



RESEARCH PAPER

Improving Everyday Spatial Experiences in Informal Settlements by using Participatory Design Approach

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ABSTRACT

The study's primary focus is on women from lower income families, particularly those employed as housekeepers, nursing aides and cleaners in colleges, universities and schools. It also focuses on the difficulties they experience in their daily lives. In order to effectively work with women from this demographic group, a participatory design methodology is utilized, to examine different facets of co-designing including how specific tasks create specific types of results. Appropriate activities are also selected in order to create a favorable environment for the women to interact with the designers. The ultimate aim is to develop co-design solutions that improve the women's quality of life by minimizing their challenges. In addition, the paper identifies the importance of using co-design which not only strengthens the collaborative process but also creates compelling stories that provide enhanced benefit to the women. The concepts to be research are evaluated through a systematic literature review.

Keywords: Co-Design, Participatory Design, Collaborative Designs, Design Thinking, User Experience

Introduction:

The Co-designers believe in collaborative design practices. They believe that stakeholders' point of view is very important as we design for them. As they have to use it, live it enjoy it, they know what their priorities with a specific space are. In the present complex world full of problems collaboration is believed as the king of designing techniques (Monica Weiler, 2016).

Participatory design which is known as cooperative design successfully involves the researcher, stakeholders, and designer in any design process to ensure that its end product is according to the needs of the people that will use it. It is considered as the both process as well as the strategy (mckercher, 2020).

It has been 40 years that the collective design practice has been successfully under the term participatory design practices. Having various terms to Co-design it is also termed as Collective Creativity. In Europe, co-design is considered as the standard part of the design process while executing buildings that have their direct impact on the local community. In other professional terms, it is also termed as Collective Resource Approach (Elizabeth B.-N. Sanders, 2008).

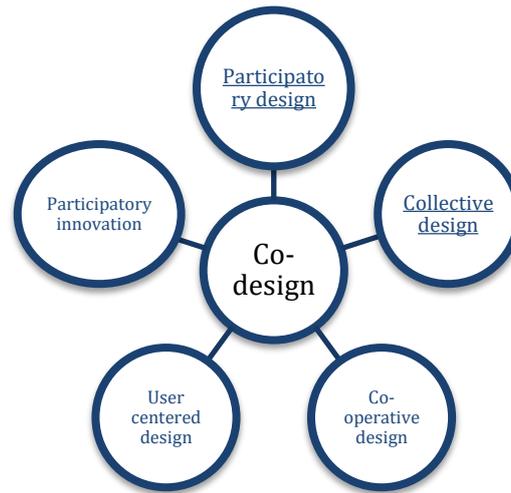


Figure 1 Term Co-design and its Similar used terms

Literature Review

When the standard practice of architecture is reframed, it eliminates the elements of rigidity and does not totally have the essence of the designer's ideas but also contains the point of views of the people for whom it is being designed. Sustainable design approach refers to the dynamic approach where a designer collaborates with a number of intelligent minds. With a number of people being involved the hard work leads to smart design approaches (Webb et al., 2018). Co-design has been serving in different fields. It has its roots in different histories. Co-design is such a practice that it is believed to have democratic qualities where the people hold the power "design by people for people". Every category of co-design works differently and holds a problem-solving power.

Community Design

At the time of civil and social war in 1960's in UK when the Britishers, started to talk against redevelopment and rehousing that is where the designers felt that the people should be given right in participating and shaping the environment they live in. A large number of architectural and planning practitioners started to speak for the importance of community/public engagement in designing the settlements. They believed that it's the right of the people/user to get involved during the design process because it's them who will be getting in contact with the structures later on. The same method is used with the term social architecture in US. Social architecture works on teaching people about how much they need to be critical and sensitive towards the environment. It also focuses on how to design what people wish for (Sanoff, 2006).

Socio Technical Design

In 1960's Scandinavian projects followed a tradition of introducing computers systems in office works. In 1971 a project under Norwegian Iron and Metal workers was initiated now considered as the birth place of collective design. The project aimed to give the workers the opportunity to influence design's designs workings and to influence the use of computer in their designs (Scacchi, 2004).

Co-Creative Designs

In 1990's innovation in the designing was brought by involving citizen or user in the designing phase. It was believed that in order to design community entity the community should be involved to produce something good for themselves and they better know what

their needs are. There has been an idea of the user led innovation where different firms and government entities come to interact with the user to develop new services or products. To bring creativity in these developments it is necessary to adopt “design thinking strategies” which includes the creative practices that the designers usually adopt such as provoking inspirations, finding patterns, framing patterns making tangible and developing prototypes. These are the generic strategies that can be applied to address any problem in the society (Zamenopoulos & Alexiou, 2018).

Social Design

The end of 1960 came with a transformation in the approaches of people and made them believe that designers in the society are very important they have the most critical responsibility of looking at the environmental needs of a built environment and socio-economic needs of people. The people started believing in the potentials of need for design practices which acts as a key to social change. Movements started to be led by the designers where they started to engage the public and made them to rethink about their built environment, how it is and how it should be. Co-design is believed to work a tool in architectural design process. The design process is the most important phase in architecture upon which the whole project lies. Therefore co-design works as a tool in developing good products through the collaboration of the inhabitants (Sarmiento, 2015).

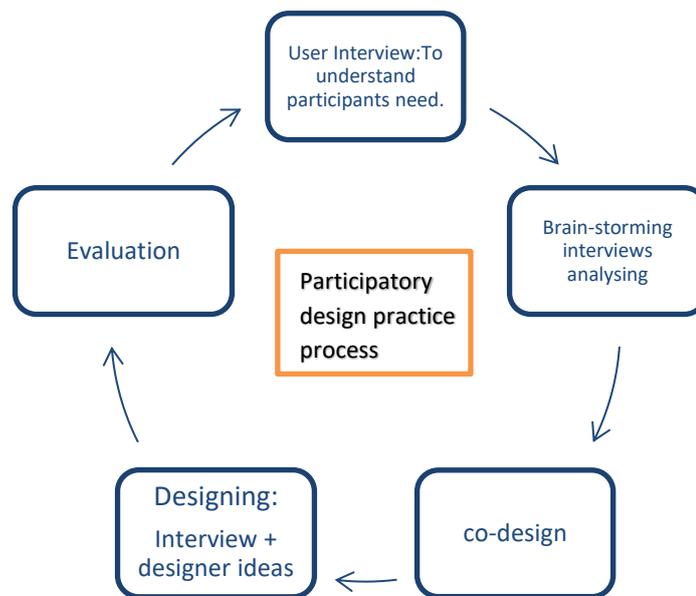


Figure 2 How co-design is carried out

Codesign and 21st century

As with the emerging social problems co-design is again being used in order to reach and execute problem solving design strategies. It serves as a connection between the designing and non-designing team that helps in shaping the social problems (Lee, 2008).

Co-design a successful way towards design

The participatory practice only makes sense when at the end of the session the designer has extracted some productive ideas out of the non-designing team by making them participate in rational activities related to the nature of project about which they want their suggestions in plus designer is also willing to give the outcomes an architectural shape. Many designers fail to listen what people have to say and what they speak according to their

lived experiences. Sometimes designers only focus on the wants of some specific group and ignore the community needs that they have according to their time spend in a specific area. Here the author mentions six ways in which the co-design can become a successful venture. If the following are sensitively catered while designing i-e valuing perspective and curiosity of the lived realities (SHRUTHI SAI CHIVUKULA, 2022).

You cannot meet everyone’s expectations

Many researchers believe that you cannot design it for everybody as design has its own constraints so they believe of building for everybody is totally wrong and might lose your focus and path. Designers believe that stakeholders have a knowledge about the local traditions, local needs, culture, religion, myths, and beliefs of that particular area that is why involving them in designing result in long lasting user friendly products (Eriksson, Williams, & Hellström, 2023).

Techniques and methods

Co-design have been proving itself as a useful tool to provide better living designs that blends in the environment perfectly. The activities highlight the problems and the cultural constraints and it also highlights if the people are satisfied with a certain culture of they want a design in order to bring a change and then they have suggestions according to it as well. The designer creates an activity according to the nature of the project. Mostly when co-design has been used in the world people prefer using the collage activity in order to extract ideas and engage the participant (Naranjo-Bock, 2012).

Another method used very often with the collage making is the “Cognitive Mapping Method”. Story telling boards are made by the participants. These boards are given importance in the activities because they hold the power to explain any issue from start till end. This activity is carried out in various other methods one method is that the designer add some steps and the Non-designing party just have to add comments. In order to get the product out of the participant minds because it lies somewhere in their minds but the best activity make them think on it and express about it. Many brainstorming activities are also made a part of the activities (Evans & Terrey, 2016).

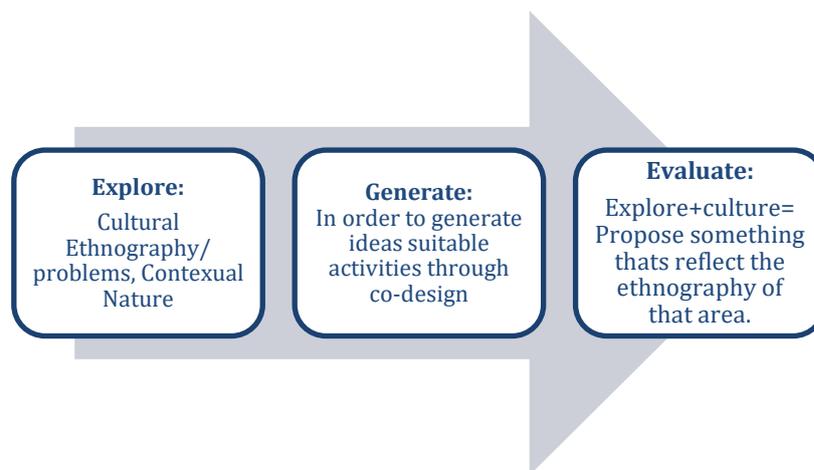


Figure 3 Activities Structure and focus.

It is believed challenging and interesting to work with children but many international firms believe participatory design practices with young people is another level of co-design practice where you get to know how much young people are familiar to their comfort zones

and they have many creative minds if explored. It is believed that all these methods of co-design developed with the passage of time analyzing and observing the psychology of every age individual. The creativity and the products of every individual depends upon how you treat them. Planning an activity in co design is the main art. Here you plan an activity according to each age group (Thabrew, Fleming, Hetrick, & Merry, 2018).

Some firms or designers properly make templates of ever activity to be carried out. It is necessary for a systematic flow of research and to get to logical conclusions. While making a template for co-design activity the researcher leaves the space for the participant to add image or any graphical sign in front of the question asked inside the column of the activity (Mortensen, 2020).



Figure 4 Activities for brain storming.

Source: <https://communities.sunlightfoundation.com/action/codesign/>

The co-design acts as a problem solver. The rapid developing world brings with it, numerous problems. It becomes difficult for a single person to bring change. With the collaboration of different stakeholders, it becomes easy to highlight and identify different problems with solutions. With co-design it becomes easy to identify what people argue or like the most. How they perceive about their environment. Co-design also serves as a tool for giving people exposure regarding how sensitive they should be towards the environment ("Why is co-design so important?," 2021). Co-design serves as a listener to understand the needs of the stakeholders and creates user centered solutions. It also acts as a learning medium where the designer learns about the environment through the participator. Sometimes there is a lot going around that we are not aware of unless we are guided or made aware so co- design also benefits the participators by giving them sense about the things they never thought of thinking (Kitch, 2023).

The policies that we suggest while involving stakeholders in a co-design practice plays an important role. The betterment in designs can only come when properly thought policies according to stakeholders needs are suggested. The policies include how the whole co-design activity is going to be carried out including the activities, design outcomes and mandatory procedures involved which include the government implications (Blomkamp, 2018). In the world where problems are increasing with the every passing day we need to create grounds where participators interact with the designer in order to get worthy conclusions. A sensible collaboration can result in conclusions that would be of great advantage in coping with societal problems. Stakeholders have more experience of a respective area then the designer, where they can prove them as a great help. Co-design adds structure to the process of execution. Its facilitator duty is to first have a small

discussion where the participator gets the idea about the project. Some expert's belief that designing without involving the stakeholder means not being loyal to your design. Co-design adds structure to the process of execution. Its facilitator duty to first have a small discussion where the participator gets the idea about the project (Calvo & Sclater, 2021).

Cases where co design was used in order to get suitable design proposals

In Unit Housing Pilot Nunavik Duplex

An example of successful co-design practice that resulted in two-bedroom duplex can be seen where the stakeholders were made a part of the meeting and then based upon the project nature selected inhabitants of Quebec that belonged to 14 villages to take part in the collaborative practices. Every age group was made a part of the activities. This was done because the inhabitants of that area knew about their needs and had lived experiences of that society. The co design practice included various activities like story boards, collage making. People took interest in the activities and had detailed discussions on the life, culture, tradition of Nunavik.

At the end of the activities a report was compiled by the Jurors of the design charette which highlighted the preferences of the tenants of the area. The people mostly emphasized on the houses to be sustainable, safe and have some essence of the culture. Architect was asked to transform these demands into tangible Designs. The house focused on the passive design strategies. Due to the area having harsh climatic conditions the sun facilitates the house because the house have reversible entries, to cope the cold of the floor heading pipes are used below the floor. Large window is provided at the sun facing side so the house remains warm.

After when the houses got executed the tenants found their houses warm, bright and the people made use of balconies in their own ways. Some use it for storage and other to enjoy the bright sunny light. Therefore this case study is the proof that when co-design activity is properly planned and made use of the joint sessions results in beneficial outcomes and users have that satisfaction (Atkins, 2016b).



Figure 2 Nunavik Duplex

Source: <https://raic.org/four-case-studies-exemplifying-best-practices-architectural-co-design-and-building-first-nations>

STHOMAS and Emily C. General Elementary School

Making the use of co-design a school got executed back in 90's. A committee was made in order to bring the people related to education, engineers, architects, parents and

the organization who was directly or indirectly involved in the school development on one table. Bringing everyone on one table was to arrange a co-design activity where all the stakeholders give their suggestions regarding the construction and designing of School. The project went in two steps first step was to design an exterior skin for the project then moving on to next step which was the interior and the stakeholder's preferences if any.

The focus was to design a building that has an excessive amount of light and have a massive entry so that a person feels welcomed. Stake holders were given pages and pens to draw whatever image their mind is having. After the meeting was over the points were noted. Execution team stayed InTouch with the stake holders while working on the execution process. The executed product reflected with the imaginaries stakeholders had in their minds (Atkins, 2016a).



Figure 3 Elementary School

Source: <https://raic.org/four-case-studies-exemplifying-best-practices-architectural-co-design-and-building-first-nations>

Material and Methods

Mixed Methods are used which is important to understand the depth of living setups in order to provide recommendations for them. Qualitative approach is used while having discussion based interviews while Quantitative approach is used to calculate the average of people participated and how their point of views can represent the whole community.

An area was selected where a community was found to have a set of such people. These people lived together in a community with more prominent ethnic beliefs, traditions, and culture. Their routines, responsibilities, problems, and preferences were easy to identify by communicating with them together. After the site was selected during the first visit, a general observation was carried out, noting the prominent activities happening. The observation was carried out by marking the standard of life, living styles, housing conditions, types of amenities nearby, moving patterns, and styles of communication with one another. This general observation helped in the selection of activities.

After observing the community in detail, three to four activities were selected depending upon the observation. The selection of activities was an art in Co-design practice because the elaboration of responses of the participants depended upon the nature of the activities selected. The easier the participant felt, the more open he/she was in front of the designer in terms of their needs, demands, problems, fascinations, and easier it was for the designer to recommend or propose design strategies depending upon the responses. After

performing different activities, a list of the responses was made, and suitable design strategies were recommended. The design acted as a problem solver and comfort provider at the same time.

Results and Discussion

In the methodology, point 1, an area was selected where a community of lower-class working women resided. The chosen area, Shadewal, was well-connected to various residential colonies, hospitals, schools, and universities. Within the interior of Shadewal, a community of women was identified, including nurse helpers, university hostel maids, university hostel cooks, schoolchildren caretakers, and maids working in residential houses.

A significant number of residents were living in small living spaces constructed by the owners of residential societies within the vicinity. These living spaces had been created for the purpose of renting to individuals from low-income groups. The people residing in these rental spaces were employed in various establishments, including the residential societies, hospitals, universities, and schools in the surrounding area (see Figure 7).

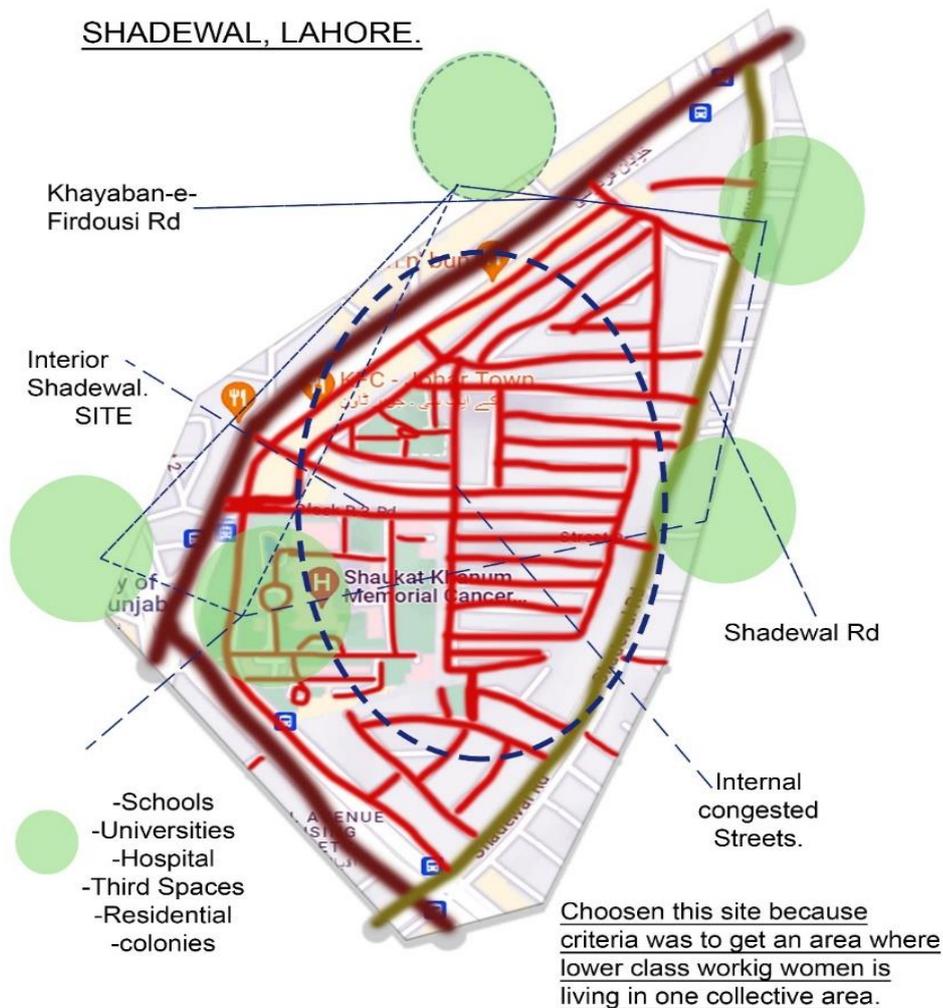


Figure 7 Showing the immediate context of Interior Shadewal

We began our analytical work by visiting the area where we intended to carry out our investigation. We aimed to study the environment and learn about the daily lives of individuals in this community by looking at their daily routines, modes of transportation,

lifestyles, social relationships, and family structures to gain insight into how they proceed through their daily lives.

We entered this exploration at the busy main road of Shadewal and continued through the network of streets that branched from it. Each of us took an individual approach to examine this area based upon our own subjectivity and the context in which we were operating. This played an important role as the psychogeographer must also demonstrate an exceptional degree of empathy for the people being studied, exhibit environmental awareness, and display exceptional observational skills.

Overall, our visit allowed us to engage with the environment and to come to an understanding about how the community operated, what the needs of the community were, and what challenges the individuals faced on a daily basis. As such, our comprehensive research formed the basis of the subsequent phases of our research and design.

- 1- The atmosphere in the area was congested, and we observed exhausted women returning to their homes from work.
- 2- The location of the homes was in proximity to vital amenities such as grocery stores.
- 3- The residences of lower-income working females were primarily basic in structure, offering mainly protection from inclement weather.
- 4- All the houses were relatively shot and identical in terms of layout with 1-2 rooms, an exterior porch with access via a shared entranceway, and a toilet located right inside the entrance.
- 5- Each home received its water supply from a municipal well, which also served multiple neighborhoods.
- 6- Individuals living in the area averaged a monthly salary that ranged from approximately 30,000 -40,000 rupees and this needed to pay their rent, utilities, food, education for dependents, and clothing.



Figure 4 Standard plan of the Lower-Class Cells.

- 7- With the extreme temperatures during the summer months, each household is equipped with cooling systems and transportation in the form of motorbikes.

- 8- Families frequently utilized their outside porches as additional cooking rooms, where they prepare meals as well as socialize with family and friends.
- 9- Education is highly regarded in the community, and it was common for families to send their children to school within a short travelling distance.
- 10- Homes tend to be overcrowded because of the frequency of in-law's living within the same home, as well as all of the husband's brothers and sisters residing at the same address, and the wife's children living there.

Activities

As we were trying to reach out to a large number of individuals, we needed to conduct our activities in a way that differed from those individual observations and style of conducting research that characterize Flaneur-style methodologies. We grouped the activities we were doing together by using batch processing to do so. As we did these group activities we all were able to document our unique perspectives and document our personal reflections based on how we were feeling while interacting with our community. What was also interesting was that we learned that each woman we met had an individual and interesting narrative about her life. We all interacted with many different people while doing the activities that helped us expand our understanding of the community and those living in it.

After doing psychogeography and collectively reviewing the notes from each person, we collectively felt the major experiences shared among us were very similar and usually only had subtle differences between them. This permitted us to create a richer understanding of the community, with a shared understanding of their circumstances, needs, and desires (as highlighted in Literature Review Finding No: 2).

By selecting specific activities, we hoped to promote a preferential environment while providing the opportunity for women to feel comfortable as they told life stories, discussed challenges, and expressed their hopes and interests. It is important to note that we also included children in our community activities. For this, there were two main purposes: children would benefit from having a better "place" in the activities we planned; and children's confidence and socialisation would also increase. Parents experienced joy as both children became enthused about the experience of participating in activities designed for them.

All activities were purposefully labelled, describing what the activities would entail. As well, each label described accurately our reasons for conducting the activities in light of our research design process. We endeavoured to establish a stronger level of connection with our community through the selection of these activities; therefore our results and future designs were based on our understanding of their experiences and/or stories.

Activity No: 01

Unity for Empowerment

A street with houses played an important part in the collaborative design practice, it fulfilled the purpose of community design where everyone indulged themselves in the activity due to the houses facing each other. This small street was seven feet wide, and it was at the center of people's daily lives.

After studying multiple communities we found that shared streets such as this were not just utilitarian but instead should be designed with care and enhancement to welcome people into these type of communities. Different Designers tried to improve both the

aesthetics and cleanliness of the street in order to improve people's quality of life. So, when people arrived back home after a tough day at work, the street work as a refreshing and revitalising zone.

Our research gathered numerous street-level photographs from neighbourhoods to examine how women in the informal settlement context might like to live. The participants were then invited to indicate their preference amongst these photographs by way of a "thumb vote". The process encouraged the participants to express their preference for how they would like their surroundings to look. Participants were invited to dip their thumbs in paint and leave an imprint on the photographs they felt most drawn to. This provided significant information for the design process and helped ensure that the final design met the desires and goals of the community.

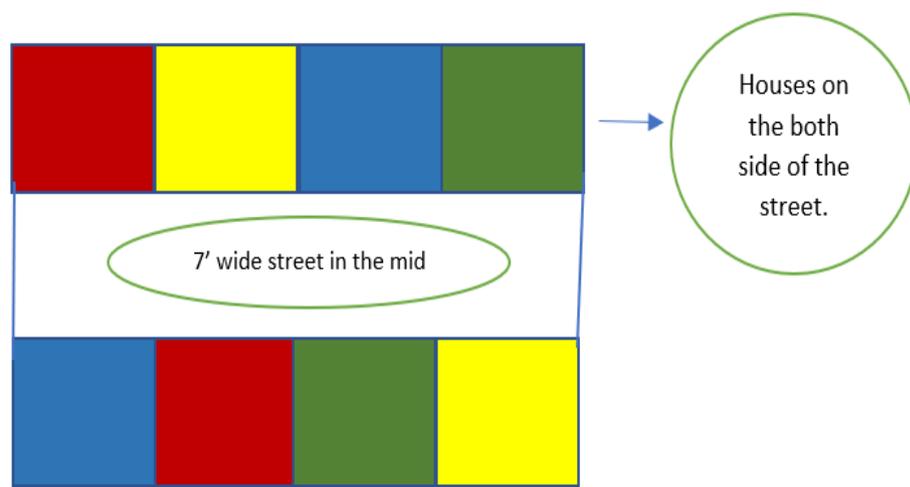


Figure 9 Showing the placement of the houses around streets and common passage.
Source: Author

Women said a lot about their lives. The major things they mentioned are:

- Having activities like this where we can freely express ourselves and share our thoughts would bring a sense of relaxation and relief to our lives.
- It often feels like whatever we say or do within our families goes unheard, which makes us hesitant to speak up in family matters.
- Women naturally have a deep understanding of one another and offer sympathy when we encounter family problems. However, we lack the privacy at home to fully open up to anyone.
- After a long day of work, whether in other people's homes or our own, we yearn for some words of appreciation, but sadly, we often encounter violence instead.
- We consistently try to support our partners and seek their understanding, but we are frequently met with dismissive remarks that women talk nonsense.
- In cases of disagreement, we may face physical violence because the knowledge that we won't leave our partners out of concern for our parents' reputation is exploited.
- There's a lack of acknowledgment that household chores can be incredibly exhausting, both physically and emotionally.
- When it comes to family planning, we rarely have a say. The decision is usually made by our partners, without consideration for any potential health concerns or deficiencies we might have.

- Any attempt to resist is often met with threats and blackmail, exploiting the reputation of our family and parents to keep us compliant.



Figure 10 Interacting with the participator. Source: Author



Figure 11 Democracy in Co-Design. Source: Author

Activity No: 02

Dream Sketching

The activity was carried out in an open lawn of a house close to the community with the children of the area. They were provided with drawing materials, including pencil colors, crayons, pastels, white sheets, pencils, and erasers to draw whatever they perceived as a happy place or the type of place they liked or wanted to live. All the children gathered and were made to sit in different groups. A total of five groups were formed, each having eight kids. Each individual from the batch interacted with a group of their choice. The groups were composed of random kids from the community within the age group of 8-13 years.



Figure 12 Children of the community going for Activity.

Source: Author

Most of the children drew houses with plantations and added water bodies around the houses. When they were asked why they included landscapes in their drawings, their response was that they wanted houses that were spacious and had clean, fresh spaces around them.

The kids displayed enthusiasm and enjoyed the stationary materials given to them. Some children even requested extra white sheets to draw more of their ideas. The activity helped the children become more comfortable with interaction. They expressed their thoughts and questions freely. During the activity, questions were asked about their studies, and some children showed interest. On an individual basis, everyone from the batch tried to have good interactions with the children and advised them regarding the importance of education. The main things the children emphasized were:

- 1) Hygienic environments
- 2) Colorful streets
- 3) Houses having a play area
- 4) The streets with green patches



Figure 13 Kids sketching their thoughts.
Source: Author

ACTIVITY NO: 03

Ink of Involvement

Following the initial engagement with the children and women, they participated in a third engagement called "Ink of Involvement," which was intended for two primary purposes: to document the number of people participating by allowing them to leave their handprints as 'stamps' and as a final interactive event to encourage the participants in sharing their ideas. The participants painted their hands and used them to imprint colorful charts by hand-stamping. After many engagements, the women felt comfortable discussing many issues without reservation. They were asked if there were any leisure spaces available for them to spend time there or with family members. They indicated that they would like to have a place to gather, to talk about everyday issues that they had, and to spend time being social. The women indicated that they would like to have a leisure facility near their homes so that they could watch their children while they could have leisure time.



Figure 14 Hand Printing
Source: Author

ACTIVITY NO: 04

Gifts of Generosity

This aspect of co-design was different from previous ones since it was a closing gesture to show the students some snacks as an appreciation of the value of socializing. The children were truly excited when they received their gifts. They were excited and expressed their surprise and indicated that they had not been aware that they would receive anything beforehand, which made it even more special to them. The parents of the children were also



Figure 5 Reward Distribution.
Source: Author

happy that they were able to give their children their gifts, which contributed to a positive environment.

Women expressed many points during Activity No. 1. The messages being shared by women show the emotional pain and sorrow many women face at the turn of the 21st century. Society continues to place restrictions on women through its expectation for them to take care of a large amount of their family's household chores. These women believe that it is their responsibility to perform all of these household chores to perfection in order to please their in-laws. While performing household chores is a noble activity in and of itself, we must remember that all people have a restrict to what they can do (e.g., emotionally, physically). Expecting women to be solely responsible for the entire household is inhumane. In many cases, women have to care for not just their husbands and children, but also their husband's parents and siblings. Women must begin their day very early and clean the entire house, and then prepare breakfast for all household members as they are waking from their slumber. In addition to this task, women must also take care of their children (e.g., change their diaper, feed them), wash laundry and iron clothes for their entire household. Women must continue to engage in a long list of tasks throughout the day, including prepare lunch and/or afternoon tea for all household members, and prepare dinner for their entire household.

A woman can have a demanding daily schedule where she holds down a job and performs many other tasks. Historically, the idea that women are weaker and delicate has added to their overwhelming workload. The tasks that women perform do not make them deserving of any physical or emotional mistreatment. Every human being deserves equal respect in society and the opportunity to live their life without an undue burden. Men should rethink their contradictory ideas that painting women as unable to accomplish certain things allows them to escape from performing those tasks.

Equal division of responsibilities between men and women will help to dissolve the toxic ideas of ego that have plagued both genders for years. Open communication and cooperation are critical to creating positive change for society. Everything we do daily sends a message to our children about personal behavior and how to interact with others. The information collected during the literature review identified and examined the issue of women in society and how it has historically been approached.

Recommendations

An area of concern is the need to give woman opportunities for leisure space to maintain a little bit of personal time and for leisure as a result of their busy work schedules. As a solution, the area consists of one-story homes and single-roof homes and, so as to assist in this manner to these persons, solid recommendations for enhancements to the streets include developing a pedestrian-oriented, attractive, and functional street scape with visual



Figure 16 Aesthetic streets

Source: <https://www.pxfuel.com/en/query?q=spain>



Figure 17 Decorated walkways.

Source:

<https://www.bigstockphoto.com/image-396753959/stock-photo-cobbled-narrow-street-decorated-with-flower-pots-in-chora-on-folegandros-cyclades-islands%2C-greece>



Figure 17 Sitting spaces in streets.

Source:

https://www.google.com/search?q=residential%20narrow%20alley%20sitting&tbm=isch&hl=en&tbs=ring:CXv8lz4MDkSFY YRGiQ788UhHsgIMCgIIABAAOgQIABAAwAIA2AIA4AIA&sa=X&ved=0CBoQuIIbAhcK EwjQp16ficL_AhUAAAAAHQAAAAAQBg&biw=1519&bih=656#imgrc=smJLkSlBENgh0M&imedii=vTLN07ZhmddL.M

enhancements, such as planters with flowers, landscaping in vertical form, ornamental street lighting, and tile pathways, to help minimize standing water (see Figure 16-17).

Furthermore, the interconnected terraces of the houses can serve as valuable spaces for women. These areas can be transformed into sitting spaces where they can have some time for themselves or enjoy tea with other women. Such leisure spaces hold immense importance for personal and mental well-being. Sharing and relaxing can significantly impact a person's sense of self. Designing spaces for women on the rooftops, where they can unwind and spend time on themselves, could provide them with a much-needed respite.



Figure 5 Terraces transformed into leisure spaces for women.

Source: <https://safetipin.com/re-gendering-open-spaces-for-leisure-one-terrace-at-a-time/>

References

- Atkins, L. (2016a). *First Nation schools: Case study 1*. Royal Architectural Institute of Canada. https://raic.org/sites/raic.org/files/en_case_study_1.pdf
- Atkins, L. (2016b). *Inuit housing: Case study 4*. Royal Architectural Institute of Canada. https://raic.org/sites/raic.org/files/en_case_study_4.pdf
- Blomkamp, E. (2018). The promise of co-design for public policy. *Public Administration Review*, 77(4), 729–743. <https://doi.org/10.1111/1467-8500.12310>
- Calvo, M., & Sclater, M. (2021). Creating spaces for collaboration in community co-design. *Journal of Architectural and Design Education*, 40(1), 232–250. <https://doi.org/10.1111/jade.12349>
- Chivukula, S. S.,(2022). *What do I need to design for co-design? Cornell University Supporting co-design as a designerly practice*. DOI: 10.48550/arXiv.2210.02986
- Eriksson, E., Williams, S., & Hellström, A. (2023). Dis/value in co-production, co-design and co-innovation for individuals, groups and society. *Public Money & Management*, 43(1), 17–25. <https://doi.org/10.1080/09540962.2022.2108248>
- Evans, M., & Terrey, N. (2016). Co-design with citizens and stakeholders. In *Oxford Press*, (pp. 243–262), DOI: 10.1332/policypress/9781447329367.003.0014
- Kitch, J. H., (2023). *What is co-design? A primer on participatory design*. Mural. <https://www.mural.co/blog/co-design-method>.
- Lee, Y. (2008). Design participation tactics: The challenges and new roles for designers in the co-design process. *CoDesign*, 4(1), 31–50. <https://doi.org/10.1080/15710880701875613>
- McKercher, K. A. (2020). *Mindsets for co-design. Beyond sticky notes*. <https://static1.squarespace.com/static/5ca4de229d4149308ca0f8be/t/5fa88c9444651c5602f6f89a/1604881561303/Mindsets+For+Co-Design.pdf>
- Mortensen, J. R. (2020). *Planning co-design sessions was a nightmare... until we built this template*. Medium
- Naranjo-Bock, C. (2012). *Creativity-based research: The process of co-designing with users*. *UX Magazine*
- Nuckley, P. (2019, September 9). *Co-design for digital health inclusion: A sneak peak into how we have developed our co-design approach*. Good Things Foundation.
- Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *International Journal of Co-Creation in Design and the Arts*, 4(1).
- Sanoff, H. (2006). Origins of community design. *Progressive Planning*, 166, 14–17.
- Sarmiento, P. (2015). Co-design: A central approach to the inclusion of people with disabilities. *Revista de la Facultad de Medicina*, 63(3 Suppl.), 149–154.
- Scacchi, W. (2004). *Socio-technical design*. Institute for Software Research.

- Thabrew, H., Fleming, T., Hetrick, S., & Merry, S. (2018). Co-design of eHealth interventions with children and young people. *Frontiers in Psychiatry*, 9, Article 481. <https://doi.org/10.3389/fpsyt.2018.00481>
- Webb, R., Bai, X., Smith, M. S., Costanza, R., Griggs, D., Moglia, M., ... Thomson, G. (2018). Sustainable urban systems: Co-design and framing for transformation. *Ambio*, 47(1), 57–77. <https://doi.org/10.1007/s13280-017-0934-6>
- Weiler, M., & McKenzie, D. (2016). *Co-design: A powerful force for creativity and collaboration*. *Medium*, <https://medium.com/@thestratosgroup/co-design-a-powerful-force-for-creativity-and-collaboration-bed1e0f13d46>
- Zamenopoulos, T., & Alexiou, K. (2018). *Co-design as collaborative research*. University of Bristol.