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“The Impact of Infrastructural and Technological Resources on The Academic Achievement of Hostel’s Students at University Level in Quetta City”

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ABSTRACT

This study investigated the impact of infrastructural and technological resources on the academic achievement of the students living in on-campus hostel in the three public sector universities 1; Sarदार Bahadur Khan Women University 2; University of Baluchistan 3; Baluchistan University of Information and Technology, Engineering and Management Sciences in Quetta city. Data for the study was collected through a self-constructed questionnaire survey from randomly selected 210 students of final year from BS, Masters, MS/M.Phil. living in hostels of these three universities both boys and girls. The IBM Statistical Package for Social Sciences (SPSS) version 23 was used to analyze the data. Descriptive statistics were employed for the demographic of students and multiple regression was applied to identify the impact of infrastructural problems (library, bedrooms, bathroom, toilet, laundry furniture) and technological problems (internet connection, electricity, WIFI) on students’ academic achievement. The regression analysis showed the positive impact of independent variables (technological and infrastructural problems) on dependent variable (Academic achievement of students).

Introduction

One of the most important needs in every household is accommodation, which has a direct impact on people's socioeconomic lives as well as the socioeconomic life of society. It has been described as the physical structures, amenities, and services that govern the welfare of the individual and the family and are a part of the entire residential neighborhood environment. The housing in a given society indicates the general level of well-being of its members. Since housing affects both national and individual lives, it is widely acknowledged that it plays a significant role in fostering human comfort in both the natural and social spheres. More than just a place to sleep, accommodations offer security, social connections, a path to a successful career, a good position, control over the environment through ownership, and other amenities. Thus, it has a significant impact on the residents' well-being and standard of living (Jansen, 2014).

Places where travelers and students can stay are referred to as hostels in some countries. A hostel is a facility run by a school, college, or university in Pakistan where students can stay under the supervision of staff members and hostel wardens. Shared in the hostel are typically hundreds of students from diverse backgrounds—moral, sociological, cultural, geographic, and economic. While pursuing their formal education away from their homes, students can stay in hostels. Given that they provide real-life experiences, hostels serve as both a place to stay and a human experience laboratory.

One way to characterize the hostel is as a meeting place for students who have come from all over the world with the

shared objective of learning. Common spaces in a hostel typically include a kitchen, restroom, reading room, guest hall, reception area, and so forth. Similar services are offered by certain colleges to both on-campus and off-campus students. It is undoubtedly a new experience for the young students who live in dorms away from their families. This gives them the opportunity to practice living on their own, learn how to live with roommates and other students, share utilities and solutions, and so forth.

After school hours, students can succeed in courses if they are provided with a conducive study space. Poor hostels discourage students from pursuing their academic goals, but first-rate housing that satisfies their basic needs encourages diligent study. Hostels provide a distraction-free environment for students to concentrate on their studies as they are not connected to their families. They also establish solid social ties. Hostel residents may anticipate respectable behavior from their fellow residents. They might simultaneously be affected by the awful company. The hostellers' academic performance might be impacted by questionable companions.

The amount of money allocated to education in Pakistan is extremely small. Higher education resources are limited to Pakistan's developing and advanced cities due to the nation's status as a developing one. Consequently, in order to pursue postgraduate and undergraduate education, students are required to live in a dorm. Hostels thus have a significant impact on students' academic careers in Pakistan. Students must stay in hostels in order to complete their coursework.

Now, a big problem in Pakistani universities is finding accommodations for

graduate and undergraduate students. Student satisfaction is linked to both academic and managerial factors. Research on this variable is recognized as essential. We've talked to academics, families, organizations, and universities about the issues surrounding students' satisfaction with dorms. Improved dorm amenities and quality are top priorities for higher education establishments. The concerns about student satisfaction in dorms need to be looked into. Consequently, in order to gauge the students' contentment with their accommodations, a great deal of concepts or ideas have been assessed over time.

Statement of the problem

Academic success of students is highly valued by educators. It is primarily responsible for change both domestically and internationally. Education experts have studied the variables that affect students' academic performance in great detail, especially when it comes to female students. According to Crosnoe et al. (2004), these include all facets of the learning environment that affect students' academic development both inside and outside of the classroom.

Students in Baluchistan are compelled to move to larger cities in order to complete their education due to the dearth of higher education options in the country's small towns. To pursue higher education, they are required to reside in the on-campus hostel of the university. A few of the few universities that provide housing are unable to supply sufficient amenities.

Students living in dorms on campus might experience a variety of issues that hinder their ability to succeed academically. As a result, the research study concentrated on the institutional (library, restrooms,

laundry, rooms, and study rooms) and technological (electricity, Wi-Fi, internet connection) issues that students in public sector universities encountered in their dorms, as well as the effects these issues had on students' academic performance.

Significance of the Study

For individuals, families, communities, and the country as a whole, housing is and always will be a major concern because it plays a crucial role in determining human welfare, life sustenance, and existence. This means that the study will investigate how students perceive their experiences in hostels and how they affect their academic performance. This subject has not received much attention in Pakistan, especially in this field. Man's second most basic need after food has traditionally been considered to be housing, also referred to as shelter. Accommodations for university students, specifically dorms on campus, are referred to as housing. There is usually an administrative branch of government that deals with housing.

The study's goal was to find out how the educational achievement of pupils was affected by accommodations issues. The results is useful to parents and students as they make decisions, particularly about suitable accommodations. The study will help parents and teachers better understand the connection between academic achievement and living in a dorm.

For planning and policy-making purposes, the study will also be suitable and beneficial to the entire administration of the university and hostel authority. The government will also benefit from the research study in the areas of applying

housing-related services in public universities and formulating policies. The study's findings will support the enhancement of university housing services.

Limitations of the Study

Due to time and resource constraints, this study was only conducted at public universities. The sample size was restricted to students living in hostels; teachers residing in hostels were excluded from the sample.

Review of Literature

To graduate is the primary objective of every student, ideally with the best grades possible. Building and maintaining surroundings that support better learning conditions and outcomes is a growing concern for many universities, businesses, and HE funding organizations due to the rise in enrollment in higher education worldwide (Masrek & Zainol, 2015). This is important because, according to Mustaq and Khan (2012), students are an educational institution's most valuable asset and because their success directly affects the social and economic advancement of a nation. As a result, in recent years, there has been a lot of scholarly attention focused on the factors that affect students' academic performance. According to Dey et al. (2015), these fall into three categories: family, student, and school/university.

School and university factors are arguably an area where public policies and funds are visibly aimed towards improving, HE in many circumstances, in contrast to family and student variables, which are outside the public domain and influence. The effect of the physical environment, particularly accommodations as a factor in school characteristics, on students' academic

performance has not received much attention in research. This is significant because many developing nations spend large sums of money improving the physical built environment to enhance the higher education experiences of their citizens. Accordingly, the impact of hostel issues on university students' academic achievement in Quetta City is also a focus of this study.

Hostel

According to Khozaei et al. (2010), a hostel is a building on a university's campus that houses all of the recreational resources available to students. Other scholars have also defined student accommodation differently. As defined by (Akindele, 2015), student housing is a dwelling either inside or outside the institution where students reside.

In the context of this study, a "student hostel" is a structure that offers all necessary amenities to facilitate students' living and learning. According to research studies that are currently available, many institutes have failed to provide students with adequate housing on their campuses (Abdul, 2008; Nwite & Nwuche, 2016). As a result, students look for lodging off university campuses. On-campus housing is a type of housing provided to students living on campus, while off-campus housing, also known as lodges, is housing provided to students living off campus.

Role of Students Housing at University Level

The contemporary society is witnessing a shift in the role of higher education. The twenty-first century is seeing a rise in the value of knowledge and information. The main goals of education are to produce highly skilled professionals and to create an environment that is

conducive to the advancement of knowledge and skills. According to the advanced worldview, education fosters the development of a multifaceted personality that is both a global human and professional. Thus, it is crucial to investigate every aspect of students' lives that are crucial as well as the environments in which they work.

According to Kolawole and Boluwatife (2016), the student residence has been identified as the most crucial component of postsecondary educational establishments. It has been observed that the provision of hostels in universities can draw in a significant number of international students from various cultural and national backgrounds. According to the research study by online (2014), having dorms on campuses benefits students' academic performance, sense of fulfillment, and retention rate in addition to fostering cross-cultural interactions among students from different backgrounds and cultures. According to Nimako and Bondinuba (2013), hostels play a significant role in improving students' livelihoods and levels of knowledge. Students should also have access to appropriate housing services in order to maximize their academic potential.

Impact of problems at Hostel on Students' Academic Achievement

Students can succeed academically when the facilities in the institutions are available. As per Ugwuanyi et al. (2020), academic achievement is determined by an individual's mean scores on their final exam. The researcher claims that factors including campus services, facilities, and technology developments can be used to measure students' academic success and satisfaction in higher education (Jalani & Sern, 2015). Academic productivity of students is

significantly impacted by the availability of the institution's facilities and services.

Government-owned colleges are more blatantly lacking in suitable student housing (Akinpelu, 2015). Evidence of inadequate student housing risks the main objective of education for pupils. Hassanain (2008), for example, claimed that well-designed dorm facilities support the achievement of the larger goals in any institution and encourage the promotion of desired educational outcomes. Good hostel facilities have a positive impact on academic studies, while a bad hostel atmosphere is detrimental to learning, according to the findings of a study done in 2015 by Ekejiuba. He continued by saying that dorms encourage better social ties and that domestic distractions should be avoided by students in order to concentrate on their academics.

The Impact of Internet on Students' Academic Achievement at Hostel

Intranet and Internet connectivity to dorms and hostels for students has been offered by the majority of American and other developed country colleges for a considerable amount of time (Sridhar & Jain, 2006). According to Adomini et al. (2004), Internet usage is utilized by Nigerian universities for research, teaching, and learning. Many newspapers and magazines can be read online by students for pleasure or educational purposes if they have access to the Internet. While there are several ways for Tanzanian students to obtain electronic resources, living arrangements do not offer this (Manda, 2005).

The internet affects students who use it, and the extent of this influence varies depending on the kind of internet usage, claim Shah et al. (2001). When they use the

internet for educational purposes, they benefit, but when they use it for recreational purposes, they suffer badly. Similar to the University of New Hampshire, today's college students are expected to use social networking on a daily basis because they grew up in the technological age. They found that '65% of light users received high grades, compared to 63% of heavy users.' (The University of New Hampshire reports that while the majority of students use social networking for entertainment and social connections, they also use it for business and education.) Regular internet users scored higher and did better on reading proficiency exams (Linda et al., 2006).

Impact of Library on Students' Academic Achievement at Hostel

According to Edem et al. (2009), a library is a space that offers instructors and students a variety of information sources and related resources, along with additional resources that support teaching, learning, and research. However, according to Akomolafe and Adesua (2016), inadequate physical facilities may have a detrimental effect on students' academic progress since they will be less motivated to learn. The library is a valuable component of education and a reader's source of information, according to the researchers (Ayaz et al., 2017). He continued by saying that having library resources on hand can help students and teachers learn more effectively by providing easy access to up-to-date information.

The Effect of the Library on Students' Academic Performance David (2014) asserts that the library offers learning suggestions to individuals as well as support the teaching and learning process. A prior study found that when an institution has a

library, computer lab, and other resources, students perform better (Mushtaq & Khan, 2012). Moreover, Adomi and Anie (2006) state that the library fosters positive interactions between educators and students.

Impact of Toilets, Bathroom and Laundry Rooms, on Academic Achievement of Students at Hostel

The study conducted by Nurul and Nazirah (2011) revealed that the primary factors influencing students' satisfaction were the accessibility and availability of Student Hostel Facilities (SHF), which included the following Student Residential Satisfaction (SRS). Based on the students' stated satisfaction in the following areas, the real experience of the class was evaluated: 1. study in the bedroom 2. Facilities for laundry, restrooms, and toilets Third, the kitchenette (pantry) 4. lobby, computer room, TV room, study and entertainment area, meeting room, and prayer room (musallla) 5. Support services include a parking lot for cars, a canteen, a small store, a mini bookshop, an automated teller machine (ATM), public phone service, CCTV surveillance, security personnel, lifts and stairs, electrical wiring, and fire safety. Based on the criteria, they found that "a substantial association between overall satisfaction and loyalty behavior is caused by the level of satisfaction of residential students."

Academic performance, well-being, and overall quality of life are all impacted by how satisfied students are with hostel amenities like internet access, kitchens, laundry rooms, and bathrooms. In the current literature, the most widely accepted definition of user satisfaction is that it is a process of comparing what was expected and what was received (Parker & Mathews,

2001). In contrast, Sawyer and Yusof (2013) categorized the amenities associated with student living into five groups: accommodations, restrooms, shops, common areas, entertainment areas, and support services.

Impact Room Size and study rooms on Students' Academic Achievement at Hostel

Suki and Chowdhury (2015) found in a previous study on hostel facility management that students achieve best academically when they can feel satisfied, which is in a calm, less crowded hostel with suitable room sizes. Students' satisfaction with the hostel's administration shows that hostels have a positive effect on their academic achievement.

Seldom have hostel physical attributes been thoroughly examined. In their assessment of student satisfaction in Turkey, Kaya and Erkip (2001) pay particular attention to ratings of room size and traffic. Students on the highest floor perceived their rooms as larger and less crowded than those on the lowest floor, he found. They also concluded that dormitory satisfaction increased as a result of students' perceptions of their privacy. Susilawati (2001) states that amenities like kitchens, laundry rooms, internet connections, bedrooms that can be used for both sleeping and studying, bathrooms, and toilets are all included in student housing and are meant to enhance the study-learning experience of the students living in on-campus dorms.

Study spaces, computer centers, TV lounges, meeting rooms, and a musalla, or Muslim prayer room, are among the amenities that Nurul et al. (2010) found to be associated with guest satisfaction. Other

amenities included in the study include pantries, study rooms, washrooms (bathrooms and laundry rooms), and leisure rooms.

Impact Electricity on the Academic Achievement of Students at Hostel

Researchers have shown that providing excellent, well-thought-out residential amenities affects students' academic performance. Complete safety, intellectual stimulation, teamwork, and student responsibilities are all required in the hostel. For instance, the cafeteria, water supply, stairwell, electrical wiring, sanitation system, and security (Hassanain, 2008).

Additionally, Oluwunmi et al. (2015) found that while students at Covenant, Bells, and Crawford Universities in Ado-Odo, Ogun State, were content with the lighting, furniture, windows, and doors in their classrooms, they were not pleased with the availability or provision of air conditioning and internet facilities. The research demonstrates that the amenities provided by dorms, particularly those pertaining to housing and university communities, have an impact on how satisfied students are.

Methodology

This chapter outlines the study's methodology, design, target population, sample size, sampling strategies, and data collection procedures. Together with ethical considerations, it also includes the validity and reliability of the study instruments.

Conceptual Framework

Conceptual Framework

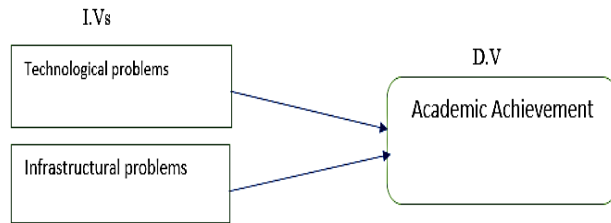


Figure # 3.1 conceptual framework

Research Design

The researcher used a quantitative (descriptive) approach to examine the effects of hostel issues on students' academic achievement at the university level. Regression analysis was used in addition to descriptive statistics (frequency, percentage). This resulted from the researcher's ability to measure variables and investigate the influence of independent variables on dependent variables through descriptive and regression analysis.

Data Collection Instruments

In order to gather data for this study, a self-constructed questioner was employed. Closed-ended questions with a 5-point Likert scale were used to identify the main issues that students in dorms faced as well as to learn more about the effects of dorm problems on students' academic performance.

Data Collection Procedure

The population of this study consisted of all the students residing in the on-campus hostels of the following three public sector universities in Quetta: Sardar Bahadur Khan Women's University, University of Baluchistan, and Baluchistan

University of Information Technology, Engineering, and Management Sciences (BUIAMS). 70 final-year students from three universities' residences and 210 students (male and female) from the population of final-year students living in on-campus dorms were selected as a sample. A sample of 25 students from the Bachelor's program, 20 from the Master's program, and 25 from the MS/MPhil program was selected. Every student had an equal chance of being chosen for the study because selection bias was prevented through the use of a simple random sampling technique. A formal consent letter delivered to the institution's head. The students completed the questionnaires. Each and every questionnaire that was distributed to respondents was filled out and promptly collected. Making prior arrangements for respondents to have time and a place to sit for approximately thirty minutes in order to complete the questionnaires was necessary in order for this to be feasible. 100% of the student questionnaires that were returned as a result of the highly successful questionnaire data collection method.

Research Findings

This section comprises data analysis and interpretation of the researcher's collected data, and the respondents' demographic characteristics are presented in this chapter. The information gathered via the questionnaire was examined using IBM SPSS, displayed in various tables and figures, and the findings were interpreted appropriately.

Demographic Characteristics of the Respondents

Table # 4.1

Gender	Frequency	Percentage
Male	38	18.1%
Female	172	81.9%
Institution		
SBKWU	70	33.3%
UOB	70	33.3%
BUIITEMs	70	33.3%
Program		
BS	94	44.9%
MASTERS	57	27.5%
MS/M.Phil.	58	27.6%
Semester		
3 rd	67	31.9%
4 th	53	25.2%
7 th	50	23.8%
8 th	25	11.9%
GPA		
1-2	78	37.1%
3-4	132	62.9%

Impact of Independent Variables on Dependent Variable

Regression analysis is applied when determining how an independent variable affects a dependent variable. The purpose of this study's regression analysis was to ascertain whether the infrastructure, facilities, technology, medical, and other independent variables could all be expected to have a meaningful impact on the dependent variable, which is academic achievement among university students. The model fit results and each component's relative contribution to the study's total variance can be found using multiple regression.

Table No 4.3. The Impact of Infrastructure on Students' Academic Achievement

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.064 ^a	.004	.001	.48450

a. Predictors: (Constant), Infrastructure

ANOVA						
Model		Sum of		Mean Square	F	Sig.
		Squares	Df			
1	Regression	.202	1	.202	.861	.354 ^b
	Residual	48.826	208	.235		
	Total	49.029	209			

a. Dependent Variable: Academic Achievement

b. Predictors: (Constant), Infrastructure

Coefficients						
Model		Unstandardized		Standardized		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.534	.108		14.266	.000
	Infrastructure	.012	.013	.064	.928	.354

a. Dependent Variable: Academic Achievement

Multiple regression analysis is used to show how the dependent variable (academic achievement) and independent variable (infrastructure resources) relate to each other in the above mentioned tables.

According to the model, the independent variable has a positive impact on the dependent variable, as indicated by the correlation coefficient "R" value of .064. With a coefficient of determination of =.001, the independent variable causes 1% of the variation in the dependent variable. Infrastructure resources have a regression coefficient (β) of 1.534, meaning that 1% of these resources make up 15% of the variance in academic achievement amongst hostel students. if other factors remain under control. The positive but statistically insignificant correlation between the

independent and dependent variables is indicated by the F value of .861 at $p.354 > 0.05$. Additionally, it is displayed that the regression model is valid.

Table No 4.3. The Impact of Technological Resources on Students' Academic Achievement

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.113 ^a	.013	.008	.48240

a. Predictors: (Constant), Technological Resources

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.625	1	.625	2.687	.103 ^b
	Residual	48.403	208	.233		
	Total	49.029	209			

a. Dependent Variable: Academic Achievement
 b. Predictors: (Constant), Technological Resources

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.511	.079		19.060	.000
	Technological Resources	.012	.007	.113	1.639	.103

Dependent Variable: Academic Achievement

In the tables above the connection between independent variable (technological resources) and dependent variable (academic achievement) is observed by running multiple regression.

It is indicated by the result of this model that the correlation coefficient “R” value is .113 which shows that independent variable has positive impact on dependent variable. The coefficient of determination “R²” is = .008 which shows that 8% of variation in dependent variable is explained by independent variable.

The technological resources regression coefficient (β) value is 1.511, meaning that a one percent increase in technological resources accounts for a fifteen percent variation in the academic achievement of students living in hostels, if other factors remain under control. The statistical insignificance of the positive correlation between the independent and dependent variables is indicated by the F value of 2.687 at $p.103 > 0.05$. The validity of the regression model is also demonstrated.

Impact of Independent Variables on Dependent Variable

- The outcomes of the multiple regression analysis for the hostel's infrastructure demonstrated the favorable influence of the independent variable—the infrastructure—on the dependent variable, which is the students' academic achievement.
- A positive effect of technology on students' academic achievement was observed as a result of the hostel's technological resources by regression analysis.

Discussion

This study has shed light on issues with technology resources and hostel infrastructure that affect the academic achievement of pupils. The study's technological resources include WIFI, electricity, and an internet connection; the study's structural resources include the library, restrooms, laundry rooms, and bedrooms. This study, which included 210 male and female students as respondents, was carried out among college students residing in on-campus dorms at three Quetta-area universities: Sardar Bahadur Khan Women's University Quetta, BUITEMS University Quetta, and

University of Baluchistan. Most of the respondents (who were living in hostels) were in their final year of M.Phil./MS, B.S. (49%) and master's program (27%).

The academic achievement of the students was the dependent variable, and the infrastructure (bedrooms, bathrooms, laundry, and library) in the hostel had a positive impact on it, according to the results of multiple regression, where the "R" value was .064. It also showed that the infrastructure had a 1% impact on academic achievement, as indicated by the "R²" = .001. Additionally, there was a positive correlation ($p = .354 > 0.05$) between the students' academic achievement and the infrastructure. Susilawati (2001) conducted a similar study and found that student accommodations include amenities like internet access, kitchens, laundry rooms, bedrooms that can be used for both sleeping and studying, and bathrooms and toilets. These features are meant to enhance the study-learning experience of students living in on-campus hostels.

Given that the "R" value for the regression of the technological resources in the hostel was .113, it was concluded that the resources had a positive effect on students' academic achievement. The 8% change in students' academic achievement caused by technological resources was demonstrated by the value of "R²" = .008. Additionally, since the p-value was .103 higher than the level of significance, it was determined that there is a positive correlation between students' academic achievement and technological resources. Many newspapers and magazines can be read online by students for pleasure or educational purposes if they have access to the Internet. While there are several ways for Tanzanian students to obtain electronic resources,

living arrangements do not offer this (Manda, 2005). The availability of Internet workstations at homes, dorms, and universities is predicted to have an impact on how much time students spend on the Internet and library websites, according to Aman (2004).

In order to assess the effects of independent variables on the dependent variable in this study, the researcher employed multiple regression analysis in addition to descriptive statistics for demographic data. Finding the model's overall fit for this investigation was made easier with the help of the regression analysis results. Therefore, in order to guarantee that students are satisfied with their education, universities must give facility management and services more consideration in light of the study's findings. The government should increase funding for higher education in accordance with the reasonable request of RS 104.983 billion made by Pakistan's higher education commission and university heads. Additionally, students must be given access to all necessary facilities in hostel.

However, the following researchers are suggested for additional study:

Future Studies

- Three public sector universities made up the study's population, and the sample size consisted of 210 hostel students. Future research, however, should have a larger sample size and a broader population.
- The three public sector university dorms were the subject of this investigation. Future research on hostels at universities in the private sector ought to be done as well.

- Research on the effects of issues related to hostels on the mental, physical, and behavioral well-being of students residing there should be undertaken in the future.
- Future research should take into account additional elements like hostel transportation, hostel staff conduct, hostel guidance and counseling, hostel restrictions, etc.

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