering the needs of families during the planning, design, and implementation of projects, they cancelled the idea of sharing housing and service facilities among more than one family, and they provided a housing unit with its own facilities for each family. In my opinion, this strategy in action is consistent with the principle of improving the living conditions of the displaced in the camps and protecting them from the harsh climatic conditions and their effects.

He also added the most important challenges they face in their work is a large number of displaced people in the region, as they see that individual efforts are insufficient and seek to joint work with other organizations active in the region, which may accelerate development in this field, in addition to the unwillingness of some beneficiaries of the rural population to live in closed apartments in multi-story buildings, so they had to find an expansion of the apartments' spaces in proportion to the population's culture and social sensitivity.

The improvement strategies of the Shelter Department in Molham volunteering team had two directions, the first being the development of spaces and design, where their construction projects started with Project (1000 housing units), as they started by constructing 50 housing units with an area of 16 square meters, then they developed the space to 24 m^2, then 32 m^2, until they reached today a space of 58 m^2 for the family, including facilities

to suit the families' needs properly and guarantee them a decent life, which will be explained as follows:

A. 1000 Housing Units Project: (Table 1, Figure 9, Figure 10, Figure 11).

Table 1: *The models that have been worked within the 1000 Housing Units Project (BABULI, 2021)*

#	Space (m^2)	Number of rooms	Ceiling type
1	16	1	Shader insulator rain
2	24	1+(bathroom-toilet-kitchen)	Shader insulator rain
3	32	2+(bathroom-toilet-kitchen)	Shader insulator rain
4	32	2+(bathroom-toilet-kitchen)	Prefabricated reinforced concrete ceiling with a thickness of 1.5 cm
5	58	2+(bathroom-toilet-kitchen)	Reinforced concrete ceiling with a thickness of 15 cm

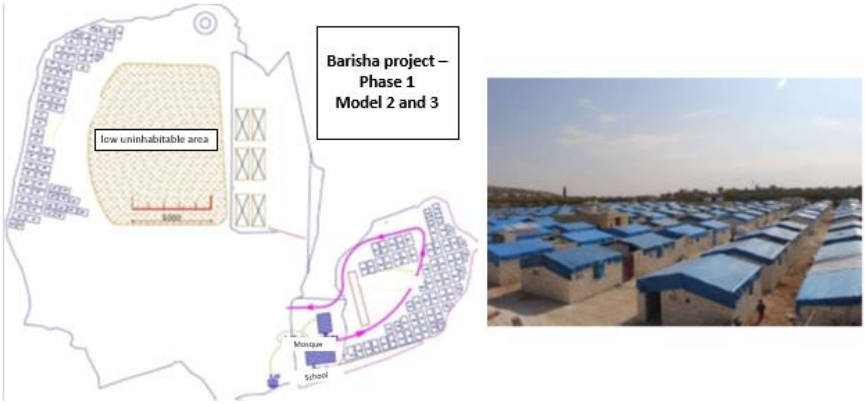

Figure 9: *Barisha project - Phase 1 - Model 2 and 3 that have been worked within the 1000 Housing Units Project (BABULI, 2021)*

Figure 10: *Azaz project - Model 4 that have been worked within the 1000 Housing Units Project (BABULI, 2021)*

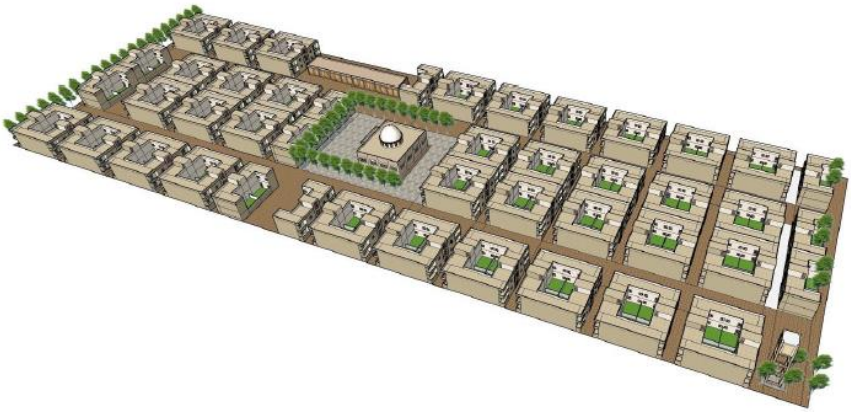

Figure 11: *Azaz project - Model 5 that have been worked within the 1000 Housing Units Project (BABULI, 2021)*

B. Molham Village Project: (Table 2), (Figure 12, Figure13,).
The project is an integrated village that contains apartments, a health center, a mosque, a cultural center, a children's garden and a commercial market.

Table 2: *The building models that have been worked within the Molham Village Project (BABULI, 2021)*

#	Number of floors	Number of apartments per floor	The total number of apartments in the building
1	3	6	18
2	4	6	24
3	3	4	12

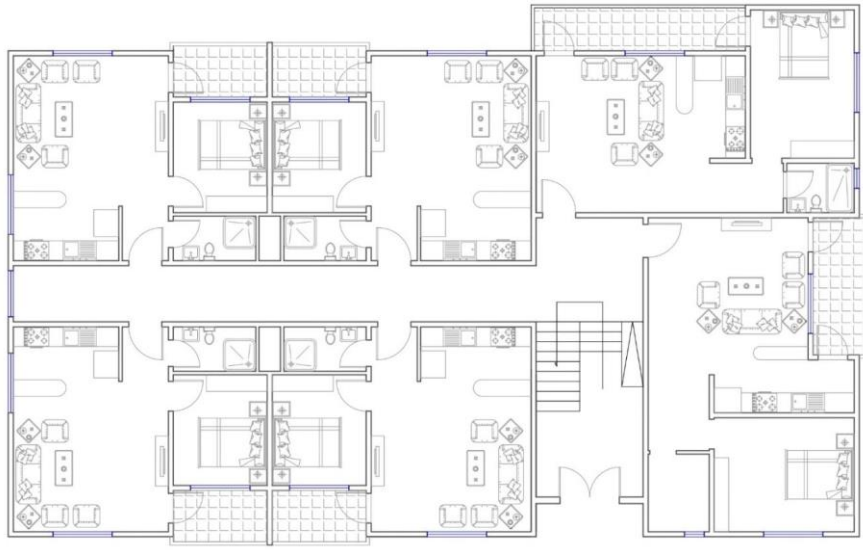

Figure 12: *Architectural plan for the first and second models - the floor contains 6 apartments with an approximate area of 52 m^2 (BABULI, 2021)*

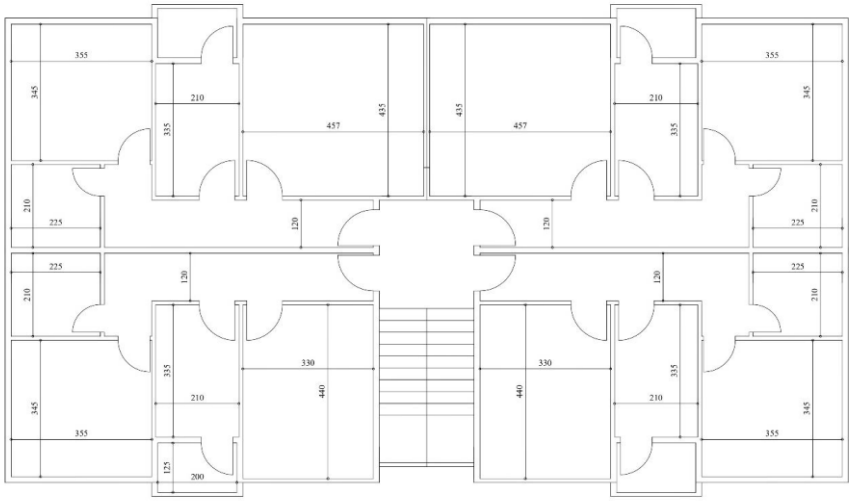

Figure 13: *Architectural plan for the third model - the floor contains 4 apartments with an approximate area of 55 m^2 (BABULI, 2021)*

The second direction of improvement strategies was in the WASH sector, as Al Baraa Babuli mentioned, where they started their projects in remote locations that lack sewage systems, which affected the project budget and implementation, as they had not planned for it previously. Now, after many experiences in the field, they changed the planning mechanism and included the budget for the infrastructure of the housing unit within the total budget.
Working perfectly may be difficult to achieve from the beginning, but identifying and analysing mistakes and developing solutions to them makes the work achieve better results for the beneficiary and the organization, and this is what the team does by developing their work strategies to meet their projects as much of the needs of the displaced who benefit from their projects.

Discussion

Legally, and to solve the property problems, the Molham volunteering team followed two methods in the implementation of construction projects, the first method is the purchase of the project land by the wealthy of the targeted village and donated it to the displaced and the ownership of apartments for the displaced, the second method is the purchase of the project land by individual donors and made it an endowment for the team's work and after construction the team signs usufruct or rent contracts with a symbolic value such as 1 Turkish lira annually, and the contract includes terms that guarantee the right of both parties. After the implementation is completed and the housing units are handed over to the displaced, an administrative committee is formed by the team to manage the camp/village/site to avoid problems related to selling, renting, and any other problems (BABULI, 2021). It is worth noting that what helped the team implement this type of project is their dealings with individual donors who do not place conditions and restrictions on their implementation.
Their projects are implemented based on the Shelter Cluster Guideline, along with the design criteria they developed according to the Syrian Building Code with slight variations according to the culture of each region. Also, the blocks and buildings that they create are based on a strong foundation, last for long periods, and provide safety standards for the land and the beneficiary (BABULI, 2021).
As for the demographic change, we cannot say that the tent and the housing units will affect the demographic change, the displaced person will return to his home and city after the war. These blocks can be used later in other

projects as shelters for orphans and others, as they inevitably belong to the implemented organization.
The work experience of the Molham Volunteering Team in the Shelter field is considered one of the earliest experiences in the field of construction in the Syrian context, and attention must be drawn to it to benefit from it in terms of dealing with donors, managing resources, communicating with the affected population and planning projects according to their needs.

QATAR CHARITY PROJECTS – EXPERT C – AMRO KATKHADA

About QATAR CHARITY

Qatar Charity has responded to the needs arising from the Syrian crisis since 2011 through its field office in Turkey and its multiple cooperation and partnerships with local and international organizations operating in the region, and until 2015 it has spent approximately $88,148,974 implementing projects in various sectors in Syria, including Shelter, and WASH (QATAR CHARITY, 2016).

Successes, Challenges, and Improvement

C. Amro Katkhada was the expert I interviewed from Qatar Charity, and despite the various projects in the Shelter department that he manages, he mentioned that the most important project implemented in this sector, which he considers his greatest **success** in this field, is the project to build a modular village in Idlib to house the displaced, where the village contains 400 housing units, a mosque, a medical point, a two-story school, shops, an administration building, water well, and a sewage system. This success is due to the presence of an empowered work team, a good supplier, good project management, in addition to the design and implementation of the project well in terms of space and backsets, etc. (Figure 14, Figure 15).

Figure 14: *The modular village plan (AMRO KATKHADA, 2021)*

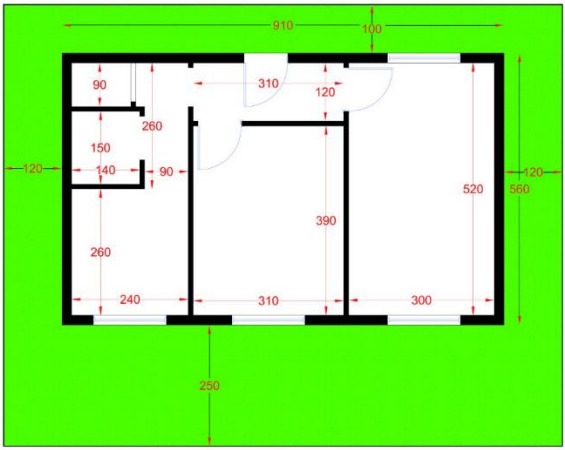

Figure 15: *The Housing unit plan in the modular village (AMRO KATKHADA, 2021)*

He also mentioned another success of his previous work in the Shelter sector, which is the rehabilitation of unfinished residential homes through the repair of doors, windows, walls, ceilings, and sewage networks. What reinforced the

success of this project, in his opinion, is that it is based on great real need and targeting entire housing complexes.
He also summarized the challenges he faces in his work by managing projects remotely, which reduces the quality of work sometimes, the unwillingness of some displaced people residing in the tents to move to the housing units, beneficiaries selling tents after receiving them because of working based on an unreal and inaccurate need assessment, which added activity to their projects, which is installing the tent and isolating its floor, and then handing it over to the beneficiary. It is also worth noting that this problem prompted OCHA to agree to alternative solutions such as construction and others because although tents are cheaper, the continuity of their annual distribution leads to a waste of resources.
Amro Katkhada divided the improvement of work strategies into two parts, the first is to use resources correctly, as he believes that in responding to the displacement movement in northwest Syria, there is no better solution than the other, but each solution must be used at its time, as tents must be used in emergency response to emergency displacement situations or sudden disasters, and then providing families with an alternative shelter to preserve their dignity. Due to the difficulty of finding donors for construction projects, they resorted to other solutions such as prefab containers and Refugee Housing Units (RHUs), but they were very expensive. And recently, after the intervention of many organizations in this field and achieving tangible success and positive impact, it was approved to add construction project activity to the Result Framework in the Cluster.
In the second part, he talked about the legal field and HLP housing land property problems, "Despite all the problems, we know from the experience of the Palestinian camps in Syria that they are capable of development and the integration of their residents into societies."
Therefore, a working mechanism has been developed that reserve the rights of the beneficiary and the landowner, which is due diligence, whereby the neighbours, the local council, and organizations working in the area are asked about the land and its ownership, then negotiations with the owner to reach approval and a signed agreement. As for the beneficiaries, a housing document, a rental contract, or a sponsorship contract with the organization, is signed with them and then assigning management for each residential community to be responsible for managing the beneficiaries and transferring

housing from one family to another in the event of departure to avoid problems of sale and rent.

In this type of project, I think that assigning management supervising the residential complexes is positive, and it is, as mentioned previously, that it preserves the rights of the residents, the owner of the land and the organization, in addition to protecting the site from a security point of view, but on the other hand, I cannot ignore that this community will not feel independent as long as monitored from the party that provided the service to him, and because the end of the Syrian crisis is not yet known, it may continue for years, and this will increase the financial burden in terms of administrative salaries and logistical expenses, so I think that assigning management for a limited period is very important for coordination between residents and ensuring their safety and guaranteeing their rights, but after a period not exceeding a year, I think that the gradual withdrawal will be better, and the population will feel more independent. It will also give them self-motivation to protect this community because it has become their community temporarily and for an unknown end.

Also, in one of Qatar Charity's projects, they built two residential blocks of 4 floors, but they bought the land before implementation and it became the property of the organization, so they never faced legal problems. But in my point of view, it is not always possible for organizations to resort to similar solutions. In the end, they are non-profit organizations that depend on donations, so adding the cost of purchasing land to the budget of the projects will be very expensive, and it will put an extra burden on them that they cannot bear.

Discussion

At the beginning of the response, Qatar Charity was targeting the beneficiaries according to the criteria of weakness that are specified in their projects proposals, but now OCHA has issued standards for Dignified Shelter and Qatar Charity works according to it, but the interviewed expert believes that targeting entire camps and transferring their residents to residential complexes will contribute to development all the way to closing the camps completely. As for me, I cannot agree with the idea of closing the camps completely, because as it is known that the Syrian crisis is not over yet, so we must expect new waves of displacement at any time, and this highlights the importance of maintaining some camps and shelters in safe areas from the flood to respond urgently to such cases and seek to transfer the displaced who have been there

for a period of time to residential settlements that are built to protect them and preserve their dignity.
They also work according to the Syrian Architectural Code and consider the field reports to be the strongest reference for them, in addition to their understanding of the country's culture.
The interviewed expert also evaluated the emergency humanitarian response in the event of a frequent flood disaster in the Idlib camps as "quick, but it does not fully cover the need", therefore, it is necessary to respond better and develop solutions to reduce the impact of the flood, and not just replace the tent, such as repairing roads, rain drainage, and sewage channels, and raising and isolating tents from the ground. Moreover, camps in the locations where floods occur are also known so these camps must be closed and their residents moved to better sites, in addition to repair and construction solutions, but donors do not encourage this type of strategy that needs a long-term approach to implementation.
In talking about demographic change, Amr said: "We cannot work with the same standards that we work with in building an apartment in Gaziantep, for example. In the displacement areas, we build residential blocks that are 10 to 15 years old, but in Gaziantep, we build for 50-75 years because long-term construction will affect the demographic change that may affect the country and the city, the buildings that we build do not have sidewalks to protect the housing unit and increase the life of the building, and this is the only way we have been able to convince donors to build in Syria." I think that that this is a problem that is being promoted under the name of demographic change to put conditions on the benefits that the displaced in the NW Syrian camps get. The most logical solution, after more than 10 years, in my opinion, is to move people from tents to housing units, but the problem of demographic change places conditions and limits on this type of project, on the other hand, when I asked the displaced community in the NW Syrian camps about their desire to stay in the areas of displacement or return to their original areas after the war, more than 86% of them chose to return (Figure 4-11), therefore, we should not let this idea affect the provision of the service because it will affect the quality and thus the impact of the project on the ground.

ALTERNATIVE SOLUTIONS COMPARISON AMONG EXPERTS

Table 3: *Alternative solutions comparison among experts*

#	Solution	Evaluation (Applicable /Not applicable)			Cost Evaluation (Very High/High/Medium/Low/Very Low)		
		Expert A	Expert B	Expert C	Expert A	Expert B	Expert C
1	Infrastructure repair and development in all camps	A	A	A	VH	VH	VH
2	Establishing recycling stations in the area to collect rainwater, recycle and reuse it	NA	NA	A	VH	VH	VH
3	Training camp residents on the mechanisms of dealing with the flood disaster and providing them with the necessary equipment	A	A	A	M	M	M
4	Replacing all tents with mud houses, in addition to building the necessary facilities	NA	NA	NA	VH	M	M
5	Replacing all tents with caravans, in addition to building the necessary facilities	A	NA	NA	VH	VH	VH
6	Replacing all tents with housing units, in addition to building the necessary facilities	A	A	A	M	VH	VH

7	Replacing all tents with a multi-story building, in addition to building the necessary facilities	A	A	A	VH	VH	VH

The experts agreed that the solution to repair and develop the infrastructure in all the camps in NW Syria is definitely an applicable solution, but it requires cooperation and coordination between all organizations and bodies working in the region. Perhaps the cost of a project of this type will be very high, but it will be for one time only, and it will be less than being divided into separate projects in terms of administrative expenses and operational costs, and the cost will be lower compared to the costs of repair and annual maintenance of dilapidated sewage networks, which have reached almost non-existent condition as mentioned by the population in the community survey. Besides, the training of camp residents and their involvement in the construction and maintenance process will benefit the displaced and the organizations, as the camps include IDPs with technical backgrounds, engineers and talents, and their contribution to these activities (Cash For Work) will restore their self-confidence and give them a source of income to support them under the harsh living conditions, which will ease the burden of funding spent on distributing food baskets to the camp residents, so directing people to action is more important than directing them to wait for aid every month. This strategy needs a long-term approach, but implementation can be done gradually.

Moreover, solutions as replacing tents with built housing units, whether they are independent units of one floor or apartments within multi-story buildings, these solutions are what the community prefers and what the experts unanimously agreed on in the interviews, and solutions of this type contribute to protecting the family, especially children and women from risks and threats in terms of protection, such as access to privacy services and facilities such as the toilet, bathroom, and kitchen, which are usually shared facilities in the camps and people are forced to leave their tents to use them.

COMMUNITY PARTICIPATION

CHARACTERISTICS OF THE TARGETED SAMPLE

- 384 interviews were conducted with the residents of the northwest Syrian camps for 4 days, distributed over 12 districts and 40 camps (Figure 16, Figure 17).

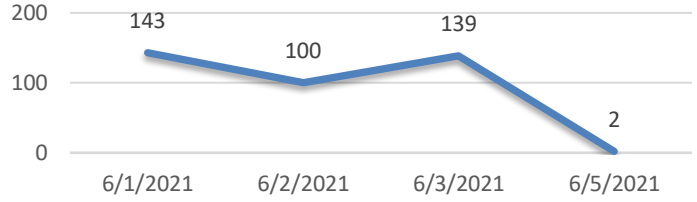

Figure 16: *Interviews number per day - Community Survey*

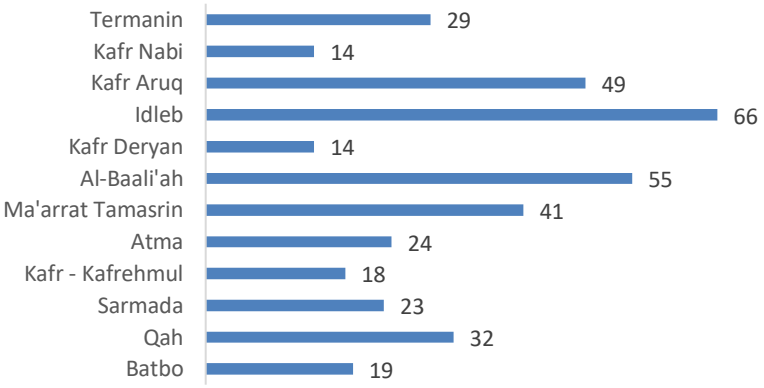

Figure 17: *Interviews number per district - Community Survey*

- The percentage of males interviewed was 78%, whereas the females interviewed was 22% (Figure 18).

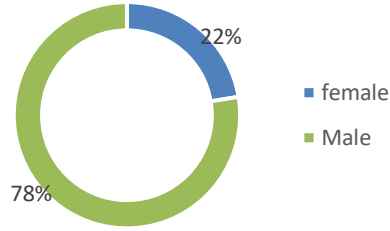

Figure 18: *Gender of the respondents - Community Survey*

- More than 93% of them have been living in the camps for more than a year and less than 5 years (Figure 19).

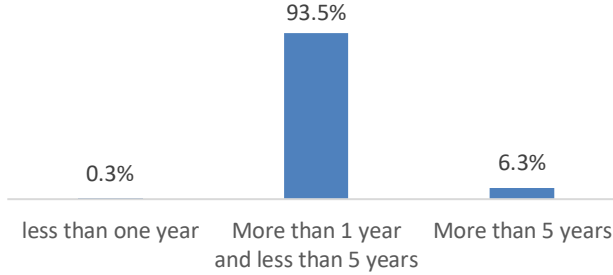

Figure 19: *How many years have you lived in the camps?- Community Survey*

FINDINGS

- All camps are considered safe areas.
- In 92% of the interviews, camps were considered as an unsafe area from a health point of view (Figure 20).

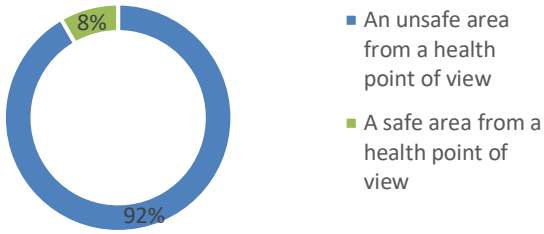

Figure 20: *Is the camp considered as safe?- Community Survey*

- All interviewees were affected by floods caused by heavy rains in the camps of northwest Syria.
- 56% of respondents their tents completely damaged, and 14% of them their tents become uninhabitable (Figure 21).

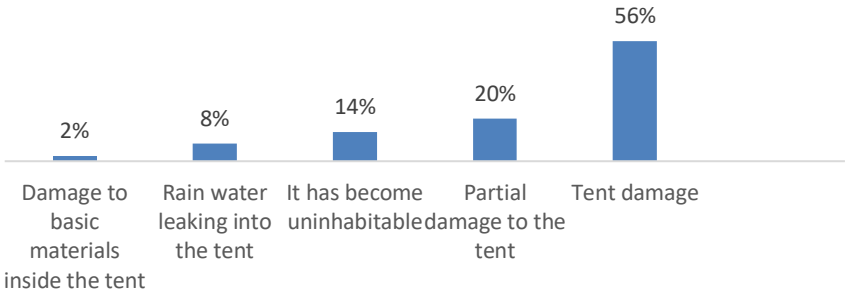

Figure 21: *What was the fate of your tent after this disaster? - Community Survey*

- 46% of the respondents suffer from water leakage into the tent in the winter, and 41% of them suffer from severe cold (Figure 22).

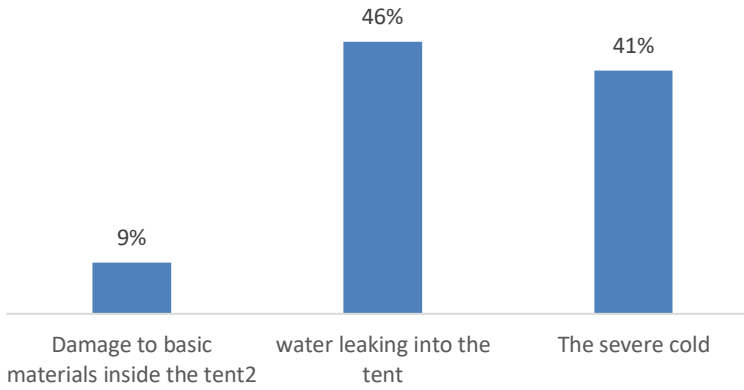

Figure 22: *What problems do you usually facing in winter in your tent? - Community Survey*

- The respondents suggested a set of solutions to solve the problems they face in the winter in their tents, as 29% of them stressed the importance of isolating tents, and 45% of them mentioned the importance of replacing the tent with other alternative shelters (Figure 23).

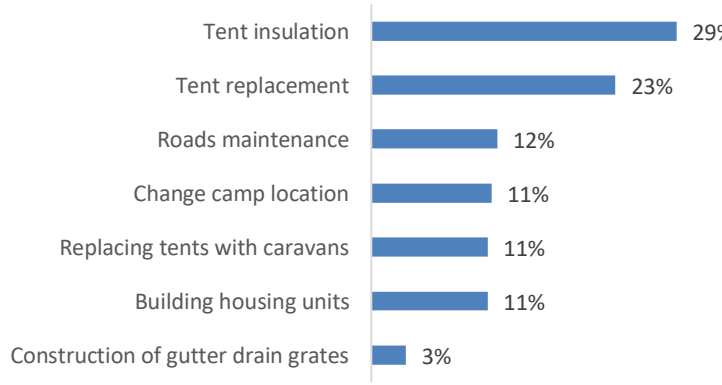

Figure 23: *What are your suggestions for solving problems regarding winter in your tent? - Community Survey*

- Moreover, 79% of them suffer from the lack of effective sewage systems in the camps, which leads to rainwater remaining above the ground and thus leaking into the tents and causing them to sink and damage them (Figure 24).

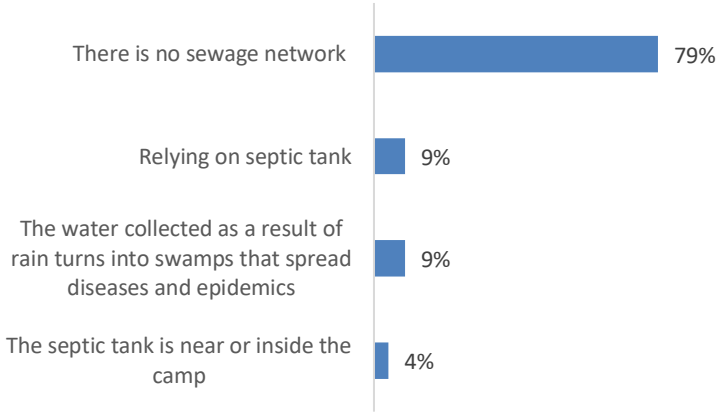

Figure 24: *What are the problems you are currently facing in your tent in terms of sanitary installations and the sewage system? - Community Survey*

- Also, 58% of the camp residents who were interviewed indicate the need to Construct a sewage network to get rid of problems related to sewage systems (Figure 25).

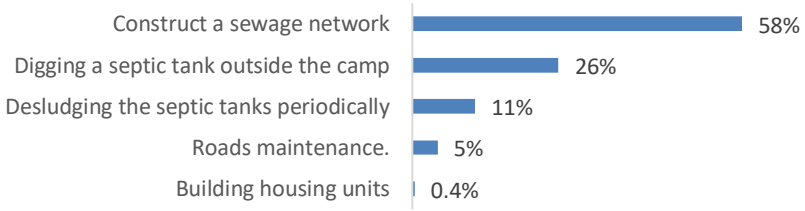

Figure 25 What are your suggestions to solve these problems?2 - Community Survey

Figure 25: *What are your suggestions to solve the problems regarding sanitary installations and the sewage system? - Community Survey*

- In 19% of the interviews, respondents rated the humanitarian response to the winter flood disaster in camps on NW Syria as bad, while another 69% rated it as a medium.
- The highest percentage of suggestions for improving intervention strategies in the winter flood/heavy rain disaster from the population's point of view was Construction of concrete housing units (46%) and maintaining roads inside camps (29%). This indicates people's dissatisfaction with the conditions in which they live and their hope for better conditions (Figure 26).

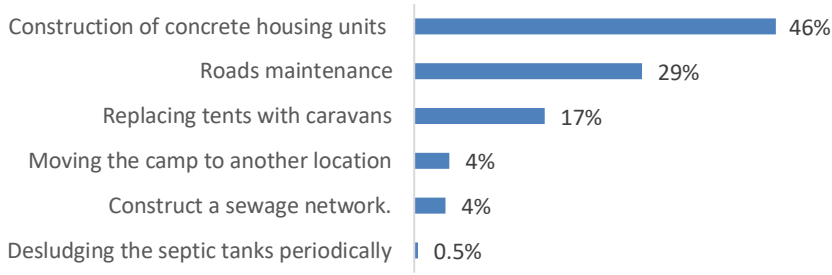

Figure 26: *What are your suggestions for a better response to the winter flood/heavy rain disaster? - Community Survey*

- More than 86% of the respondents confirmed their desire to return to their cities and homes in the event of the end of the war (Figure 27).

Figure 27: *If the war ends, would you rather stay in the camp or your current place of residence, or return to your home city? - Community Survey*

DISCUSSION

It is noted from the feedback and suggestions of the affected population that they want a change in their living conditions, as they want to replace the tents with caravans, or built housing units that protect them from the weather and preserve their dignity. In addition to their need for heating fuel in the winter. It is also clear that they need to replace, insulate and install damaged tents at least after every storm, which frequently wastes resources. Therefore, it is necessary to think of long-term strategic alternative solutions that cover the needs of the displaced and reduce the waste process. Long-term solutions may be more expensive, but they will be one-time, such as establishing and extending a sewage network in camps that do not have one, and digging and transferring septic tank outside the camp and that it is periodically dislodged and cleaned, and the transfer of flood-prone camps to other locations, in addition to preparing an emergency plan in advance with the organizations working in the area in order to obtain a quick and good response in the event of floods.

Also, all the construction solutions that will be implemented to solve the problem of the displaced will remain an endowment for organizations in the event of the end of the war and can be used in other projects and provide various services and benefits to the host community through them after the stability of the region.

RESULTS AND DISCUSSION

By following the mentioned steps above an Inductive Analytical on the problem of winter floods on the camps of NW Syria has been done and results was obtained as listed below:

i. Observation:

- Aggravation of the need: The Syrian crisis has been going on for more than 10 years, in addition to the occurrence of emergency events such as the continuous waves of displacement until today as a result of the continuous bombing and instability of the region, and other disasters that affect the displaced such as fires and floods in the camps, and this is what makes the need increased year after year.
- Inadequate response: The recurrence of the flood disaster year after year indicates that the humanitarian response that took place in the previous year did not contribute to solving the underlying problem.
- Beginnings enthusiasm and dwindling motivation over time: The occurrence of the disaster, its size, and dimensions make governments

and actors enthusiastic and motivated to develop long-term action plans and strategies to prevent the disaster from happening again or at least mitigate its impact, however, the immediate emergency response and erasing the effects of the disaster at the time, make these parties forget the problem, the preparedness, and the solution and wait for it to occur again to respond as the previous time.

- Waste of resources: The distribution, isolation, installation, and replacement of tents by organizations on an annual basis, wastes a large part of the funding allocated to respond to the displaced people of the Syrian crisis because we know in advance the fate of this tent after a year or less from the date of distribution. Moreover the flood disaster also causes other needs, such as the need for food items, non-food items, and hygiene items, which could have been avoided through prior preparation for this disaster.

ii. Experts Feedback:

- Inadequate shelter: To this day, the tent is still the best solution in emergency cases but considering it a suitable shelter for the displaced after all this period is considered unacceptable, so it is necessary to seek alternative solutions gradually to protect them and ensure their safety and integration into the new society.
- Shelter compatible with the culture of the displaced family and the society sensitivity: Since the beginning of the crisis, the organizations have responded to the need, and as a result of their communication and interaction with the displaced on the ground, they have developed designs and plans that correspond to their needs, cultures and the sensitivity of the society around them so that they do not feel isolated in the host community.
- Stable shelter contributes to economic empowerment: After all these years, the displaced are accustomed to waiting for the aid that is distributed periodically, however, one of the criteria for distributing this aid (food baskets, ready-to-eat baskets, non-food items, etc.) is that the family is displaced and lives in a tent, accordingly, transferring of the displaced to housing units within the new residential complexes that contain markets and shops, as we noted in the designs above, will reduce fund for aid distribution projects, and

will contribute to the economic empowerment of families through their work in these markets or outside them.

- A big gap in infrastructure and sewage systems: The sewage systems were established in the area before 2011 for a certain number of users, so today, after the influx of huge numbers of displaced people, it became out of service in many areas, in addition to the presence of camps in agricultural lands that do not have sewage systems at all, which increases the impact of floods when they occur.
- Donors between conditional service and unconditional service: It was observed through interviews of experts that the implementation mechanism in projects varies according to the donor, as some donors impose conditions and restrictions on implementation, and some of them do not accept construction projects for many reasons, some of which are authorized, such as fear of demographic change and others that are unclear and incomprehensible. On the other hand, the experts stated that dealing With individual donors who do not follow specific governments, organizations, bodies, and etc, always allows them to be comfortable and flexible in their work.
- Demographic change is not a goal of working in the region: Working to protect people and their health and psychological safety is the most important, for example: In the gathering of Atma camps, more than 50% of the tents have been converted into housing units, and most of the transformation took place at the hands of the displaced, not in the hands of the organizations (CCCM CLUSTER, 2021). So, since these actions inevitably happen, we must intervene and respond to the needs of the displaced in an organized and more effective. With this systematic transformation, we do not encourage demographic change, but the displaced are forced to change, so we must stand by them and support them. The length of the Syrian war has caused problems for the displaced, the supporters and the cities of displacement, so the best solution is always to return people to their original homes, but now, we must strive to preserve their dignity and empower them economically in their places of displacement.

iii. Community Feedback:

- Camps are an unsafe area from a health point of view: This is due to the very high summer temperatures which the canvas tent cannot

protect the displaced from, the spread of swamps and polluted water in the camps as a result of heavy winter rains, digging the septic tanks inside the camps, and the lack of interest in desludging them periodically.

- All camp residents suffer in the winter: The suffering of the displaced in the tent varies between the destruction of the tent as a result of heavy rains, torrential rains, and strong winds, severe cold, and leaking of rainwater into the tent.
- The displaced need a safe environment: The needs and suggestions of the displaced during the interviews were based on two main elements, the first is to replace the tents with another kind of shelter that provide them protection, privacy, and stability, and the second is the repair and maintenance of infrastructure and sanitation systems to prevent diseases and epidemics.

CONCLUSION AND FUTURE WORK

CONCLUSION

According to the findings and discussion of the literature review, case studies, and the population's participation in this project, the current findings confirm the need to change implementation and intervention strategies in response to the flood disaster caused by heavy rains in northwest Syria, where the reasons for the need for this change were explained above.

Ideally, these results should be adopted and replicated in future studies and projects that contribute to improving the living conditions of the displaced in these camps. In addition, these results provide additional information about the situation in general due to the in-depth research and involve diverse stakeholders in the study.

The analysis also leads to the following conclusions, the response to the aforementioned disaster still needs further development in several areas, starting from assessing the need before designing the project and ending with respecting the real need and providing a full service to the beneficiary, most organizations work separately, which increases the operational value of all projects. Based on this, we conclude that advocacy to work for the best result is an applicable strategy in the camps of northwest Syria because it will benefit all stakeholders, by working on strategic projects sponsored by major

donors and implemented by multiple organizations and in multiple sectors and under the supervision of one body coordinates, supervises and manages work. This study adds to a growing body of studies that attempt to improve the living conditions of the displaced and provides a basis for future research.

RECOMMENDATIONS

Displaced people in NW Syria face many challenges that hinder their stability. Construction housing units alone are not sufficient to address these barriers. Although there is an urgent need to transfer displaced people from tents to residential housing units. However, a balance must be struck between this urgent need and fair and effective long-term planning as much as possible.

By identifying the various stakeholders involved in projects of this type, namely IDPs, host community, landowners, organizations active in the area, local councils, and donors, intervention strategies can be identified more effectively, and accordingly, the following recommendations can be suggested:

- Starting to deal with the disaster from the perspective of long-term strategies rather than applying an emergency response.
- Advocacy in order to convince donors of the importance of these projects and their success on the ground by publishing successful experiences and encouraging donors to visit campsites and built project sites to notice the difference in the living conditions, and constantly develop work mechanisms.
- Develop a long-term intervention strategy that includes multiple sectors (shelter, WASH, Early Recovery and Livelihoods) in which roles are distributed among multiple organizations according to their experiences, where it is implemented according to a gradual time frame in order to achieve balance and not cause shock to the displaced and host communities. This strategy will also include:
  i. Fully equipping the infrastructure and digging the septic tanks away from the housing sites.
  ii. Constructing residential complexes that contain residential units and complete service facilities.
  iii. Starting with selecting the camps located in the mouths of rivers and torrents, which are considered the most vulnerable to the risk of flooding in the winter, and transferring their residents to built housing units, and closing these camps completely.

iv. Moving to camps in which the degree of danger is hierarchically lower than most dangerous to least.
v. Including livelihood activities in the implementation, such as establishing commercial markets in the complexes that are being built and training the displaced in vocational in which they can work, earn their livelihood, and preserve their dignity, and include Cash-for-Work (CFW) activities in construction, maintenance, and other activities to engage the experienced and talented IDPs.
vi. The establishment and support of health points and schools will provide many job opportunities for the displaced and the host community, which will create a state of intimacy and effective communication between them.
vii. Establishing, mosques and gardens within the complexes will also contribute to the integration of the displaced into the host community and not isolate them.

- Implement similar studies to support implementation strategies and implementing agencies and contribute to the continuation of progress towards development.

FUTURE WORK

- Livelihood strategies and activities can be studied thoroughly and in detail for inclusion in future projects, as they must be based on an assessment of the real needs of the population.
- Analytical studies can be conducted for the opinions of donors and the basis on which they place restrictions and conditions while donating to a project.
- Future research could take into account the opinions of the host community and their participation in the process.
- Apply this project in at least one camp gathering and study the effects, results, and impact, for example: targeting the entire Atma or Ma'arrat Tamasrin gathering and providing full service in it.

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Muqarnas

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ABSTRACT
Muqarnas, which is one of the basic parts of traditional Islamic architecture and Islamic art, has its own important features in terms of usage areas. Although from the perspective of Islamic art history, Islamic architecture and Turkish-Islamic Architecture it is both a structural and artistic visual feast unfortunately not much work has been done on muqarnas. For this reason, the aim of this study is to eliminate this deficiency in the literature, in the light of the relevant literature, especially from the perspective of Fatih Uluengin's historic work titled "Stalactite Plans Trench" presented at the First Turkish Arts Congress (Ankara 19-24 October 1959). Issues regarding what a muqarnas is, where it is found and where it is used for will be questioned in this study.

KEYWORDS
Muqarnas, Decoration, Traditional Islamic Art, Islamic Geometric Patterns.

INTRODUCTION

In general terms, Muqarnas refers to a kind of console, stonework (or any material used to build them) protruding from a wall or ceiling, both used as a decorative element in Islamic architecture. The famous mathematician and astronomer Giyaseddin Çemşid, who lived in the 15th century, defined muqarnas in his work "Miftah al-Hisab" (Key to Arithmetic), in which he also included muqarnas arithmetic:

The muqarnas is a ceiling like a staircase with facets and a flat roof. Every facet intersects the adjacent one at either a right angle, or half a right angle, or their sum, or another than these two. The two facets can be thought of as standing on a plane parallel to the horizon. Above them is built either a flat surface, not parallel to the horizon, or two surfaces, either flat or curved, that constitute their roof. Both facets together with their roof are called one cell. Adjacent cells, which have their bases on one and the same surface parallel to the horizon, are called one-tier (DOLD- SAMPLONIUS, 1992).

Muqarnas is the gradual merging of patterns in Islamic geometric form (Figure 1) at the center point in 3D at a certain angle as a concave with the height and angle are given by the designer. Muqarnas is a decorative element protruding from a wall or ceiling, which is used as a decorative element in Islamic architecture, but in some geographies, it is used to lighten the load on the carrier. The muqarnas is in the form of small, pointed niches arranged in layers, each projecting forward from the level below (MÜLAYIM, 2006). Meanwhile, it is a design that uses a series of complex prism shapes resembling stalactites in some places where it is used. The stalactite element, which rises gradually with geometric calculations resembling stalactites, is defined as stalactite in Fatih Uluengin's (1959) works. In this respect, muqarnas is an architectural element that can spread the load of the dome to the carrier like a stalactite. The usage area and function of muqarnas vary according to the regions. In some regions, it is used as an ornament and embellishment.

Fatih Uluengin (1959) determined this situation in his article as follows; "This ditch ornament, whose origin we found in the Middle East, is found in various places such as crown doors, altars, domes, pendentives, squinches, balconies, corners, window jambs, etc." Muqarnas uses forms such as small niches, stars, that is, forms made up of Islamic geometric patterns (Figure 1).

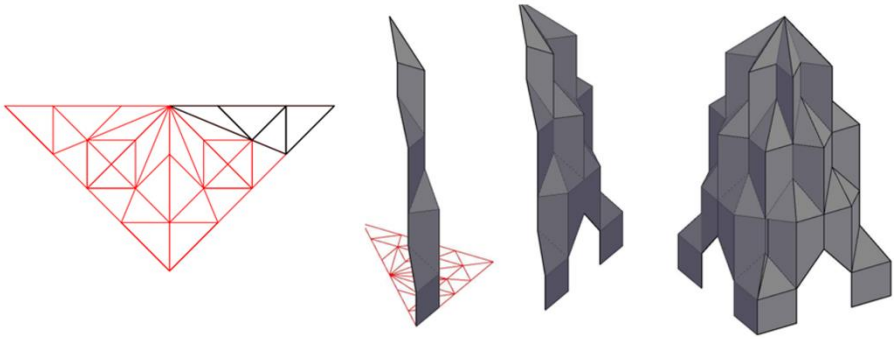

Figure 1: *Muqarnas on the Geometric Plan Consisting of an 8-Pointed Star and Divided into Two*

These geometric patterns are in a certain form and pattern, and these forms are arranged in layers, with a layer protruding forward from a lever below a certain level (Figure 2). This continues until it reaches a point and eventually forms an arch. They are generally applied on domes, pendentives, cornices, squinches, under arches and vaults, to fill the space under them. And with its honeycomb-like appearance in the transitions from the dome, it also displays a complementary intermediate material feature.

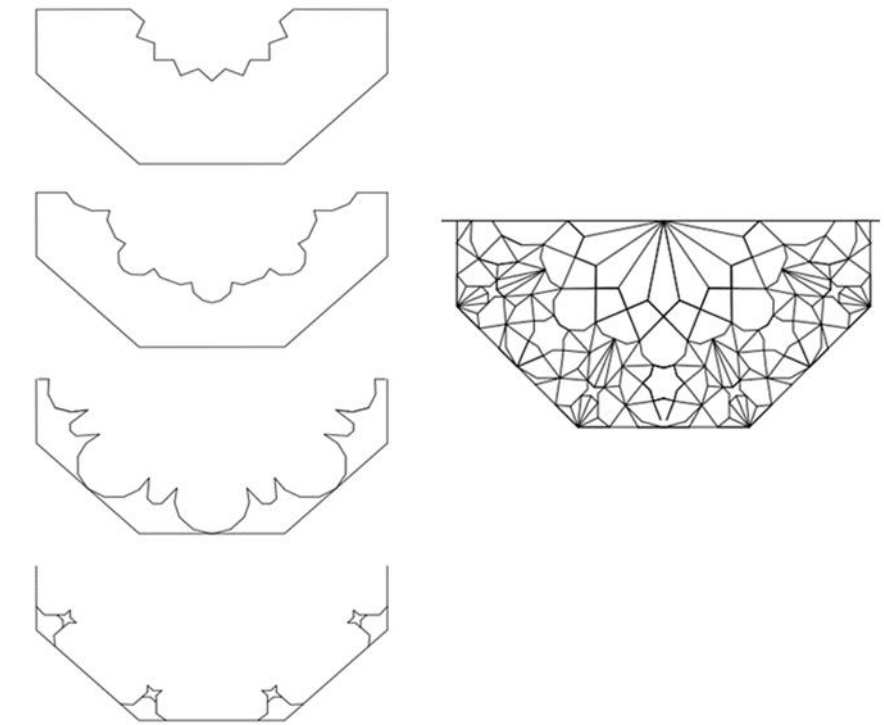

Figure 2: *The plan view of the muqarnas layers*

Muqarnas can be found on domes, columns, mihrabs, pendentives, honours, corners, column capitals, or window jambs (Figure 3). In summary, muqarnas, which elaborates and enriches many architectural elements in traditional Islamic arts, is one of the indispensable details of architectural works.

Figure 3: *Example of muqarnas in the carrier system and door of Sokullu Mehmet Pasha Mosque.*

All kinds of materials are used in the making of muqarnas. These materials have been shaped and diversified according to their usage areas. Muqarnas combinations are the transfer of geometric patterns applied as a plan into 3 dimensions (Figure 4). While geometric patterns spread to infinity with a certain system, they do not change at all, but only gain a third dimension over the same plan scheme (Figure 4). The patterns that progress in this geometrical order appear with the systematic layered dimensioning given to them, sometimes by spreading the load on the carrier, and sometimes by using them as an architectural decoration element (Figure 4). The three dimensions of the muqarnas used in Diyarbakir mosques are shown in (Figure 4). “Seven rows of muqarnas stalactites in the form of an eight-pointed star were placed in the area bounded by the frames.” (YILDIZ, 2011).

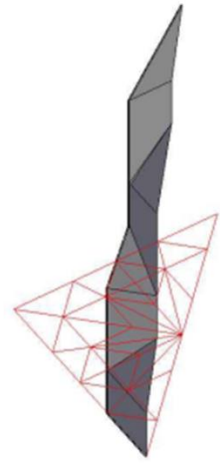

Figure 4: *Image of the muqarnas being moved to three dimensions on the plan.*

WHERE WAS MUQARNAS FOUND?

Muqarnas was introduced to the Iberian Peninsula by the Almohads in the 12th century, became famous as a "Moorish" and spread throughout the world, shaped in the identities of different geographies and survived to the present day, faithful to its original starting point (GLOSARIOARQUITECTONICO, N.D.). As the Islamic culture-expanded its borders across the world, it made itself felt through cultural interaction by taking its influence from the northern part of Africa to the western part of the European continent. Mathematics and geometry, which were quite advanced compared to medieval Europe, showed themselves in art with the developing culture. Muqarnas is mentioned in the work of al-Uzrî al-Endelüsî, known as Tarsiʿü'l Ehbâr, which is known to have been revealed between the years (1003-1085). In Miftahü'l Hisâb, muqarnas has been handled more artistically than its geometric design.

According to al-Kashi (N.D), a muqarnas consists of an edge and a surface. There is a roof that raises these edges like a ladder. And each edge is perpendicular to the adjacent edge, repeatedly perpendicular, or at half the angle of the right angle. Above these edges are one or two inclined surfaces

that are not parallel. In addition, the size of the largest side at the bottom is accepted as the size of the muqarnas.

According to al-Kashi (N.D), there are four types of muqarnas. These are "simple or biruminbar muqarnas (as the builder call it), mutayyan (muddy muqarnas), curved muqarnas and Shirazi muqarnas."

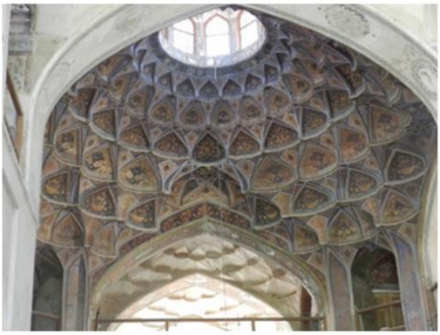

Figure 5: *Hasht Behesht Palace (8 Heavenly Palace), Isfahan*

WHERE IS MUQARNAS USED?

In both eastern and western muqarnas, the horizontal projection pattern acts as a solid template, in which muqarnas in one plane is made to match the next. Another interesting feature that makes muqarnas radically different from East and West is the degree of standardization. In the West, the muqarnas achieve some degree of complete standardization, no matter how complex the frieze or vault in question, we can be sure that the set is made of only eight different pieces. Each of these pieces is given a name and its shape has remained unchanged since Antiquity. In the East, on the contrary, although it is possible to recognize a number of individual parts, they can significantly change their shape to adapt to the desired design.

Figure 6: *Ali Qapu Palace (Left) and Jameh Mosque (Right) in Isfahan*

Figure 7: *Columns of Chehel Palace, Isfahan (Left) and Finnish Bath and Garden, Kashan (Right)*

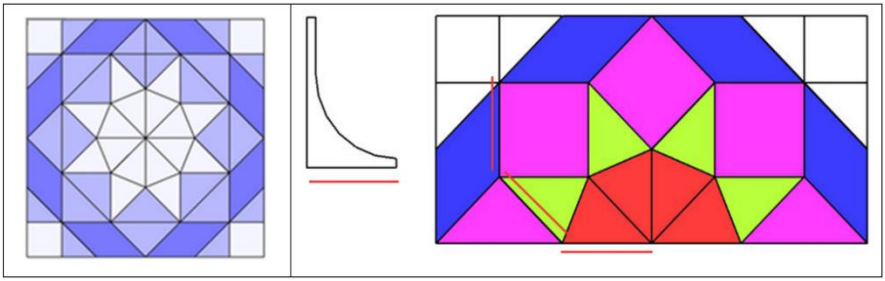

Figure 8: *Eight-pointed star divided into two parts in the middle*

First, it is divided into multiples to form a star muqarnas consisting of eight corners. By colouring each layer in a different colour, the layers that will be formed are understood. Thus, it becomes easier to understand and analyse muqarnas. Then, a "rib" is formed that will carry the muqarnas up and form the protrusions in the form of niches. This rib is the same size as the sides of triangles, squares, and equilateral.

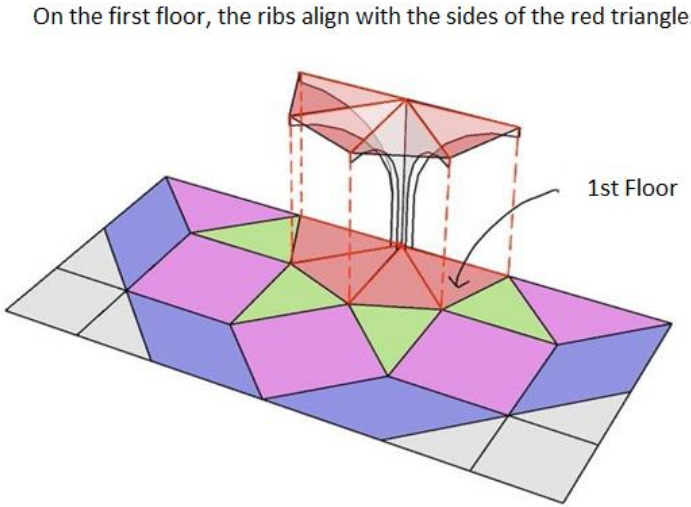

Figure 9: *Image of the ribs aligned parallel to the red triangle on the 1st floor*

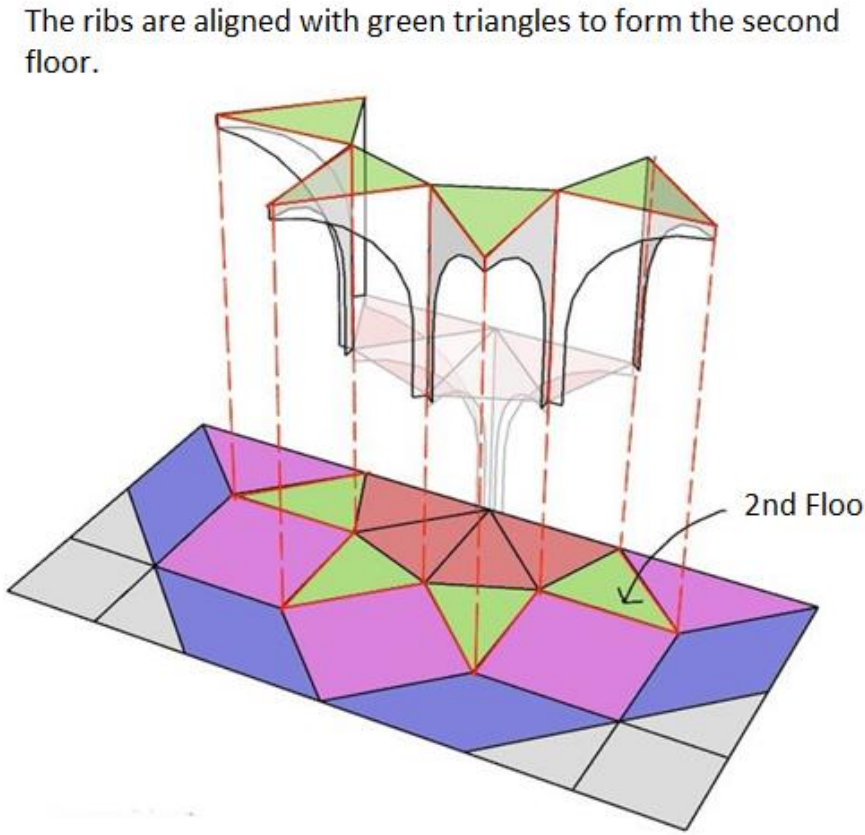

Figure 10: *Triangle alignment image of the upper surface of the ribs on the 2nd floor*

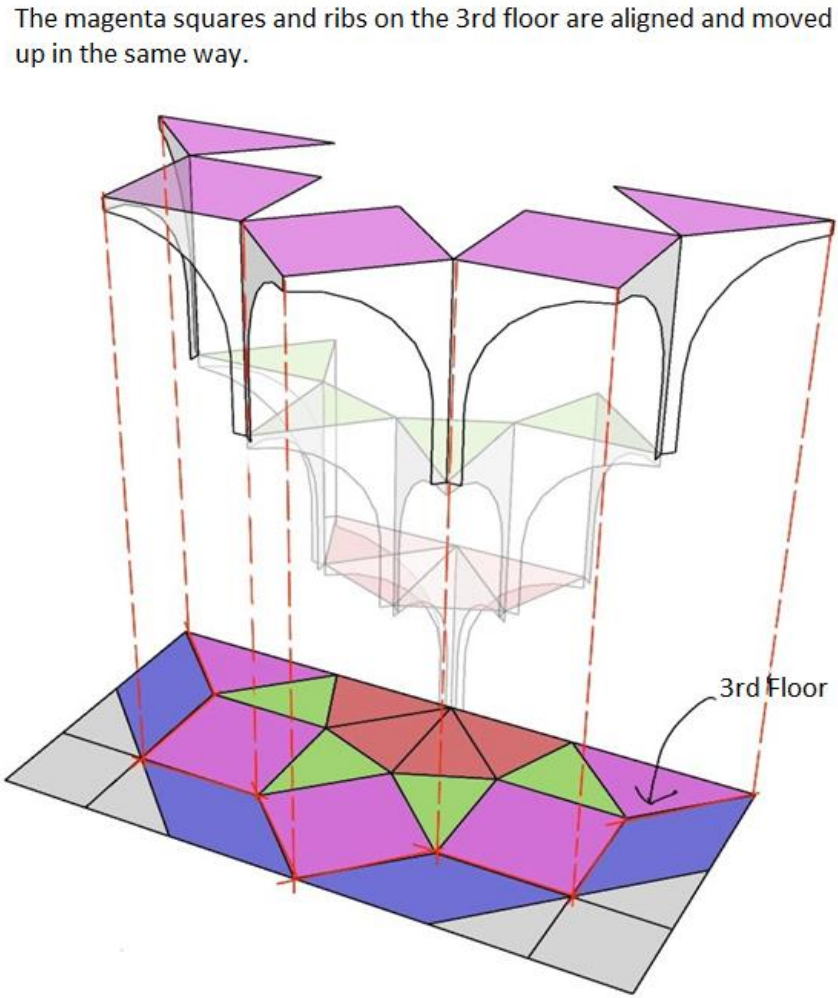

Figure 11: *Image of the alignment of the rib surface with the squares on the 3rd floor*

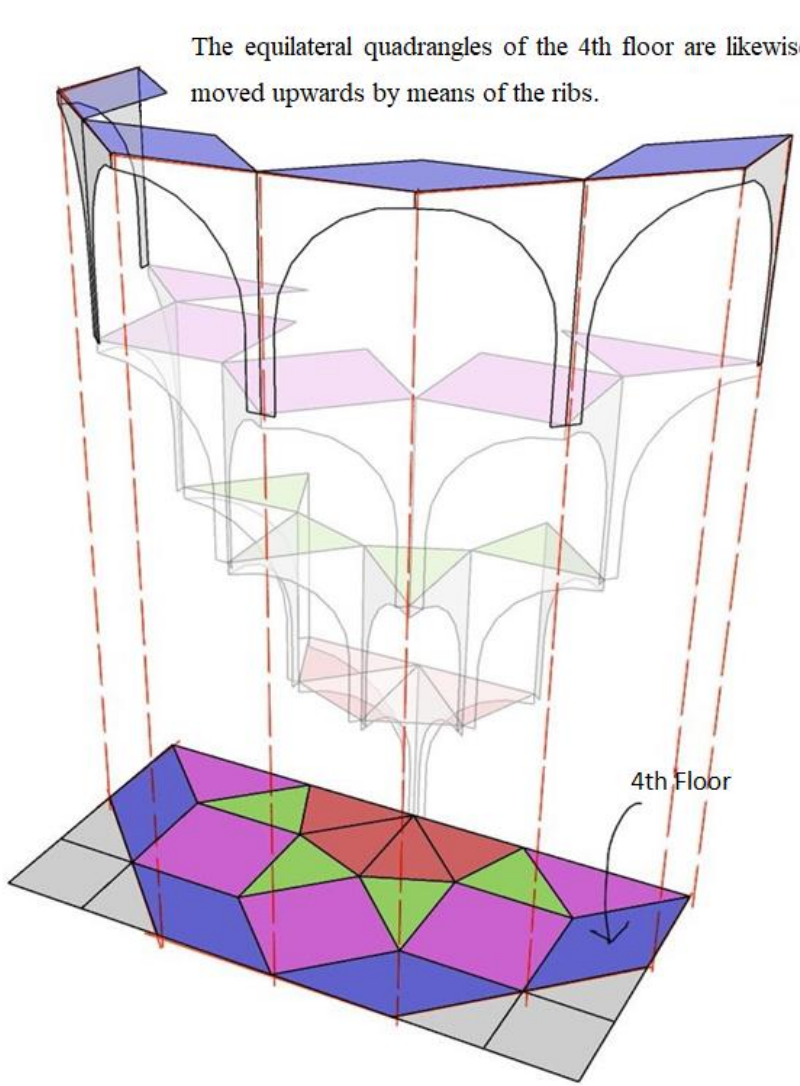

Figure 12: *Image of moving the rib surface upwards with equilaterals in the 4th floor*

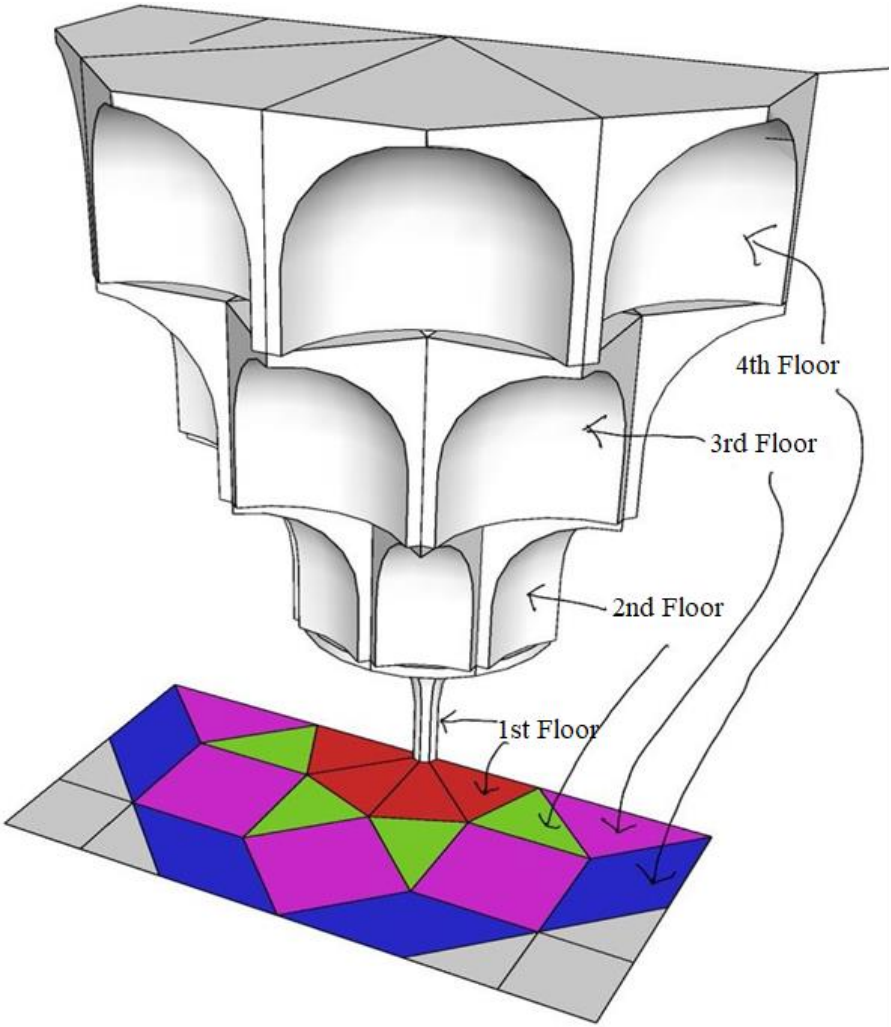

Figure 13: *Obtaining the final form by superimposing the muqarnas with the 1st, 2nd, 3rd, and 4th-floor levels*

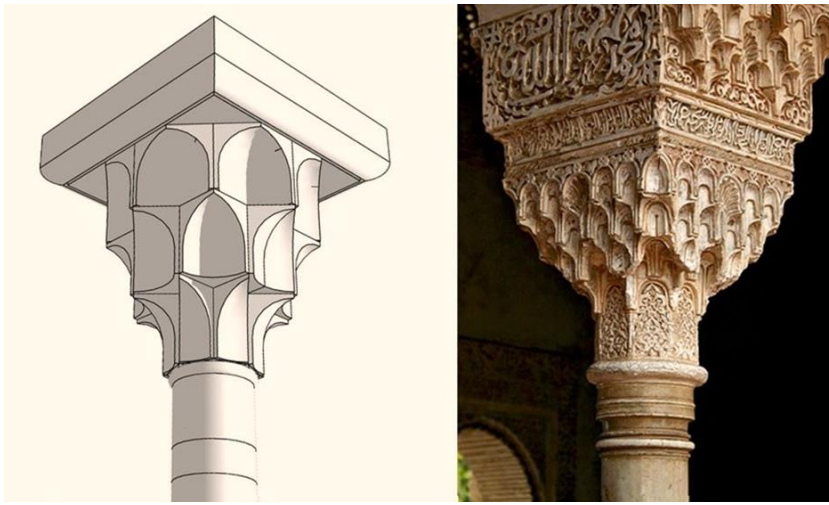

Figure 14: *The use of muqarnas created with an 8-pointed star*

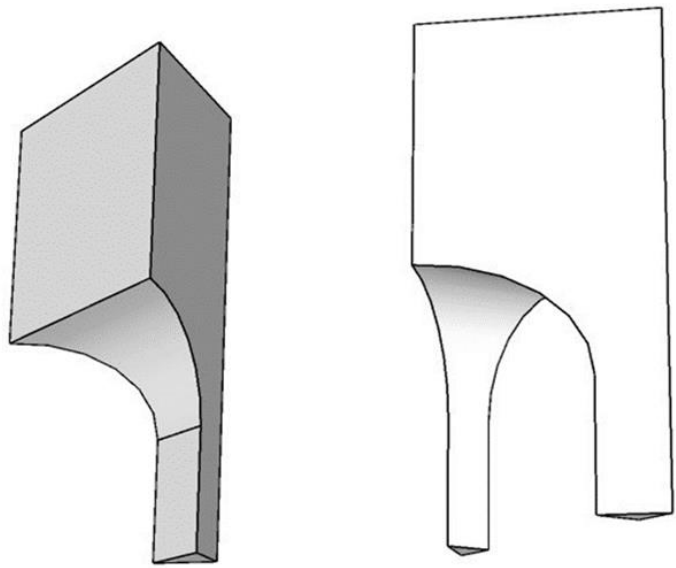

Figure 15: *Rib system consisting of two triangular prisms, one male and one female*

The ribs, which consist of two triangular prisms, one male and one female, are the system that staggers the layers of the muqarnas as convex or convex according to the starting point.

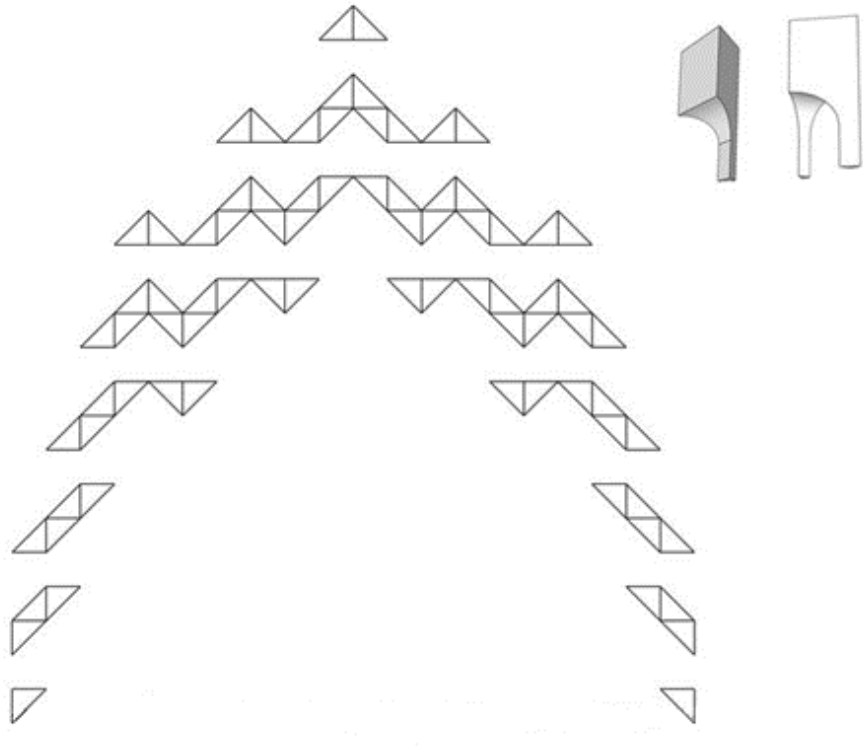

Figure 16: *Plan view of the triangular stalactite*

The setup here is prepared to create a 3-dimensional muqarnas, which will be made in 2 dimensions and will be seven layers based on triangles only.

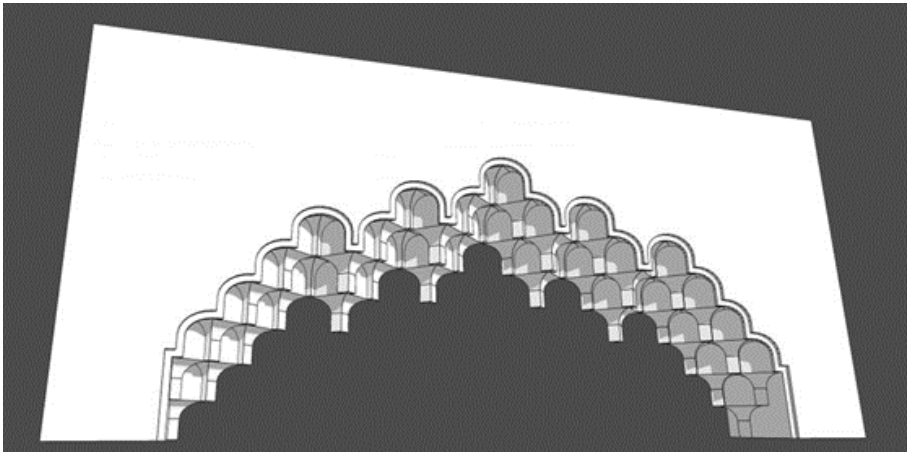

Figure 17: *Muqarnas form uncovered by forming layers with ribs from the triangular form*

As a result, a 7-story arch-shaped stalactite is formed from these triangles. The muqarnas, which are formed by the transition of 2-dimensional plans to 3 dimensional, are formed by grasping a surface of the geometry in a plan and pulling it upwards. While this feature does not change the plan, the height used on the surface is shaped according to the decision of the floor used or the architect.

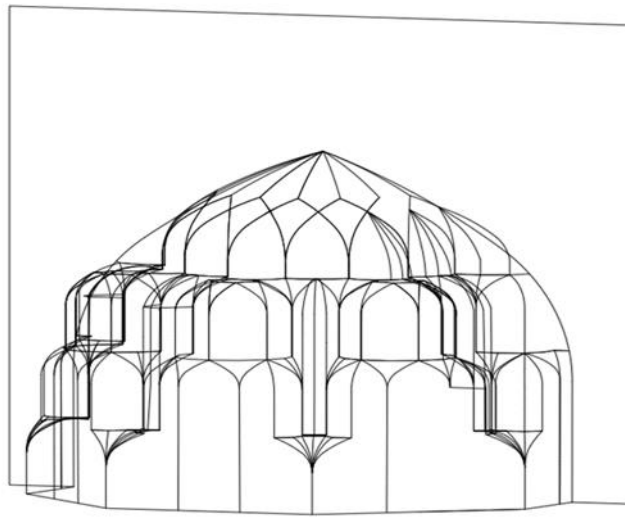

Figure 18: *Image of a stalactite sample made of a 12-pointed star*

Muqarnas differ according to the geographies in which they are used. So much so that as a result of the geometric analysis of the muqarnas, it can be distinguished from which culture they came from. This difference is due to the different angle techniques used when transferring the muqarnas from the main plan to different dimensions, rather than the geometrical diversification of the muqarnas. According to the expression of Fatih Uluengin, (1959) the angles used in different degrees provide diversity in dimensioning.

Figure 19: *Şah Gheragh Mosque in Şiraz (left) and Enah o Dolah Mosque in Kermanshah (right)*

While the geometric plan of the muqarnas in Iran, Central Asia, that is, orientalist cultural geography, continues in a certain order, in the same way, the stages are evident with the effect of the development of geometry in the Ottoman Empire. This situation can be clearly understood from the fact that the transitions used in the stages of the muqarnas layers in the advanced geometric system are made at different angles. The differences in these transitions show how the different geometric forms that are skilfully connected to each other are completed, even though they are transitions from different degrees of angles.

Interpretation of muqarnas with al-Kashi explains muqarnas more clearly as a bibliography. According to al-Kashi, they are the elements that connect cells and cell frameworks. In other words, the system that dimensions the geometry and connects the cells is very important. When the Stalactite Stars are analysed separately, it is seen that the ancestors had sufficient knowledge of these stars and geometric patterns in the past.

CONCLUSION

Understanding muqarnas directly can often be proportional to perspective. The muqarnas, which can be revealed in a system of its own with many polygons, brought a different dimension to the understanding of design. In Islamic architecture, where geometry is used as a design element, muqarnas is a design wonder that is created as a result of harmony, discipline, and a mathematical calculation in itself as a design element. Besides the use of geometry in plan, facade, and holistic sense in architecture, the use of computationally in detail elements is purely aesthetic. The connection established between the understanding of infinity in the design of geometry and reaching the supreme in the religion of Islam has passed into different dimensions in design.

The basic design elements in classical architecture have been moved to a traditional dimension with modern architecture. It is reinterpreted as parametric design in today's architecture. When traditional design approaches and parametric design are combined, design analysis has become more systematic with the use of new technologies. In order to understand the design of muqarnas, it is necessary to think in addition to embedding in 3D.

In the analysis of the muqarnas, first, the basic pattern that creates the muqarnas should be revealed, then the layers should be looked at by starting from this pattern. Single patterns from the same family form the main muqarnas design by providing a harmonious rule among themselves. That is, the regular rules between the patterns reveal the main pattern from different parts. All this harmony actually occurs as a result of a certain algorithm. In other words, in the design of muqarnas, all the basic principles of architecture are present. There is a non-symmetrical harmony as well as symmetry among themselves. It is a 3-dimensional parametric design created with a rhythm in the order of irregularity. Besides a certain rhythm, it provides continuity with an angle. It has a hierarchy within itself. It has a system that is complex most of the time but has simplicity in its own complexity. It is a mechanism where patterns that can take functions according to their places of use come together and provide continuity. In other words, while each pattern creates its integrity with a certain mathematical algorithm, each layer is associated with each other with a different parameter. Patterns harmonized in Fibonacci's Golden Ratio axis appear as reinterpreted in every design under the infinity emphasis of Islamic architecture.

When we look at the applications in parametric design, the methods followed, and the design stages reveal the beauty of the harmony between them. The parametric design provides an understanding of the design process. This creates a new perspective to understand the aesthetic understanding underlying the design. The systematic components that make up the muqarnas, the rules of the topological relationship and the main introduce parametric analysis. In other words, the analysis of the pattern becomes understandable with the rules of which system it is used. This improves the design knowledge. It reveals the concept in the main design. In this way, the basic composition in the design goes beyond the visible and becomes understandable. It easily explains the transition of the parameter to the software dimension. Of course, in this case, it is especially useful to remind that not only visual arts but also mathematics, astronomy, and physics contribute to today's design understanding by passing through a huge filter in muqarnas design. Finally, findings from current studies show that muqarnas like all architectural elements can be clearly rebuilt or new original muqarnas designs can be produced using parametric design tools.

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The State of Recovery Housing in New Orleans After Katrina Hurricane, 2005

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ABSTRACT

The housing issue is considered one of the central and important issues in the recovery process after natural disasters in the short and long term. This paper discusses the location of the city of New Orleans, its urban planning, and the catastrophic errors that led to the housing disaster in 2005. Hurricane Katrina is considered the most devastating in the city's history. The city is in a swampy area and has been exposed to the risk of flooding over the past decades, and it was dealt with by building networks of sewage and dams along the coast. In 2005 AD, the city's protection systems failed, and more than 800,000 housing units were destroyed in whole or in part. Thousands of people fled the city.

This paper sheds light on the reality of housing in the city before the disaster, as the city was suffering from a shortage of affordable housing units for low-income families, and how it became more difficult after the disaster. In addition to the reconstruction plans over the years that followed the disaster and how there was no clear plan to deal with the disaster and reconstruction.

It also discusses the decisions taken after one and two years of reconstruction and what happened after ten years of the recovery process. As some neighbourhoods were able to recover and most of the population returned to them. However, some others no longer have about half the population. And the role that FEMA played in dealing with the disaster, the slow response to dealing in the short term, the unclear reconstruction plan, and the organizational problems that faced the institution.

KEYWORDS

Orleans, Hurricane, Katrina, Housing situation, Recovery, FEMA.

INTRODUCTION

The Middle East region is a region of conflicts on various levels, including economic, political, and religious.

The current conflict in the region may intensify with the exacerbation of the problem of global climate change, which may lead to unplanned and unprepared mass migrations.

The report by The Intergovernmental Panel on Climate Change (IPCC) also indicates a possible increase in the intensity of natural disasters such as floods and desertification. All these things increase the possibility of sudden mass migrations for various reasons, such as the destruction of dwellings because of devastating floods or an urgent shortage of water.

It is expected that the sea level rise will accelerate over the next few years, which doubles the possibility of mass migrations. For example, if the sea level rises by 50 cm, this will threaten the displacement of approximately 2-4 million Egyptians in the Nile Delta and Alexandria. All these things impose on the region local and regional cooperation to mitigate the potential effects of these disasters (UNDP, 2018).

The Middle East is not a region of hurricanes, but throughout the past years, we noticed the formation of some of them at a greater rate than it was previously. Scientists attribute this to global climate change and global warming, which contribute to the rise in sea level, which in turn leads to hurricanes. This threatens coastal areas in the Middle East. so, the middle east region needs to prepare in short term to face this type of natural disaster which is going to be more affectionate and frequent than before. Due to that this paper focused on the most vulnerable areas to hurricane and floods in United States America which faced at least 36 hurricanes from 1900 to 2008 and it has still faced this problem. Moreover, concentrate on Katrina Hurricane and its recovery process.

Hurricane Katrina 2005 was considered one of the most destructive hurricanes since 1928. The damage resulting from the disaster was estimated at more than 75 billion dollars distributed along the Mississippi coast and the city of New Orleans.

As a result of this hurricane, hundreds of people lost their lives, and the vast majority were concentrated in the city of New Orleans, which lost 1,500 people, while the city of Louisiana lost nearly 230 people, and the total place of the missing people in that area was 1,800 people.

Figure 1: *Hurricane Katrina Aerial view of flooding in the New Orleans area following Hurricane Katrina, August 2005 (HURRICANESCIENCE, 2020)*

New Orleans city facade hurricane and it was widely believed that sewage systems and dams would protect the city from the danger of flooding and inundation, but soon it became clear that the system failed and entire neighbourhoods in the city sank, and residents climbed on the roofs of buildings to rescue.

This hurricane led to the loss of more than 800,000 people in their homes completely or partially, and material damages were considered the largest in the history of the United States of America (UNIVERSITY OF RHODE ISLAND, 2020). The platform (HurricaneScience) formed by the university focuses on the state of reconstruction and recovery for the city of New Orleans and in particular the state of housing for more than a decade.

THE HISTORY OF THE ESTABLISHMENT OF THE CITY OF NEW ORLEANS AND THE CHANGE OF URBAN DESIGN AFTER DRAINAGE SYSTEMS

In 1718 the mayor of Louisiana establishes a shipping port in New Orleans to access the Gulf of Mexico and the Mississippi. Although the city's location is strategic, it is surrounded by many bodies of water that make it vulnerable to continuous flooding from the Mississippi River to the Gulf of Mexico as well as Lake Pontchartrain.

Moreover, the city is located below sea level, which makes it vulnerable to sinking permanently. Despite all these things, the city was set up in a geographical area not prepared to do so.

Therefore, it is normal that the city faced many natural disasters throughout history. The Engineer Pierre Le Blond de La Tour laid out the master plans for the city in the form of a grid representing the French colonies at the time.

Over time, many neighbourhoods and suburbs surrounding the city were built somewhat organically, but they emerged from the basic grid lines of city design. In 1828, the city faced devastating floods that caused severe damage, which prompted the government to establish sewage and dams to protect the city from the danger of frequent floods (NEWORLEANSUSP100, N.D.).

The construction of flood protection systems helped the city prosper and expand the construction process in areas that were uninhabited, such as swamps and areas below sea level, but the process of building dams and sewage made it possible to reclaim these lands and build some new neighbourhoods, and this led to change the landscape and geography of the area.

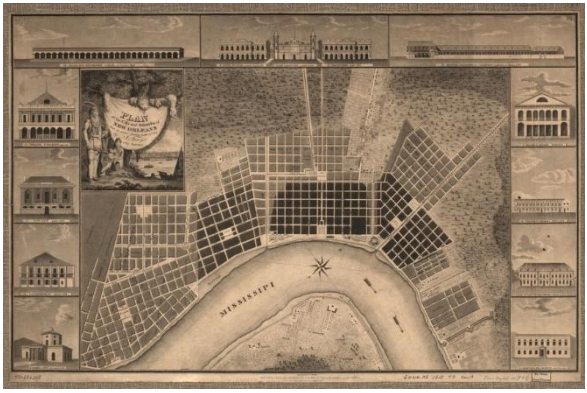

Figure 2: *Plan of the city and suburbs of New Orleans: from an actual survey made in 1815 (TANESSE ET AL.,1815)*

This was done through the construction of pumps, levees, and canals. But all these projects could not protect the city from hazards, furthermore. These projects made the city more vulnerable to floods and hurricanes. Throughout its history, this city used to face natural disasters but some of them had a major impact on the history of the city and it was a turning point in urban design and the shape of the city. In this last century, there are two massive hazards the hurricane of 1947 and the Betsy Hurricane which affect hardly in New Orleans (NEWORLEANSUSP100, N.D.).

THE PROBLEMS THAT LED TO THE 2005 HURRICANE KATRINA DISASTER

Some political and economic systems that encourage the development of cities and residential communities along coasts that lie below sea level or in swampy areas have exacerbated the risks of floods and natural disasters. Destructive floods are often the result of a series of urban planning errors in unsuitable areas or a failure in protection systems.

The construction of huge dams and sewage systems gives an illusory feeling of safety to develop some dangerous areas such as the edges of rivers or coasts that are constantly exposed to floods. And for sure, this was the case for some neighbourhoods of New Orleans City.

The strategic location of the city, which is surrounded by bodies of water, made it a permanent need to build new water channels, and consequently, the reclamation of uninhabitable swampy lands to establish new residential neighbourhoods for workers, which led to the need to establish flood protection systems. This gave a false sense of security and contributed to the increase in population density in these areas.

Canals played a role in the development and destruction of the city at the same time, as they contributed to channelling floodwaters into the city, and this was observed during the major hurricanes in 1915, 1947, 1956 (Flosi), and 1965 (Betsy).

In 2005 a devastating hurricane hit the city and it was expected that the systems would protect the dams and levees from flooding, but as it was happening before the system failed to protect the city. At the end of the hurricane, instead of reconsidering the urban planning of the city and studying the dangerous and vulnerable areas frequently, the city began rebuilding barriers and dams of a larger size than they were and constructing new water channels, which are expected to increase the severity of disasters in the foreseeable future (YOUNGMAN, 2015).

WARTIME CANAL CONSTRUCTION

The shipping industry has been a major impact on New Orleans' growth machine since its founding in the early eighteenth century. The coming of the First World War gave the city what seemed to start to be a golden opportunity to expand its shipbuilding industry.

The entry of the US into the Second World War transformed the fortunes of the Dock Board, as the Industrial Canal became a major pull for federal investment. New Orleans' shipbuilding industry grew rapidly in the early 1940s, largely by federal contracts to local shipbuilding corporation Higgins Industries.

The Dock Boards' expanded canal system has shifted and worsened the hurricane storm surge flood risk facing New Orleans by the mid-1940s. In addition, As New Orleans drained and developed its wetlands for expanded housing, particularly during the rapid growth period of the

1940s, these drainage canals would prove to be a major source of flood risk for many newly created neighbourhoods (YOUNGMAN, 2015).

HOUSING CRISIS

After the Second World War, the city faced a period of especially rapid population growth, and finding housing was most difficult for the many thousands of new workers running into New Orleans.

as result, the newly created Housing Authority of New Orleans (HANO) erected six segregated public housing projects around the city between 1941 and 1947.

Meanwhile, the private real-estate industry took advantage of improved drainage and pumping technology to develop the city's 'backstamp' areas into new neighbourhoods full of modern slab-on-grade (rather than elevated) homes.

The Director of the Division of Public Health Engineering, John H. O'Neill, wrote expressed concern about the development taking place in the area.

(A considerable part of the area east of the Industrial Canal, due to its low elevation and the character of its soil, is presently not suited for residential development. The availability of water lines recently constructed and of the sewer line which it is proposed to construct will) the Board insisted that such problems could be prevented by 'proper protective measures' and urged the local, state, and federal governments to take immediate steps to mitigate the problem.

no major protective actions were taken for these newly developed areas, however; the housing and development needs and the political power of the developers were too great (YOUNGMAN, 2015).

THE SITUATION OF HOUSING IN NEW ORLEANS BEFORE KATRINA HURRICANE

Housing has long been the American Dream and hub of opportunity. also, homeownership provides the chief source of wealth-building for millions of Americans. the pre-Katrina lack of endurable housing in New Orleans has since broken into a major crisis, confiscation thousands of displaced dwellers of their right to return. This problem is

inconsistent bearing by the region's poorest dwellers: about 20 % of the the 82.000, rental units that Katrina damaged or demolished in Louisiana were affordable to low-income families. A Lack of Affordable Housing: before the storm, New Orleans already had a less homeownership rate–only 47% compared to 67% nationally. Of those owning houses, rates were not even among dwellers as African American and low-income households in New Orleans had far lower rates of homeownership than whites and higher-income families, for this reason of this history, New Orleans remained highly segregated when Katrina happened. While residential segregation in the city declined a bit between 1990 and 2000, it continued to remain greatly above the national average (KAISER, 2006).
ethnical segregation had played a part in the economic isolation of New Orleans, causing ethnically segregated high- and intensified-poor areas. Before Katrina, New Orleans had the second-highest rate of African American intensified poverty in the nation, with 37% of the town's African American inhabitants living in neighbourhoods of intensified poverty.

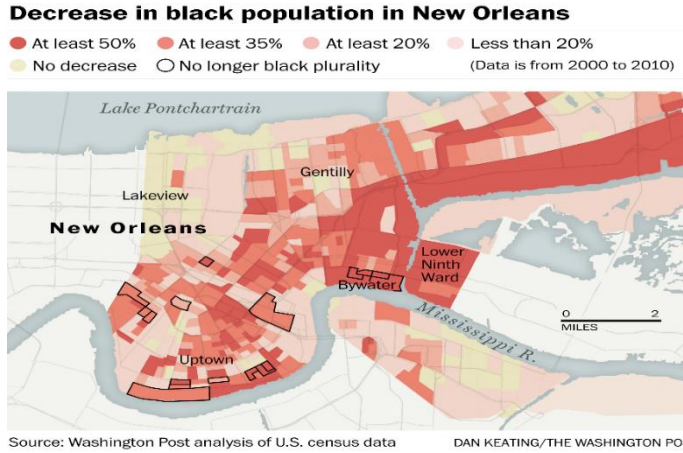

Figure 3: *Washington post analysis of U.S. census data (ROIG-FRANZIA, 2015)*

KATRINA HURRICANE 2005

Katrina Hurricane hit New Orleans on, August 29, 2005, as a Category 4 hurricane. the storm reached to15 miles of New Orleans, Louisiana. The cyclone brought heavy winds and rain to the town, and the height of water broke many levees built to protect the city from Lake Pontchartrain. The levee breaking flooded up to 80% of the city, with water in some places as high as 15 m. The storm and flooding took over 1,500 lives and a diaspora of an estimated 700,000 dwellers. The levee breached and demolished the homes of hundreds of thousands of New Orleans residents. Nearly 228,000 apartments and homes in New Orleans were flooded. furthermore about 204,700 housing units in Louisiana either were demolished or sustained big damage. As of April 2006, 360,000 Louisiana dwellers stayed displaced outside the state and approximately 61,900 people were living in FEMA mobile homes and trailers. As the floodwaters withdraw, displaced dwellers start the difficulty of rebuilding their lives. but one that required access to safe, affordable homes that the state and the federal government still have not assisted to provide (KAISER, 2006).

PLANNING FOR REBUILDING OF NEW ORLEANS AFTER KATRINA

The successful recovery process of any natural disaster takes a long term to reach its aims and needs good planning. in addition, recovery efforts after a catastrophe goal at least to return a region to its previous standard of business activity and exchange the homes lost and demolished. and if authorities deal with the disasters in a good way. it may help to provide opportunities for better hazard reduction, a good urban design, and resilience infrastructure. the success of a recovery process can be noticed by its goodness and the quickness with which this happens.

The best ingredients for any successful recovery have six principles (OLSHANSKY ET AL., 2008):

- Substantial external funding, provided quickly, and with few restrictions

- Strong local leadership
- Local, citizen-based processes for making and reviewing reconstruction decisions
- Previous planning documents which describe consensus policies for future development,
- Pre-existing planning institutions.

Unfortunately, the situation in New Orleans after Katrina was unbelievable and none of the six principles above. in contrast to these, Congress and the White House have been unready, to expedite investment in long-term recovery and send help immediately to the town. furthermore, Relationships were weak between the White House and the governor, between the governor and the mayor, and between the mayor and the city council. The town had no system for citizen involvement in governance and no pre-existing plan for the city's future.

Five main recovery planning operations that seek to land-use planning cases happened in post-Katrina New Orleans through the management of Mayor Nagin (OLSHANSKY ET AL., 2008).

The Bring New Orleans Back Commission planning process (BNOB)

- The New Orleans Neighbourhood Rebuilding Plan process (NONRP or Lambert Plan)
- The Unified New Orleans Plan process (UNOP)
- The Office of Recovery and Development Administration planning process (ORDA)
- Grassroots and neighbourhood-based planning processes (WAGNER ET AL., 2009).

Unfortunately, none of these plans fully achieved their goals.

THE STATE OF HOUSING IN NEW ORLEANS ONE YEAR AFTER KATRINA

After one year of this disaster, the large lack of fit rental houses has caused a severe rent rise in many damaged places around the city. The plans of the United States Department of Urban Development and

Housing to demolish four of the town's largest public housing sets instead of fixing and reopening them will moreover obstruct returning residents' opportunity to start over. The lack of affordable housing is now accompanied by a failure to repeat the areas and infrastructure that supply and enhance society.

For a lot of people who were hardly affected, the recovery process seemed late and irregular. Rebuilding has been stopped by the intensity of the harm, the need to limit future flood disasters, and the need to coordinate the recovery among many facilities of government. The spread of the population has made public meetings and elections difficult. Pre-existing economic trends were already providing stimulants for work and people to leave the place, not stay. reconstructing the Gulf Coast after the Katrina hurricanes presents matchless challenges both to those directly affected and the nation. Hurricane Katrina destroyed approximately 90,000 square miles, made more than 770,000 people homeless, and unfortunately had a death toll of 1,464 in Louisiana (KAISER, 2006).

before the hurricane ridership in New Orleans was about 124,000, but after the storm, the number declined to 431 people the week. A year later weekly ridership was 16,000. Only 16% of the routes and 8% of the buses were operational a little through a month after Katrina. After one year, 49% of the routes and 17% of the buses were in or ready to use. about 19% of electricity customers and 36% of natural gas customers had oncoming to these services in Orleans right away after Katrina, but a year later more than 95% of last customers had access to natural gas and electricity. Access was not the same as usage, because rebuilding had slow, and, in many cases, buildings must be searching for safety before the user can be turned back on. Although, the general availability of electricity and natural gas, only some 60% of former customers were using electricity and 41% were using natural gas a year later. Only 9% of the major hospitals in Orleans Parish were open a month after Katrina, and a year later 50% were open (WEISS, 2009).

TWO YEARS AFTER KATRINA

The population of New Orleans had increased and reached 295,448, about 65% of its pre-disaster scale of 454,863. furthermore, the public service retrieval is about 57% for health centres, also 62% for private schools, 68% for public schools, and 19% for domestic transportation on the pre-disaster scale. There was a passive spiral the dwellers cannot come back due to the bad public service recovery and the retard in recovery planning, at the same time the fall in population leads to a retard of public services (KONDO, 2008).

THE HOUSING SITUATION AFTER TEN YEARS

New Orleans after ten years of the worst catastrophe to hit any U.S. city, has exceeded anticipations in people's recovery. at the end of 2015, New Orleans had Recovered about 86% of its pre-Katrina people, with roughly 390,000 population calling the city home. just four districts have less than half the people they had before Katrina; the Lower Ninth Ward, one of the City's most destroyed districts, and three districts that include three public housing sites that have been destroyed to make way for new mixed-income housing.

New Orleans is one of the highest rates of income inequality across the USA as a gap that falls starkly along ethnic lines. According to the Data Centre, a New Orleans-rely thinks tank focusing on Southern Louisiana, the average income of black households in New Orleans is 54 percent lower than that of white households.

For this reason, the capability for a lot of dwellers to bear housing - in New Orleans of escalating rents and low wages is more threatening than before. but now the city has become a massive workshop for examining solutions to issues in housing, education, and social mobility that are disturbing the full nation.

Figure 4: *Where the white population have increased (orange) and the black population have decreased (white). Changes of 5 percentage points or more since 2000 (CAMPBELL & FAUSSET, 2020)*

The newcomers to the city participated in street culture in the black people's neighbourhood where They have spent a lot of money on homes and paid excellent rent to stay on roads that were neglected and unsafe so long ago. also, the old and neglected houses have been renovated and repainted. the values of the houses in the city rose very high

house prices inflation more than tripled between 2000 and 2013, with some renovated houses now on sale for close to $1 million.

A few of the most prominent owners are black, but according to census data, the percentage of white Tremé residents in 2013, at 36 percent, was more than twice what it was in 2000. Four out of five of them were not Louisiana-born (CAMPBELL & FAUSSET, 2015).

10 years since the storm, many workers from different ethnic who came from outside the city participated in rebuilding New Orleans. many of them decided to stay in the city after finishing their work. one of the neighbourhoods which faced this phenomenon is Mid-City Hispanic workers who burst in after the storm to destroy the broken landscape and reconstruct it. although some mobile far when the working end, a lot of them stayed, roughly doubling Hispanics' portion of the city people and changing the flavour of the neighbourhood.

According to census numbers, the Hispanic inhabitants, 58,000 in 2000, stand at more than 103,000 in 2013, with some of the most spectacular growth in suburban Kenner (CAMPBELL & FAUSSET, 2015).
the Lower Nine of New Orleans is now one of only four city districts that have less than half of its before Katrina people. there were several reasons one of them was That it is under sea level. also, its dwellers were generally poor. this district had become known to the world after the levee explosion and working-class homes were demolished by the waters of the Canal. There was no district in New Orleans where the devastation was more comprehensive, and the recovery more lacking.

The government launched the Road Home Program, which spent $9 billion in reconstruction grants that helped rebuild homes for more than 100,000 people. But it faced many criticisms for set on the unfairness of its design.
Many housing complexes had a bad reputation for shoddy keep, dwellers' poor health, and high levels of violence. like B.W. Cooper complex which is now changed to the far-beautiful Yvonne Marrero Commons New Urbanist apartments finished with wooden siding, brightly coloured front doors, and broad front porches. In the beginning, everything looks good. But not everyone returned
one of a group of sprawling city housing developments was the Big Four which was home to 3,077 households in 2005. Now after ten years of catastrophe there are more than 1,800 elegant apartments and only about 40 percent of them are presented at classic public housing fares, according to the housing authority, with the remainder at higher market rates or a class in between (CAMPBELL & FAUSSET, 2015).
The project was to displace a lot of the old apartments with housing coupons, which have more than doubled in number since Katrina and are now used by nearly 18,000 households, or one in 10 New Orleans families.

however, in a city in which thousands of rental houses were flooded and market rents are soaring, there are merely not enough coupons to fill the need. Some former residents of public housing now look back with severe allegiance and a capable passion.

Figure 5: *Where rent and household income both rose (green), and where rent rose but income fell (orange). Changes of 10 percent or more in median rents and median household incomes since 2000 (CAMPBELL & FAUSSET, 2015)*

FEMA AND KATRINA

The most important thing to mitigate the severe pain of any catastrophe is a quick response to the disaster that needs political support and a strong link between responsible government agencies. but this did not happen during Hurricane Katrina. But Bush administration after 2001 changed the aim of FEMA from Response to natural disasters to a new direction organization loyal to safety and terrorism alertness. With a lot of mistakes was happened, the Katrina disaster was unimaginable.

Many parts of New Orleans-area levees had been badly built because of inferior planning and failing contract work. local state waited a long time to order an evacuation command, furthermore, they failed to consider the miserable dwellers. also, federal and state agencies were too slow to supply relief and recovery resources. in addition, when aid eventually came it was badly coordinated.

from 1993 to 2001, FEMA was so better prepared to deal with catastrophic natural disasters than it was in 2005. according to the

political situation at that time, FEMA had lost a lot of its elements essential Politically appointed emergency managers, including Witt, were changed by Recruited with a few disaster experiences, also in 2003 leaving, soon retirement, and work dissatisfaction had weakened the agencies (ROBERTS, 2006).

when alertness programs were transformed FEMA into a separate office in the Department of Homeland Security. The all-hazards, all-phases concept, was weakened. The Katrina catastrophe revealed the cut-off between preparation and response in agencies. although the possibility of a painful flood and hurricane was a main of domestic traditions and expert studies New Orleans failed to plan for the Katrina hurricane with the urgency that the response required. there were some Plans however never totally trained.

CONCLUSION

The location of New Orleans city made it so desirable for people to come and work, because of the easy access to the Gulf of Mexico and the Mississippi. this made the city need new residential areas and expand urban space every time. Throughout history, the city faced many housing crises which happened during the II war and after the development of the Industrial Canal. the Local authorities of New Orleans solved this issue by Land reclamation, where they change swampland to residential areas and they constructed pumps, levees, and canals to protect the city from the surrounding water bodies. all these infrastructure projects did not protect the city from massive natural disasters like hurricanes and floods. however, after any catastrophe, New Orleans started a new recovery process which change the shape of the city.

In 2005 Katrina hurricane hit New Orleans city causing huge destruction that led thousands of people to evacuate from the city and demolished full many neighbourhoods. On the first day of the disaster, the local authority and FEMA initiated short- and long-term responses, which had a lot of arguments about their role and their preparation for this disaster. where there was not any clear plan to rebuild the city.

Also, at the first, the authority did not allow people to anticipate in planning which made people refuse many of the plans as a result the recovery plan was late. However, in the end, the rebuilding started with a lot of arguments.

this paper discussed the decisions which were done after one year and two years and evaluated the situation of the housing plan and recovery process after ten years. the most noticeable thing is a slowing in reconstruction plan and unclear vision about some neighbourhoods for this reason some areas have less than half the population before Katrina. At the same time, we cannot ignore that some areas flourish and return to the same situation before the storm and in some areas better than before.

The Federal Emergency Management Agency (FEMA) had a major role in recovery during and after the disaster, although the FEMA had many derelictions in different fields, it has an essential role during Katrine in short and long response. after Katrine hit New Orleans a lot of things was changed and developed in it to enhance the aims of this agency. Like hiring experienced workers and solving the problems of corruption and preparing an urgent response plan time we need to think that the calamity as an opportunity to improve agencies.

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3-Boyutlu İnşaat Yazımı ile Hızlı ve Güvenilir Barınma Çözümleri: Afet Sonrası Acil Barınma Birimleri Üretimi

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ÖZET

Amaç: 3-B inşa yazımı teknoloji ve yönteminin acil barınma merkezi kurulumunda kullanılmasının getireceği fırsatlar, potansiyeller ve engeller öneri bir senaryo üzerinden araştırılmıştır.

Metodoloji / Yaklaşım: 3-B inşa yazımı teknolojisinin işleyişi, mevcut durumu, özellikleri ve geliştirilmeye açık alanları incelenmiştir. Acil barınmanın problem teşkil ettiği durumlar özetlenerek, acil eylem planlarında tarif edilen acil barınma merkezi kurulumu süreci 3-B inşa yazımı dahil edilerek yeniden kurgulanmış ve bir senaryo dahilinde sunularak normal süreç ile birlikte değerlendirilmiştir.

Bulgular: Acil barınma birimleri üretiminde 3-B inşa yazımı yöntemi, hızlı olması, neredeyse sıfır atık bırakması ve yerel malzeme kullanımı gibi imkanları nedeniyle faydalıdır. Bunun yanında normal süreçte barınma birimleri standart olarak ve asgari düzeyde konfor ve barınma imkânı sağlıyorken, 3-B inşa yazımı barınma birimlerinde çeşitli kullanıcı odaklı konfor, ebat ve barınma seçenekleri oluşturabilir.

Orijinallik: 3-B inşa yazım yöntemi halen geliştirilmekte olan bir alandır. Acil barınma birimleri üretiminde 3-B inşa yazımının kullanılmasının getireceği olumlu ve olumsuz yönler bir senaryo üzerinden değerlendirilmiştir.

Kısıtlamalar: Araştırma, senaryo olarak kurgulanmış ve mevcut literatür çalışmalarından derlenen sentetik bulgularla desteklenmiştir. Çalışmanın gerçek hayatta uygulanabilir bir düzeye gelebilmesi için acil barınma ve 3-B

inşa yazımı paydaşları ile birlikte daha ayrıntılı çalışmalarla bulguların desteklenmesi gerekmektedir.

Pratik Çıkarımlar: Mevcut acil eylem planlarında kullanılan acil barınma birimleri üretim süresi ve maliyeti gibi kısıtlamalar nedeniyle kullanıcı odaklılıktan ziyade kurulumu en kısa sürede olacak şekilde kurgulanır. Ancak 3-B inşa yazımının hızlı olması ve yerel malzeme kullanım seçeneği, acil durum ortaya çıktıktan sonraki süreçte kullanıcının birtakım kişiselleştirme gereksinimlerini karşılayabilme gibi çeşitli imkanlar sunmaktadır. Bu durum 3-B inşa yazımının çadır ve konteyner gibi hazır çözümlerin sunduğundan çok daha konforlu ve kullanıcı odaklı barınma birimlerinin üretilebilmesine olanak sağlamaktadır

ANAHTAR KELİMELER

3-B İnşa Yazımı, Acil Barınma Merkezleri, Kullanıcı Odaklı Tasarım

Rapid and Safe Shelter Construction with 3-D Printing: Emergency Shelter Production for Post-Disaster Situations

ABSTRACT

Purpose: The opportunities, potentials and handicaps by use of 3-D printing in construction technologies and methods on emergency shelter construction have been investigated with a proposed scenario.

Methodology/Approach: State of the art of 3-D printing in construction technology has been explored by referencing key terms and terminologies. Emergency sheltering conditions and requirements were described in the official reports and a scenario is established incorporating the use of 3-D printing technology on establishment of an emergency shelter center instead of use of existing sheltering units.

Findings: In addition to taking benefit from general advantages of 3-D printing in construction such as rapid construction, the use of local material, and almost no waste disposal, it presents a certain level of user-oriented design and comfort at shelter units in terms of size and commissioning options.

Originality: 3-D printing in construction is a developing new topic. The paper investigates the advantages and disadvantages of 3-D printing technology in emergency shelter creation upon a scenario.

Limitations: The research is based upon the scenario of the use of 3-D printing in emergency shelter construction without making real-world experiments and thus relies on synthetic findings. The study must be supported by detailed in site experiments incorporating 3-D printing and emergency sheltering stakeholders.
Practical Implications: Regarding the existing official reports, emergency sheltering units are required to be constructed and installed as fast as possible when the emergency condition becomes real due to manufacturing time and cost limitations. Since 3-D printing has the ability to overcome such limitations, it has been revealed that there are also opportunities for the user to make a certain level of customization on the design and manufacturing of shelter units.
KEYWORDS
3-D Printing in Construction, Emergency Shelter, User-Oriented Design

GİRİŞ

Barınma yapıları modern insanın kültürel ve sosyal açıları ile beraber tarihsel gelişimi ile örtüşmektedir (ASASOĞLU, 2013). Barınma kelimesi insanın temel bir ihtiyacına nispeten çevresel etmenlere karşı güvenli ve korunaklı bir mekânda bulunma gereksinimini tanımlar. Bu nedenle kullanıcının gereksinime göre barınma ihtiyacının karşılığı olan yapı türü de çeşitlilik gösterir. Örneğin ailesinden uzakta eğitim almak için başka bir şehre taşınan bir öğrencinin temel barınma ihtiyacını karşılamak üzere yurt yapıları üretilirken (ÖZTÜRK & DİNÇER, 2020) kullanıcının kendisinin veya ailesinin barınma ihtiyaçlarını karşılaması için üretilen yapı türü ise genel anlamda konuttur (ASASOĞLU, 2013; KOLSAL & YEŞİLTEPE, 2020). Bunlar haricinde yoğun göçlerin yaşandığı, ya da doğal bir afet nedeniyle kullanılamaz duruma gelen yerleşim yerlerinde ortaya çıkan acil barınma ihtiyacını karşılamak üzere geçici yapı statüsünde kurulan çadırlar ya da prefabrik evler de bu kapsamda değerlendirilebilir. Barınma yapıları hem kullanıcıların geçici veya kalıcı olmasına göre hem de yapıların kalıcı veya geçici olma zorunluluğuna göre gruplara ayrılabilir. Buna göre belirlenen amaçlar ve fonksiyonel ihtiyaçlar doğrultusunda farklı yapı üretme teknikleri ile yapılaşma sağlanmaktadır. Kullanıcının barınma ihtiyacı yaşadığı dönemin kültürel, sosyal ve ekonomik koşulları ile beraber temel ihtiyaç tanımına göre de değişiklik göstermektedir. Mimari yapıların kullanıcının belirlediği ihtiyaç programı göz önüne alınarak şekillendiği göz önüne alınırsa barınma

yapılarının coğrafya, kültür, zaman ve buna benzer yerel değerlere göre değişiklik göstermesi olağandır. Günümüzde temel barınma ihtiyacını karşılamaya yönelik çeşitli türlerde olgunlaşmış yapı grupları oluşmuştur. Her ne kadar insanlık, teknolojik ve kültürel olarak kayıtlı insanlık tarihine göre daha önce hiç ulaşamadığı medeniyet düzeylerine gelmesine ve halen de gelişmeye devam etmesine rağmen, ekonomik, savaş, açlık, kıtlık, kültürel sorunlar ve çatışmalar nedeniyle insan toplulukları hala acil barınma ihtiyacı içerisinde olabilmekte ve buna yönelik hızlı ve güvenilir barınma çözümleri üretmektedir.

3-Boyutlu (3-B) inşa yazımı tekniği, 1980'lerde endüstriyel ürün üretmek için geliştirilen ve 2000'lerde inşaat sektörüne devşirilen bir teknolojidir (KHAN ET AL., 2020). Parçaların kendi yapım kurgusu içerisinde bir araya geldiği süreçte geleneksel inşaat sürecinden farklı olarak, 3-B inşa yazımı ile yapı yapmak demek, yapının bir kabuk gibi düşünülüp, yatay şeritler halinde dilimlere bölünüp bu dilimlerin sıkıştırılmış harç veya yazım malzemesi ile yatay şeritler halinde üst üste getirilip püskürtülen, macun halindeki yatay dilimin kendiliğinden diğer katmanlara yapışması ile mimari bir strüktür elde etmektir.

3-B inşa yazımı tekniğinin birçok yönden mevcut inşa yapım sistem ve yöntemlerine göre avantajları vardır. Fakat yeni gelişen bir teknoloji olması nedeniyle de çeşitli kısıtlamaları ve zorlukları mevcuttur. Ancak otomasyon sistemleri ve yapı bilgi modellemesi (Building Information Modelling) gibi günümüzün ve yakın geleceğin önemli kavramları ile uyumlu bir çalışma imkânı vermesi nedeniyle geliştirilmeye yatkındır Sektör paydaşları ve araştırmacılar 3-B inşa yazımının ortaya çıkardığı mücadele alanlarını yeni imkân ve fırsatlar yaratarak aşmaya çalışmakta ve yaygınlaşmasını hızlandırmaktadır.

Yakın tarihteki gelişmeler neticesinde temel barınma ihtiyacının günümüzde ve sonrasında da devam edeceği öngörülebilir. Bununla birlikte 3-B inşa yazımı teknolojisinin acil barınma gereksiniminin oluştuğu durumlarda, mevcut yöntemlere göre avantaj ve dezavantajlarının belirlenmesi, sonuçları itibariyle tüm paydaşlar açısından önemlidir. Literatürde ise 3-B inşa yazımının acil barınma sorunu ile ilişkisi belki de henüz yeni ve geliştirme aşamasında olan bir teknoloji olması nedeniyle yeteri kadar ilgi görmemektedir. Bu nedenle bu araştırmada, 3-B inşa yazımı ile barınma birimi üretiminin, acil barınma gereksinimin ortaya çıktığı durumlardaki potansiyel rolü, mevcut acil eylem planlarında gösterilen süreçlere göre

incelenmiş, olumlu ve olumsuz yönleri literatür verileri ile birlikte desteklenerek tartışılmıştır.

PROBLEM TANIMI, AMAÇ VE YÖNTEM

Acil durumlarda kullanılmak üzere ilgili resmi kuruluşlar çeşitli acil durum senaryolarına göre eylem planları hazırlarlar ve acil durum ortaya çıktığında da eylem planı ile uyumlu olarak hızlı bir şekilde acil barınma merkezleri oluşturulur. Kullanımda olan eylem planları barınma birimi olarak çadır ve konteyner tipi basit ve geçici yapı türlerine yoğunlaşır. Çadırlar kolay depolanabilip, hızlı bir şekilde kurulabilirken, konteynerler fabrikada hızlı bir şekilde imal edilip, kullanım sonrasında da geri dönüştürülebilme imkanına sahiptir. Acil eylem planları, çadır ve konteyner türü seçeneklerin sahip olduğu bu imkanlar dahilinde geliştirilir ve asgari düzeyde standart kullanıcı konforu sağlanması için gerekli düzenlemeler yapılır.

3-B inşa yazımı ile yapı üretimi çadır ve konteyner seçeneklerinden çok farklı yöntemlerle işlemektedir. Bu nedenle acil eylem durumunda çadır ve konteynerden farklı süreç tariflerini gerekli kılmaktadır. 3-B inşa yazımının acil barınma merkezi oluşturulmasında kullanılması, sürecin 3-B inşa yazımının gereksinimlerine göre yeniden kurgulanmasını gerektirir. 3-B inşa yazımının acil barınma merkezi oluşturulmasında kullanımı ile ortaya çıkabilecek fırsat ve potansiyelleri ve eksiklikleri değerlendirmek bu araştırma çalışmasının problemi olarak belirlenmiştir.

Bu problemi tanımlamakla, 3-B inşa yazımının kullanımda olan acil barınma merkezlerine getireceği avantaj, dezavantajları ve kısıtlayıcı unsurları ortaya çıkarmak amaçlanmıştır. Bu amacı gerçekleştirmek için ortaya konulan hedefler ve uygulama adımları ise şunlardır:

- Acil barınma sorununun tanımını yapmak ve çözüm yöntemini incelemek.
- Mevcut çözümlerin avantaj ve dezavantajlarını ortaya çıkarmak.
- 3-B inşa yazımının gelişimi ve sunduğu imkanları açıklamak.
- Acil barınma merkezi kurulumu için 3-B inşa yazımı ile barınma birimi üretiminin sunacağı avantajlar, dezavantajlar ve kısıtlamaları bir senaryo üzerinden tartışmak.

ARAŞTIRMA YÖNTEMİ VE ÇERÇEVESİ

Araştırma yöntemi ve çerçevesi Şekil 1'de ifade edilmiştir. 3-B inşa yazımı, acil barınma sorunu ve mimari gereksinimi literatür taraması ile irdelenmiş,

ortaya çıkarılan bulguların birlikte düşünüldüğü bir kurgu içerisinde, resmî kurumların acil durum işleyiş süreçleri üzerinden yeni bir senaryo üretilerek analiz ve tartışması yapılmıştır.

Şekil 1: *Araştırma çerçevesi*

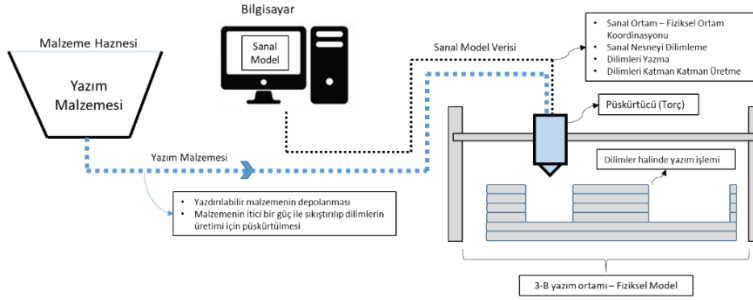
KAVRAMSAL ÇERÇEVE

3-B İNŞA YAZIM TEKNOLOJİSİ

3-B inşaat yazımı sanal veya sayısal ortamda oluşturulmuş objenin kendiliğinden çalışan bir süreç içerisinde 2-boyutlu dilimlere bölünüp çok sayıda katmanlar ile oluşturulduğu "katkılı üretim" yöntemidir (BUSWELL ET AL., 2022; WU ET AL., 2016). Özellikle 2000'li yılların başında imalat sanayinde kullanımı yaygınlaşmaya başlayan 3B inşa yazımı teknolojisi, geleneksel üretim yöntemlerine kıyasla sunduğu avantajlar nedeniyle diğer sektörler tarafından da ilgi görmeye başladı. İnşaat sektöründe kullanabilir yöntem ve malzemelerin üretilebilmesi ile 2010'lu yıllardan itibaren 3-B inşa yazımı teknolojisi ile küçük ölçekli yapı üretimine başlandı (TAY ET AL., 2017).

3-B yazım yöntemi Şekil 2'de ifade edildiği üzere üç ana bileşenden oluşur. Bunlar (i) yazım malzemesinin depolandığı malzeme haznesi, (ii) 3-boyutlu sanal modelin oluşturulduğu ve yazım işlemi için dilimlere ayrılıp yazdırma güzergahının belirlendiği bir bilgisayar ve (iii) yazım işlemini yapan cihazdan oluşur. Bilgisayar üzerinde oluşturulan sanal model yazdırma cihazı ile uyumlu ara bir platforma aktarılır. Bu platformda sanal model, yazdırma cihazının püskürttüğü malzeme ve kalınlığa göre yüksekliği belirlenen dilimlere ayrılır. Bu dilimlerin yüksekliği şu an kullanımda olan cihazlarda 2 ile 5 cm arasında değişmektedir. Daha sonra bu dilimleri cihazın yazabilmesi için dilimler üzerinde cihazın seyir yapacağı güzergâh, platform tarafından belirlenir. Tüm bu işlemler neticesinde ara platform, aktarılan modelin dilimlere ayrılmasını ve seyir güzergahını canlandıran bir simülasyon üretir.

Operatör bu simülasyonun doğruluğunu onayladıktan sonra fiziksel ortamdaki yazdırma alanında yazım cihazı dilimleri üretmeye başlar. Ara platformun kendisine ilettiği dilimler ve seyir güzergâhına göre yazdırma cihazındaki püskürtme aparatı malzeme haznesinden itici bir güç ile çektiği ve sıkıştırdığı malzemeyi ara platformdaki simülasyonda olduğu gibi yazma işlemini yapar.

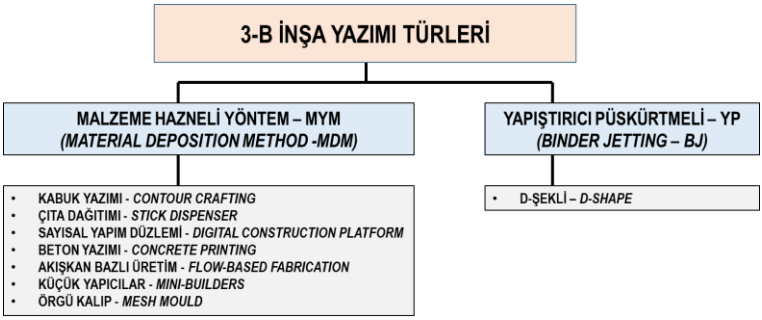


Şekil 2: *3-B yazım yönteminin temel bileşenleri (BOS ET AL., 2016)*

3-B inşa yazımı ile ilgili literatürdeki çalışmalar incelendiğinde araştırmaların beş kategoride odaklandığı görülmektedir. Bunlar, dünya dışı ortamlarda yapı üretimi (BULGER & SKONIECZNY, 2016; ROMAN ET AL., 2016; TROEMNER ET AL., 2022; ULUBEYLİ, 2022; YASHAR ET AL., 2021), 3-B inşa yazımı ile ilgili yeni yöntem önerisi (GOSSELIN ET AL., 2016; LACHMAYER ET AL., 2021; PRASITTISOPIN ET AL., 2021), malzeme geliştirilmesi (BUCHANAN & GARDNER, 2019; RAHUL & SANTHANAM, 2020; SHAHZAD ET AL., 2021; TING ET AL., 2021), BIM ile uyumluluk (JIANG, 2021; SAKİN & KİROGLU, 2017; SMARSLY ET AL., 2021; WANG & SKIBNIEWSKI, 2019) ve eleştirel değerlendirmedir (ROLLAKANTI & PRASAD, 2022; TAY ET AL., 2017; WU ET AL., 2016). Bu nedenle uygulamada birçok çeşitliliğe sahiptir. Şekil 3'te belirtildiği üzere 3-B inşa yazımı Malzeme-Hazneli-Yöntem- MHY (Material Deposition Method – MDM) ve Yapıştırıcı Püskürtmeli- YP (Binder Jetting - BJ) olarak iki kategori altında 8 türde kullanımdadır. Kabuk ve beton yazımı türleri, harç malzemesi olarak çimento bazlı ürünler kullandığı için piyasada en çok rağbet gören türlerken, çıta dağıtımı, sayısal yapım düzlemi, akışkan bazlı üretim, küçük yapıcılar ve örgü kalıp ise deneysel çalışmalardır. Özellikle küçük yapıcılar ve örgü kalıp yöntemleri dünya dışı ortamlarda otomatikleştirilmiş süreçlerle yapı üretimi alanında kullanılabilmesi için

geliştirilmekte olan türlerdir. Yapıştırıcı püskürtmeli yöntemdeki tek tür olan D-şekli ise patentli bir ürün olup, diğer türlerden farklı olarak, yapıştırıcıyı toz katmanlar halinde yazım alanına serpiştirilen ortama püskürterek yazım işlemini yapar. Dolayısıyla her katmana püskürtme işlemi öncesi toz halindeki yazım malzemesi serpiştirilmelidir. Ancak Şekil 4'te gösterildiği üzere D-şekli ile diğer yazım türlerinden çok daha farklı ve daha doğal görünümlü ürün/yapı yüzeyi elde etmek mümkündür.

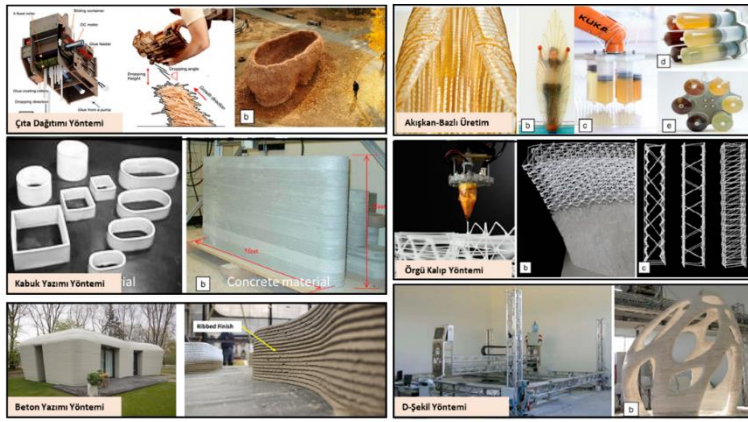
Çıta dağıtım yönteminde yapıştırıcı sürülmüş ahşap çubuklar bir dağıtıcı cihaz ile bilgisayar kontrollü bir güzergâh üzerinde katmanlar halinde üst üste bindirilerek bir araya getirilir. Şekil 4'te çıta dağıtım yöntemi ile üretilmiş bir barınma birimi örnek olarak gösterilmiştir. Kabuk yazımı yönteminde malzeme haznesinden çekilip sıkıştırılan ve macun kıvamında bilgisayar kontrollü bir güzergâh üzerine boşaltılan yazım malzemesi katmanlar halinde üst üste bindirilerek yazım işlemini yapar. Kabuk yazım yönteminde yazım malzemesi olarak betonun yanında seramik gibi başka malzemeler de kullanılabilmektedir. Yine Şekil 4'te kabuk yazımı yöntemi ile üretilmiş bir barınma birimi örnek olarak gösterilmiştir.



Şekil 3: *Kullanımda olan 3-B inşa yazımı türleri (TAY ET AL., 2017)*

Beton yazımı yönteminde yazım malzemesi mukavemeti arttırılmış betondur. Uygulamada en çok örneği görülen yöntem beton yazımı yöntemidir. Yazım işlemi tamamlandıktan sonra oluşan yüzey, yazım işlemi katmanlar halinde yapıldığı için girintili ve çıkıntılıdır. Kullanıcıların bir kısmı bunu sorun olarak görürken bir kısmı önemsememekte, bir diğer kısmı da beğenmektedir. Akışkan bazlı üretim, mini yapıcılar ve örgü kalıp yöntemleri kompozit malzeme kullanarak otomatikleştirilmiş süreçler dahilinde yazım işlemini

yapar ve genelde dünya dışı ortamlarda uygulanmak üzere geliştirilmektedir. Şekil 4'te bu yöntemlerle üretilmiş çeşitli yapı örnekleri gösterilmiştir.



Şekil 4: *Kullanımda olan 3-B inşa yazım yöntemleri (TAY ET AL., 2017)*

3-B İNŞA YAZIMI VE GELENEKSEL İNŞAAT SÜRECİ

Geleneksel inşa sürecinde yapı bileşenleri kendi üretim yöntemlerine göre atölye veya sahada üretilip birleştirilir. Dolayısı ile şantiye ortamı birçok farklı üretim yönteminin bir araya geldiği bir ortak çalışma alanıdır. Üretim ve imalat malzemeleri tedarikçilerden, üretim ve imalat işi ise imalat ve yapım uzmanları tarafından yapılır. Üretim ve imalat malzemeleri belirli ebatlara ve miktarlara sahiptir. Ancak her inşaat projesi aynı inşa yöntemleri kullanılsa da mimari farklılıklar nedeniyle birbirlerinden farklıdır. Bu farklılık her inşaat projesi için farklı miktar ve işgücü kullanımını gerekli kılar. Bu nedenle standart olarak üretilen malzemeler, imalat ve yapım sırasında projeye göre ölçülendirilmekte ve kullanılmakta, geriye kalan malzemeler atık olmaktadır veya imkân dahilinde geri dönüştürülmektedir. Her ne kadar atık malzemenin azalması için önemli çalışmalar olsa da tamamen engellemek mümkün değildir. Böylelikle inşaat için gerekli üretim ve yapım malzemesi inşa edilenden daha fazla olmaktadır. Tasarım ve imalatla ilgili hatalar nedeniyle ortaya çıkan tamir ve tadilatlar da eklendiğinde hurdaya ayrılan malzeme miktarı ve harcanan iş gücü verimlilik ve kalite konusunda ciddi sorunlara sebep olmaktadır.

3-Boyutlu inşa yazımı yöntemi geleneksel sürecin aksine mimari tasarımın doğrudan makine ve robotlarla imalatını mümkün kıldığı için yapı kabuğu

inşaatı sırasında neredeyse sıfır atık çıkmaktadır. Çünkü malzeme haznesinde kullanıma hazır halde bekleyen yazım malzemesi yapı kabuğunun biçimine göre ve gerektirdiği hacim kadar kullanılmaktadır. Bu durum geleneksel inşa sürecinde var olan birçok sorunu azalttığı, hatta ortadan kaldırdığı gibi daha kısa sürede inşaatın tamamlanmasına da imkân vermektedir. Örneğin 200 m2 büyüklüğündeki bir villa projesinin 3-B yazımı iki günde yapılabilmektedir (PERKINS & SKITMORE, 2015). Üstelik mimari tasarımın doğrudan imalatı yapıldığı için yapı kabuğu yapımında karşılaşılan tamir-tadilat işlemleri de en aza inmektedir. 3-B inşa yazımının geleneksel inşa sürecine göre avantajları, dezavantajları ve kısıtlamaları ise şöyledir:

Atık azaltma

Bilgisayar modelleri doğrudan yazım işlemine alındığı için geleneksel inşa sürecine kıyasla daha az işçilik gerekmekte ve ekipman kullanım farkı nedeniyle daha az enerji ve atık ortaya çıkmaktadır (PERKINS & SKITMORE, 2015).

B*ilgisayar modelleri ile beraber çalışma:*

Son yıllarda mimarlık, mühendislik ve inşaat sektöründe artan dijitalleşme ile birlikte yapı bilgi modellemesi gibi kavram ve teknolojilerin de yaygınlaşması hızlanmaktadır. Yapı projesi tasarım ve inşaat aşamalarındaki yönetimsel kontrol ve denetim böylelikle şantiye ortamından daha çok tasarım ortamına kaymaktadır. Her ne kadar yapı bilgi modeli disiplinlerin ve proje katılımcıların bir araya gelmesine olanak verip, tasarım aşamasında inşaat ve işletme ile ilgili birçok konunun çözülmesine imkân verse de bu dijitalleşme ve sanal ortam deneyiminin şantiye ortamındaki geleneksel üretim ve imalat yöntemlerine etkisi daha az olmuştur. 3-B inşa yöntemi ise yapı kabuğu inşaatını bilgisayar modeli ile doğrudan bağlantı kurarak yapı kabuğu imalatına çevirmektedir (PERKINS & SKITMORE, 2015). Böylelikle modellenen yapı kabuğu doğrudan imalatı yapılabilir bir hale gelmiştir.

İşçilik

Birçok ülkede imalat ve inşaat sektöründe çalışacak yetişmiş ara eleman sıkıntısı vardır. İlerleyen zamanlarda şu an çalışmakta olan yetişmiş elemanların yaşlanacağı ve iş hayatından çekileceği göz önüne alınırsa otomatik hale getirilmiş ve robotların kullanıldığı yöntemlerin varlığı sektörün devamlılığı konusunda önem taşımaktadır. Böylelikle imalat ve

inşaat işlerinden ziyade 3-B inşa yazım cihazlarının sahaya taşınması, kurulumu ve yönetimi konularında istihdam edilecek uzmanlara ihtiyaç duyulacağı için diğer işgücü ihtiyacı de azalmaktadır (PERKINS & SKITMORE, 2015). Bunlarla birlikte, şantiye ortamı iş güvenliği ve sağlığı açısından yüksek tehlikeli olarak tanımlanan ortamlardan birisidir. Yapım yöntemi değişikliği ve sahada ihtiyaç duyulan işgücünün azalması sebebiyle inşaat sahasının tehlike seviyesi düşmektedir (PERKINS & SKITMORE, 2015). Böylece 3-B yazım teknolojisi geleneksel inşa yöntemine kıyasla daha sağlıklı ve güvenli iş ortamı sunmaktadır.

Hız

Geleneksel inşa sürecine göre birçok inşa süreci ortadan kalktığı için 3-B yazım ile yapı üretimi oldukça hızlıdır. Örneğin 200 m² büyüklüğünde 2 katlı bir yapının imalatı geleneksel süreçte haftalar sürebilirken 3-B inşa yazımı ile 2 günden daha az sürede yapılmıştır (PERKINS & SKITMORE, 2015). Ancak bu karşılaştırmalar küçük ölçekli ve belirli yapı tipolojileri için yapılmakta olup, henüz karmaşık geometrili ve büyük projelerde test edilip değerlendirilmemiştir.

Maliyet

3-B inşa yazımı yeni bir teknoloji olduğu için cihaz alımı gibi ilk yatırım maliyeti geleneksel inşa sürecinde kullanılan inşa teknolojilerine göre daha pahalıdır. Ayrıca 3-B inşa yazımında kullanılan yazım malzemeleri de normal inşaat işlerinde kullanılandan farklıdır. Örneğin günümüzde yapılarda C20 veya C30 türünde beton kullanılıyorken 3-B yazımında kullanılan çimentolu yazım malzemesi C100'dür (PERKINS & SKITMORE, 2015). Ancak neredeyse hiç atık olmaması ve birçok inşa yöntemini ortadan kaldırması gibi avantajlar nedeniyle kullanım maliyeti geleneksel sürece göre bazı yapı türleri için ucuzdur (PERKINS & SKITMORE, 2015; WON ET AL., 2022; WU ET AL., 2016).

Tasarımın biçimsel çeşitliliği

Mimari tasarımın biçimsel zenginliği geleneksel inşa sürecinde bile maliyet ve inşa edilebilirlik nedeniyle kısıtlanıyorken, 3-B inşa yazımı teknolojisinin de inşa edilebilirlik konusunda belirli kısıtlamaları vardır (DE SCHUTTER ET AL., 2018; LABONNOTE ET AL., 2016). Ancak, geleneksel inşa sürecinde, imalat, kalıp, yapılabilirlik ve maliyet gibi temel kavramlar etken durumdayken, 3-B inşa yazımında, henüz teknolojinin yeni olması ve

karmaşık biçimleri üretmek için yazılım ve malzeme çeşitliliğin yetersiz oluşu gibi konular etkendir.

Yazılabilir malzeme

3-B inşa yazımının en büyük avantajı yazım sürecinde kullanılabilir malzeme konusunda geleneksel inşa yöntemine göre çok daha fazla çeşitlilikte malzeme bulabilme seçeneğinin olmasıdır (PAUL ET AL., 2018; PERKINS & SKITMORE, 2015; TAY ET AL., 2017). Özellikle yerel toprak türlerine özgü yapıştırıcı malzemenin keşfedilmesi ve gerekli mukavemet koşullarını sağlayabilen yazım malzemesinin üretilmesi sadece dünya yüzeyinde değil diğer gezegenlerde de 3-B inşa yazımı ile gezegenlerdeki yerel toprak ile yapı üretimini mümkün kılabilmektedir (BIGGERSTAFF ET AL., 2021; TROEMNER ET AL., 2022). Ancak şu anda kullanılan yazım malzemeleri maliyet olarak hala meslek uzmanlarının beklentilerini karşılayabilecek düzeyde düşük değildir. Yazılabilir yerel malzeme seçeneklerinin artması ile 3-B inşa yazımı yönteminin yaygınlaşmasını engelleyen en önemli faktörlerden birisi de ortadan kalkmış olacaktır.

Ölçek

Yazım malzemelerinin yapısal özellikleri, kuruma süresi, yazdırma cihazının büyüklüğü ve püskürtme sisteminin kapasitesi gibi 3-B inşa yazımının temel bileşenleri ile ilgili geliştirme süreçleri halen devam ettiği için henüz küçük ölçekli yapı projeleri hayata geçirilmektedir (PERKINS & SKITMORE, 2015; ROLLAKANTI & PRASAD, 2022; WU ET AL., 2016). Büyük ölçekli yapı örnekleri çok azdır, araştırma ve uygulama çalışmaları devam etmektedir.

Doku

3-B inşa yazım yöntemi ile üretilen yapı kabuğunun yüzeyinde çeşitli girinti-çıkıntılar oluşmaktadır. Bu pürüzlü yüzey yazım cihazının katman-katman yazım malzemesini üst üste bindirmesi nedeniyle oluşmaktadır. Yazdırma cihazı hızlandıkça ve katman kalınlığı arttıkça pürüzlülük artarken, katman kalınlığının ince olması ve yazdırma cihazının yavaş hareket etmesi pürüzlülüğü azaltmaktadır (BOS ET AL., 2016; KHAN ET AL., 2020).

Alt yapı

Yapı kabuğu iç ve dış yüzey halinde çift cidarlı olarak üretildiğinden iç ve dış yüzey arasında boşluk bırakılmaktadır (BOS ET AL., 2016; KHAN ET AL., 2020). Bu boşluk içine yapının mekanik ve elektriksel sistemleri

yerleştirilebildiğinden geleneksel süreçte bu sistemlerin kurulumu için yapının kaba inşaatında yapılan çalışmalar ortadan kalkmaktadır. Bu boşluk ek olarak yapının ihtiyacı olan ısı konforunu sağlamak için yalıtım yapılmasına da olanak sağlamaktadır (BOS ET AL., 2016; KHAN ET AL., 2020).

Standartlar ve ürün rehberi

Yeni gelişen ve halen geliştirilme sürecinde olan bir teknoloji olması, uygulamada örnek teşkil edebilecek yapıların henüz az oluşu gibi nedenlerle 3-B inşa yazımının çeşitli aşamaları için gereken standartlar ve ürün rehberleri ortaya konulamamıştır (PAUL ET AL., 2018; WU ET AL., 2018).

BARINMA VE BARINMANIN PROBLEME DÖNÜŞMESİ

Barınmak en yalın haliyle çevresel etkilerden korunmak için kapalı bir yere sığınmak anlamındadır (TDK, 2022). İnsanlar en eski zamanlardan beri kendilerini bu etkilerden korumak ve güvenli bir yaşam alanı oluşturmak için yaşadıkları çevrede barınacakları alanlar oluşturmuşlardır. Maslow'un ihtiyaçlar hiyerarşisinde tanımladığı gibi fizyolojik ve güvenlik gereksinimlerini karşılamak için çevreye ve iklime göre inşa edilen barınma birimleri tarihsel ve kültürel farklılıklara göre çeşitlilik göstermektedir.

En temel barınma yapısı olan konut veya ev, insanların barınma ve yaşam ihtiyaçlarına göre şekillenen bir yapı çeşididir. Diğer bir tanıma göre ev bir ailenin oturabileceği şekilde ve büyüklükte yapılmış konut olarak düşünülebilir (HASOL, 2014). Günümüzde, farklı coğrafyalarda ve farklı topluluklar için barınma çeşitlerinden bahsedilebilir. Örneğin, öğrenci yurdu, sosyal konut, otel ve büyük ölçekli ev çeşitleri (konak, saray ve bunun gibi) bu kapsama giren yapı türleridir. Bu çeşitlilik ihtiyaçlardaki farklılıklar ve ekonomik imkanlardan kaynaklanmakta ve temel ihtiyaçlardan olan barınma kavramını yapı sistemi içinde farklılaştırmaktadır.

Barınmanın bir probleme dönüşmesi genellikle arz ve talep arasındaki dengesizlikle oluşmaktadır. Konut problemi, gelişmelerle ve nüfus artışı ile birlikte tanımlı sürelerde oluşan ve yönetim birimlerinin geliştirdiği politikalarla ile varlığı ortaya konularak çözüm aranan bir alandır. Bunun yanında, ortaya çıkması önceden öngörülemeyen olaylar nedeniyle de konut ve barınma problemi ortaya çıkabilir. Doğal afetler ve buna benzer çeşitli olaylar barınma birimlerini kullanılamaz hale getirdiğinden ötürü ortaya kitlesel boyutlarda barınma ihtiyacı çıkmaktadır. (ÖMÜRGÖNÜLŞEN & MENTEN, 2021). Bu tür durumlarda kitlesel olarak ortaya çıkan acil barınma

gereksinimi için ilgili resmi kurumlarca afet ve acil durum yönetim planları oluşturulur ve acil durumun ortaya çıkış sürecine göre müdahale senaryoları geliştirilir. Afet ve acil durum yönetimi, planlama, hazırlık, müdahale ve kurtarma eylemleri sonrasında iyileştirme ve yeniden yapılandırma ile devam eder (KARAMAN & ALTAY, 2016). Afette evlerini kaybetmiş insanlara güvenli ve çevresel etkilerden korunaklı barınma birimleri oluşturmak iklim etkileri de düşünüldüğünde olabildiğince hızlı olmalıdır. (ATMACA & ATMACA, 2016). Geçici barınma birimleri bu durumlarda kullanılan ve bir planlama çerçevesinde hizmete alınan taşınabilir yapılardır (AFAD, 2019). Konteyner ve çadır gibi barınma birimleri mobil olarak belirlenen afet sonrası geçici barınma alanlarına ulusal ve uluslararası standartlara uygun olarak kurulur (AFAD, 2019; ÖMÜRGÖNÜLŞEN & MENTEN, 2021). Barınma alternatifleri ve barınma birimleri afet müdahale planlarında belirlenir ve afet sonrası kullanıma alınması gerekir. Bu nedenle insanların geçici süre ile konutu olacak barınma birimlerinin hızlı bir şekilde temin edilip, kullanıma alınabilmesi, aynı zamanda temel güvenlik ve barınma ihtiyaçlarını sağlayacak özelliklere sahip olması gerekir.

Savaş ve savaştan etkilenmiş alanlarda barınma birimlerini ihtiyaca göre oluşturmak da önemli bir problemdir. Savaşın şehirlerin gelişiminde olduğu kadar konut birimlerinin gelişiminde de olumsuz etkileri vardır (KALFAOGLU HATİPOGLU, 2020). Zarar gören veya yıkılan yapıların yerine gerekli sayıda barınma birimini hızlı bir şekilde inşa etmek ve bunu yaparken de kentin doğru bir planlama ile yapılanmasını sağlamak gerekir. Bir yandan da ekonomi ve insan kaynaklarını en fazla fayda sağlayacak şekilde kullanarak, talep edilen güvenli fiziksel çevre oluşturulmalıdır. Savaşın diğer bir etkisi de savaştan etkilenen ülkelerdeki insanları yakın ve orta derecedeki diğer ülkelere sığınması veya göç etmesidir. Son yıllarda yaşanan Ukrayna'daki ve Suriye'deki savaş durumunun devam etmesi nedeniyle milyonlarca insan mevcut yaşam alanlarını bırakıp diğer ülkelere kitleler halinde göç edip sığınmıştır ve farklı statü ve sürelerde bu ülkelerde yaşamaya çalışmaktadır. Örneğin Türkiye'de Ağustos 2022 tarihinde geçici koruma kapsamında 3.650.430 Suriyeli sığınmacı bulunmaktadır (T.C. İÇ İŞLERİ BAKANLIĞI, 2022). Daha yakın zamanda başlayan Ukrayna'daki savaş nedeniyle ülke içinde 8 milyondan fazla kişi yer değiştirmiş, 5 milyondan fazla kişi ülke dışına çıkmıştır (UNHCR, 2022). Bu gibi durumlarda ülkelere gelen insanlar, geçici barınma merkezlerine veya planlı bir şekilde şehirlere yerleştirilmeye çalışılmaktadır. Yer değiştiren insanların sayısının fazlalığı barınma birim ihtiyacını artırmakta, kalış sürelerinin uzaması ise çadır, konteyner gibi geçici

olarak planlanan barınma birimlerinin ihtiyaçlarını karşılayamamasına neden olmaktadır. Hızlı inşa edilebilen, ekonomik ve esnek, planlanabilir barınma birimleri geçici barınmanın göreceli olarak uzun sürdüğü bu durumlarda çok daha güvenli ve ihtiyaçları karşılayan çözümler sunabilir.

ANALİZ VE TARTIŞMA

ACİL BARINMA VE 3-B İNŞA YAZIMI

Savaş veya doğal afet gibi kitlesel barınma ihtiyacının bir anda oluştuğu durumlarda yönetim mekanizmaları hızlı, güvenilir ve kullanıcıların belirli düzeyde konfor ihtiyacını karşılayan basit yapılarla geçici barınma merkezleri oluştururlar. Bu tip durumlarda en çok tercih edilen barınma yapıları konteyner ve çadırlardır (ŞANLIURFA İL AFET VE ACİL DURUM MÜDÜRLÜĞÜ, 2016). Konteyner ve çadırın tercih edilme sebepleri, atölye ortamında hızlı üretimi, düşük maliyet, standart ebat, kalite ve konfor düzeyi sunması, ihtiyaç haricinde de sökülüp taşınabilmesidir (ATMACA & ATMACA, 2016).

Acil barınma merkezi oluşturulması için ilgili kurumlar yer seçimi, kapasite, alt yapı hizmetleri, barınma türü gibi temel tasarım kararlarını verirler. Özellikle kapasite ve barınma türüne göre gerekli çadır veya konteyner sayısı belirlenmiş olur. İl Afet ve Acil Durum Müdürlüğü ya da benzer hizmetleri veren diğer sivil savunma ve müdahale kuruluşlarında hızlı müdahale için depolarda belirli kapasitelerde çadırlar hazır bulunsa da aynı imkân konteynerler için bulunmamaktadır. Bu nedenle kapasite fazlası çadır veya gerekli sayıda konteyner alımı için ihale düzenlenir. İhale sürecinden sonra çadır veya konteyner imalatı yapılır ve acil barınma merkezine nakli ve sahada kurulumu yapılır. Acil barınma gereksinimi bittikten sonra, çadırlar veya konteynerler sökülebilir, başka bir yerde tekrar değerlendirilebilir veya hurdaya çıkarılarak geri dönüşüme gönderilebilir.

Geçici barınma yapıları kısa süreli kullanımlar için tasarlandığından kullanım süresinin uzaması durumunda kalıcı barınmaya dahil edilen ihtiyaçları karşılamakta yetersiz kalmaktadırlar. Çadır ve konteynerin termal, akustik ve diğer fiziksel konfor parametreleri düşük olduğu için kullanım sırasında iç mekan konfor şartlarını sağlamak yüksek miktarda enerji tüketimi yapılmasını gerekli kılmaktadır (OBYN ET AL., 2015; TAN & TAN, 2021; WANG ET AL., 2015). Ayrıca atölye veya imalathane ortamında üretilip geçici barınma merkezine nakil işleminin yapılması da sürdürülebilir tasarım yaklaşımında önemli bir olumsuz girdidir.

3-B İNŞA YAZIMI İLE ACİL BARINMA BİRİMLERİ ÜRETİMİ

Acil barınma merkezinin oluşturulması ile ilgili afet ve acil durum kuruluşlarının yayınladıkları raporlar çerçevesinde ilerleyen süreç Şekil 5'te görselleştirilmiştir. İlgili kuruluş afet ve acil durum eylem planına göre belirlenen kapasite tutarınca il müdürlüğünde belirli sayıda çadır depolanmaktadır (ÇINAR, 2018; ŞANLIURFA İL AFET VE ACİL DURUM MÜDÜRLÜĞÜ, 2016). Afet gerçekleştiğinde, kapasite yeterli gelmediği takdirde çadır veya konteyner alımı için ihaleye çıkılır. İhaleye üretici firmalar tekliflerini sunarlar. En uygun şartları sağlayan firma ihaleyi kazanır ve çadır veya konteyner üretimine başlar. Çadır veya konteyner üretimi için üretici firma diğer tedarikçi firmalardan sarf malzemelerini temin eder. Çadırların il müdürlüklerinde depolanabilme şansı olmasına rağmen, operasyonel nedenlerle konteynerler fabrikada üretilip doğrudan acil barınma merkezine nakli ve sonrasında montajı yapılır (ÇINAR, 2018; ŞANLIURFA İL AFET VE ACİL DURUM MÜDÜRLÜĞÜ, 2016). Çadırların sahada teknik personel tarafından kurulumu yapılır. Çadır veya konteynerler standart ölçülerde ve malzeme kalitesindedir. Fabrikasyon üretimlerde ölçülerin aynı olması üretim sürecini kısaltıp, ürünün daha ucuza imal edilmesini sağlar (PASQUIRE & GIBB, 2002). Bu nedenle örneğin; aile büyüklüğünün farklı olması ve üretimin her ailenin ihtiyaçları çerçevesinde yapılmasının düşünülmesi önemli bir gereksinimdir, fakat konunun acil barınma durumunun dışına çıkmasına ve üretim maliyetinin artmasına neden olur. Aynı durumun 3-B inşa yazımı ile ele alınıp afet sonrası acil barınma merkezi oluşturma süreci tekrar düşünüldüğünde süreç daha farklı olacaktır. Şekil 5'te görselleştirilen öneri sürece göre acil durum eylem planı doğrultusunda il afet ve acil durum müdürlüğünde belirli sayıda 3-B yazım cihazı bulunacaktır. Acil durumun gereksinimine göre depoda tutulan cihaz sayısı yetersiz olursa yeni cihaz alımı için kurum ihale açabilir. Üretici firmalar 3-B yazıcı cihazı imal edip acil barınma merkezine iletebilir ve sahada 3-B inşa yazımında kullanılabilecek yerel toprak örnekleri incelenip, teknik dayanım testleri ile uygun malzeme bileşiği tespit edilebilir. Malzemelerin bir merkezden gönderimi mümkündür, bununla birlikte ilgili bölgede malzemelerin belirli bir oranda kullanımı maliyet, zaman ve operasyon avantajı sağlar. Bu analizler afetlerde önceden bölgesel olarak yapılıp afet eylem planlarında yer alabilir. Çadır ve konteyner yerleşimlerinde olduğu gibi sahada gerekli

birtakım alt yapı işlemleri tamamlandıktan sonra 3-B yazım cihazları ile yapım süreci başlayabilir. Uzmanlar acil barınma ihtiyacı olan bireylerle anket veya görüşme yoluyla gereksinimlerini belirlerler. Bu gereksinimler örneğin ailedeki kişi sayısı, istenen kapı-pencere açıklık oranı, barınma alanı büyüklüğü gibi kriterler olabilir. Bu gereksinimler tespit edildikten sonra tasarım ekibi her aileye veya kullanıcı gruba özgü barınma birimlerini oluşturur ve yerleşim planını kurgular. Bu yerleşim planına göre küresel konumlama sistemi kullanılarak sahada 3-B yazım cihazları yerleştirilir ve 3-B yazım işlemi yerel tedarik edilen yazım malzemesi ile beraber her bir barınma biriminin imalatı, şu an var olan uygulama örnekleri dikkate alındığında 1 günden daha az bir sürede tamamlanabilir. Kullanıcıların ilettiği gereksinimler, acil barınma durumu göz önüne alınarak kategorileştirilir ve önem sırasına göre derecelendirilip barınma birimlerinin tasarımlarında uygulanabilir. Genelde 3-B inşa yazımı ile üretilen yapı kabukları çift cidarlı olduğu için iki cidar arası hem tesisat için hem de yalıtım malzemesi ile doldurulabilir. Böylelikle 3-B inşa yazımı ile oluşturulan acil barınma merkezi kurulum süreci, çadır ve konteynere göre iç mekân kullanıcı konforu daha yüksek, kullanıcı gereksinimleri esas alınabildiği için daha kullanıcı odaklı, hiç atık olmadan, üretim ve taşıma süreçleri azaldığı için karbon salınımı daha az olan bir sürece dönüşebilir.

Varsayım olarak önerilen bu sürecin problem ve kısıtlamaları, potansiyel ve fırsatları aşağıda listelenmiştir. Ancak bu problemlerin yakın gelecekte, şu an ilerlemekte olan gelişmeler ve teknolojik yenilikler ile çözüme ulaşacağı ve 3-B inşa yazımı yönteminin günümüzde dezavantaj olan birçok durumu avantaja çevirebileceği de göz ardı edilmemelidir.

Problem ve kısıtlamalar

- 3-B inşa yazım cihazının üretim maliyeti yüksektir.
- 3-B yazım tekniğinin hız performansının geleneksel sürece göre hızlı olmasına rağmen çadır kurulumuna göre yavaştır.
- Yazım malzeme seçeneği yüksek olsa da malzemeye özgü yapıştırıcı çalışmaları henüz geliştirme aşamasındadır. Bununla birlikte acil eylem planlarında belirlenen merkezlere yakın bölgelerdeki toprak türüne uygun yapıştırıcı üretilmesi gerekmektedir.
- Mevcut süreçte kullanıcı henüz tanımlı veya belirli değilken herkese uygun minimum standartta çadır veya konteyner imalatı yapılmaktadır.

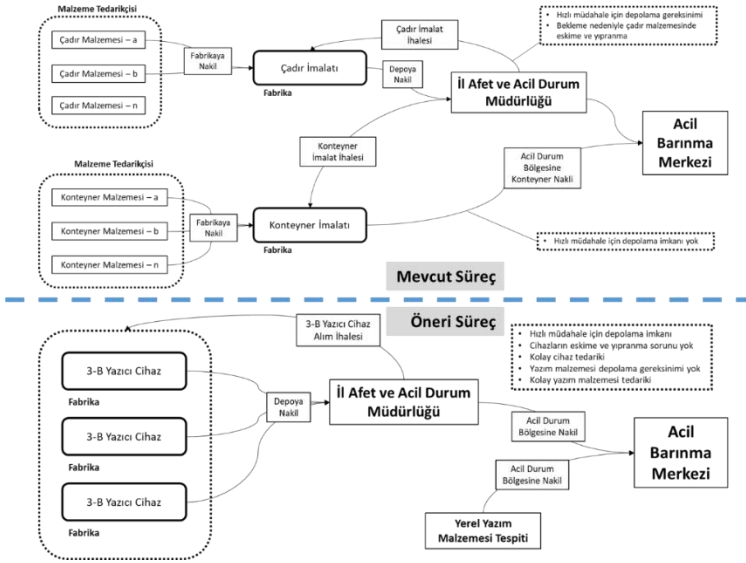
Öneri süreçte kullanıcı ve gereksinimleri belirlendikten sonra barınma yapıları üretilebilmesi için hızlı ve güvenilir veri toplama sisteminin geliştirilmesi gerekmektedir.

- Kullanıcıların barınma yapısında kişiselleştirme yapılabilmesi için kullanıcının kişiselleştirme yapabileceği seçeneklerle ilgili algısı olmalı veya algısını kolaylaştıracak yöntemler bulunmalıdır. Bununla ilgili kullanıcı ara yüzü geliştirilmesi günümüzde diğer çalışmalarda yaygın olarak tercih edilen bir yöntemdir.
- 3-B inşa yazımı sürecini içine alan acil eylem planlarının yeniden tasarlanması gerekmektedir.
- Gerekli yazım cihazı sayısı, temini ve kurulum süreci netleştirilmelidir.

Potansiyel ve fırsatlar

- Yazım cihazı maliyeti, süreç yönetimi ve yerel malzeme kullanımı ile ilgili konularda gelişme sağlandığında maliyet problemi çözülebilir.
- 3-B yazısı ile üretilen barınma birimlerinin çadır ve konteynerler göre konfor seviyesi yüksektir.
- Bölgedeki yerel malzemelerinin kullanımına olanak sağlayan araştırmaların ve teknolojik gelişmelerin oluşması ile yapı malzemesi temini ve taşınması problemi ortadan kalkabilir.
- Bölge, kullanıcı özellikleri ve barınma süresi gibi kriterlere göre barınma birimleri çeşitlendirilebilir.
- Acil eylem planları bu duruma göre güncelleştirildiğinde, tüm süreçleri kurulumun yapılacağı bölgede gerçekleşecek bir üretim modeli oluşacaktır. Bu sayede planlama tek merkezli, daha hızlı ve kontrol edilebilir olabilir.
- 3-B yazım cihazları, gerekli sayıda temin edilip, üretim süreci modellendikten sonra aynı cihazların ülke içinde veya farklı ülkelerde kullanılması mümkündür.
- Daha uzun süre kullanılabilecek veya kalıcı olacak barınma birimleri üretilebilir.

- Üretilen barınma birimlerinin kullanım süresi bittiğinde kullanılan malzeme geri dönüştürülebilir. Dolayısıyla geçici barınma birimleri için de daha sürdürülebilir bir yapı yaşam döngüsü sağlanabilir.



Şekil 5: *Acil barınma merkezi kurulumu mevcut ve öneri süreci*

SONUÇ VE DEĞERLENDİRMELER

3-B yazım tekniği ile acil barınma birimleri üretimi mevcut acil müdahale süreçleri çerçevesinde incelenmiş, çadır ve konteyner kullanımına alternatif olarak 3-B inşa yazımı tekniği kullanıldığında öneri sürecin imkân ve kısıtlamaları mevcut literatür verileri ile sunulmuştur. Barınma ve barınmanın probleme dönüştüğü durum örnekleri özetlenmiş, özellikle afet sonrası barınma birimlerinin üretim süreçleri detaylı bir şekilde açıklanmıştır. Geçici barınma ihtiyacının oluştuğu durumlarda, çadır ve konteyner gibi birimlerin belirli bir eylem planı ile hizmete alınması hızlı bir çözüm sunmaktadır. Kurumlar ve müdahale ekipleri bu birimleri temel alarak oluşturulan barınma birimlerini oluşturmada ve planlarını uygulamada tecrübelidirler. Bu yapı

birimleri kısa süreli barınma ihtiyacını karşılamakta kısmen yeterli iken konfor, güvenlik ve kullanım ile ilgili ciddi yetersizlikler sergilemektedir. Konteyner ve çadır yerine 3-B yazım tekniği kullanılarak acil barınma merkezlerinin oluşturulması önerisi çadır ve konteyner kullanıldığında yaşanan birçok problemi ortadan kaldırmakta ve yeni imkanlar sağlamaktadır. Bu yöntemin geliştirilmesi gereken birçok yönü olmasına rağmen, kullanıcı gereksinimine göre üretim, sıfır atık bırakma, hızlı uygulama ve konforlu birimler ortaya koyma gibi avantajları bu konuda yapılabilecek değişimleri bir seçenek olarak sunmaktadır. Bu sayede geçici barınma ihtiyacı için konforlu, sürdürülebilir ve kullanıcı odaklı yapı birimleri üretilebilir. Öneri kurgu, sadece acil barınma merkezlerinin oluşturulmasının yanında hızlı şehirleşme veya kentsel dönüşüm gibi kalıcı barınma birimlerinin oluşturulmasında da kullanılabilir. Varsayım olarak 3-B inşa yazımının acil barınma merkezi oluşturulmasında kullanımı incelendiğinden çalışmanın gerçek hayatta çeşitli ölçeklerde uygulamalarının yapılıp deneysel verilerle desteklenmeye ihtiyacı vardır. Bununla birlikte, çalışma ile ortaya konulan problem, 3-B inşa yazımı ile ilgili araştırma ve öneri üzerinden yapılan değerlendirmeler ile sonraki çalışmalar için faydalı olacaktır.

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فهم العلاقة بين التنوع العرقي والفراغات العامة: تحليل مرجعي

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Ankara Yıldırm Beyazıt University

الملخص
يمكن رؤية علاقة "الجمهور" - الأفراد في المجتمع وانخراطهم مع بعضهم البعض - في أوضح صورها في قلب المدن ؛ في الفراغات العامة. ساهم العديد من العلماء من مختلف التخصصات على مر السنين بأبحاث مكثفة حول هذه الفكرة. تقدم هذه المقالة تحليلاً بناءً لمقاربات البحث والمنهجيات المطبقة على التنوع العرقي كظاهرة اجتماعية فيما يتعلق بالفراغات العامة. يفحص البحث 1079 مقالة منشورة بين 1995 و 2020 وتم تضمينها في قاعدة بيانات Web of Science. تمت تصفية مجموعة البيانات المرجعية يدويًا ، وتم إنتاج التصور العلمي القائم على الاستعلام باستخدام برنامج CiteSpace. يستكشف المقال كيفية تطبيق النظرية ، ويحدد الاتجاهات الحالية ، والفجوات ، والأساليب المنهجية الشائعة في الدراسات ، والتي قد تؤدي إلى رؤى جديدة لمزيد من البحث متعدد التخصصات. تُظهر النتائج مجموعتين أساسيتين في التصور النظري للموضوع: نهج العلاقات بين الإنسان والمكان ، والذي يعتمد على فحص السياسة الحضرية والاجتماعية ، ونهج العلاقات بين الإنسان والإنسان ، والذي يركز على التفاعلات بين الأشخاص ويعتبر الفراغ العام بمثابة الوسيط من أجل هذا اللقاء الاجتماعي.

KEYWORDS
مراجعة الببليومترية ، CiteSpace ، التنوع العرقي ، الفضاء العام ، Web of Science

UNDERSTANDING OF THE RELATION BETWEEN ETHNIC DIVERSITY AND PUBLIC SPACE: A BIBLIOMETRIC ANALYSIS

ABSTRACT
In its most obvious form, the mechanism of the “public” – the individuals in a society and their engagement with each other – can be seen in the core of the cities; the public space. Over the years, many scholars from various disciplines have contributed extensive research on this notion. This article provides a constructive analysis of research approaches and methodologies

applied to ethnic diversity as a social phenomenon in relation to public space. It examines 1,079 articles published between 1995 and 2020 and included in Web of Science. The bibliometric dataset was manually filtered, and query-based scientometric visualization was produced using CiteSpace software. The article explores how theory is applied, and it outlines current trends, gaps, and common methodological approaches in the literature, which may lead to new insights for further interdisciplinary research. The results show two fundamental clusters in the theoretical conceptualization regarding the subject: a human–place relational approach, which is based on examining urban and social policy, and a human–human relational approach, which focuses on interpersonal interactions and considers public space a facilitator for this social encounter.

KEYWORDS

bibliometric review, CiteSpace, ethnic diversity, public space, Web of Science

المقدمة

يتمثل أحد الآثار البارزة لعالم العولمة في زيادة الهجرة وبالتالي زيادة التنوع في المستوطنات الحضرية. تواجه العديد من المدن الكبيرة باستمرار تدفقات عالية للمهاجرين من جميع أنحاء العالم. ونتيجة لذلك ، يتحول السكان نحو بنية ديناميكية وغير متجانسة ومتعددة الثقافات مع وجود مجموعات عرقية وثقافات فرعية مختلفة. يمكن ملاحظة التنوع العرقي من المستويات الوطنية الفرعية إلى مستوى الحي في كل من التنظيم الاجتماعي والمكاني. يحدد العرق السمات المشتركة لمجموعات من الناس ويحدد التقاليد والأيديولوجيات والسلوكيات المشتركة التي تظهر الاستمرارية الثقافية بمرور الوقت (HUTCHINSON & SMITH, 1996; PEOPLES & BAILEY, 2011). في النهاية ، يميل الناس إلى التجمع مع الآخرين الذين لديهم نفس المعايير والقيم ، وتتطور مجموعات معينة بخصائص مميزة. ومع ذلك ، يضطر الأفراد والجماعات المتنوعة إلى الانخراط وتقاسم المساحة مع بعضهم البعض أكثر من أي وقت مضى. لطالما كانت هذه الظاهرة مشكلة في مجموعة واسعة من المجالات مثل الجغرافيا والدراسات الحضرية وعلم الاجتماع وعلم النفس البيئي والدراسات الثقافية. يلعب النسيج الحضري دورًا جوهريًا وحاسمًا في تشكيل العلاقات بين المجموعات العرقية. يحدث التفاعل بين المجتمعات العرقية المتنوعة في الحياة اليومية في الأماكن الشائعة الاستخدام في المدينة ؛ الفضاء العام هو مكان التقاء الهويات المختلفة - أو ، كما يجادل (SENNETT, 2003) : المكان الذي يلتقي فيه "الغرباء" مع بعضهم البعض. الفضاء المشترك هو وضع مكاني هش يشكّله الناس دائمًا من خلال المشاركة. بالإضافة إلى ذلك ، فإن الهوية الثقافية للشخص تخلق إحساسًا بالانتماء وبالتالي تعزز الأماكن ذات المعنى. تجربة المساحات المشتركة كما هي ممكنة من خلال ظهورها في عملية استخدامها وتعريفها وفهمها والتواصل معها بشكل جماعي (STAVRIDES,2016). "نظرية وتطبيق التصميم الحضري السائد بوضوح مؤيدة للمجتمع ؛ يتم تعزيز أهمية التنشئة الاجتماعية في الأماكن العامة في الهواء الطلق " (RISHBETH ET AL.,2018) من خلال مقاييس سكنية مختلفة في المدينة (JACOBS, 1961; WHYTE, 1980; GEHL & GEMZOE, 1996; CARMONA ET AL., 2003) . بهذه الطريقة، فإن الفضاء العام الحضري هو المكان الذي تعكس فيه الممارسات اليومية الثقافات الاجتماعية الفردية والجماعية للتواصل الاجتماعي (DINES ET AL., 2006) وبالتالي فهي تعتبر ضرورية لنوعية الحياة. وفقًا لـ (HILLIER,1996) ، تعد واجهة العرق واحدة من أكثر الواجهات أهمية بين الواجهات المتعددة التي تميز الفضاء الحضري. ومن ثم ، يظهر التنوع العرقي كهيكل اجتماعي يتكون من تفاعل المجتمعات المختلفة في المشهد الحضري. بالتوازي مع هذا النهج الاجتماعي الحضري ، تجتذب الفراغات الأكثر تكاملاً في النظام المكاني مزيدًا من الحركة ، وبقوة الجاذبية الخاصة بها تحمل القدرة على خلق تفاعل اجتماعي (HILLIER ET AL., 1993). بهذا المعنى ، من الضروري فهم دور التنوع العرقي في الأماكن العامة ، مع الأخذ في الاعتبار أن هذه الأماكن هي أكثر الأماكن تكاملاً في المدينة. تميل المجموعات الإثنية إلى أن تكون منفصلة مكانيًا عن بعضها البعض ، لكنها مندمجة في النظام (قريبة من أي فضاء أصلي لجميع الآخرين المجودين في النظام) قدر الإمكان. ومع ذلك ، فإن الأغلبية تحتل الأماكن الأكثر تكاملاً ، والأقلية تحتل أماكن عامة ثانوية (FERATI, 2009). على الرغم من أن المنازل في المجتمعات العرقية المتنوعة لها

نفس التصـــميم المكـاني ، إلا أن تكوينهـا المكـاني هو الـذي يكشـــف عن الهويـة العرقيـة (CHARAMBOUS ANTONIADOU & PERISTIANIS, 2001). من حيث التواصل الاجتماعي في الأماكن العامة ، تحدث آليات فك الارتباط والاتصـال مع زيادة التنوع العرقي (BLUMER & SOLOMOS, 2015). تمثل تشـكيلات الفضـاء العام أو تشـكيلات الفراغات المشـتركة (المسـاحة كممتلكات مشتركة لمجموعة ترمز إلى هوية جماعية مشتركة) أنماطا لإنشاء مساحة مشتركة. في واقع الأمر ، قد يتم التنازع على المساحة المشتركة في صراع على التمثيل حتى قبل أن يتم تعريفها على أنها مسـاحة مشـتركة. هذه المسـاحات ليسـت مجرد نتيجة للأفعال التي أنتجتها. من الممكن أن تعريف المساحات المشتركة بشكل خاطئ ، وافسادها ، بل وحتى تخريبها من خلال هذه النزاعات. من المهم إذن دراســـة الطرق التي يمكن للناس من خلالها تطوير أدوات للتعرف، وايجاد وحتى الحلم بالمساحات المشتركة (STAVRIDES,2016).

الطريقة الشـائعة بغية فهم اتجاهات هذا الشـان الديناميكي ومتعدد التخصـصـات تتمثل في إجراء مراجعة للدراســات والادبيات البحثية. هذه المراجعة لا تقدم فقط نظرة عامة متعددة وجهات النظر للأدبيات السابقة حول هذا الموضـوع ولكنها توفر أيضًـا أساسًـا للأهداف والمنهجيات والمؤشـرات المحتملة التي تسلط الضـوء على الفجوات والإمكانيات فيما يتعلق بالموضـوع (KHOO ET AL., 2010). كما أنها توفر أسـاسًـا لدراسـات أكبر تتعلق بالموضـوع. من خلال إجراء تحليل مرجعي ببليومتري يجادل (SU ET AL, 2019) بأن بناء نموذج اجتماعي وانعكاسه في الفضاء العام يعتمد على بناء التراث الثقافي غير المادي للمجموعات العرقية المختلفة. صـــرح SHUANGYUN AND HONGXİA,2020) أن "التثاقف ليس مشكلة المهاجرين فحسب ، بل يمثل أيضًـا مشكلة الأقليات العرقية التي عاشت لأجيال في اتصال مع المجموعات السائدة. يستعرض ANDRADE ET AL. ,2016) أبعاد "الحق في المدينة" ويظهر أنه كان هناك تكثيف للفصـــل العنصـــري في العقد الماضـي في الأماكن العامة الحضـرية. بشكل عام ، تشير مثل هذه الدراسات إلى أنه لا يمكن التقليل من تأثير الإثنية والعرق في تكوين الهياكل والعلاقات الحضرية الملموسة ، ولكنها تشير إلى أن هناك دراسات ببليومترية محدودة تعالج هذه القضية.

ضمن هذا الإطار ، تبحث هذه الدراسة في العلاقة بين التنوع العرقي والفضاء العام بناءً على تحليل بنّاء لمقاربات البحث والمنهجيات المســـتخدمة. يحدد البحث الافتراضـــات المفاهيمية والاتجاهات الأساسية في التطور الماضـي والحاضـر للفضـاء العام الحضـري فيما يتعلق بالتنوع العرقي. تتناول المقالة ديناميكيات وأنماط التنوع العرقي في الأماكن العامة الحضـرية ، بحجة أن اسـتخدام المجال العام والمشـــاركة فيه يتأثران بالهوية العرقية. وبهذه الطريقة ، فإنه يحلل فكرة أن التنوع العرقي يؤدي إلى الفصل الاجتماعي المكاني في الأماكن العامة.

طرائق البحث وادواته

ألية البحث والاختيار

يعتمد البحث على منشـورات من 1995 إلى 2020 مأخوذة من قاعدة البيانات الببليوغرافية لشـبكة العلوم (WoS). يعد برنـامج دعم المراجع (على ســبيل المثـال ، CiteSpace أو HistCite أو

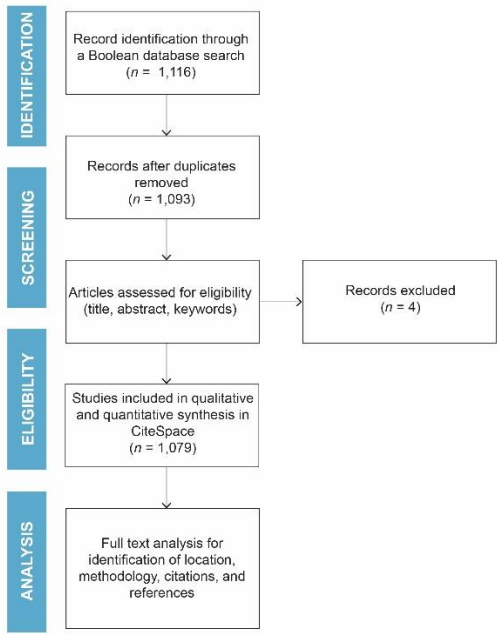
VOSviewer) مفيدًا جدًا لمعالجة التعقيد العابر للتخصصات في مثل هذا البحث (SHUANGYUN & HONGXIA , 2020). لذلك ، تم تحليل البيانات يدويًا بمساعدة برنامج CiteSpace. تُستخدم هذه الأداة لترجمة مجموعات البيانات الببليومترية إلى تصورات تستند إلى الاقتباسات المشتركة وخوارزميات التجميع ، وتتيح استكشاف تطوير مجال بحث معين (CHEN & SONG, 2019). تم إجراء البحث في يوليو 2021 بناءً على العنوان والملخص ومعلومات النشر والكلمات الرئيسية ومحتوى النشر. تم تخزين المعلومات التالية في مجموعة البيانات أثناء عملية البحث: عنوان النشر ، معلومات المؤلف ، معلومات مصدر النشر ، ملخص المنشور ، مقدار الاقتباس ، وعدد الاستخدام. بالإضافة إلى ذلك ، قدمت WoS معلومات محددة حول المنشورات الفردية ، بما في ذلك الكلمات الرئيسية للمؤلفين ، والكلمات الرئيسية لـ WoS (KeyWords Plus) ، معلومات المؤلف ، معلومات الناشر ، معلومات المستندات ، المراجع التي تم الاستشهاد بها ، وغيرها من المعلومات المتعلقة بالنشر. كان استعلام البحث "عرقيًا * أو عنصريًا * أو العنصرية والفضاء العام أو الفضاء الحضري المفتوح" وشمل المصطلحات ذات الصلة التي كشفت عن بقايا ذات صلة بالموضوع وبالتالي مجموعة بيانات أكثر دقة وجوهرية (الجدول 1).

الجدول 1: *معايير البحث عن التضمين والاستبعاد لمجموعة البيانات*[1].

المعيار	كلمة البحث		
الادخال	Ethnic*	+	Public Space*
	Racial*		Shared Space*
	Racism		Urban Space*
			Urban Public Space*
			Open Space*
			Open Public Space* Common Space*
الجمهور	Ethnic groups		
الاعداد	Open public space accessible to all		
النتائج	النوعي: التصورات واللوائح المتعلقة باستخدام الفضاء العام من قبل الجماعات العرقية الكمي: الارتباط بين المجموعات العرقية واستخدام الفضاء العام		
نوع المنشور	المنشورات التي استعرضها النظراء المفهرسة في قواعد بيانات WoS		
المجال الزمني	1995-2020		

[1]- ملاحظة: ("*" (علامة النجمة) تسترد أي مجموعة من الأحرف ، بما في ذلك عدم وجود حرف في Web of (Science

نتج عن مجموعة المصطلحات وعمليات البحث المنطقية 1116 زيارة [الشكل 1]. ثم تم تطبيق الترشيح اليدوي من خلال قراءة ملخصات المنشورات للوصول إلى دقة أكبر واكتشاف الانحرافات والتكرارات. تضمنت مجموعة البيانات النهائية التي تعتبر ذات صلة بالدراسة 1079 منشورًا.



الشكل 1: مخطط تدفق PRISMA يوضح إجراء الاختيار وتحليل مجموعة البيانات

المحددات الرئيسية

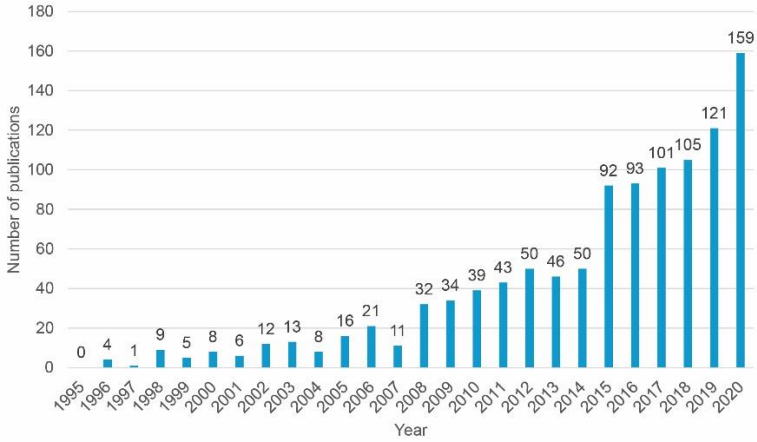
التفسيرات القائمة على نتائج هذه المنهجية محدودة بعدة عوامل. أولاً ، يمكن أن تحد ممارسات فهرسة WoS من موثوقية النتائج "(Le Gentil & Mongruel, 2014). المنشورات المختارة حول هذا الموضوع ليست كاملة ، وهناك مواد أخرى موجودة بلا شك (على سبيل المثال ، في المجلات والكتب و / أو فصول الكتب غير المفهرسة في WoS ، (غير) التقارير المنشورة ، الأطروحات ، أو (غير) وقائع المؤتمرات المنشورة). ثانيًا ، قد يكون ناتج البحث متنوعًا بسبب تضمين كلمات رئيسية مختلفة متعلقة بالموضوع.

نتائج البحث حول التنوع العرقي فيما يتعلق بالمساحة العامة

تبحث الدراسة بشكل شامل في المجالات الموضوعية الرئيسية وأنماط المجموعات المرتبطة بها بناءً على المعلومات الببليوغرافية والجغرافية والمواقع والطرق المنهجية لمجموعة البيانات.

المعلومات الببليوغرافية والجغرافية

استرجعت مراجعة الأدبيات ما مجموعه 1116 منشورًا من قاعدة بيانات WoS ، والتي تم اختصارها إلى 1079 دراسة (96.7 ٪) تتناول التنوع العرقي في الفضاء العام. أنواع الوثائق هي بشكل أساسي مقالات بحثية (93.4٪) ووقائع مؤتمرات (5.1٪) ، مما يشير إلى أن هناك درجة معينة من الاهتمام بالموضوع لأن بعض المنشورات قدمت في المؤتمرات. على الرغم من أن فترة البحث غطت ربع قرن تقريبًا (1995-2020) ، فقد نُشر نصف الدراسات بعد عام 2015 [الشكل 2]. ازدادت أعداد الاقتباسات الإجمالية للمنشورات المختارة بشكل واضح بين عامي 2013 و 2020 ، ووصلت إلى ذروتها في عام 2020. على الرغم من وجود فترات متذبذبة ، إلا أن هناك زيادة في هذه المنشورات بمرور الوقت (تم نشر أكثر من 50٪ من جميع المقالات في العقد الماضي) مما يظهر اهتمامًا متزايدًا وبحثًا حول هذا الموضوع. في الوقت نفسه ، أصبح الموضوع تدريجيًا مدمجًا في مجالات البحث المختلفة. اللغة الإنجليزية هي اللغة السائدة في المنشورات بنسبة 88.6٪. من بين المنشورات غير الإنجليزية ، كانت الروسية والإسبانية (3.3٪ و 3.2٪ على التوالي) الأكثر شيوعًا.



الشكل 2: توزيع مجموعة البيانات عبر السنوات

يقدم (الجدول 2) التصنيف المخصص من قبل WoS للسجلات المختارة في مجالات البحث. تصنف WoS غالبية المنشورات في فئة "الجغرافيا". نتج عن البحث في الأدبيات أكثر من 150 مجلة مختلفة. على الرغم من ذلك ، لا توجد مجلة أكاديمية واحدة مكرسة بالكامل للعلاقة بين التنوع

العرقي والفضاء العام. ومع ذلك ، فإن المجلات تمثل فروعًا وابوابًا فرعية في العلوم الاجتماعية ، بما في ذلك علم الاجتماع وعلم النفس والجغرافيا البشرية والأنثروبولوجيا والدراسات الحضرية والعمارة والتخطيط والعلوم السياسية واللغويات والاقتصاد والتاريخ. فقط المجلات الرئيسية في علم الآثار مفقودة.

الجدول 2: مجالات البحث المدرجة في مجموعة البيانات.

مجال البحث	التكرار
جغرافية	194
الدراسات الحضرية	169
علم الاجتماع	134
العلوم البيئية ، علم البيئة	120
العلوم الاجتماعية مواضيع أخرى	112
الدراسات العرقية	102

أجريت نسبة كبيرة من الدراسات في الأمريكتين (49.1٪). تتناول دراسات الحالة ، في الابحاث ذات الصلة بشكل أساسي، المستوطنات الحضرية (الفرعية) والأحياء متعددة الأعراق في الولايات المتحدة (40.2٪). ينصب التركيز الرئيسي لهذه الدراسات على الأحياء المختلطة بين البيض والسود (CALIENDO, 2011) (ROLLOCK ET AL. , 2011)، (GIBSON,2018)، (HARWOOD ET AL., 2018) ، لا سيما في نيويورك ولوس أنجلوس. ترتبط هذه الدراسات ارتباطًا وثيقًا بالتمايز الثقافي في استخدامات المناطق العامة (شبه) المتنوعة مثل المدارس والمتنزهات (LOUKAITOUSIDERIS-SIDERIS, 1995) ؛ (HO ET AL., 2005)؛ (KACZYNSKI ET AL., 2013) ؛(CHUANG ET AL., 2013) ؛(WOLCH ET AL., 2005) ؛ (WILSON, 2016) ؛ (TROUILLE, 2014) ؛ (VAUGHAN ET AL., 2013) ؛ (RIGOLON & NÉMETH, 2018). تركز هذه الدراسات بشكل رئيسي على الأطفال والشباب.

"لقد شكلت الهجمات الإرهابية الملحوظة في السنوات الخمس عشرة الماضية ، في كل من المملكة المتحدة ودول أخرى ، الفهم اليومي للمجال العام كمكان يحتمل أن يكون خطيرًا ، وغالبًا ما يتم الخلط بين هذا الخطر والرؤية العنصرية" (RISHBETH ET AL., 2017) . وبناءً على ذلك ، قد تكون إحدى نقاط الاساسية في هذه المراجعة مرتبطة بالمقاربة العالمية لمكافحة الإرهاب بعد هجمات 11 سبتمبر. نسبة دراسات الحالة في الدول الأوروبية المتعلقة بهذا الموضوع مرتفعة نسبيًا (20.1٪). والجدير بالذكر أن 14.4٪ من دراسات الحالة تدرس المملكة المتحدة ، مع التركيز على الخطاب البريطاني عبر الثقافات والتفاهمات العرقية للأحياء المتنوعة إثنيًا. الظواهر متعددة الثقافات والأسئلة حول اندماج الأقليات المسلمة وأنشطتها اليومية في الأماكن العامة واضحة

(Johnson ،(Mohammad, 2013) (Kloek et al., 2013)، (Schmidt, 2012) (& Miles, 2014 ، (Hopkins et al., 2017) ، (Joly, 2017). هناك أيضًا أمثلة لدراسات حالة لأماكن كانت فيها التعددية الثقافية موجودة منذ قرون. تبحث مجموعة من الدراسات في المستوطنات في فلسطين ، وتدرس مناطق الصراع بين اليهود والعرب ، وتحلل مناطق الحكم الذاتي غير المعترف بها ، وتقيّم حالة المجتمعات المضطهدة ، وتستكشف مفهوم "المكان" في سياق متعدد الثقافات

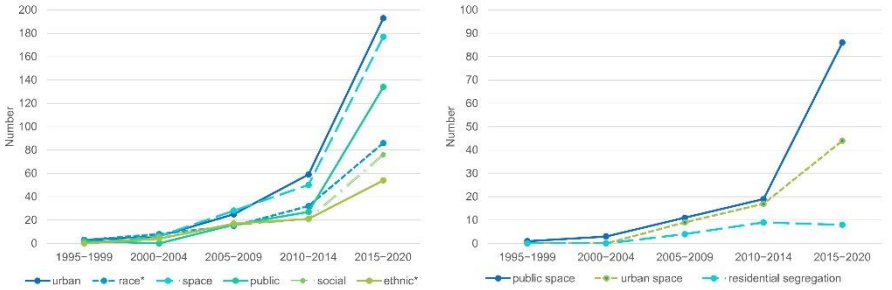
(Yiftachel & Yacobi, 2003) (Shuval et al., 2009) (Monterescu, 2011) (Aharon-Gutmann, 2014) (Jadallah ،,2014) (Badarin, 2015) (Shtern , 2016) (Omer et al., 2016) (Rokem & Vaughan,2018).

تشير مجموعة البيانات إلى أن اتجاهات الهجرة الحالية كانت أيضًا موضع تحقيق. تغطي الدراسات بشكل أساسي الأبحاث حول المهاجرين والانتماء الى المدن ،التنافس ومقاومة المجموعات المقابلة، أصحاب المنازل والقادمين الجدد (Ryan, 2003); (Ayata, 2008); (Müller, 2011) (Ehrkamp, 2013); (Triandafyllidou & Kouki, 2013); (Hall, 2015); (Lobo, 2015); (Demintseva, 2017).
تشير مجموعة البيانات إلى أن هذا الموضوع هو موضوع نقاش مركزي في السياسة اليومية. تركز دراسات الحالة في آسيا وأستراليا بشكل أساسي على المناطق المختلطة إثنيًا الناتجة عن تدفقات الهجرة في الماضي البعيد أو القريب. يفحص (Williamson, 2016) ما إذا كانت "أشكال الانتماء تزداد مرونة وتتميز بتعدد أماكن التعلق من خلال استكشاف كيفية تضافر مستويات مختلفة من الانتماء والتنقل في عمليات دمج المهاجرين في منطقة ضواحي انتقالية شديدة التنوع في سيدني ، أستراليا. "

المجالات البحثية

لفهم بنية المجال وديناميكياته ، من الضروري فحص البحث المحدد الذي تم إجراؤه لكل مجال رئيسي وكيف ترتبط مجالات البحث المختلفة من خلال مقالات محددة (Chen, 2020). يمكن تقسيم عملية البحث هذه إلى جزأين. يتكون الجزء الأول من تحليل تكرار الكلمات لفحص مجموعة البيانات بناءً على الكلمات الرئيسية، و من خلال استخراج الكلمات الرئيسية ، يتم تكوين موضوعات رئيسية تصف المحتوى الأساسي لمجموعة البيانات. الجزء الثاني هو تحليل الاقتباس المشترك. يُظهر الاقتباس المشترك في الدراسة ظهور مقالتين أو أكثر في قائمة مرجعية ثالثة. في مثل هذه الحالة ، تشكل هذه المقالات علاقة اقتباس مشترك ، والتي يمكن أن تكون مفيدة للإشارة إلى الاتجاهات في مجال البحث.
تتطور الكلمات المفتاحية public وspace بالتوازي مع بعضها البعض ويبدو أنهما مرتبطتان بمظهر متسق بمرور الوقت [الشكل 3 أ]. يشير هذا إلى أن الأبحاث المخصصة للمناطق الحضرية مرتبطة بالأماكن العامة المفتوحة. ومع ذلك ، فإن هذه المساحات ليست فقط على نطاق المدينة

ولكن أيضًا على نطاق الحي لأن هناك عددًا كبيرًا من الدراسات التي تبحث في الفصل السكني في أحياء متنوعة داخل المشهد الحضري [الشكل 3 ب]. (ZSOLT FARKAS ET AL.,2017)درس آثار وعواقب الفصل السكني في المساحات الحضرية في المجر مع التركيز على شعب الروما. تحقق (BURGERS AND ZUIDERWIJK, 2016) في الفصل العرقي في إنجلترا وويلز. بالإضافة إلى الأماكن العامة الحضرية المفتوحة ، تم أيضًا فحص أماكن أخرى مثل "الصالح العام" ، مثل أماكن العمل أو التعليم أو الترفيه. يوضح (SWYNGEDOUW, 2013) أن "الأشخاص من أعراق وطبقات مختلفة ، ممثلة بالمحطة التي يستقلون فيها القطار ، لا يلتقون كثيرًا في القطار بسبب الفصل السكني القائم في مدينة شيكاغو." يستكشف (LOBO, 2014)التجربة الحية للتعددية الثقافية من خلال عيون ثلاثة أشخاص (من السكان الأصليين ، وامرأة مهاجرة ، وهي نفسها) من خلال ركوب الحافلة نفسها في داروين ، أستراليا. يستكشف (JACKSON , 2019)الآراء المتنازع عليها حول صالة بولينغ في لندن تستخدمها مجموعات عرقية متنوعة ومهددة بالهدم. يفحص (SCHMIDT, 2015) عدم المساواة والتنوع في الوصول إلى البيئة المدرسية باستخدام التحليل الفراغي. هنا ، يتم التركيز على العلاقة بين التنظيم الاجتماعي والنسيج المكاني. من ناحية أخرى ،يحاول (YU ET AL., 2015) استكشاف التصور المكاني لطلاب الجامعات للحرم الجامعي في ممفيس. يختلف تفسير درجة المكانية والدعاية في الأماكن العامة في الدراسات.



a b

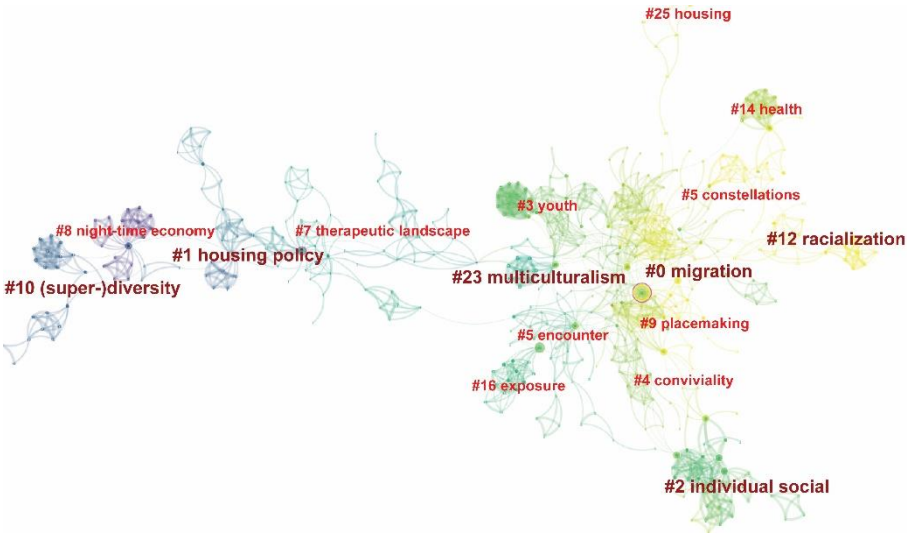
الشكل 3: أ) الكلمات الرئيسية الأكثر شيوعًا خلال الفترة الزمنية ؛ ب) العبارات الأكثر تكرارا خلال الفترة الزمنية

يؤكد قدر كبير من مجموعة البيانات (44.6٪) على كيفية ارتباط المعاملات المختلفة بالعرق ، وتعزيز التنوع ، وكيف يؤثر ذلك على البيئة المعيشية والعكس صحيح. الفوارق هي الشاغل الرئيسي. المتغيرات الأكثر شيوعًا التي تدرس العلاقة بين التنوع العرقي والأماكن العامة هي الفصل والتكامل والدمج والإقصاء والاتصال والتفاعل الاجتماعي والتماسك الاجتماعي. تشمل هذه المعلمات معاني متعددة الأبعاد لأنها مرتبطة بالمدينة ككيان مادي ، بما في ذلك جميع ديناميكاتها. على سبيل المثال ، تم تعريف الفصل ، وهو المتغير الأكثر أهمية ، في سياق أوسع (الفصل

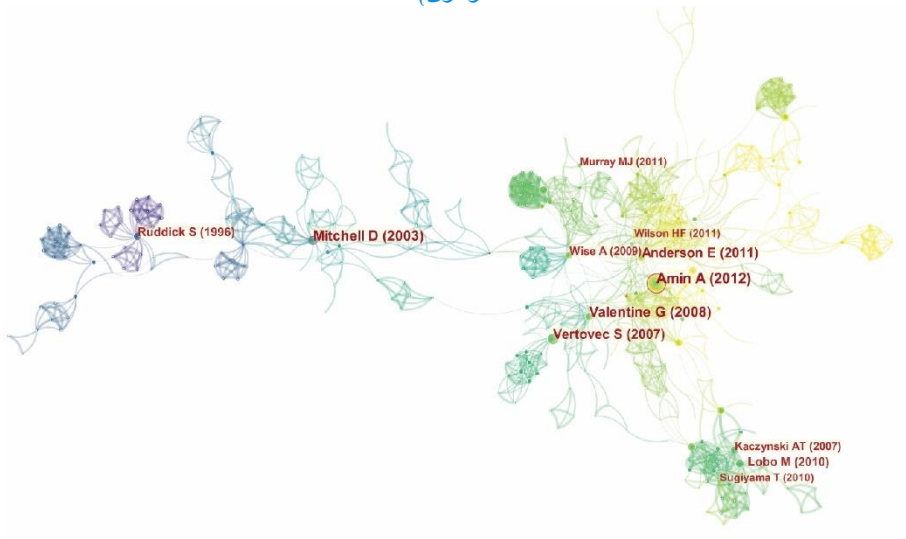
التعليمي ، الفصل السكني ، الفصل الاجتماعي ، أو الفصل الاقتصادي) في العديد من الدراسات ويرتبط كثيرًا بالعنف الحضري ، مما يثير تساؤلات حول متى وكيف الفصل يشكل العنف إما من حيث التوترات أو الصراع النشط (Bhavnani et al., 2013; Trouille, 2014; Kutmanaliev, 2015; Ha, 2017; Zahnow, 2018)

إلى هذا النقطة تحديداً ، تشير الكلمات الرئيسية إلى أنه يمكن تصنيف الدراسات إلى أربعة مواضيع رئيسية: 1) التعددية الثقافية (الظواهر الاجتماعية المتعلقة بإنشاء التنوع العرقي) ؛ 2) العلاقة (التي تحتوي على مؤشرات / بارامترات تقيس العلاقة المتبادلة بين الهويات العرقية أو العلاقة بين المكان والهوية) ؛ 3) الفضاء (يُفهم على أنه الفضاء العام ، الصالح العام على أنه المظهر المكاني) ؛ 4) المدينة (النظام الدستوري للشبكات التي تكشف العلاقات الاجتماعية المكانية).

تشكل العلاقات المتبادلة بين المقالات شبكة اقتباس مشترك ، مما يشير إلى كيفية اختلاف المنشورات من حيث المراجع التي يتم الاستشهاد بها. إنه يوضح ببساطة مدى تكرار اقتباس مقالتين معًا بواسطة مقالات أخرى في مجموعة بيانات (Chen & Song, 2019). يتم تحديد سمات هذه المجموعات من خلال مصطلحات الفهرس من المقتبسين الخاصة بهم. يمكن تضمين مؤلف أو دراسة مقتبس منها في مجموعات متعددة. بالتوافق مع مجموعة البيانات ، تتكون الشبكة من ستة عشر مجموعة اقتباس مشترك ، ستة منها عبارة عن مجموعات رئيسية [الشكل 4]. تتضمن هذه المجموعات الدراسات المترابطة و / أو المؤلفين ، والتي تكشف عن مناهج تمثيلية للموضوع [الشكل 5]. علاوة على ذلك ، تشير دفعات الاقتباسات إلى نقاط ساخنة تجذب قدرًا كبيرًا من الاهتمام في غضون فترة زمنية قصيرة (Chen, 2016) يشير هذا إلى بعض المقالات التي يتم الاستشهاد بها بشكل متكرر في فترة زمنية معينة ، مما يكشف عن الدراسات الرئيسية المتعلقة بالموضوع.



الشكل 4: عرض المجموعة المعنونة لمجموعة بيانات المراجعة (مشتق من CiteSpace: المؤلفون).



الشكل 5: شبكة مرجعية للمجموعات الرئيسية (مشتقة من CiteSpace: المؤلفون).

المجموعة المفاهيمية 1: العلاقات بين الإنسان والمكان: اهتمام بالسياسة الحضرية والاجتماعية.

أكبر مجموعة (# 0) تسمى "الهجرة". المؤلف الأكثر ذكرًا في هذه المجموعة هو (AMIN,2012)، الذي يركز على العيش مع التنوع ودور الفضاء العام في مدينة الغرباء ضد السياسات الحضرية المعاصرة فيما يتعلق بالتخلص من تعايش المجموعات غير المرغوب فيها. يمكن إنشاء السياسات الحضرية لإدارة وتعزيز التماسك الاجتماعي داخل المجتمع من خلال دراسة التفاوض اليومي للاختلافات العرقية في المدن متعددة الثقافات. ومع ذلك ، فإن هذه التحليلات محدودة (AMIN, 2002; FINCHER & IVESON, 2008; VALENTINE, 2008). يعد فهم العمليات الاجتماعية والمكانية لأنماط المستخدم المتنوعة في الأماكن العامة أمرًا معقدًا وصعبًا للغاية. كما يوضح (MASSEY, 1994)، قد يكون هذا بسبب أن فكرة المكان "تتكون من مجموعة معينة من العلاقات الاجتماعية التي تتفاعل في موقع معين". يجادل بأن "الأماكن لا يجب أن يكون لها حدود بمعنى التقسيمات التي تشكل حاويات بسيطة" (MASSEY, 1994). بدلاً من ذلك ، "ليس لديهم" هويات "فريدة ؛ إنها مليئة بالصراعات الداخلية "، وهذه الخصوصية" مستمدة من حقيقة أن كل مكان هو محور مزيج متميز من العلاقات الاجتماعية الأوسع والمحلية "، ونتيجة لذلك تكون" تقدمية ؛ لا ينغلق على نفسه ويدافع عن نفسه ويتطلع إلى الخارج "(MASSEY, 1994).

تشير مجموعة صغيرة تسمى "صناعة الأماكن" بشكل أساسي إلى عمل (MITCHELL, 2003)، والذي يواجه القارئ ببيان نقدي مفاده أنه يجب الدفاع عن الحق في المدينة من خلال جميع أنواع التنوع لتحقيق العدالة الاجتماعية. في الواقع ، يحتوي هذا المنشور على اكبر حجم اقتباس[الشكل 6]. يدافع المؤلف عن "أهمية المدينة كموقع للتنوع والنضال من أجل خلق مجال عام" (MITCHELL, 2003). ومن ثم ، فإن فكرة الفضاء العام توصف بأنها البيئة المادية التي تسمح بتمثيل سلوك الفرد أو المجموعة ، وبالتالي تتخذ خطوة مهمة نحو تحقيق العدالة على مستوى الإدارة. عندما لا يتم تحقيق هذه العدالة ، غالبًا ما تواجه المجموعات الأقل تمكينًا صعوبة في الوصول إلى الأماكن العامة اليومية واستخدامها (MITCHELL, 1995). انعكست الأبحاث الناشئة حول الهجرة وسياسات اللجوء وأجندات اللاجئين وما إلى ذلك في دراسات الحالة المختلفة في جميع أنحاء العالم لدراسة الإطار السياسي وتقييم الآثار الاجتماعية والسياسية وصراعات التنوع العرقي في المستوطنات الحضرية (LEES, 2003; BRYNE, 2012; BHAVNANI ET AL., 2013; FESTIĆ, 2015; FREDMAN, 2018)

تمثل مجموعة البيانات الشاملة مجموعة من الأعمال التي تستكشف "كيفية تجربة التنوع الثقافي والتفاوض بشأنه على أرض الواقع في مواقف الحياة اليومية" (WISE & VELAYUTHAM, 2009) وتقترح سياسات تنوع جديدة مناسبة للوقت الحالي (BROWN, 2006; AMIN, 2012).

ثاني أكبر مجموعة اقتباس مرتبطة بعمل (VERTOVEC, 2007). نظرًا لاتجاهات الهجرة القوية في فترة ما بعد الاستعمار في المملكة المتحدة ، يعتبر المؤلف شرق لندن وبرمنغهام على أنهما غير متجانسين ويركزان على تجارب المهاجرين. يقدم فيرتوفيك في هذه الوثيقة مصطلح "التنوع الفائق" ، الذي يعترف "بالهويات المتعددة ومحاور التمايز ، وبعضها فقط يتعلق بالعرق". العديد

من المعاملات الأخرى تولد عدم المساواة بين المجموعات العرقية وداخلها. تشمل هذه المتغيرات أبعاد الدين والطبقة ، وكذلك العمر والجنس والوضع القانوني.

References	Year	Strength	Begin	End	1995–2020
Ruddick S, 1996, URBAN GEOGR, V17, P132, DOI 10.2747/0272-3638.17.2.132, DOI	1996	5.36	1999	2003	
Day K, 1999, ENVIRON PLANN D, V17, P307, DOI 10.1068/d170307, DOI	1999	3.55	2003	2006	
Caldeira Teresa, 2000, CITY WALLS CRIME SEG, V0, P0	2000	3.48	2005	2008	
Mitchell D, 2003, RIGHT CITY SOCIAL JU, V0, P0	2003	7.79	2006	2011	
Valentine G, 2008, PROG HUM GEOG, V32, P323, DOI 10.1177/0309133308089372, DOI	2008	5.16	2011	2016	
Kaczynski AT, 2007, LEISURE SCI, V29, P315, DOI 10.1080/01490400701394865, DOI	2007	3.83	2011	2014	
Vertovec S, 2007, ETHNIC RACIAL STUD, V30, P1024, DOI 10.1080/01419870701599465, DOI	2007	5.66	2012	2015	
Cohen DA, 2007, AM J PUBLIC HEALTH, V97, P509, DOI 10.2105/AJPH.2005.072447, DOI	2007	3.36	2013	2014	
Amin A, 2012, LAND STRANGERS, V0, P0	2012	3.85	2014	2018	
Anderson E, 2011, COSMOPOLITAN CANOPY, V0, P0	2011	4.78	2015	2020	

الشكل 6: أهم المراجع مع أقوى رشقات اقتباس (رسم توضيحي مشتق من CiteSpace: المؤلفون).

المجموعة المفاهيمية 2: العلاقات بين الإنسان والإنسان: التفاعل بين الأشخاص والفضاء العام كوسيط

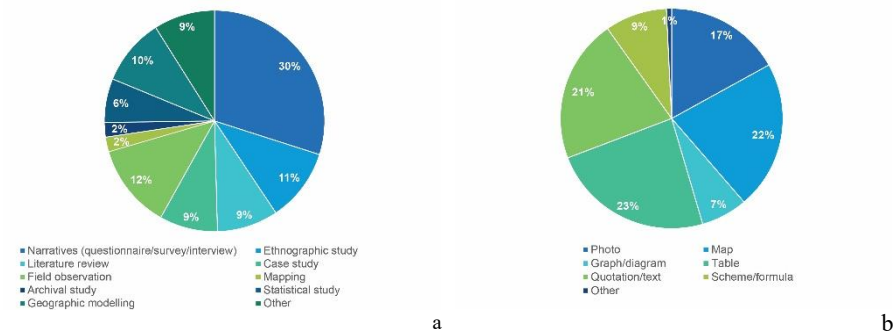
المجموعة الثانية (# 2) تسمى "الاجتماعية الفردية". حسب التعريف ، فإن الأماكن العامة "يمكن الوصول إليها عالميًا ، فهي توفر واحدة من الفرص القليلة للأشخاص لمقابلة أشخاص آخرين ذوي سلوكيات وثقافات مختلفة" (Shaftoe, 2008) . (Lobo, 2010)هو أكثر المؤلفين استشهدًا في المجموعة ، وتكشف دراسته الإثنوغرافية عن أهمية الارتباط بالمكان باعتباره اهتمامًا اجتماعيًا وسياسيًا يتشكل من خلال اللقاءات اليومية بين الثقافات في الأماكن العامة. وهذا "يوفر إمكانية طمس الحدود العرقية الثابتة والمساهمة في التفاهم بين الأعراق والشعور بالانتماء" (Lobo, 2010). تناقش العديد من الدراسات تحديات مماثلة تشكك في أهمية اللقاءات الحضرية في الأماكن العامة. يجادل (Wessel, 2009) أنه في التفاعل اليومي "مجرد التعرض للتنوع يقلل من التحيز". ومع ذلك ، "لا يجلب القرب بالضرورة" اتصالًا ذا مغزى "، وبدلاً من ذلك ، قد يظل الأشخاص الذين يتبادلون المهارات المدنية في الأماكن العامة يحملون وجهات نظر متحيزة تجاه مجموعات الأقليات العرقية" (Piekut & Valentine, 2017). أثبتت الدراسة التي تحتوي على ثالث أقوى موجة اقتباس (Valentine, 2008) أن "اللقاءات الإيجابية مع أفراد من مجموعات الأقليات لا تغير بالضرورة آراء الناس حول المجموعات (ككل) للأفضل" (Valentine, 2008)) . "وبالمثل ، أظهرت الدراسات الكمية أن زيادة التنوع العرقي في الحيز الحضري لا تؤدي بشكل مباشر إلى تحسين العلاقات والمواقف الاجتماعية" (Piekut & Valentine, 2017). بدلاً من ذلك ، تسعى الدراسات إلى فهم الظروف التي قد يؤدي فيها التباين العرقي إلى توترات (Schlueter & Scheepers, 2010; Stolle et al., 2013; Laurence, 2014). هناك دراسات محددة تبحث في العلاقات اليومية للأشخاص داخل الأماكن العامة. (Cattell et al., 2008) يجادل بأن "[مجموعة] واسعة من الأماكن المفتوحة العامة اليومية كان يُنظر إليها على أنها ذات تأثير إيجابي على كل من رفاهية الفرد وحياة المجتمع. . " تؤكد الدراسة بشكل خاص على القيمة المشتركة والاستخدام الجماعي للمساحات وكيف يمكن أن يساهم ذلك في الحفاظ على الصحة والرفاهية. قام (Kazmierczak ,2013)

بالتحقيق في "مساهمة الحدائق المحلية في تطوير الروابط الاجتماعية" في "ثلاثة أحياء داخل المدينة في مانشستر الكبرى ، المملكة المتحدة ، تتميز بمستويات مختلفة من الحرمان المادي والتنوع العرقي." يدعي المؤلف أنه إلى جانب التركيبة الاجتماعية الحالية ، فإن عمليات النشر الجديدة أو قصيرة المدى ذات صلة أيضًا بالتركيز عليها.

باختصار ، تُظهر هذه المجموعة أن العلاقات الاجتماعية في المناطق المعزولة (اجتماعيًا) قد يكون لها تأثير في التغلب على الاختلافات أو على الأقل تقليلها (AMIN, 2002). يركز الخطاب إما على علاقة الأغلبية بالأقلية أو على غياب مجموعة عرقية معينة مهيمنة. كما يؤكد (GEHL, 2011) فيما يتعلق بدرجات الاتصال المتفاوتة ، لا ترتبط الشدة ارتباطًا مباشرًا بأهميتها. "بالمقارنة مع أشكال الاتصال الأخرى ، تبدو جهات الاتصال (منخفضة الكثافة) غير مهمة ، ومع ذلك فهي ذات قيمة كأشكال اتصال مستقلة وكمتطلبات مسبقة لتفاعلات أخرى أكثر تعقيدًا" . (GEHL, 2011) بالنظر إلى هذه الأساليب المختلفة ، ركزت الدراسات بشكل متزايد على التنظير وفحص المواجهات العرقية في الأماكن العامة.

المقاربات المنهجية

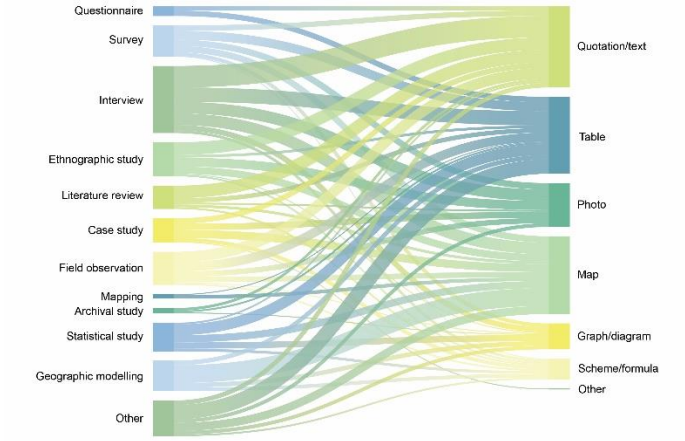
لاحظنا أن المقالات النوعية تكشف عن آثار إيجابية أو سلبية على الفضاء العام وفرضيات الاختبار ، بينما تقدم المقالات الكمية القيم العددية للعلاقة بين الظواهر من خلال تقييم المؤشرات والمعايير. تستخدم الدراسات نهجًا مختلطًا يتضمن البيانات النوعية والكمية. تم جمع البيانات النوعية باستخدام المقابلات والاستبيانات والملاحظات في أشكال سردية. بالإضافة إلى ذلك ، تمت مراجعة المؤلفات السابقة والمواد الأرشيفية لدعم الدراسات التي أجريت. تظهر النتائج أن 138 مقالًا تم ذكرها تحديدًا باستخدام طريقة دراسة إثنوغرافية ، وفي الواقع استخدمت في نصف الدراسات تقريبا [الشكل 7]. يهدف البحث الإثنوغرافي إلى فهم الثقافات والمعايير التي تركز على السلوك البشري وجمع بيانات الرصد (CRESWELL, 1998, 2003). بالنظر إلى أن ربع الدراسات تقريبًا استخدمت روايات تم الحصول عليها من المقابلات ، يجب التأكيد على أهمية البحث التشاركي. من ناحية أخرى ، تم جمع البيانات الكمية باستخدام البيانات الإحصائية ورسم الخرائط ، كما تم الحصول عليها من خلال الملاحظات الميدانية. تركز هذه الملاحظات على أنماط الأنشطة اليومية لمستخدمي الأماكن العامة. كانت وحدات التحليل عبارة عن مجتمعات هامشية وثانوية داخل المستوطنات الحضرية الخاصة بكل حالة. كانت بعض مناطق الحالات المحددة الأخرى عبارة عن أحياء سكنية ومناطق ضواحي وبيئات تعليمية مثل المدارس الثانوية والحرم الجامعي. وشملت مجموعات التركيز المتعلقة بدراسات الحالة هذه تلاميذ المدارس وطلاب الجامعات.



a b

الشكل 7: أ) توزيع المنهجيات المطبقة ؛ ب) تمثيلات مرئية للأساليب المستخدمة).

يقدم التدقيق الإضافي فهمًا للعلاقة بين الطريقة المستخدمة وتمثيل البيانات التي تم الحصول عليها أو تصورها. تم استخراج كل نوع من الأساليب المنهجية تقريبًا كنص ، ولكن تم أيضًا التعبير عن بيانات مهمة كتمثيل مرئي ، مثل الصور الفوتوغرافية أو الخرائط [الشكل 8].



الشكل 8: العلاقة المتبادلة بين المنهجيات المطبقة وتمثيلاتها المرئية

النتائج

لمنع تدهور المناخ الاجتماعي ، من الضروري فهم المواقف بين الأعراق في الفضاء العام من وجهات نظر مختلفة. تكشف الدراسة أن الأدبيات ذات الصلة ترتبط عمومًا بالجغرافيا والدراسات الحضرية وعلم الاجتماع. ومع ذلك ، فإن قاعدة البيانات المحددة تتوافق مع مجموعة واسعة من التخصصات الفرعية. تشير الأدبيات إلى أن هناك أربعة مواضيع رئيسية يجب تحديدها فيما يتعلق

بالموضوع: التعددية الثقافية ، والعلاقة ، والفضاء ، والمدينة. باستخدام تحليل البيانات الببليومترية ، تم اكتشاف مجموعتين رئيسيتين من الاقتباسات المشتركة وتقييمهما بناءً على هذه الموضوعات. تمثل المجموعات العلاقة بين الإنسان والمكان (الاجتماعي - المكاني) ، والعلاقة بين الإنسان والإنسان (الاجتماعية - الفسيولوجية).

تستكشف المجموعة الأكبر العلاقة بين الإنسان والمكان وتركز على التنوع العرقي كمصدر قلق للسياسة الحضرية والاجتماعية. تتناول دراسات الحالة المتعلقة بالمجموعة الآثار الاجتماعية والسياسية والصراعات المرتبطة بشكل خاص بالهجرة وسياسات اللجوء وأجندات اللاجئين. علاوة على ذلك ، يعد "المكان" منفعة مشتركة أساسية لتطوير التعبير العام الجماعي والفردي. في المجموعة الثانية ، يوفر الفضاء العام منبرًا لتحقيق العلاقات الاجتماعية ، وبالتالي فهو وسيط في اللقاءات العرقية. ومع ذلك ، فإن التحقيقات في سلوك المجموعة العرقية في الأماكن العامة هي في الأساس استكشافية. تكشف الأبحاث التجريبية المختلفة أن التأثيرات السياقية للتعبير العرقي مهمة لفهم محددات العلاقات الاجتماعية في المستوطنات. يتعامل معظمهم ببساطة مع العرق باعتباره متغيرًا مشتركًا في تحليل السلوك في الأماكن العامة ، ويركزون على الاختلافات الجماعية بدلاً من ذلك. هنا ، يتم التركيز على نسبة الأغلبية إلى الأقلية في المجتمع. تشير الأدبيات ذات الصلة إلى الإعداد المادي للأماكن العامة كموقع للمنافسة أو الاحتجاج أو التفاوض. يؤسس الارتباط بين المجموعات على أنه إذا تعذر تحقيق العدالة على المستوى الإداري ، فستجد المجموعات المحرومة عرقيًا صعوبة في الوصول إلى الأماكن العامة اليومية واستخدامها. لذلك ، فإن تطبيق إطار متعدد التخصصات لدراسة المستوطنات متعددة الأعراق قد يفتح الأبواب لمناقشة قضايا صنع السياسات وبناء السلام على المستويين المحلي والعالمي.

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