

The walking behaviour of staff and students on the university campus physical environment-A case study of cross river university of technology Calabar, Nigeria.

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ABSTRACT

Campus environment are most times inundated with footpath (tracks) making them unsightly, Cross River University of Technology is not an exception, this paper sought to find out the reason for these footpaths (tracks). Amongst such causes is what Spatial Interaction theory describes as the flows of people and materials between places. On its parts, the principles of least effort (Zipf's Law) in describing human behavior in space said that it is human nature to want the greatest outcome at the least amount of work. The researcher discovered that it is in an attempts to overcome the intervening distances between one activity point and another that people cross lawns to save time and reduce the distance. The study revealed that the way infrastructure such as classrooms, studios, workshops office and students hostels are located far apart on campus also encourage this footpath.

The study therefore suggest that, if there is opportunity to redesign the campus layout, most of these infrastructures should be located within the same building. Or near each other in space.

KEYWORDS: WALKING, BEHAVIOUR, CAMPUS, TRACKS, PHYSICAL ENVIROMENT, FOOTPATH.

INTRODUCTION

The campus environment is made up of physical infrastructure such as buildings, road network, electric poles, trees (flowers) etc upon which social environment (Human being) depends. The dependence of the social environment is consequent upon the fact that there are many needs and desire of those on campus (both staff and students) as well as visitors who visit the university campus for one thing or the other.

It is in view of those desires that man tries to meet on campus, that makes him or her to use the shortest possible route to catch up with that appointment and to reduce the walking time and energy spent to reach the desired destination. In an attempt to reduce the time he would use to get to the destination, man has decided to use the shortest possible road or he has to create footpaths to link up his origin and the destination on campus. Suffice this to mean that man is a moral economic man. Based on the above, Etzioni (1929:88) opins that the socio-economic behaviors of man is co-determined by utility calculations and moral consideration. As a Homo-economicus, man is characterized by self-interested and utility maximizing being.

As a Homo-sociologicus, man is a norm following and social being. However, when he is under pressure to gain time, he behaves in the opposite thereby making himself a social anomaly. The ethicality of economic behavior can be predicted by moral character of the agent and the relative cost of ethical behavior. In the predicting the ethicality of economic behavior Etzioni (1929) believes that if the moral character of the agent is strong then ethical behavior can be expected and the relative cost of ethical behavior is low. If the moral character of the agent is weak then unethical behavior can be expected and the relative cost of ethical behavior is high.

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

The search for a solution to our environmental problem is not only a matter of science in an objective sense. It is as much a matter of ideology. Values are always with us as argued by Gunnar Myrdal (1978) individuals act habitually or after consideration of competing alternatives. In both cases, it is assumed that the individual is guided by an ideological orientation. Ideology here refers to “means-ends relationships”. If the individual feels that his practical behavior deviates from his ideals or ideological orientation, then there are reasons to reconsider either ideological orientation or practical behavior or both to make them more compatible Soderbaum (1994).

Homo-economic or economic man is an individual that acts so as to maximize his well-being, given the constraints he faces. Perhaps this may be why people on campus behave in a peculiar manner by crossing lawns as the shortest routes to link their destination thereby gaining time.

Home economics is the prevalent of human behavior among economists and has also permeated other social sciences through so called rational choice theory (Lodrigues-Sicket 2009).

Although, Home economics was created by John Stuart Mill, the term was coined by Mills adversaries of the historical school (Perskey, 1995).

Another concept which helps to explain this study is the spatial interaction theory by O' Kelly. Spatial interaction theory deals with the flows of people or materials between places. The level and pattern of such interaction is a reflection of the need for movement (complementarity) and the difficulty or ease of overcoming intervening distance which serves as an impeding factor. Suffice this to mean that people and places matter (push and pull factor) distance matter, and Spatial effects such as competing opportunities, clustering and agglomeration matters. It is an attempt to overcome the intervening distance between one activity point and another that people cross lawns on campus in order moving between one activity point and another.

The “Theory of least Effort” also explains why people on campus behave in particular ways by crossing lawns. It is known as the principle of least “Effort”, it was first discovered in 1894 by a French philosopher Guillaume Ferrer. He discussed this principle in his article entitled “L'inertie Mentale et la loi de Moindre effort”. However, until 1949, the principle was proposed by George Kingsley Zipf an American professor of philology at Harvard University in his book “Human behavior and the principle of “Least Effort”. It is also known as Zipf's Law. The principle believes that each individual will adopt a course of action that will involve the expenditure of the probably Least average of his work. That it is human nature to want the greatest outcome at the least amount of work. With this phenomenon, it is presented that people often choose their entire behavior along the direction of minimizing the Effort. Basically, Zipf's law describes people's social behavior in space. This phenomenon clearly interprets why people choose the shortest track (path) by crossing lawns between one activity point and another to spend less energy and less time to get to the next point.

DATA PRESENTATION AND ANALYSIS (Materials and Methods)

MATERIALS AND METHODS: Questionnaires were used for the study. A total of 444 respondents were used for the study with the responses analyzed. A top map of the campus was produced to show the foot paths.

TABLE 1: Distribution of Sex Respondents

Sex	Frequency of Respondents	Percentage
Male	288	64.865
Female	156	35.135
Total	444	100.00

Source researchers field work 2020

From the table above a total of 500 respondents were administered questionnaires and only 444 respondents returned their questionnaire representing 88.8% response rate. Based on the 444 (88.8%) respondents who also returned their questionnaire, 288 (64.865) respondents were males, while 156 (35.135) respondents were females. This results, to a large extent depicts the fact that there are more males employees/students than females.

Table 2: Duration of stay (Schooling/work) in the University Campus.

No. of years	Frequency	Percentage
0 – 5	276	62.162
5 -10	80	18.018
10 -15	32	7.207
15 and above	12	2.703
Not Sure	44	9.910
Total	444	100%

Source: Researcher Field work 2019

Table 2 above shows the duration of the respondents stay in the campus for working or schooling 276 (62.162) respondents have stayed in the campus for a period of 5 years; 80 (18.018%) have stayed for a period of 5 -10 years; 32 (7.207%) have been in the campus between 10 – 15 years; 12 (2.703%) respondents have stayed for a period of 15 years and above. This group must definitely be workers because there is no program in school that is up to 15 years. The researcher observed with dismay that 44 (9.910%) respondents cannot ascertain how long they have stayed in the campus. This group of people either do not want to give information about how long they have stayed in the campus or they are suspicious of the purpose of the research so they will not divulge information that will implicate them. This is an ignorant group who do not know what academic researches are meant for inspite of the researcher's explanation that the research is for academic exercise.

Table 3: Year of study in the Campus

Year of Study	Frequency of Respond	Percentage
Year one	76	17.117
Year two	68	15.315
Year three	104	23.432
Year four	112	25.225
Year five	60	13.514
Undecided	24	5.405
Total	444	100%

Source: Researcher field work 2020

In table 3 above on the year of study on the campus from year one to five the students have spent different years of their study on campus meaning that they are familiar tracks in question on campus. They also have varying reasons why they use the tracks they use. Year one respondents were 76 (17.12%), year two respondents were 68 (15.2%), year three respondents were made up of 104 (23.42%) year four respondents were 112 (25.23%) and year five respondents were 60 (13.51%). Those who refused to disclose their year of study maybe because they were doing their extra year, were 24 (5.41%) respondents.

Table 4: Type of program

Type of Program	Frequency	Percentage
NCE/OND	04	0.9
HND/Degree (undergraduate)	280	63.1
Post graduate diploma	36	8.1
Graduate program (M.SC,MA/MED and Ph.D)	104	23.4
No clear program	20	4.5
Total	444	100.00

Source researchers field work 2020

Table 4 above shows the type of program that respective students respondents have registered for. As at the time of the research only 4 (0.9%) respondents were doing their NCE/OND. This could be due to the fact that the university have become a degree awarding institution. Perhaps this group of people may be working in CRUTECH and doing their programs in another institution that is awarding NCE/OND, 280 (63.1%) respondents were doing their HND programs. Again the HND students respondents maybe doing their program outside CRUTECH campus where Higher National Diploma (HND) is awarded, 36 (8.1%) respondents were doing their post graduate program. 104 (23.4%) respondents were post graduate students, doing either M.A; M.Ed; M.TECH; M.SC or Ph.D programs. Again this number adds up to those who use the tracks (shortcut) on

campus 20 (4.5%) respondents refuse to disclose their program of study. The researcher assumed the respondents in this group may be doing their extra year, having unsuccessfully completing the minimum number of years for their programs. This could be why they refuse to disclose because of the shame it carries.

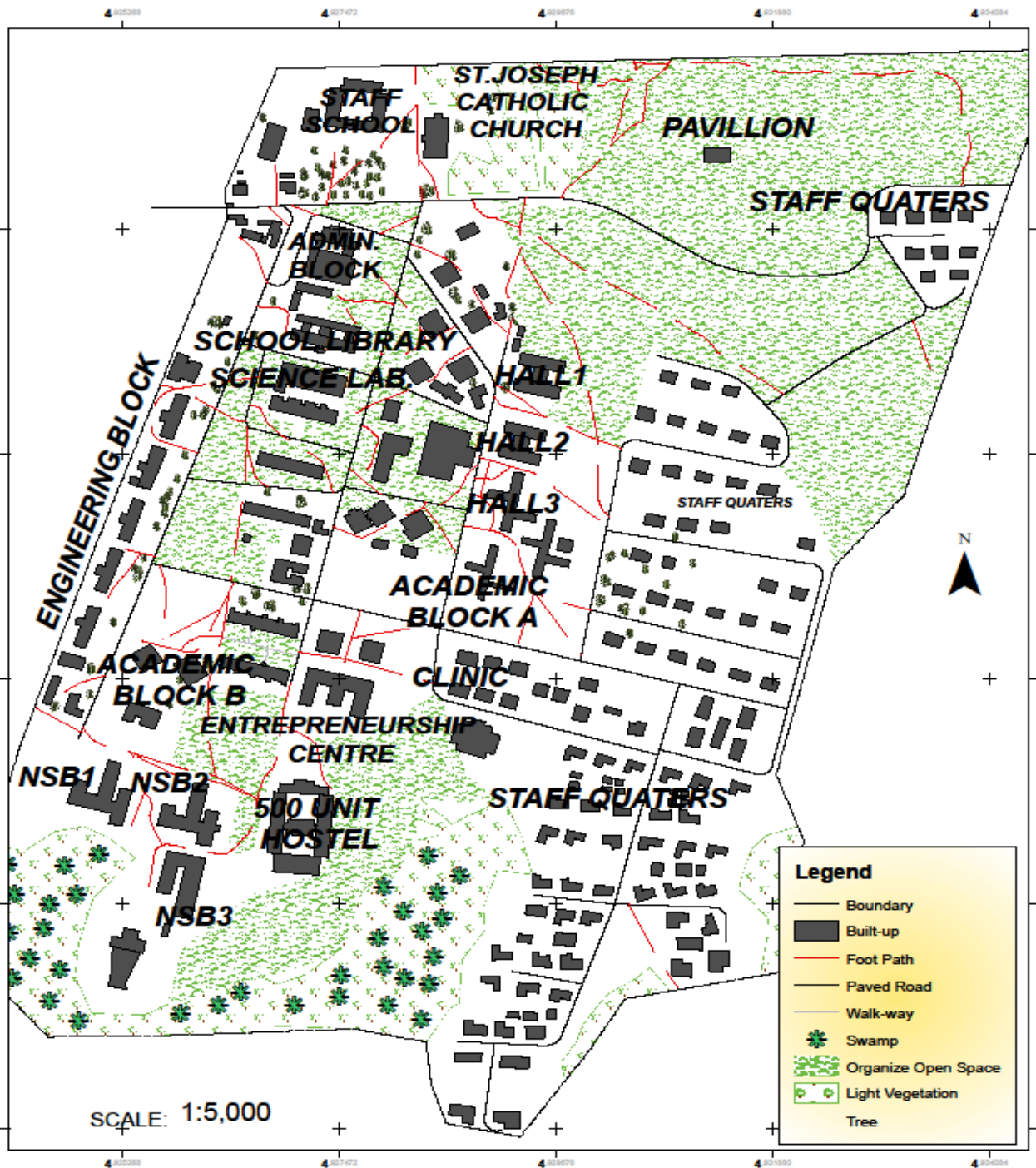


PLATE1: MAP OF THE STUDY AREA

Table 5: Respondents impression about the campus layout

Item	Responses	Frequency	Percentage
Are you satisfied with the campus layout	a. Yes	214	48.20
	b. No	180	40.54
	c. undecided	50	11.26
	Total	444	100.00

Source researchers field work 2020

A total of 214 (48.20%) respondents admitted that the campus layout is alright the way it is, while, 80 (40.54%) respondents were not satisfied with the layout of the campus and 50(11.26%) respondents have no response as to whether the layout is alright or not. They are indifferent probably because they do not have any knowledge of planning as what a university campus should look like.

Table 6: Respondents Reasons for their impression about the campus

Reasons for their opinion	Frequency	Percentage
a. the alignment of building is poor	72	16.22
b. the road network in the campus is inappropriate	96	21.62
c. lecture halls are far away from the departmental office block	88	19.82
d. the location of the offices are far from the lecture halls and studios/workshop and hostels	80	18.02
e. indifferent (no answer)	108	24.32
Total	444	100.00

Source researcher field work 2020

Table 6: above shows that respondents hold different impression about the layout and spatial distribution of facilities on campus. 72 (16.22%) hold the opinion that the alignment of building on campus are poor, not following a particular pattern. 96 (21.62%) are of the opinion that the road network on campus are inappropriate. 88 (19.82%) sees the problem with the campus that the lecture halls are too far away from the departmental administrative office block and the hostels and as such if one must reduce the time to walk from hostel to administrative office block without using any means of transportation on campus, the best way is to create short distance tracks that will link up those two points. 80 (18.02%) respondents say that the office block is far from lecture halls, studios and workshops hence their reasons for criss crossing lawns thereby creating tracks to link up the two points. The preceding two groups above add up to 168 (37.84%) respondents whose

opinion for the creation of tracks on campus is the distance between one activity point and the other. However, 108 (24.32%) are indifferent. It would be inferred that, this is an uninformed groups who do not know the reason for the tracks they see on campus or they are more interested on their studios and therefore wherever the offices or facilities are located does not really matter so long as they can get there and acquire the knowledge they came for.

Table 7: Amenities/facilities that are lacking or not appropriately located

S/N	Amenities/Facilities	Frequency	Percentage	
1	Lecture Halls	80	18.10	18.02
2	Restaurants	104	23.81	23.42
3	Campus Walkways	132	30.48	29.72
4	No Attractive Welcome Entrance	108	24.76	24.32
5	No Convenience	12	1.90	2.70
6	None of the Above	08	0.95	1.80
	Total	444	100%	99.99

Source researchers field work 2020

From table 7 above, 80 (18.02%) complained that lecture halls are either lacking or not appropriately located.

104 (23.12%) respondents complained of the location of restaurants which are either lacking or inappropriately located 132 (29.73%) complained of inadequate campus work ways. 108 (24.32%) complained of no attractive welcome entrance into campus. 12 respondents (2.70%) complained of inadequate convenience on campus which makes them criss cross the lawns to any nearby bush or house to ease themselves finally, 8 respondents (1.80%) do not, see any of the above as a problem. This may be ignorant group that do not understand while people are creating paths on the campus to save time in reaching their destination.

Table 8: Reasons why staffs/students chose to use short courses (footpaths)

S/N	Reasons	Frequency	Percentage
1	When I am late for lectures or exams	134	30.18
2	I don't want to be seen by other students	62	13.96
3	It is a shorter link to my next activity spot	118	26.58
4	Due to poor pattern of circulations	114	25.67
5	There are very few good roads on campus	14	3.15
6	Any other (specify) (Undecided)	2	0.45
	Total	444	100.00

Source: Researcher's field work 2020

From table 8 above 132 (30.18%) respondents take short courses if they are late for lectures or exams, 62 (13.96%) respondents decide to take short course when they don't want to be seen by other students.

Another 118 (26.58%) respondents take short courses because it is a shorter link to their next activity point. 114 (25.68%) take short courses because of poor pattern of circulation in the campus. This group may likely be the workers amongst the human population in the school.

In spite of the strong reasons why people take through paths on the campus, 2 (0.45%) respondents have no reasons to present for their choice route.

Table 9: Distance between the hostel and the next activity point

S/N	Distance	Frequency	Percentage
1	0.05km	28	6.31
2	0.05-1.5km	136	30.63
3	1.5-2km	216	48.65
4	Above 3km	44	9.91
5	No response	20	4.50
	Total	444	100.00

Source researcher field work: 2020

Table 9 above shows that 28 (6.31%) say that from their hostel to the nearest activity point is less than a kilometer (0.05km). This group of students may not need to use tract road to reach the next activity point because of proximity. 136 (30.63%) respondents state that their distance to the next activity point from hostel, ranges between 0.5-1.5km, this is why they need to take track roads on campus to get to their next point of activity if they will be there on time. Another group whose distance from the hostel to the next activity point is 1.5-2km 216 (48.65%) respondents. Adding this two groups whose distance is far to the next activity point we have 352 (79.28%) respondents. This implies that most people (students) on campus are far from their activity centers from the hostel. This is why they have to take tracks (footpaths) to such activity points, hence the reason for so many tracks on campus.

Those whose distance is above 2km to their next activity point is 44 (9.91%) respondents. This also add up to the last two groups of those who create tracks on campus. 20 (4.50%) respondents have no response. Such activity areas or points are sport grounds, refectory, lecture halls, studios, workshop to mention a few.

Table 10: Choice of track road based on distance to next activity

S/N	Condition for the choice of tracks	Frequency	Percentage
1	Comfortable	76	17.12
2	Not at all	76	17.12
3	Somehow	128	28.83
4	It depends on how urgent I need to be there	120	27.03
5	Undecided	44	9.90
	Total	444	100.00

Source: Researchers field work 2020

From table 10 above 76 (17.12%) people do not use any track based on what activity and time they need to move to the next point of activities, rather they use tracks based on how comfortable the tracks are to them suffice this means that some tracks are not clean or not safe while others are good to use. Also another 76 (17.12%) says that they do not use tracks based on whether they are comfortable or not. It depends on where they are going. Yet another group 128 (28.83%) respondents opines that their choice of a track to the next activity point depends on the distance to the destination whether short or long. A fourth group 120 (27.03%) says choice of the tracks they use to the next activity point depends on how urgent they need to be at the destination. However, 44 (9.90%) respondents say they do not base their choice of route (path) on anything faster. To them, it is how the situation demands.

Table 11: Estimated time to the next activity point

Source researchers field work 2020

S/N	Estimated time (Minutes)	Frequency	Percentage
1	0-5 mins	52	11.71
2	5-10	200	45.05
3	10-15	96	21.62
4	15-20	52	11.71
5	20 and above	32	7.21
6	No response	12	2.70
	Total	444	100.00

From table 11 an estimated time between one destination (activity point) and another ranges from 5 minutes to over twenty minutes. 200 (45.05%) of the respondents needs between 5-10 minutes to get to the next activity point. This population may account for the short tracks that adorn the campus. This is done in an attempt to get to their destinations in time. Their origin is based on the destination below in table 12.

Table 12: Origin of people to the activity points (e.g Lecture halls)

S/N	Origin of movement to destination	Frequency	Percentage
1	School's Main Gate	252	56.76
2	Hostels	136	30.63
3	Refectory	28	6.31
4	Departmental office block	24	5.41
5	No response	04	0.90
	Total	444	100.00

Source researcher's field work 2020

Table 12 above shows most of the movement to other parts of the campus starts from the gate. This is why 253 (56.76%) take their origin from the gate which is far away from the lecture hall/workshops/studios; 136(30.63%) move from the hostels for students who are resident on campus. Only a few move from Refectory 28 (6.31%) Departmental office block, 24 (5.41%) and a very negligible number do not have any specific origin and possibly may not have destination. These may be the group that move aimlessly on campus only to forment trouble at the slightest opportunity.

Table 13: Proposed Re-designing of the school campus

S/N	Items to correct	Frequency	Percentage
1	Bring all classrooms (Lecture hall) and core academic facilities closer together	124	27.93
2	Bring the school sport ground closer to the hostels	104	23.42
3	Ensure that core academic facilities (laboratories/studios workshops) are located closer to the offices	112	25.23
4	Every department should have enough accommodations that will not make students to move far from the next lecture hall or activity. That is, all office and lecture halls/laboratories workshop and studios should be accommodated in the same block (Note: it could be a high raise building)	104	23.42
	Total	444	100.00

Source researchers field work 2020

In order to reduce the time taken to get to the next destination or activity point, and to reduce the rate at which tracks (paths) are created in the school compound, 124 (27.93%) respondents suggested that all classrooms (lecture halls) and core academic facilities should be brought together; 104 (23.42%) respondents suggested that schools sport ground should be close to the hostels. 112 (25.23%) respondents said that the core academic facilities (laboratories/studios/workshop) are located closer to the office.

Another 104 (23.42%) said every department should have enough accommodation that will make students not move far for the next lecture or will activity.in other words all offices and lecture halls/laboratories/workshops and studios should be accommodated in the same block (Note: it could be a high rise building).

Table 14: Possession of mobility (car) to move about in the campus

S/N	Items	Frequency	Percentage
1	Yes	108	24.32
2	No	268	60.36
3	I had a car before	56	12.61
4	It is in the workshop	12	2.70
	Total		100%

Source researchers field work 2020

On the possession of mobility (car) to move about on campus, 108 (24.32%) said they have cars, 268 (60.36%) respondents do not own any mobility to move about on campus. 56 (12.61%) respondents had car before while 12 (2.70%) were in the workshop as at the time of interview. A sum total of 336 (75.57%) respondents out of 444 respondents have no car or any other means of movement on campus. This implies that for this population to get to their destination on campus on time, they must have to use tracks (footpaths), hence the proliferation of tracks on campus.

Table 15: Do you move about with car on campus

S/N	Responses	Frequency	Percentage
1	Yes	44	9.91
2	No	144	32.43
3	Not always	40	9.01
4	Except when am carrying heavy things	16	3.60
5	When I want to get to my destination quickly	32	7.21
6	When I want to get to my destination quickly	168	37.84
	Total	444	100.00

Source researcher field work

From table 15 only 44 (9.91%) respondents move about with their cars or other means of mobility on campus. This means that 400 (90.09%) respondents move about on campus without their means of transportation. Suffice this to mean that only those who have their means of transportation move on tarred lanes on the campus, the remaining fraction which is greater make use of the tracks across lawns thereby worsening the aesthetic view of the campus scenery.

Table 16: Reasons why people don't move around with their means of transportation on campus

S/N	Responses	Frequency	Percentage
1	I can use the tracks which is shorter between origins and destinations on campus	68	15.32
2	To economize my fuel	100	22.52
3	It is inconveniencing to move about with cars on campus	76	17.12
4	I don't move out of my office until close of work	40	9.00
5	My lecture halls are within the same building, so I don't move about	48	10.81
6	No response	112	25.23
		444	100.00

Source researchers field work 2020

From the foregoing in table16: respondents have various reasons why they do not move about with their vehicles on campus. 68 (15.32%) respondents prefer to use tracks because it is shorter between their origin and destination, 100 (22.52%) respondents say they want to economize their fuel in the car, 76 (17.12%) respondents say it is inconveniencing to move about with cars, 40 (9.0%) respondents say they don't move out until at the close of work, 48 (10.81%) respondents say they don't move about because their lecture halls are within the same building while 112 (25.23%) respondents do not have any response.

DISCUSSION OF FINDINGS

Over 276 (62.16) respondents out of the 444 respondents have stayed in the campus for over ten years. This group is probably those employed as workers. They are therefore familiar with the footpaths (tracks) on campus.

On respondents impression about the campus layout, only 214 (48.20%) out of the 444 sample population admitted that the campus layout is alright while over 52% are dissatisfied with the layout. Their judgment is based on poor alignment of building and the distance far apart between administrative blocks of department, their lecture halls, studios and workshops. Location of office are far from the lecture halls.

Most people on campus 268 (60.36%) out of 444 sampled population do not have cars, hence they use short courses (footpaths or tracks when they are late to the next activity point). Also those who have cars do not always moves about with their cars for personal reasons. The respondents therefore suggested that if there is another opportunity to redesign the campus, all core academic facilities should be brought closer together. Every department should have enough accommodation that will have offices and lecture halls within the same building, including studios and workshops.

CONCLUSION: It was discovered that the major reason why people cross lawns (footpaths or tracks) on campus is because of the distance between one activity point and another.

The footpath creates unsightly views of the campus environment, destroying the aesthetics. More infrastructural facilities should be provided to avoid the few ones being overstretched. Every department should be provided with all necessary amenities within the same location.

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