

EXPLORING GENDER DIFFERENCES IN STUDENTS' SATISFACTION WITH HOSTELS IN HIGHER EDUCATION INSTITUTION CAMPUSES IN INDIA

Are we designing considering students could be girls?

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Abstract

Students' hostels are an essential component of higher education campuses where students come from far off places. The design quality of hostel buildings, public spaces and various amenities play an important role in students' satisfaction with the educational institution. This has a direct and indirect impact on the quality of the teaching-learning process. With the emergence of private sector higher education campuses, there is an emphasis on the quality of hostels to attract the students. However, the design of hostels continues to follow the 'gender-neutral' approach. The only difference in the hostels for boys and girls are the design of wash rooms. This paper presents the results of the assessment of gender differences in student's satisfaction with the hostels in higher education campuses in India. Five educational campuses catering to different disciplines are chosen and data was gathered through the use of questionnaire administered to 176 students selected through random sampling. The study revealed that there are subtle but important differences in the requirements of boys and girls in terms of thermal comfort, privacy, public spaces, wash rooms, and the spatial distribution of facilities, etc. The results of this study provide a possible direction to architects and management of educational institutions to adopt a gender-sensitive approach while planning and designing of hostels and related facilities.

Keywords: *Gender, Hostels, Design, Students' satisfaction*

1. Introduction

Hostels are very important component of higher educational campuses and greatly impact student's liveability, academic performance and overall development. However, students who are the real users are not involved in the design and development process. All decisions are based on perceptions of the top management, campus development team, architects and other consultants. With men dominating the decision-making process, the so-called gender-neutral designs are often biased towards men. Thus, girls end up compromising with the buildings and facilities designed for boys. As proper facilities sensitive to women's needs are missing in most of the public buildings in India, the girls have become conditioned to accept the design anomalies as normal. At times, such situation may lead to dissatisfaction that may hamper their studies. Thus, there is a felt need to understand the subtle but important differences in men's and women's physical, psychological and cultural requirements and develop truly gender sensitive designs. This paper explores gender differences in the level of satisfaction with the design of hostels in higher educational campuses in India and suggests a few parameters which could be considered by the designers, campus developers and decision-making authorities while designing and developing the hostels.

Authors' experience of designing and managing educational campuses, backed with literature studies and semi structured interviews with women architects helped in developing a list of functional requirements specific to girl students. This was used to develop a survey questionnaire that was administered to girl students of five higher educational institutes of different disciplines. These covered institutes of Management, Architecture, Science, Liberal Arts and Law. The sample included girl students ranging from an age group of 18 to 28 and spread in educational profile ranging from undergraduate to post-graduate level.

The questions were designed to understand the usage pattern of girl students of spaces in an academic institute. The spaces of varied uses like academic classrooms, hostel rooms, mess, toilets, outdoor spillouts etc. were considered. The survey was done both in the form of written documented

questionnaires and spoken interviews. We also spoke with a few college administrators to understand the concerns further.

Need for Gender Sensitive Designs

The need for gender sensitive approach to design is best reflected by the in the initial designs of seat belts for cars in 1960s. The vehicular test crash protocols used dummies modelled on male anthropometrics. This resulted in creating seat belts that made women more vulnerable. In case of car crash female drivers were 47 per cent more likely to be seriously injured. (Reiley, 2016)

In order to capture larger consumer base, designs of web pages and products are moving towards gender neutral approach. In case of planning and design of public buildings, neighbourhoods and infrastructure also, a gender-neutral approach is adopted. (IGNOU, 2018) For women specific products there are a conscious effort by designers to create designs that would serve women's needs. However, when it comes to design of buildings like hostels specifically meant for women, there is little effort to understand women's functional and psychological needs. One of the evident reasons for such lack of sensitivity is the dominance of men in the world of architecture and planning. (Friedman, 2010)

The sensitivity to women's needs is missing even in the most developed nations. A survey conducted in Stockholm in 2019, by Tryggare Sverige Foundation shows that the public toilets are not designed to meet women's needs. (Reiley, 2016)

In Indian context the requirements of women are quite different from that of western culture. Most obvious and visible difference is the dress. These differences become more noticeable in tier two cities and towns. During informal conversation while researching for this paper, head of an institution expressed anguish that even the modern airport lounges are not designed to cater to women wearing Indian dresses. (Rohemtera, 2019) During interview with women architects, all agreed that when designing and detailing the buildings scant attention is paid to subtle details that are important for women.

A study by the City University of New York has established that men and women see the world differently and have distinct design preferences. (Striking Gender Differences in Modern Interior Design and Decorating for Guys and Girls 2015) Speaking of the design preferences, Men like solid design, functional furniture, strong contrasts and comfortable colours, deep tones, like rich red wine colours burgundy and Beaujolais, forest green, navy, black and brown. Leather, wood and heavy fabrics are their favourite materials that manifest strength and comfort which is quite in contrast with the preferences of women.

It has been observed that females prefer the use both natural & industrial ventilation More than males who prefer natural ventilation. That may be associated to larger size of Hypothalamus which is 2.5 times bigger in males than females. (Fuster, 1998) The scientists have found that in most cases women demonstrate higher sensitivity to smell, sound and colour than men. (Ibrahimagic, et al., 2006). They found that boys needed a little long wavelength colours to see the same colours as the girls. It means that women enjoy monochromatic colour schemes and interior decorating ideas for women should include rich colour palette with more than one colour. Men are unable to describe the small differences in colour shades. (Feingold, 1994)

In terms of physiological systems, since the centre of gravity is lower in women than in men, women have lower balancing strength than the men. (Stander n.d.) Differences in intake and delivery of oxygen translate into some aspects of performance besides Female lung capacity is about 30 percent less than in males: when a man is jogging at about 50% of his capacity, a woman will need to work at over 70% of her capacity to keep up with him. (Ritchie, 2017)

The points stated above clearly establishes the difference between the requirements of men and women, but still we continue to design gender neutral designs. Wherein, the "average male" is used for design

prototyping although there are biological differences between men and women that result in different ergonomic needs and comforts. (Friedman, 2010)

Therefore, making design for male's room has to definitely differ from room design for female in all elements of interior design, and in colours, forms and lightening and the interior designer should achieve the gender specific requirements. taking into account anatomical, physiological and psychological differences between the two genders. (Nimako & Bondinuba, 2012)

Importance of hostels in academic life

Almost every parent feels that a hostel life will be safe and more protective for their child. The supervised atmosphere combined with the strict regimen almost resembles the way parents perceive their kids at home. (FLORES & GONZALEZ, 2005) Apart from this, many colleges make it mandatory for students to live on campus in their hostel. There is a general notion that students who live in decent housing units within or around their university have a better chance of exceling academically. (Garland, 2017)

Numerous studies as conducted by Clinical and Counselling Psychology Department, Kinnaird College have also indicated that instead of having a positive impact on a student, a hostel like could adversely affect their overall development, if hostels are not properly aligned to meet the requirements of habitants. (Iftikhar & Ajmal, 2016) It is important to note that girl students are forced to live in an environment which is not designed considering them but their male counterparts. (Mindoiola, 2010) (Nimako & Bondinuba, 2012) In order to establish our hypothesis that girl students are forced to adapt to male centric spaces against their level of comfort and satisfaction, we did a survey with randomly selected 176 students from 5 different educational institutes and results were revealing.

The selection of institutes was done to include students from different background, courses and age groups. The background factor was ensured by selecting institutes from different regional locations in the country which includes Rajasthan, Uttar Pradesh, Maharashtra and Kerala. Colleges selected included affiliated University, Architecture College, Government Undergraduate College, Management College and a Law University. Among the selected institutes, there were Post-graduate college, Undergraduate college and also an all-encompassing University. This helped us in ensuring a varied group of students consisting of different locations, courses and age-groups.

Importance of students' hostel in academia

Based on our interviews and survey with students and academic administration teams of different institutes, it was established that quality and facilities at hostels do impact the selection of institute; to the tune that students while selecting their management college did give preferences to institutes having air-conditioned hostel. (NIUA-CIDCO Smart City Lab, 2019) The students believe that comfort conditions help them study and prepare better for their classes and tests. Therefore, it becomes pertinent to establish that if hostels are duly designed considering the due importance to gender specific design, it will result in spaces which are more conducive and would help them perform better in academics which will have a direct impact on their placements.

As per the findings of Mansoor and Ali, there is statistical evidence to claim that there is a relationship between Hostel Students' Satisfaction and its Academic Performance and the level of Hostel Students' Satisfaction in the universities is moderate implying that its greater degree of improvements is needed to reach the level of very high. (Mansoor & Ali, 2015)

Thus, if one group of students is put in more stressful conditions than the other in an academic institute, it could lead to an underperformance of that group. ***It is important to realize that we constantly put our girl students under such pressure in all the gender-insensitive designs.*** (Daniel, 2013)

2. Gender Neutral Design

Design of hostels

As designers of the built environment, we are invested in the idea that our design interventions will help to positively shape and link relationships to one another and its importance reaches to an altogether different level when we deal with designs of academic institutes wherein hostels are the home that the students have for their 3-5 years in institutes.

Architects are known to design hostels which are generic in nature, and could easily accommodate male or female students and it has now led to a gender-neutral building typology design system for hostels. (Rohemtera, 2019) (Feingold, 1994) The prime criteria considered for hostel design are:

- a) Occupancy to be considered in each room
- b) Attached or clustered toilets
- c) Air-conditioning to be provided in the room
- d) Clustered facilities
- e) Leisure activities

All these points, consider the standard proportions of male bodies thereby skewing the design against the requirement and needs of the girls. As established earlier, the requirements and abilities of men and women is inherently different and things comfortable and experienced by men cannot be generalized for women as well. (Student Accommod8, 2018)

Gender inequality in design parameters is a universally accepted challenge wherein we still lack in having appropriate standards which consider women as prototype. (Kalms & Korsmeyer, 2017) Addressing gender inequality is ranked universally high on the global agenda. (Pothukuchi, n.d.)

Differences between gender hostels

As recorded, the major difference in the design of boys and girls' hostels was the absence of urinals in the girl's toilet, apart from skewed entrance-exit timings for girls' students. (Oluwaseyi, 2015) (Stander, 2017)

3. Research Results

The research was conducted using multiple surveys and was based to understand the level of satisfaction that the students had with the prime requirements of their hostel life and it had a quite insightful result which is as shared below:

- The architects give no importance to the requirements of girls even while designing exclusive toilets for girls. Around 72% of the girls felt that there is no appropriate space in the toilets to meet their mandatory requirements, things as important as dustbins are not suitably placed in the toilets forcing them to carry undesirable items with them to their rooms. Also, the space is small and not appropriately planned to let them carry their set of clothing.
- Similar to the boys, girls were expected to carry their luggage to the upper floors. There is no design provision made in the girls' hostel to let them carry their luggage conveniently. More than 60% of the girls expressed their helplessness in being able to move their luggage, they told either they had to request the sweepers or the boys of their class, establishing a prior dominance over them and leading to a constant sense of helplessness.
- 95% of the girls expressed that there is a mandatory need of a full-length mirror in the hostels considering the numerous conferences, placement sessions, feast or cultural events taking place in colleges and more than 60% of them recorded an absence of it. They also said, they see no space available in the hostel where it could be easily installed. It leaves them with an unwanted

consciousness in spite of them being dressed for the occasion. Things like this, unwantedly impact the girl students and give the boys an unseen upper hand in their level of confidence.

- 2 of every 5 students surveyed, told that the design of storage cupboards is poor and they were high unsatisfied with the organizers provided in the students' hostel.
- The centralised air-conditioned spaces have a temperature adjusted wherein the girls don't feel comfortable, as recorded by more than 70% of the students. They said that there was no option for them to change the temperature and were forced to feel comfortable in the uncomfortable surroundings.
- As per the survey, around half of the girls cannot comfortably close the latch of their room or washroom doors. Also, to add to it 1 out of every 5 girls surveyed cannot even access the top latch of the door comfortably, every three out of 5 girls cannot adjust the shower head. They also said that they couldn't use their hair-dryers and other accessories in the washrooms owing to the absence of the plug-points in the toilets.
- Sometimes, because of the design negligence of the hostel, workers can easily peep inside the hostel room and washroom block, creating an unsafe environment for the girls. This problem was felt by every 2 of 5 girls as per the survey.
- Due to the insecure environment, the university campus girls are often forced to stay inside their rooms from late evening onwards which is different than the timings allowed for their male counterparts, as told to us by more than 65% of the girls. (Kneeshaw, 2018)
- There are absolutely very few high heel friendly spaces in campus. The presence of cow catchers etc make it absolutely impossible for them to wear a footwear of their choice. It was put forth by more than half the girls surveyed.
- Around 80% of the girls surveyed, expressed that they found spaces boring, depressing or dominating, a few of them expressed that it is owing to the colours and materials used in the design.

We would like to bring it to the notice of our readers that the survey findings were found to be consistent among different institutes. It was also noted that the students in post-graduate courses had started to accept the findings as the reality of life, wherein they suspect they would have to adjust with male-centric spaces throughout their life and they should accept the fact without any protest whereas the younger students were more vocal with their discomfort and unbalanced design.

Architects

Students of architecture are made to look at issues like climate, orientation, universal design etc. however, the aspects of gender are missed while discussing the design principles, resulting in insensitive architects. When we spoke to 5 design firms of national repute who participated in an academic college design competition (a national level competition for design of one of the most reputed brands of academic institute), all the five firms admitted that there has been no special consideration made for gender sensitive architecture. Their designs didn't pay any form of attention to the requirement of the girls, in fact none of them even initially realized that this is any form of a negligence from their side. They expressed that they were never made to realize that there could be different form of requirement of the girl students. (Mansoor & Ali, 2015)

4. Analysis of Results

The girls have found discomfort in the following parameters:

Organizer in the cupboard	Position of door latches	Size of bathrooms	Orientation of the room with respect to Sun and direct light
Thermal comfort under air-conditioned spaces	Size of corridor	Hooks in the doors	Lighting in the outdoor spaces
Acoustic privacy of rooms	Sports facilities in the hostel	Absence of laundry facilities or space to wash clothes	Pantry facilities
Number of toilets considering the room occupancy	Number of drinking water points	Visibility of the room from external spaces (poor design of windows)	Absence of dustbins
	Lack of Full-length mirrors	Different hostel timings for girls	

From the analysis of the survey it is found that till now no special consideration are taken into practice for designing Girls Hostel. However, it is very clear that the housing requirement for a female is quite different than that of male's and as here we are talking about Girls

Difference in requirements of boys and girls

Gender based designs is about creating spaces that respond equally to men and women. However, women experience spaces differently, and meeting women's needs also are equally important while promoting sustainable development.

The most widely adopted model of personality is the Five Factor Model (FFM), whose five domains are known as the Big Five: neuroticism (negative emotionality and emotional instability), agreeableness (altruism and cooperation), conscientiousness (self-control, self-discipline, and organization), extraversion (sociability, assertiveness, and positive emotionality), and openness (imagination, intellectual curiosity, and aesthetic appreciation). If these five points are considered while attempting the design for girls' exclusive spaces, the resulting designs would be more sensitive to the requirements of the girls. (Karlqvist & Gard, 2012)

5. Conclusion

In order for architects, educational administrator and policy makers to understand the differences in the way girls and boys experience the built environment and public spaces of educational campuses there is need for more awareness and training. This requires back up of well researched evidence of specific challenges that a girl student faces.

Direction for architects

While doing the research, we came across a set of interventions that had taken place in Vienna over a period of 25 years and it has set the city as an exemplar city for gender sensitive urban planning. The environment for women is safer in the city and facilities are more accessible. (URBACT, 2019)

Our survey also concluded that the requirement of girls is different than boys, therefore after the study of different interventions and our research, we have come up with the following considerations:

- As discussed earlier the difference in Anthropometric standards should be taken into consideration. The cabinets or cupboards should be designed in such a fashion so that each corner of it can be easily accessible.

- The interior design of space should be aligned with colours and materials which improve the satisfaction and performance of women. (Hallock, 2003) The standard practice of the choice of texture is aligned with male sex and is still quite insensitive to the requirements of women.
- As the average height of the female is recorded as 5' 4" so the door latch should be placed accordingly. If it is undesirable to decrease the height of the door the door latch can be placed at a suitable height on the side stile. (Mindoiola, 2010)
- Washrooms / toilets can be furnished with small lockers to meet the storage requirements or appropriate hooks or niches could be provided within the spaces in the toilets.
- To match the thermal comfort level of the occupant, a regulator should be provided in each room so that the occupants can easily regulator adjust the temperature or the temperature should be adjusted to match the requirements of girls which is 2 degrees higher than men.
- As safety is a big consideration in girls' hostel, the building should be design keeping in mind that the privacy of the girls should not be hampered due to the presence of any male worker inside the hostel.
- The pathways towards all the public gathering space must kept lit up all the time or all the public gathering spaces should be design to ensure the safety of students. (Velarde, 2018)
- The public gathering spaces must be design in such a fashion that the area is visible from all the security points. All the gathering points should be lit up by ample amount of lights.
- The electrical sockets should be provided in the toilets for the use of hair-dryers and other cosmetic accessories that they might want to use them. Also, there should be space for the placement of such items.
- Study of Anthropometrics should incorporate differential spatial behaviours and needs by men and women in a particular area and community. (West, 2018)

Requirement of Gender sensitive approach

It was the lack of emotion and lack of intimacy that Eileen Gray decried in modernism is 1929, 'Modern designers have exaggerated the technological side... Intimacy is gone, Atmosphere is gone... Formulas are nothing, Life is everything, and life is mind and heart at the same time. (Mahimkar & Gokhale, 2014) (Mansoor & Ali, 2015)

The insensitive designs impact both the mind and heart of one of the genders, thereby impacting performance of half of our population thus causing massive underperformance as a society.

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