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SOCIAL INEQUITY IN PUBLIC TRANSPORT INFRASTRUCTURE & ITS IMPACT ON A CITY'S SUSTAINABILITY

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ABSTRACT

Popular narratives on sustainable development of transport infrastructure focus predominantly on how successfully designed transit stops are an important tool to improve social inclusion and urban mobility. This approach to sustainable development treats social inclusion as a consequence of sustainable development and looks at social inclusion as a rights issue, where everyone irrespective of gender, age, disability etc. has a right to public transport facilities. This paper proposes an alternative way of understanding social inclusion with respect to sustainability. Rather than treating inclusion as a consequence of sustainable development, it seeks to position inclusive approaches in spatial design as pathways and enablers of more sustainable cities in the global south. This approach also presents social inclusion as an opportunity-provider for sustainability as opposed to popular narratives that present it as an opportunity created by sustainable development.

Through the context of the Mass Rapid Transport System (MRTS) stations in Chennai, the paper shall address this method in two parts -

1) Through existing narratives of social exclusion while navigating through a Chennai MRTS station - The space is dissected and examined to elucidate its contribution to social exclusion of people with different identities, in its socio-economic and political context. The resultant exclusion discourages them from using particular modes of public transport.

2) Establishing connections between the discussed social exclusion and overall usage of public transport in a city. This is followed by a brief discussion on how eliminating this exclusion can lead to increased sustainability.

1. INTRODUCTION

The United Nations development program has identified “Gender Equality” as a Sustainable Development Goal (SDG). The text on the United Nations Development Program website addresses this Goal in two ways (“Goal 5: Gender equality | UNDP”, 2019): -

- 1). It recognizes the potential of gender equality as an accelerant for sustainable development by stating that “It has been proven time and again that empowering women and girls has a multiplier effect, and helps drive economic growth and development.” This approach places social inclusion & gender equality as a cause for sustainable development.
- 2). It also recognizes gender equality as a rights issue and aims to ensure that there is an end to discrimination against women and girls everywhere as a consequence of sustainable development. Sexual violence and exploitation, the unequal division of unpaid care and domestic work, and discrimination in public office, all remain huge barriers. This approach places social inclusion & gender equality as a consequence sustainable development.

Despite both approaches described as methods to achieve the SDG, popular narratives on sustainable development focus predominantly on the latter method.

The UN environment program blog narrates the story of a young mother from an economically underprivileged household who has to traverse the horrors of threat of sexual harassment, fear (and possibilities) of abduction and long painful walks in the sun on a regular basis. She has to go through this mentally and physically gruelling journey almost every day in order to access the public transport facilities from the stop nearest to her home, to commute to and back from her place of work. (“Driving Gender in India’s Public Transport Policy”, 2019) My masters’ design thesis (submitted to University of Sheffield, Oct 2017) followed similar narratives of young women, street vendors, older people who had difficulties walking etc. to elucidate the exclusion they were subject to, in and around a public local train station in Kasturba Nagar, Chennai.

The MRTS or the Mass Rapid Transport System in Chennai was started as an ambitious project about 20 years ago. (Prabhakar, 2019) While the train lines are still up and running from day to day, only 25% of the projected number of people use them. Due to large initial investment of capital, lack of good design and minimal maintenance efforts, they have turned into vast vacant spaces that exclude a large portion of the society due to their lack of facilities for the disabled, unhygienic public toilet facilities and lack of safety for women after dark. (“Chennai Mass Rapid Transit System”, 2019)

2. SPATIAL EXCLUSION & DESIGN IN THE MRTS

As Henri Lefebvre points out in his seminal work “Right to the City”, an individual’s right to the city includes the rights of ages and sexes, rights of conditions, right to work, to culture, to rest, to health, to housing etc. (Lefebvre, Kofman and Lebas, 1996). Spatial exclusion can be defined as a violation of these rights. In order to understand the various degrees of exclusion, it’s important to acknowledge the fact that exclusion is not binary (e.g. restricted access, fear created by space/society etc. despite being allowed physical access to space) and varies from person to person based on their identity. (Soja, 2014)

Method Employed – Narratives (constructed by assimilating outcomes of various methods of observation)

The method employed to explore and understand exclusion in the MRTS station and the gradation of oppression through space and time was constructing narratives - narratives of imaginary individuals (based on real people) who traverse the space and to understand their resultant experience. As a result, not one but many subjective positions and kinds of experience were generated and understood. As journeys in space had to be understood with and within timeframes, the element of temporality got added to the analysis.

Fear Created in/By Space as Exclusion

In “Discrimination By Design”, Leslie Weisman elaborates on “The Spatial Caste System” i.e. how space and society (physical and metaphysical space) create a dichotomization of space which makes one group of people more powerful than another in it. (Weisman, 1994) She also writes in detail on the cognitive impact on spatial perception in women due to fear of sexual harassment. Fear of personal safety can hinder day to day activities and an individual’s ability to live peacefully in society. (Minton, 2009) Therefore, by our very definition and understanding of it, fear plays an important role in creating the feeling exclusion. As Leslie Weisman writes, “If the fear of sexual harassment on the street causes women stress, the fear of rape keeps women off streets at night, away from public parks and dangerous parts of town, and unconsciously afraid of half the human race.” (Weisman, 1994)

The MRTS station studied, due to its opaque walls and lack of sufficient lighting, has become a space that inspires fear in women at night. During the night, the design of the station creates dark pockets of spaces within it making it conducive to criminal activities like sexual harassment. (figure 1) Also, there is a lack of natural surveillance in these spaces because of policies that restrict movement of people within and through them. For example, despite the actual platform being on the first floor of the station, access to the ground floor is also restricted to users of the platform/those who possess a ticket, street vendors aren’t allowed to sell or trade on the ground floor.

Exclusion of the Disabled

In 2013, the Berkeley Prize Essay competition was held under the theme of “The Architect and The Accessible City” which invited essays that spoke about how disabled people experienced space and transforming that experience ... The winner of the prize-winning essay, Sophia Bannert wrote (about the city of Lincoln):

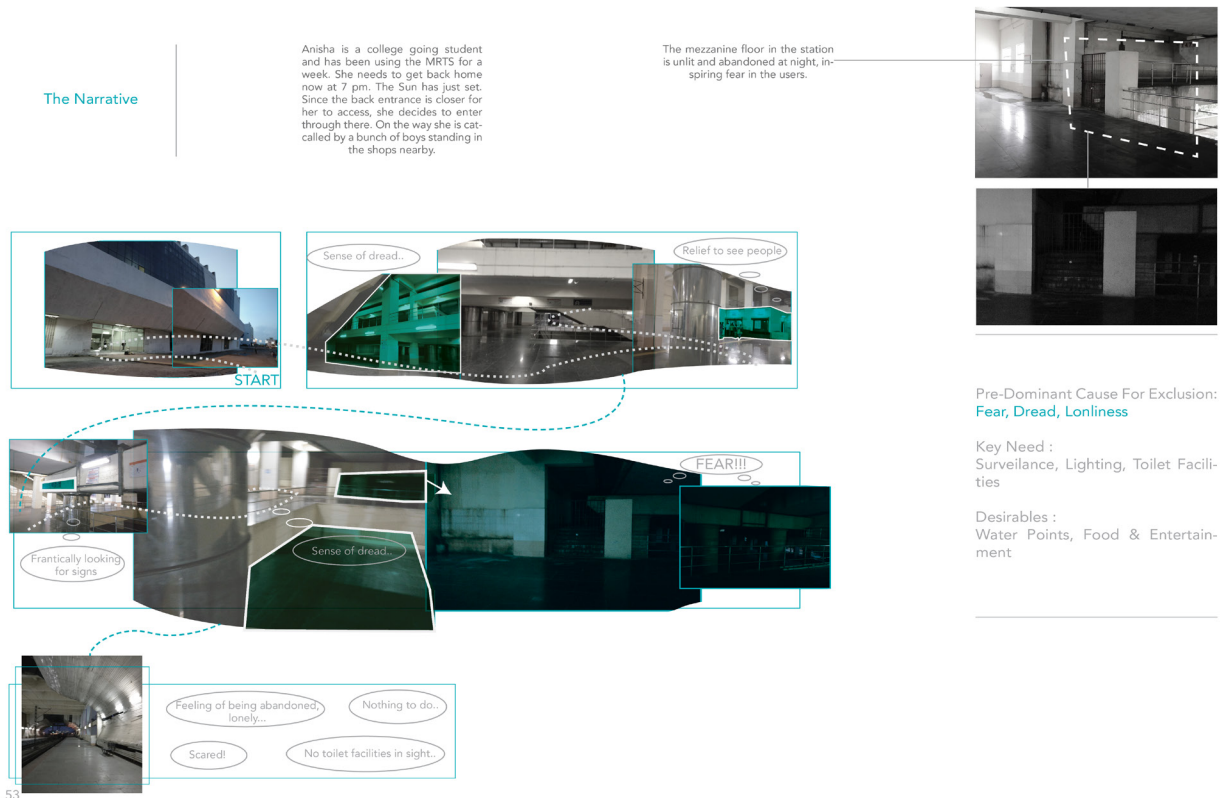
“Jarred into an utterly complex version of what I formerly knew as reality, my eyes begin scrutinizing and dissecting the cobbled street surface ahead into zones which I can and cannot access.... Whilst battling physical obstructions, I myself have become one. If the pavements were widened, perhaps disabled citizens wouldn't be seen as causing an obstruction.” (Bannert, 2013)

My aunt has limited mobility in her city as she suffers from arthritis. Everyday functions like climbing a set of stairs that feel like second nature to me, are a herculean task for her. Due to lack of facilities for disabled access in public transport infrastructure in her city, she is forced to commute within the city only by car and is entirely dependent on a member of the family to drive her around. The only impression she has, of the local train stations is their unimpressive facades, as she cannot use the monumental staircases inside of them (that are only means of access to trains in these stations).

Proposal for integration of the MRTS station into the Metro Rail Network

Currently, there is a proposal for the MRTS to be taken over by the Chennai Metro Rail Limited after which all MRTS stations would be air-conditioned and the costs of the tickets would be escalated to match that of the Metro network (Kaveri – The News Minute, 2019). Currently the costs of using the MRTS lines range between 5 INR to 30 INR per individual per trip. (Indian Rail Info by TravelKhana, 2019) However, the metro ticket prices range from a minimum of 10 INR to as high as 60 INR per trip (Kaveri – The News Minute, 2019). This move has raised concerns of gentrification of the MRTS network.

Conversion of the MRTS stations into metro stations would also usher in security infrastructure such as security cameras and baggage scanning devices inside the MRTS stations. In Ground Control, Anna Minton provides evidence to support her claim that “an unintended consequence of extra security including intruder alarms and other security measures, was to raise concerns over safety and security.” (Minton, 2019) CCTVs, the role of police in urban areas, security guards and walls that segregate an area to “secure” it from another inspires fear of “strangers”. These strangers are mostly likely to be people who harbour the same fear of other strangers. Therefore, the widespread feeling of fear is partly caused by unfamiliarity with other members of the public. And closed segregated spaces, increase this sense of fear. In the case of the MRTS stations, converting them into metro stations might induce a feeling of safety from sexual harassment/theft because of security infrastructure such as CCTV cameras. However, in the process of this conversion, they are at a risk of being alienated from their immediate surroundings further due to probable reinforcement of the opacity of their walls and stricter regulations for entry. These measures could inspire a fear of “strangers” (street vendors, the economically more underprivileged) in these spaces further widening the so-



cio-economic divide in the city.

[Figure 1] Cognitive map of a young woman using the MRTS station at night – Map constructed based on multiple narratives of young women (18-30 years



old) who've used the station to commute.

[Figures 2 & 3] Pictures of the MRTS stations depicting the opaque walls and lack of disabled access

3. REFLECTIONS & NEW POSSIBILITIES

A policy brief called “Women and Transport in Indian Cities” published by ITDP India (Shah, Vyas, Viswanath & Gadepalli, 2017) elucidates that women are subjected to forced immobility due to fear of sexual harassment in public transport and related infrastructure. Whereas, pressures such as need to work for an income, commute to place of work and economic status lead to forced mobility through public transport. This implies that unless subjected to forced mobility in public transport due to economic situations, most women at particular times of the day, would opt for “safer” modes of private transport. Aforementioned narratives also indicate that this is the likely possibility in case of people with restricted physiological mobility due to disability or age.

Popular narratives on gender aspects of public transport such as the UN environment article referred to previously (“Driving Gender in India’s Public Transport Policy”, 2019), place women and disabled persons as victims of developments that aren’t inclusive. While the argument that fundamental rights to urban mobility and transport are crucial to design and plan cities, it puts the users it discusses in a disempowered position. This approach also fails to discuss the possibilities, both economic and environmental, that arise when the stations are designed to be inclusive.

In my masters’ thesis, based on interviews and surveys conducted among 28 women who used the MRTS stations, only 4 reported that they used the MRTS regularly (at least once a week). However, 22 women reported to have places they regularly visit along the MRTS route. 13 out of the 28 women reported to having felt a threat to their safety in the stations at some point of time. Due to subsidised ticket costs, economically while the MRTS line was favourable to travel, exclusion caused by fear prevents women from traveling through the MRTS line more regularly. Thus, gender-inclusive design and policies have the potential to increase the number of women using the train line at least 3 fold. In 2011, the number of women commuting by trains to work in Chennai was only one fourth of the total number of people commuting to work via rail. (Census 2011)

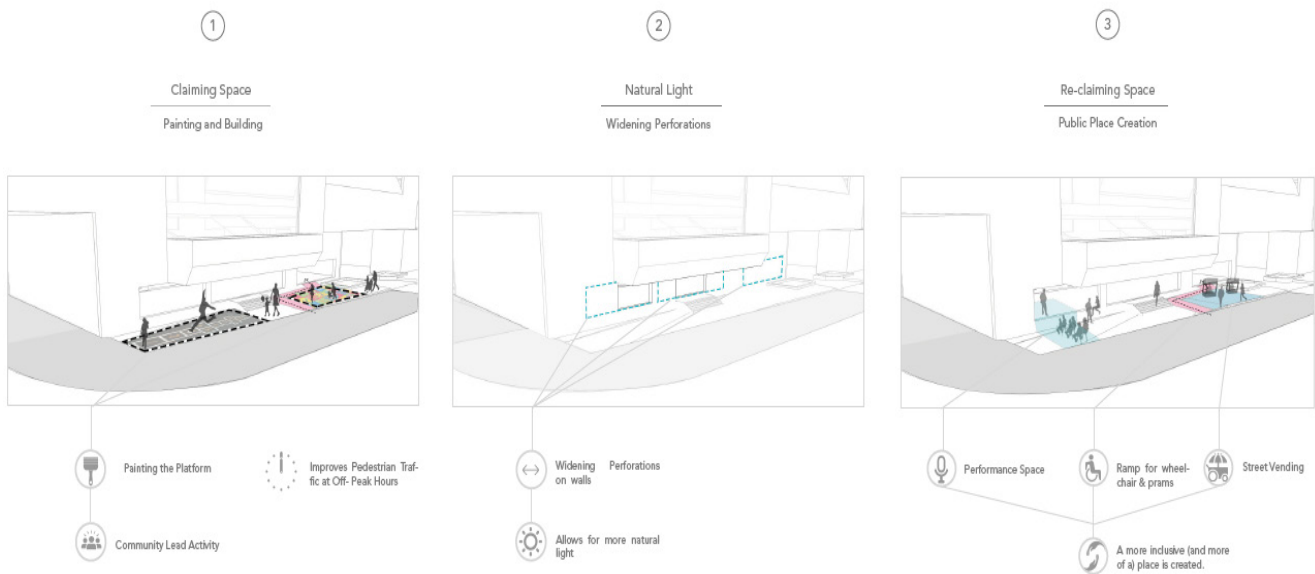
If the stations and trains were to be made more gender inclusive in design and policy, this will lead to an increase in revenue for MRTS stations that can facilitate their maintenance and upgradation. With regard to environmentally sustainability, this would lead to use of public transport over private modes of transport by women, reducing fuel emissions. With regard to social sustainability, this would also lead to the MRTS lines being used by different economic sections of the society as opposed to the gentrification that would be caused by integration of the MRTS with the metro rail network. In stark contrast to the character of exclusion that the proposed conversion would bring, spatial strategies to improve natural surveillance (Jacobs, 2016) such as opening up the walls on the ground floor, constructive use of spaces on the mezzanine and policies allowing free movement or vending in the ground floor can facilitate the creation of safer spaces and bring in revenue for maintenance of the stations.

4. REFLECTIONS ON MODE OF STUDY - MICRO VS MACRO UNDERSTANDING

While literature on public transport infrastructure and sustainability outlines the need to cluster and concentrate residential zones around lines of public transport (Tonkiss, 2015) or orienting public transport networks to connect various points in the city frequented by women (Jarvis, Kantor and Cloke, 2009), a micro-level understanding of the physicality of this infrastructure can provide an insight into social exclusion posed by transport infrastructure within

its physical boundaries leading to failures in sustainable development. Parallels can be drawn to Petcou and Petrescu (2015)'s successful and holistic approach to resilience and social sustainability perceiving it from a neighbourhood scale. This approach takes into consideration the narratives of diverse stakeholders.

Studying spatial inequalities can point to gaps in our understanding of spaces and their use. Rather than un-



derstanding exclusion and inequality as issues predominantly pertaining to rights or as outcomes of development, understanding the potential and possibilities of social inclusion in sustainable development can incentivise the creation of socially inclusive and environmentally sustainable public infrastructure.

[Figure 4] Solution proposed in thesis for changing the spatiality of the MRTS station to make it more inclusive.

5. LIMITATIONS OF APPROACH & DISCUSSION

Consciously integrating pro-social inclusion approaches into spatial design processes can improve the use of public transport and related infrastructure. Consequently, robust use of public transport by people every day, will result in a decrease in use of private transportation. Understanding the opportunities presented by social inclusion for development can lead to more sustainable cities. However, this approach to social inclusion must be incorporated hand-in-hand with the understanding of social inclusion as a rights' issue. Including groups of people such as women and elderly in public transit stops can increase revenue, incentivising this inclusion. Where there is a danger of increase in revenue being seen as the only incentive worthy of generating inclusion, this incentive can overshadow the need to preserve every individual's rights. This overshadowing can lead to the rights of individuals who aren't in majority, to get lost in the process of democratic design that favours the collective majority. In such cases, to approach sustainable development as a pathway to inclusion (the popular approach) can be beneficial for the public.

Therefore, perceiving and addressing sustainable development and spatial inclusion as both cause and consequence of each other can lead to more robust and holistic approaches of spatial design in public transit stations.

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