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## Contents

### Social Science Education

- 429 **Capabilities Un-Enabling?**  
*Giuseppe Annacontini*
- 439 **Synchronous CMC E-tandem Learning in Japanese as a Second Language: Linguistic Environment and Language Development**  
*Satomi Kawaguchi*
- 449 **Beyond the Ideology of Native Speakerism of English on Teaching: Views from the Field of Intercultural Communicative Competence**  
*Mei-Lan Huang*
- 461 **Higher TVET Educational Model as Basis for Global Curriculum: The UniKL Experience**  
*Azanam Shah Hashim, Ruzainah Ali, Kamaruzzaman Ismail*

### Science, Technology and Engineering Education

- 470 **Modeling and Simulating Persuasion Strategies: Domain Specific Language for Persuasive Systems' Design Productivity**  
*Saad Abdessettar, Mickaël Gardoni, Bessam Abdulrazak*
- 478 **Issues Related Emergency Hospital Visit for Foreign-Residents: Consideration about Medical Care Support Systems of Foreign-Residents in Public Health**  
*Shigeki Tatsukawa, Nanae Shintani*
- 483 **The Role of Pre- and Post-College Education in Preparation of Engineering Professional and the Concept of Teaching Factory**  
*Edriss A. Ali*
- 490 **Overcrowding a Threat to Environmental Safety and Wellbeing: An Empirical Investigation of Female Undergraduate Halls of Residence in a Nigerian University**  
*Ruth Ochanya Adio-Moses*
- 498 **Impediments to Accessing Virtual Education by Learners with Visual Impairments in Kenyatta University**  
*Fridah Gatwiri Kiambati, Daniel Wambiri Muthee*

# Overcrowding a Threat to Environmental Safety and Wellbeing: An Empirical Investigation of Female Undergraduate Halls of Residence in a Nigerian University

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**Abstract:** The demand for University education in Nigeria has led to an increase in undergraduate population and this comes with various problematic conditions with regards to university accommodation, available basic infrastructure and facilities. The resultant effect is manifested in overcrowded residential halls and rooms. Against this backdrop, this study investigated the correlation between overcrowding and environmental safety and wellbeing in female undergraduate halls of residents in the University of Ibadan, Nigeria. Four research questions and two hypotheses guided the study. Descriptive survey research design was adopted and a sample of six hundred and fifty five (655) was proportionately drawn from the residential female undergraduate population of 3274. A questionnaire with reliability coefficient of 0.87 was used for data collection. The results showed that 87.7% of the female undergraduates perceived their rooms to be overcrowded. Findings on environmental safety showed that apart from fire extinguisher, other safety facilities and equipment are either not readily available or are not adequate in all the halls of residence. The result of the hypothesis showed a strong negative relationship between overpopulation and environmental safety and wellbeing. In recommendation, more halls of residents should be built to meet up with the increase in female undergraduate enrolments to Nigerian universities. Environmental safety issues of residential undergraduates must be taken seriously by providing functional safety facilities and equipment to make the halls more secure.

**Key words:** overcrowding, environmental safety, wellbeing, health, female undergraduates,

## 1. Introduction

The demand for University education has led to an increase in undergraduate population especially in federal government owned universities in Nigeria. This comes with intense pressure on the bearing capacity of available basic infrastructure including student housing, environmental health and safety issues. The resultant effect is manifested in overcrowded students' residential halls and rooms. Poor living conditions can serve as a mechanism of social stratification, affecting undergraduates' wellbeing and safety. Stressors of the university environment may affect the life of an undergraduate and have lasting consequences throughout their life-course.

Indeed One's housing relates to many aspects of social life including privacy, location, health, security, social

relations, and community resources (Solari and Mare, 2008). A secured, conducive, well ventilated and spacious room is an important requisite for students' well-being. Well-being transcends health because it connotes optimal health which implies operating at the peak of the health continuum. Smith, Tang and Nutbeam (2006) defined well-being as the optimal state of health of an individual and groups which involves the realization of the fullest physical, psychological, social, spiritual and economical potential and the fulfillment of one's role in the community and other settings. Health and well-being are determined by a constellation of factors that cut across an individual's living environment. Modebelu and Agomough (2014) listed significant factors in students' health to include 'safe drinking water, sufficient food, and most importantly, secure shelter/accommodation and good social amenities.' It is essential for undergraduate housing to provide the basic infrastructural facilities needed by the students. Such facilities include toilets, running water, electricity, reading room, canteen, kitchenette and a recreation area to mention a few. Provision of these facilities is one thing; having them in good working order is something that is not always readily available. It is therefore a fairly common occurrence for these facilities to either be unavailable or in a state of despair (Aluko, 2011).

Although the environment of undergraduates' accommodation is considered important for their wellbeing and for improved academic performance; the management of these facilities still raises serious concern among stakeholders. Especially, Federal tertiary institutions in Nigeria are facing problems in providing comfortable hostel accommodation to their ever increasing students' populations as they now face real cut in the level of public funding. However, Pat-Mbano, Alaka and Okeoma (2012) posited that the deterioration of undergraduate hostel accommodation is largely tied to overstretching of available facilities due to overcrowding and this has posed grave danger to academic success. Uzuegbunam (2011) described hostel accommodation in Nigerian federal universities as disorganized physical environment devoid of social amenities, essential public utilities and meaningful communal life. This problem is compounded by the continuous increase in the number of students allocated into the universities.

An increase in population in the students' hall of residence is as a result of many factors which among them are: squatting, inadequate funds, inadequate basic amenities (bed, water, toilets), increase in birth rate, conducive environment, preferential treatment, peer competition, cognitive rive, ego enhancing rive and increase in the number of students seeking admission. According to Ubong (2001), students who are accommodated into hostels socialize and perform better academically. As a result of this, every student desire and lobby to stay in the school hostel. This can lead to overpopulation in the hall of residence if not checked. It is indeed true that overcrowding leads to increase in crime rate, decline in quality of life, pollution, competition for clean water and spread of diseases. A hall of residence that does not serve or meet these four fundamental needs will lead to health implications like; spread of communicable diseases such as cough, catarrh, toilet disease, diarrhoea and vomiting, chicken pox, etc. Pollution (noise), unhygienic living condition (infection from toilet, bathroom), injuries (fall, electrocuted), respiratory problems, suffocation in room and spread of water borne disease (cholera)

Overcrowding in students' hall of residence can generate problems like strife, quarrel, stress, frustration, fear, insecurity, delinquency and antisocial behaviour which affects the mental and social health of students and can lead to poor academic performance in school if not controlled. Solari and Mare (2008) noted that overcrowding affects students well-being, academic achievement, behaviour problems, and physical health. Concerns regarding the consequences of overcrowding cannot be overemphasized or ignored because the number of students in almost all the female hostels in the University of Ibadan greatly surpasses the available resources. This has led to over utilization of available space, toilet, reading and recreational facilities.

Presently there are a total of eleven halls of residence in the University of Ibadan. Three of them are for female students and these are Queen Elizabeth hall, Queen Idia hall and Obafemi Awolowo hall is being shared by female postgraduate and undergraduate. These halls are grossly inadequate in comparison with the number of females admitted into the university, thereby forcing the University to give priority accommodation to students in the first and last years of their studies. Many students who cannot afford accommodation off-campus are illegally accommodated by their friends thereby further overstressing the already bloated number of students in the halls. This is suspected to result in overcrowding of rooms particularly and the halls at large. Overcrowding is suspected to have adverse effect on health and well-being of individuals. A cursory look at the student accommodation status in University of Ibadan though adjudged one of the best in the country among public institutions, still causes concern. Living conditions are generally seen to be below average due to factors that are largely tied to student population. The extent to which this overcrowded rooms interface with well-being is an important issue for research. In view of the foregoing, this study was therefore conducted to examine overpopulation as correlate of well-being and safety among residential female students in University of Ibadan.

## **2. Research Questions**

The study attempted to provide answers to the following research questions:

- (1) Do residential female undergraduate in the University of Ibadan, Nigeria perceive their halls to be overcrowded?
- (2) Are residential female undergraduates rooms overcrowded in the University of Ibadan, Nigeria?
- (3) Are the Safety facilities and equipment in female halls of residence in University of Ibadan Nigeria perceived to be adequate?
- (4) Do residential female undergraduate in the University of Ibadan, Nigeria perceive overcrowding in their rooms to have any effect on their health?

## **3. Hypotheses**

The following hypotheses were tested for significance:

- (1) There will be no significant correlation between overcrowding and well-being of residential female undergraduates in the University of Ibadan, Nigeria
- (2) There will be no significant correlation between overcrowding and disease occurrence among residential female undergraduates in the University of Ibadan, Nigeria

## **4. Method**

Descriptive survey research design was employed and the population for the study was made up of all residential female undergraduates in the University of Ibadan, Nigeria for the 2013/2014 academic session. Proportionate sampling technique was used to select 20% out of 3275 females in three undergraduate halls of residence in the University of Ibadan, Nigeria. A sample of 655 respondents was used for the study.

A self-structured questionnaire was used as instrument for data collection. The 17 items questionnaire was close ended and the respondents were asked to tick (✓) the appropriate answer from a list of responses that were provided. The questionnaire consisted of five sections; (a) Overcrowding scale, (b) Safety facilities and

equipment scale, (c) Health and well-being scale and (d) health problems and frequency of disease occurrence scale. The content and face validity of the instrument was established through expert assessment. Thirty female undergraduates in Moremi Hall of Residence University of Lagos were used to pre-test the instrument for clarity and ambiguity.

The measure of internal consistency of the instrument was established using Crobach alpha which yielded the reliability coefficient of 0.87; which was considered high. The questionnaire was administered to the respondents at their various halls of residence with the help of three research assistants. The respondents were guided to complete and return the questionnaire immediately. Six hundred and fifty five questionnaire were administered and collected. Out of the 655 copies returned, twelve copies were not completed properly and thereby were invalidated. Only the 643 copies of questionnaire that were properly completed were used for the purpose of data analysis. Frequency counts and percentages were used to answer research questions while Pearson Product Moment Correlation statistics was used to test the null hypotheses.

## 5. Results

The results were analyzed in relation to the research questions and null hypotheses. Significances was established at 0.05 level and results are presented on Tables 1–4.

### 5.1 Research Question 1

Do residential female undergraduate in the University of Ibadan, Nigeria perceive their Halls to be overcrowded?

**Table 1 Perception of Overcrowding in Respondents Halls**

| Do you think your hall is overcrowded? | Frequency | Percent |
|--|-----------|---------|
| Yes                                    | 564       | 87.7    |
| No                                     | 79        | 12.3    |
| Total                                  | 643       | 100.0   |

The finding of the study as shown in Table 1 revealed that respondents' perceived their halls to be overcrowded based on the percentage that responded to the question. The table showed that 564 respondents, representing 87.7% of residential female undergraduates perceived their halls to be overcrowded with only 79 respondents representing 12.3% stating that their halls are not overcrowded.

### 5.2 Research Question 2

Are residential female undergraduates rooms overcrowded in the University of Ibadan, Nigeria?

**Table 2 Response to Overcrowding in Respondents' Rooms**

| ITEM   | 1-2         | 3-4         | 5-6         | 7 and above |
|--|-------------|-------------|-------------|-------------|
| What is the original capacity of your room?          | 337 (52.4%) | 247 (38.4%) | 59 (9.2%)   | -           |
| How many students are currently occupying your room? | -           | 267 (41.5%) | 376 (58.5%) | -           |

The findings of the study as shown in the table above revealed that respondents room are overpopulated as the rooms are presently accommodating students beyond their original bearing capacities. Table 2 showed that, while 52.4% of the students reported that their rooms were meant to accommodate 1–2 students, none of the respondents reported that her room is currently accommodating 1–2 students. Similarly, 38.4% respondents stated

that the original bearing capacity of their room is 3–4 students, a larger percentage of 41.5% disclosed that their rooms are currently accommodating 3–4 students. The same result was reported for respondents who observed that their rooms were meant to accommodate 5–6 students. Only 9.2% reported this but the percentage of responses for rooms having 5–6 people is 58.5% thus supporting the fact that the rooms are overcrowded

### 5.3 Research Question 3

What are the safety facilities and equipment in the undergraduate female halls of residence in the University of Ibadan, Nigeria?

**Table 3 Response to Available Safety Facilities and Equipment in Female Halls of Residence**

| Safety Gadgets                                 | Available   | Not Available |
|--|-------------|---------------|
| Fire extinguisher                              | 475 (73.9%) | 168 (26.1%)   |
| Fire alarm and water horst                     | -           | 643 (100%)    |
| Surge protector                                | 57 (8.9%)   | 586 (91.1%)   |
| Functional and decentralized first aid box     | 97 (15.1%)  | 546 (84.9%)   |
| Functional perimeter and security lights       | 307 (47.7%) | 336 (52.3%)   |
| securitypostwith armed security men            | 242 (37.6%) | 401 (62.4%)   |
| Emergency toll-free phone number and ambulance | -           | 643 ((100%)   |

The findings of the study revealed that apart from fire extinguisher; no other safety device or mechanism is readily in place in the female halls of residence. 73.9% of the respondents disclosed that they have fire extinguisher in their halls with none of them reporting the availability of fire alarm. Findings also showed that 91.1% disclosed that they don't have surge protector, 84.9% reported not having a decentralized and functional first aid box. Findings equally showed that 52.3% of the respondents do not have functional security lights and post in their halls of residence. There are no toll-free phone numbers and a standby ambulance in case of an emergency in any of the female halls of residence.

### 5.4 Research Question 4

Do residential female undergraduate in the University of Ibadan, Nigeria perceive overcrowding in their rooms to have any effect on their health and well-being?

**Table 4a Perception of the Effect of Overcrowding on Respondents Well-being**

| ITEM   | SA          | A           | D           | SD          |
|--|-------------|-------------|-------------|-------------|
| I get tired easily due to the time spent sleeping in my room   | 173 (26.9%) | 104 (16.2%) | 313 (48.7)  | 53 (8.2%)   |
| I feel weak most time due to my inability to rest well in my room  | 57 (8.9%)   | 331 (51.5%) | 202 (31.4%) | 53 (8.2%)   |
| I lost appetite most times when I see the number of girls in my room                                     | 117 (18.2%) | 150 (23.3%) | 276 (42.9%) | 100(15.6%)  |
| I hardly find pleasure carrying out tasks assigned to me due to the overcrowding in my room              | 58 (9.0%)   | 314 (48.8%) | 124 (19.3%) | 147 (22.9%) |
| I feel like staying in bed every morning due to a noisy night in my room.                                | 53 (8.2%)   | 259 (40.3%) | 222 (34.5%) | 109 (17.0%) |
| I hardly look forward to my daily activities due to the stress and discomfort in my hall                 | -           | 223 (34.7%) | 315 (49.0%) | 105 (16.3)  |
| I know I do not work hard as I should due to constant ill health as a result of the condition of my room | 157 (24.4%) | 259 (40.3%) | 73 (11.4%)  | 154 (24.0%) |

**Overcrowding as a Threat to Environmental Safety and Wellbeing: An Empirical Investigation of Female Undergraduate Halls of Residence in a Nigerian University**

**Table 4b Perception of the effect of Overcrowding on Frequency of Common Diseases Occurrence among Respondents**

| Health Problems            | Frequency of Occurrence               |  |   |             |
|----------------------------|---------------------------------------|--|---|-------------|
|                            | Frequently (at least once in a month) | Occasionally (at least once in three months) | Less often (at least once in four months) | Never       |
| Cough                      | 151 (23.5%)                           | 205 (31.9%)                                  | 267 (41.5%)                               | 20 (93.1%)  |
| Dysentery                  | 45 (7.0%)                             | 59 (9.2%)                                    | 52 (98.1%)                                | 487 (75.7%) |
| Malaria                    | 59 (9.2%)                             | 298 (46.3%)                                  | 266 (41.4%)                               | 20 (93.1%)  |
| Domestic accident/injuries | 59 (9.2%)                             | 196 (30.5%)                                  | 233 (36.2%)                               | 155 (24.1%) |
| Catarrh                    | 247 (38.4%)                           | 160 (25.9%)                                  | 236 (36.75)                               | -           |
| Skin infection             | 57 (8.95)                             | 208 (32.3%)                                  | 96 (14.9%)                                | 282 (43.9%) |
| Headache                   | 457 (71.1%)                           | 57 (8.9%)                                    | 129 (20.1%)                               | -           |
| Toilet infection           | -                                     | -  | 116 (18.0%)                               | 527 (82.0%) |

A breakdown of the results as shown in Tables 4a and 4b above revealed that the residential female undergraduate in the university of Ibadan Nigeria perceived overcrowding as a threat to their health and wellbeing. Respondents perceived overcrowding to have a negative effect on their wellbeing. 51.1% indicated that they become weak due to the inability to sleep well in their rooms. 48.8% of the respondents also reported that they hardly find pleasure in carrying out their daily task due to the overcrowding in their rooms. Table 4a showed that the health and well-being of respondents is being compromised due to the various discomfort and stress they are exposed to as a result of the large numbers of females sharing rooms made to accommodate a few. Table 4b also showed that the respondents perceived themselves being exposed to some diseases due to overcrowding in their rooms and halls.

**Hypothesis One:** There will be no significant correlation between overcrowding and the well-being of residential female undergraduates in the University of Ibadan, Nigeria.

**Table 5 Correlation Table of the Relationship between Overcrowding and Wellbeing**

| Variables              | N   | R      | P     | Remark      |
|------------------------|-----|--------|-------|-------------|
| Overcrowding Wellbeing | 643 | -0.675 | 0.000 | Significant |

The finding of the study as presented in the correlation table above revealed that there is a strong but negative relationship between overcrowding and wellbeing of the respondents. The r value at -0.675 showed that there is a strong negative relationship between the independent variable (overcrowding) and the dependent variable (wellbeing). The implication of the negative relationship is that overcrowding has negative effect on wellbeing as such increased overcrowding will leads to decreased health and well-being. Meanwhile, findings also indicated that the p value at 0.000 is less than the level of significance at 0.05. Based on this, the null hypothesis which states that there will be no significant correlation between overcrowding and well-being of residential female undergraduates in the University of Ibadan, Nigeria is therefore rejected.

**Hypothesis 2:** There will be no significant correlation between overcrowding and disease occurrence among residential female undergraduates in the University of Ibadan, Nigeria.

**Table 6a Correlation Table of the Relationship between Overpopulation and Disease Occurrence**

| Variables          | N   | R     | P     | Remarks     |
|--------------------|-----|-------|-------|-------------|
| Overpopulation     | 643 | 0.399 | 0.000 | Significant |
| Disease Occurrence |     |       |       |             |



The finding of the study as presented in the correlation table above revealed that there is a moderate positive relationship between overcrowding and disease occurrence among accommodated female undergraduates of University of Ibadan. The  $r$  value at 0.399 shows that there is a moderate positive relationship between the independent variable (overcrowding) and the dependent variable (disease occurrence). The implication of this finding is that overcrowding has predisposition effect on disease occurrence among the respondents as such increased overcrowding may lead to increased disease occurrence. The findings also indicated that the  $p$  value at 0.000 is less than the level of significance at 0.05. Therefore, the null hypothesis which states that there will be no significant correlation between overcrowding and disease occurrence among residential female undergraduates in the University of Ibadan, Nigeria is rejected.

## **6. Discussion of Results**

The study answered four research questions on the perception of residential female undergraduate in the University of Ibadan, Nigeria towards overcrowding and the resultant threat to their wellbeing and environmental safety. Two hypotheses were also tested to determine the relationship between overcrowding and wellbeing, overcrowding and safety. The findings indicated that residential female undergraduates perceived their rooms to be overcrowded. The high level of overcrowding found in this study may not be unconnected to the fact that existing facilities in the university earlier designed for just few students are being overstretched with increased aspiration for university education without corresponding provision of facilities to meet the growing demand for university education. This has resulted into having more students in a room more than the number of students the rooms were initially designed to accommodate. The findings also showed that safety facilities and equipment in all the halls are either not available or in short supply in all the female halls of residence. Important safety equipment like fire water hose, emergency toll free line and fire alarm were all found to be non-existent in all the female undergraduate halls of residence. This shortage may be attributable to other reasons but more to overcrowding as there are more students than the resource and/or facilities provided for their safety and well-being.

This study confirmed the findings of Aluko (2011) who reported that similar shortages in health facilities in a study centered of a tertiary institution in Nigeria. Findings from the study showed that overcrowding was inversely related with well-being meaning that an increase in population without a relative increase in the facilities and equipment will definitely compromise safety and decrease the well-being of the people involve. This study further revealed that disease occurrence increased with increased overcrowding. This could be seen in the correlation between overcrowding and disease occurrence ( $r = 0.399$ ). The findings of the study confirmed the findings of Katrina (2014) who listed health implications of overpopulated accommodations to include spread of communicable diseases such as cough, catarrh, toilet disease, measles, chicken pox and more, including Pollution (noise), unhygienic living condition (infection from toilet, bathroom), injuries (fall, electrocution), respiratory problem, suffocation in the room and spread of water borne diseases.

## **7. Conclusion**

Based on the findings of this study it was concluded that residential female undergraduate rooms and halls in the University of Ibadan Nigeria is overcrowded and by implication the situation may expose the respondents to the spread of diseases. Safety facilities and equipment in the halls are either inadequate or not available and this indicates that the level of environmental safety and safety preparedness is poor. This situation will not only

predispose the respondents to safety issues but also to disease as the findings of the study showed that overcrowding is strongly correlated with disease occurrence and well-being and safety of residential female undergraduates in University of Ibadan Nigeria.

## **8. Recommendations**

(1) There is a pressing and compelling need to build more halls of residence especially for female undergraduates as this will definitely reduce the pressure on the existing residential facilities in the University of Ibadan, Nigeria.

(2) The need to provide undergraduates with safe living environments in universities across Nigeria cannot be overemphasized. Therefore all undergraduate residential buildings in the University of Ibadan should be fitted with functional safety facilities and equipment to make it more secure for the inhabitants.

(3) The University of Ibadan administration should make concerted effort to prevent and reduce the spread of diseases in the halls of residence.

(4) The University of Ibadan administration should negotiate with mobile telecommunication companies to provide a toll-free line for use in case of emergency in all the residential halls.

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