



STUDENT SATISFICATION IN QUALITY OF SPORTS FACILITIES IN UNIVERSITY OF KELANIYA

STAT 22542 – Survey Methods & Sampling Techniques

Department of Statistics and Computer Science

University of Kelaniya

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ACKNOWLEDGEMENT

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This endeavor would not have been possible without his help and supervision we could not have asked for a finer mentor in our studies. This initiative would not have been a success without the contributions of everyone, we were always there to cheer each other on, and that is what kept us together until the end.

I would like to thank demonstrator Mr. Nishchitha for providing many details and giving knowledge about our project and thank the university of Kelaniya for providing us to this great opportunity to work on the survey project. Finally, we are deeply grateful to everyone who has contributed to the successful completion of this project.

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INTRODUCTION

Background of the study

The topic of our survey project is” Student satisfaction in quality of sports faculties in university of Kelaniya”.

We conducted the survey on all the 1st year,2nd year,3rd year and 4th year students in Commerce and management faculty, Humanities and social science faculty, Medicine faculty, Science faculty and Technology faculty who are doing the sports Badminton, Basketball, Boxing, Carrom, Cricket, Hockey, Karate, Netball, Swimming and Volleyball.

Doing a sport is a wonderful way for university students to improve cardiorespiratory fitness, build strong bones and muscles, control weight, reduce symptoms of anxiety and depression and reduce the risk of developing health conditions such as heart disease, cancer and diabetes. And also, it teaches students the value of teamwork and encourages them to work hard and never give up. Not only that it helps students to develop discipline, dedication and commitment which are essential values for success in life while it opens a way for students to socialize and make new friends. The Department of Physical Education (DPE) provides a wide range of sports for the benefit of internal students at the University. They have given facilities to 32 sports for students to select.

As mentioned above, university has provided many facilities for students for sport activities. Hence, we wanted to identify whether students are engaging in sports, whether they have time to manage sports with academic activities and what is their satisfaction about these facilities given by the university to continue their sport activities and to upgrade their sport achievements.

For conduct this survey selecting a sample from the population we utilized the use of stratified sampling technique. Through this technique we divided the population into subgroups called stratum and then selected proportional number of participants from each stratum. Further we subgroup those gender wise too. To collect data from the selected sample, we utilized a questionnaire in the form of google form, which was an easier way to collect efficient data. Our purpose is to assess the quality, variety and overall satisfaction with the services provided for sports activities by university and use these analyses to future improvements of sports in our university.

Research Problem

Our problem was that since the university has been using sports facilities since its inception and because of the innovation of sports we wanted to know whether the existing facilities are enough for the players to do their sports activities easily and effectively and whether they can achieve success through these edible facilities given by the university itself. The main problem was are they satisfied with those facilities? Knowing that, if the facilities are not sufficient, then give solutions and gain more sport achievements to our university.

Aims and Objectives

This aims to identify areas for improvement and innovation in sports facilities. This will aid assessing the quality, variety and overall satisfaction with the services provided for sports activities by university. Additionally, this aims to empower the physical and mental wellbeing of university students. Due to a higher fraction of university students suffering from non-infectious diseases and the researchers have concluded that lack of engagement in sports has a direct impact on this issue therefore this study aims to uplift the awareness on the importance of engagement in sports.

Methodology

Strata	Strata inside	Population
01. Hockey	Boys	17
	Girls	18
02. Cricket		89
03. Volleyball	Boys	22
	Girls	19
04. Swimming	Boys	17
	Girls	16
05. Badminton	Boys	30
	Girls	36
06. Karate	Boys	25
	Girls	20
07. Carrom		35
08. Boxing		58
09. Netball		28
10. Basketball	Boys	30
	Girls	20

Population

N=452

Sample Calculation

Using proportions to calculate sample size ,

$$n = \frac{\sum_{i=1}^l N_i p_i q_i}{ND + \frac{1}{N} \sum_{i=1}^l N_i \cdot p_i q_i}$$

Hockey	$N_1 = 35$	$q_1 = \frac{417}{452}$	$p_1 = \frac{35}{452}$
Cricket	$N_2 = 89$	$q_2 = \frac{363}{452}$	$p_2 = \frac{89}{452}$
Volleyball	$N_3 = 41$	$q_3 = \frac{411}{452}$	$p_3 = \frac{41}{452}$
Swimming	$N_4 = 33$	$q_4 = \frac{419}{452}$	$p_4 = \frac{33}{452}$
Badminton	$N_5 = 66$	$q_5 = \frac{386}{452}$	$p_5 = \frac{66}{452}$
Karate	$N_6 = 45$	$q_6 = \frac{407}{452}$	$p_6 = \frac{45}{452}$
Carrom	$N_7 = 35$	$q_7 = \frac{417}{452}$	$p_7 = \frac{35}{452}$
Boxing	$N_8 = 58$	$q_8 = \frac{394}{452}$	$p_8 = \frac{58}{452}$
Basketball	$N_9 = 50$	$q_9 = \frac{402}{452}$	$p_9 = \frac{50}{452}$
Netball	$N_{10} = 28$	$q_{10} = \frac{424}{452}$	$p_{10} = \frac{28}{452}$

Taking bound of error

B=0.05

$$D = \frac{B^2}{4} = \frac{(0.05)^2}{4} = 6.25 \cdot 10^{-4}$$

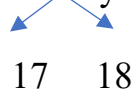
Sample size of strata

Hockey	$35 \times \frac{417}{452} \times \frac{35}{452} = 9.756 = 10$
Cricket	$89 \times \frac{363}{452} \times \frac{89}{452} = 24.809 = 25$
Volleyball	$41 \times \frac{411}{452} \times \frac{41}{452} = 11.429 = 12$

Swimming	$33 \times \frac{419}{452} \times \frac{33}{452} = 9.199 = 10$
Badminton	$66 \times \frac{386}{452} \times \frac{66}{452} = 18.398 = 19$
Karate	$45 \times \frac{407}{452} \times \frac{45}{452} = 12.544 = 13$
Carrom	$35 \times \frac{417}{452} \times \frac{35}{452} = 9.7566 = 10$
Boxing	$58 \times \frac{394}{452} \times \frac{58}{452} = 16.168 = 17$
Baseball	$50 \times \frac{402}{452} \times \frac{50}{452} = 13.938 = 14$
Netball	$28 \times \frac{424}{452} \times \frac{28}{452} = 7.805 = 8$

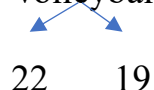
Strata inside

Hockey=35 n=10 $B=10 \times \frac{17}{35} = 4.85 \longrightarrow 5$



$G=10 \times \frac{18}{35} = 5.1428 \longrightarrow 6$

Volleyball=41 n=12 $B=12 \times \frac{22}{35} = 6.439 \longrightarrow 7$



$G=12 \times \frac{19}{35} = 5.5609 \longrightarrow 6$

Swimming=33 n=10 $B=10 \times \frac{17}{33} = 5.15 \longrightarrow 6$



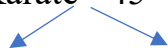
$G=10 \times \frac{17}{33} = 4.848 \longrightarrow 5$

Badminton=66 n=19 $B=19 \times \frac{30}{66} = 8.6363 \longrightarrow 9$



$G=19 \times \frac{36}{66} = 10.363 \longrightarrow 11$

Karate =45 n=13 $B=13 \times \frac{25}{45} = 7.222 \longrightarrow 8$



25 20

$$G=13 \times \frac{20}{45}=5.777 \longrightarrow 6$$

Basketball=50

n=14

$$B=14 \times \frac{30}{50}=8.4 \longrightarrow 9$$

30 20

$$G=14 \times \frac{20}{50}=5.6 \longrightarrow 6$$

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Academic Year	Count of Academic year
1st year	53
2nd year	56
3rd year	22
4th year	4
Grand Total	135

faculty	No of undergraduates
Commerce and management	43
Humanities and social sciences	13
Medicine	4
Science	71
Technology	4
Grand Total	135

No of respondents	Count of Sport
Badminton	21
Basketball	22
Boxing	4
Carrom	7
Cricket	25
Hockey	16
Karate	17
Netball	8
Swimming	10
Volleyball	5
Grand Total	135

Row Labels	Count of Time spent per week
1-3 hours	62
3-6 hours	51
6-9 hours	15
More than 9 hours	7
Grand Total	135

Count of Availability of time slots				
Column Labels				Grand Total
Faculty	Maybe	No	Yes	
Commerce and management	13	12	18	43
Humanities and social sciences	3	4	6	13
Medicine	1	2	1	4
Science	10	33	28	71
Technology		2	2	4
Grand Total	27	53	55	135

Count of Availability of time slots				
Column Labels				Grand Total
Academic Year	Maybe	No	Yes	
1st year	14	18	21	53
2nd year	7	26	23	56
3rd year	6	7	9	22
4th year		2	2	4
Grand Total	27	53	55	135

Count of Availability of equipments						
sport	Column Labels					Grand Total
	1-very satisfied	2-satisfied	3-neutral	4-dissatisfied	5-very dissatisfied	
Badminton	2	2	15	1	1	21
Basketball	2	5	9	4	2	22
Boxing		1	2		1	4
Carrom		2	3	1	1	7
Cricket		13	10	2		25
Hockey		4	9	3		16
Karate		2	9	4	2	17
Netball		1	1	3	3	8
Swimming	5	1	4			10
Volleyball	2		2	1		5
Grand Total	11	31	64	19	10	135

Count of Cleanliness of sanitary facilities	Column Labels					
Gender	1-very satisfied	2- satisfied	3- neutral	4-dissatisfied	5-strongly dissatisfied	Grand Total
Female	5	17	18	7	5	52
Male	6	14	18	26	19	83
Grand Total	11	31	36	33	24	135

Count of Cleanliness of equipments and play areas	Column Labels					
Sport	1- vey satisfied	2- satisfied	3- neutral	4- dissatisfied	5-very dissatisfied	Grand Total
Badminton	3	6	10		2	21
Basketball	4	8	6	4		22
Boxing		3	1			4
Carrom		2	4	1		7
Cricket		1	3	11	10	25
Hockey	1		2	8	5	16
Karate	1	6	8	2		17
Netball	3	1	3	1		8
Swimming		2	2	4	2	10
Volleyball	1		3	1		5
Grand Total	13	29	42	32	19	135

Count of Modernity of equipments	Column Labels				
Sport	1-extremly outdated	2- outdated	3- moderate	4-moderately modern	Grand Total
Badminton	4	2	13	2	21
Basketball	7	7	8		22
Boxing	1	1	2		4
Carrom	1	1	4	1	7
Cricket	5	12	6	2	25
Hockey		6	6	4	16
Karate	1	1	13	2	17
Netball		6	2		8
Swimming	6	1	3		10
Volleyball	2	1	1	1	5
Grand Total	27	38	58	12	135

Count of Accessibility of play areas	Column Labels					
Sports	1-very satisfied	2-satisfied	3-neutral	4-dissatisfied	5-very dissatisfied	Grand Total
Badminton		5	13	2	1	21
Basketball	1	10	7	2	2	22
Boxing	1	1	1		1	4
Carrom			4	2	1	7
Cricket	1	2	11	9	2	25
Hockey		1	1	12	2	16
Karate	1	8	6	1	1	17
Netball		2	3	3		8
Swimming	1				9	10
Volleyball	3	1	1			5
Grand Total	8	30	47	31	19	135

Count of Availability of sanitary facilities	Column Labels					
Gender	1-very satisfied	2-satisfied	3-neutral	4-dissatisfied	5-very dissatisfied	Grand Total
Female	7	14	15	9	7	52
Male	5	16	21	31	10	83
Grand Total	12	30	36	40	17	135

Count of Professionalism of coaches	Column Labels					
Sport	1-very satisfied	2-satisfied	3-neutral	4-dissatisfied	5-very dissatisfied	Grand Total
Badminton	4	2	3	4	8	21
Basketball	6	5	6	4	1	22
Boxing	1	1	1		1	4
Carrom		1	5		1	7
Cricket		5	18	2		25
Hockey	3	7	5	1		16
Karate	3	4	1	7	2	17
Netball	6	1	1			8
Swimming		3	5		2	10
Volleyball	2	2			1	5
Grand Total	25	31	45	18	16	135

Response	Count of Need of additional staff
Maybe	41
No	24
Yes	70
Grand Total	135

Response	Count of Does the academic time table interrupt your practice sessions?
No	43
Yes	92
Grand Total	135

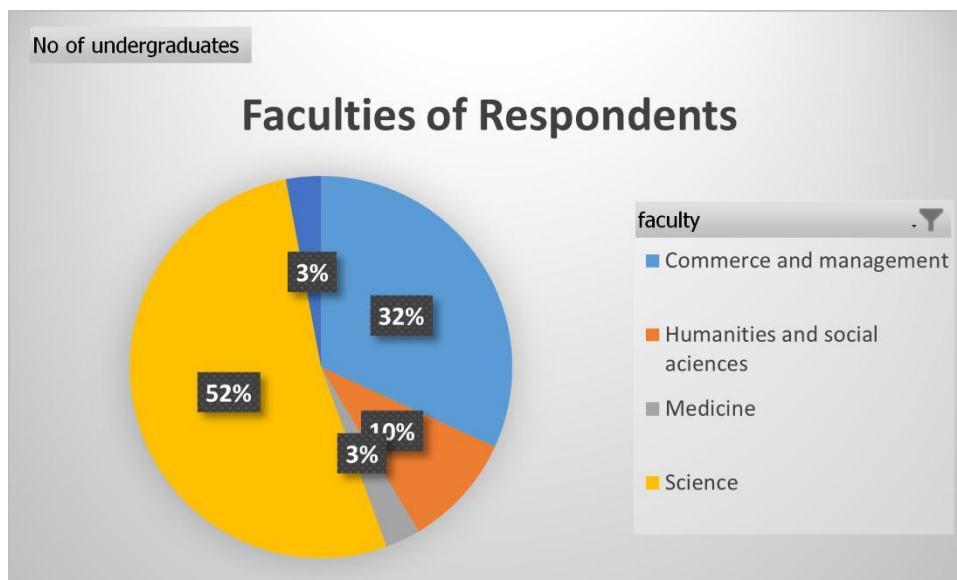
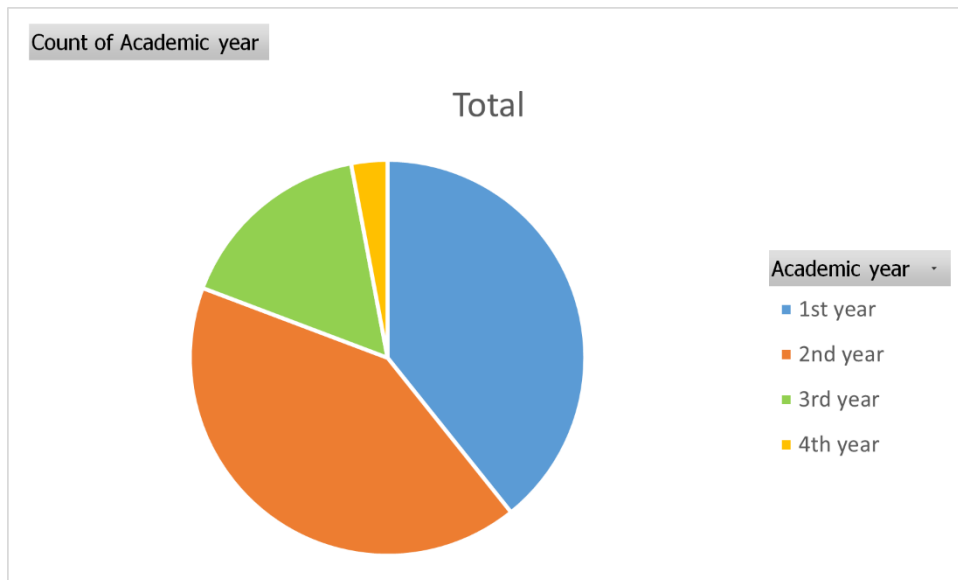
Count of Does the academic time table interrupt your practice sessions?	Column Labels		
Sport	No	Yes	Grand Total
Badminton	8	13	21
Basketball	7	15	22
Boxing	1	3	4
Carrom	2	5	7
Cricket	10	15	25
Hockey	4	12	16
Karate	5	12	17
Netball	4	4	8
Swimming	1	9	10
Volleyball	1	4	5
Grand Total	43	92	135

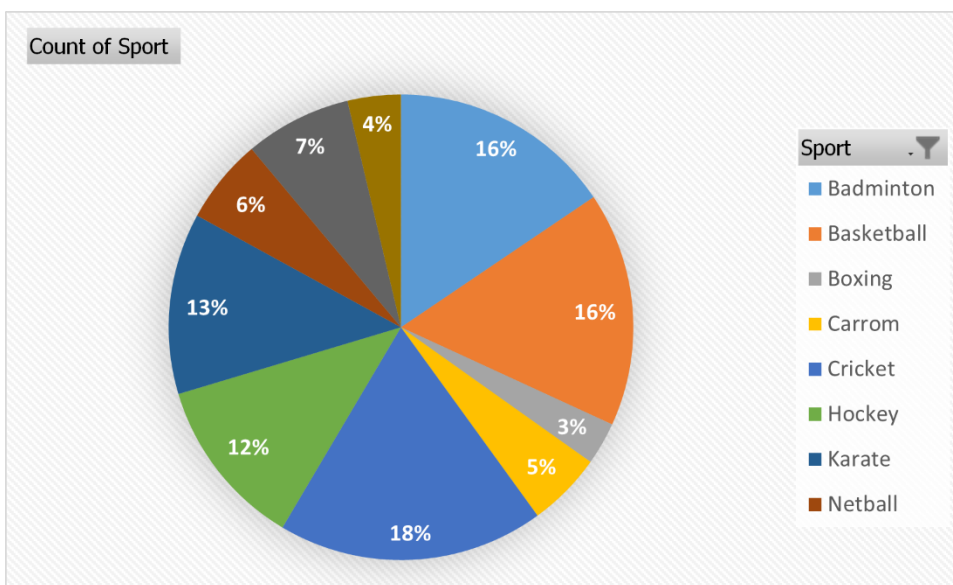
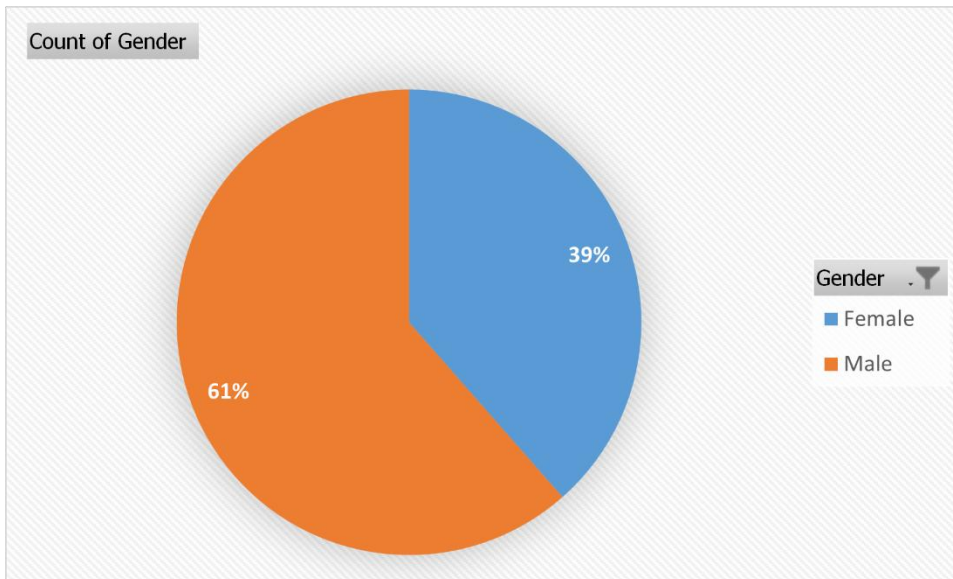
Count of satisfaction towards the organization of sport events and tournaments	Column Labels					Grand Total
Sport	1	2	3	4	5	Grand Total
Badminton		5	11	2	3	21
Basketball	1	3	8	8	2	22
Boxing	2			1	1	4
Carrom		1	5	1		7
Cricket		10	14	1		25
Hockey	1	6	7	1	1	16
Karate	3	5	5	4		17
Netball	3	1	1	1	2	8
Swimming		2	1	4	3	10
Volleyball	1	1	1	1	1	5
Grand Total	11	34	53	24	13	135

Response	Count of Continuing the sports activities in the coming academic year
Maybe	36
No	12
Yes	87
Grand Total	135

Response	Count of Recommending sports to freshers
very likely	58
likely	29
moderate	30
unlikely	10
very unlikely	8
Grand Total	135

ANALYSIS AND INTERPRETATION



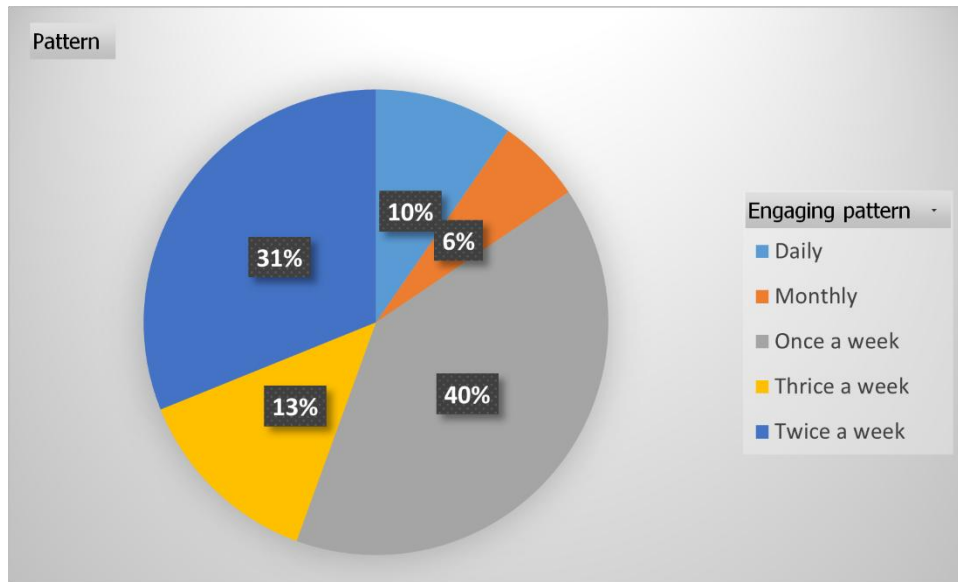


This pie chart shows the percentages of undergraduates who responded to the survey faculty wise. According to this pie chart we can see that most of the respondents are from science faculty with the lowest respondents are from commerce and management faculties with a stable percentage of 3%. We can conclude that students of science faculty have given their full support to this survey than comparing to the other faculties

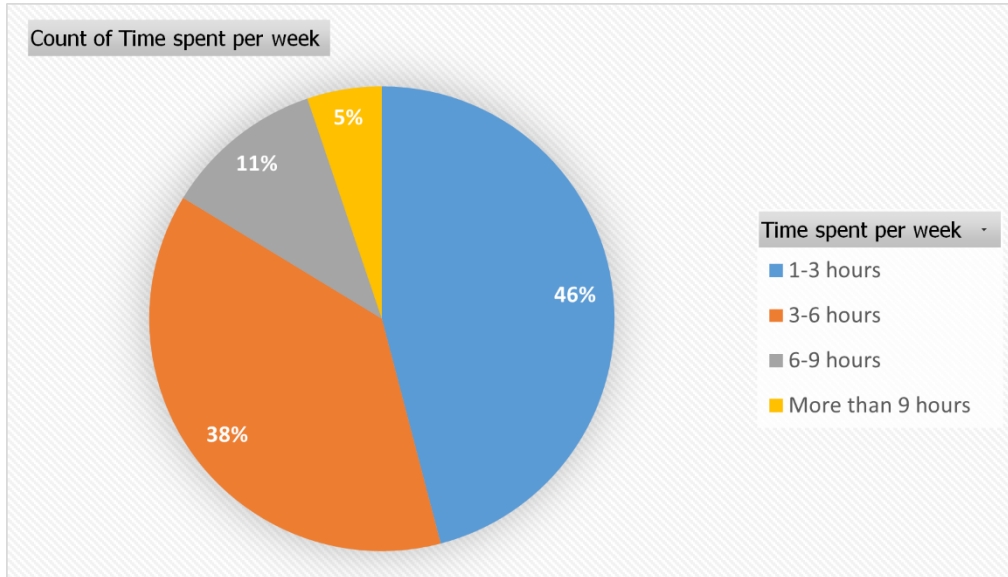
This pie chart shows the count of gender of students engaging in sports, who responded to the survey. According to the pie chart we can see that most of the respondents who does a sport are female with 61% while the male respondents percentage remains low with 39%. We can conclude that females prefer to do sports and respond to surveys based on sports is greater than the males in university of Kelaniya.

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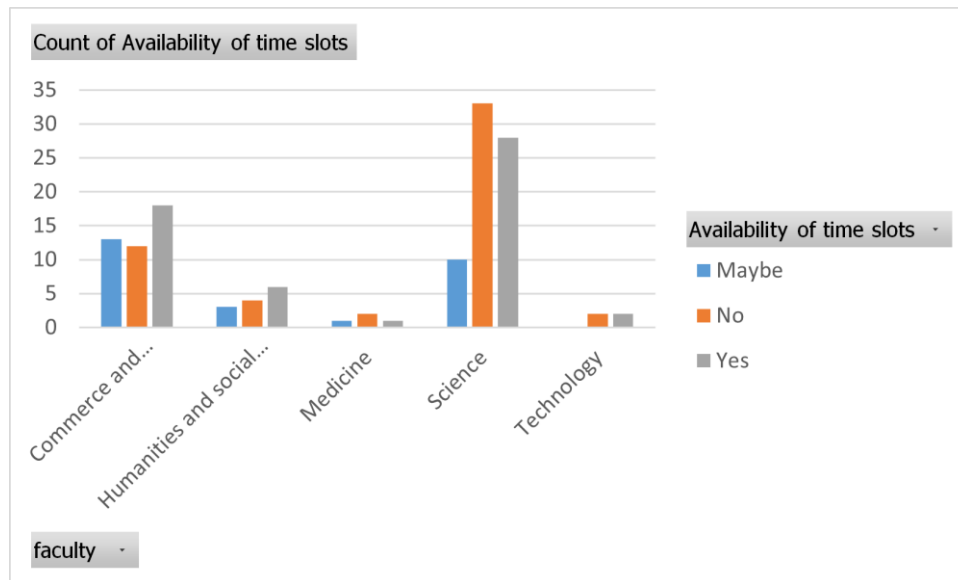
This pie chart shows the number of undergraduates attending each sport in the University of Kelaniya. By referring to this pie chart we can see that the number of students doing each sport are equally likely spread among the eight sports that we considered for this survey project. But cricket is the most popular sport among the students in the university of Kelaniya while the least popular sport is Netball. And also, we can see number of sports like badminton and Basketball are average popular among students



This pie chart shows the percentage of practice attending pattern of undergraduates in university of Kelaniya. According to this pie chart we can conclude that most of the students are engaging in sport practices only once a week with 40% and 31% of them engage in sport activities twice a week. Only 10% are engaging in practices daily. So, we see that most of the students don't have much time to spend on doing a sport in university of Kelaniya with their academic stuff.



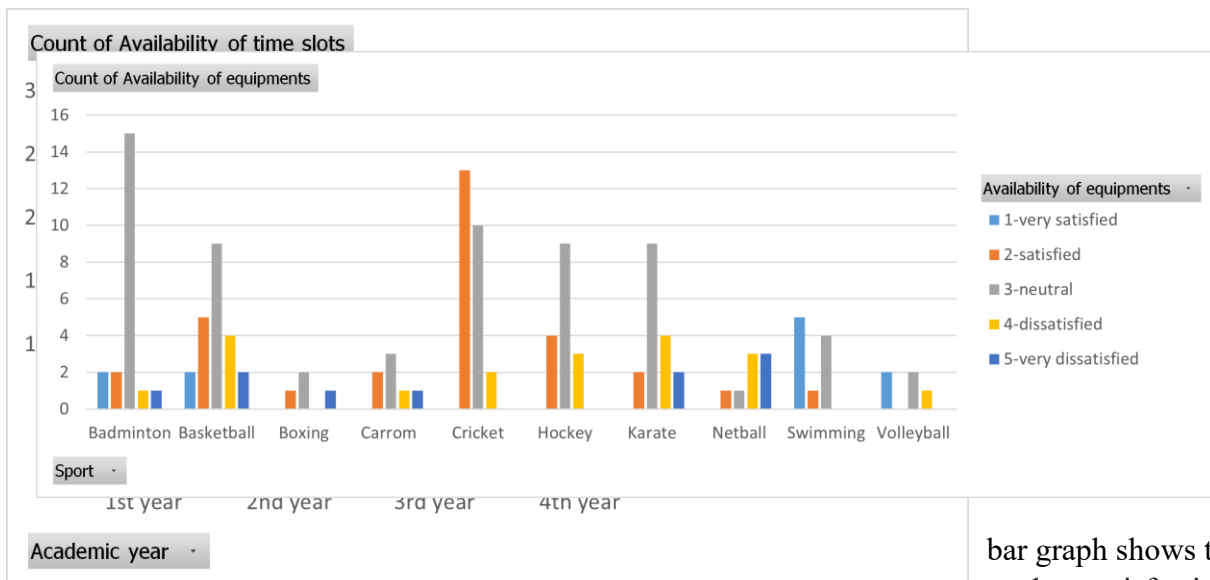
This pie chart shows the percentages of time spent to engaging in a sport by an undergraduate in university of Kelaniya. From this pie chart we can see that most of the students just engage in sport activities 1-3 hours per week while the second most of the students just spend 3-6 hours per week. It is less proportion of time for a sport to be success in achievements at all. We can conclude that most of the students have a less interest in engaging in practices neither from engaging pattern nor count of time spent.



This student towards of time

practices in each faculty. When comes to faculty of science more number of students dissatisfied about the availability of time slots while commerce and management students have satisfied.

graph shows satisfaction the availability slots needed for

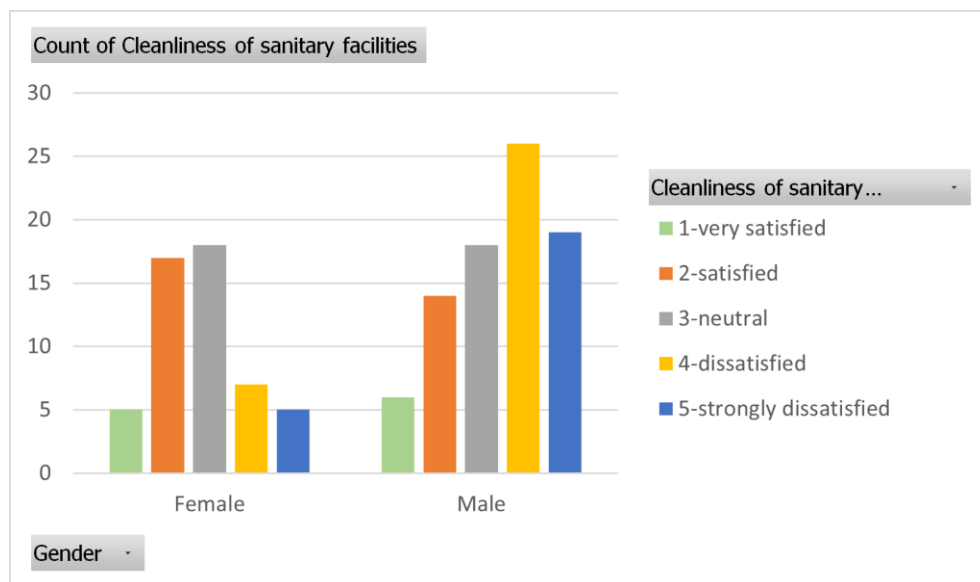


This

towards the availability of time slots needed for practices in each academic year. When comes to 1st and 2nd years students don't have enough time to engage in sports. So, we can conclude that there is a large dissatisfaction among students about the available time that they have to do practices.

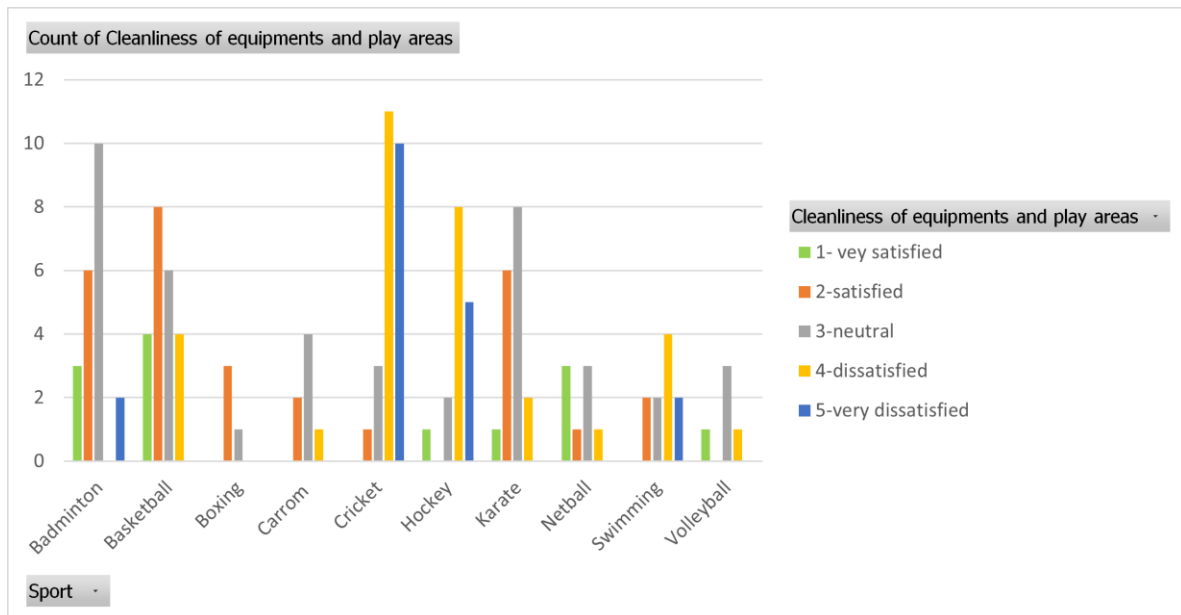
bar graph shows the student satisfaction

This bar
the
towards
of sport



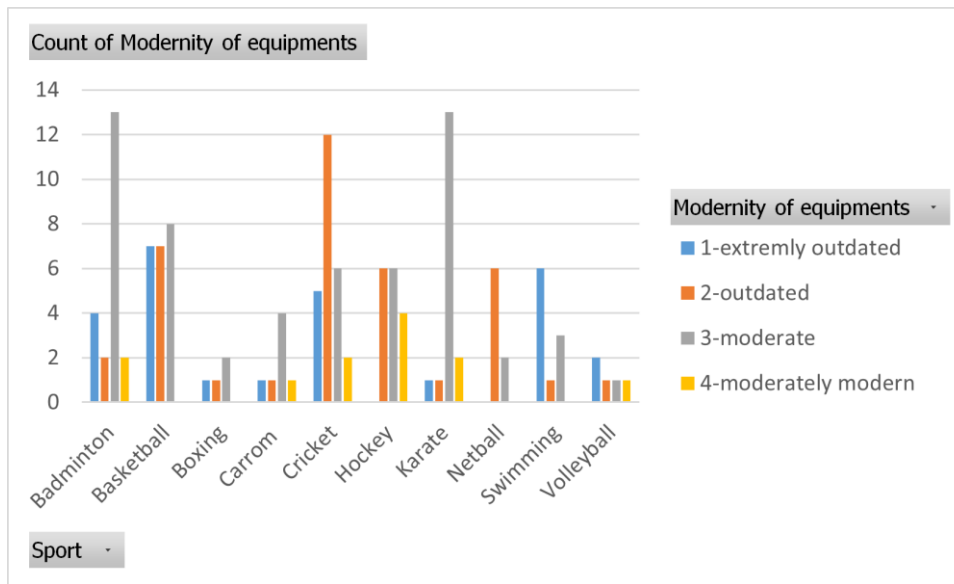
graph shows
student
satisfaction
the availability
equipment in
university of
Kelaniya, We

can see that most of the responses are within the area dissatisfied and strongly dissatisfied. So, we can conclude that the students are not satisfied with the sport equipment that available in the university



This bar graph shows the satisfaction on cleanliness of sanitary facilities given to the student who are doing sports in university of Kelaniya. According to the bar graph we can see that most of the male students are dissatisfied about the given cleanliness and sanitary facilities .From the overall analysis we can conclude that students are not satisfying about the cleanliness of sanitary facilities given by the university

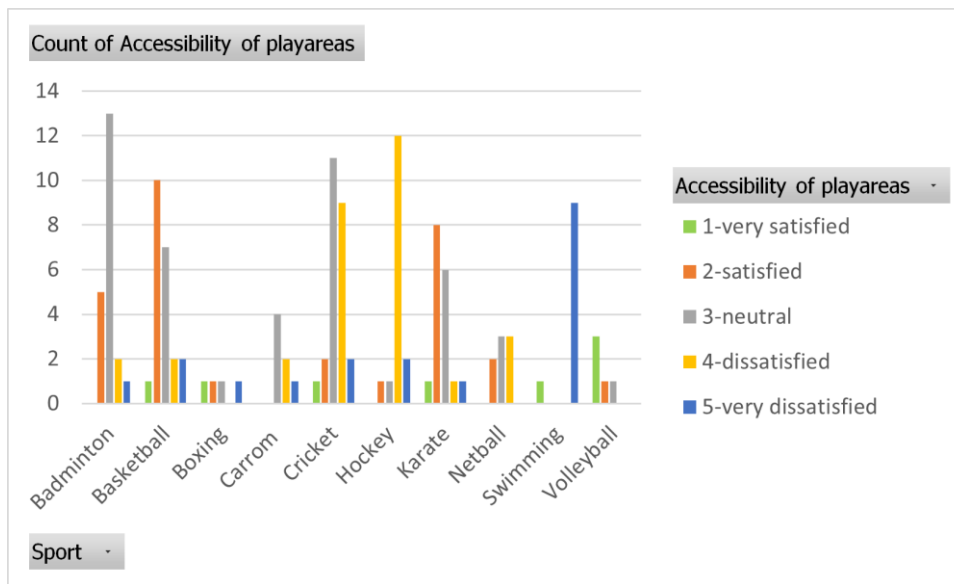
This student play each of overall graph Most



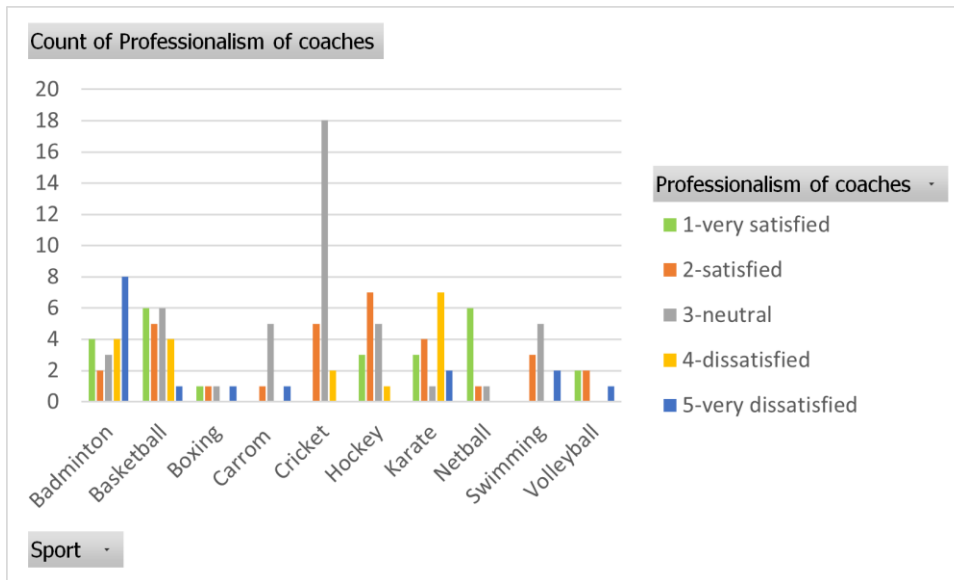
bar graph represents the satisfaction towards the cleanliness of equipment and areas available for sport in university Kelaniya. By analyzing the spread of the bar we can see that of the students

who engage in sports are not satisfied about the cleanliness of equipment and play areas that available. The conclusion is through the innovation of sports the equipment and the play areas also should be innovated

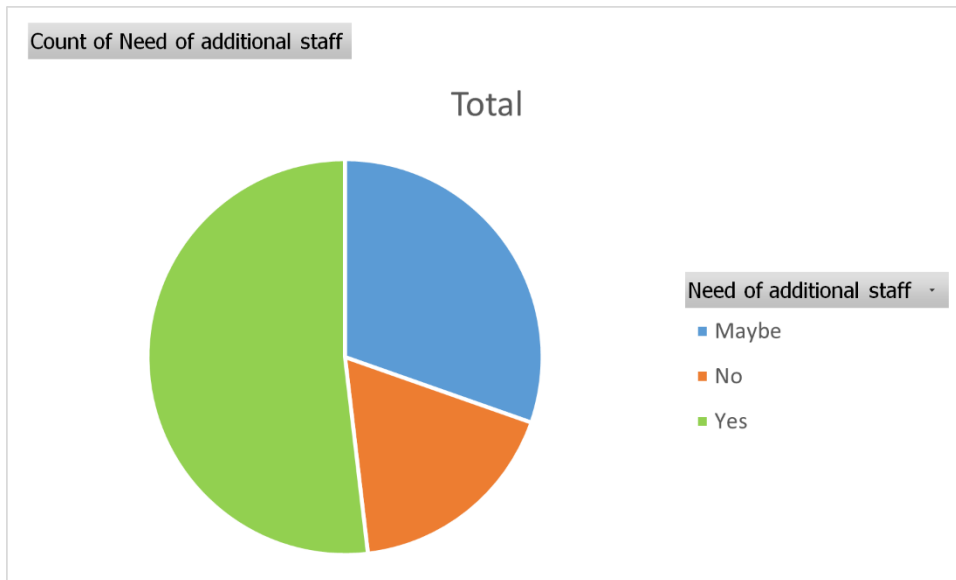
This bar graph represents the satisfaction about the Modernity of sport equipments in university of Kelaniya. According to the bar graph we can see that some sports like cricket, basketball and swimming have more equipments of outdated while only Badminton and karate have moderate equipments. On average we can conclude that in most of the sports students are dissatisfied about the less modernity of the sport equipments that they are given from the university.



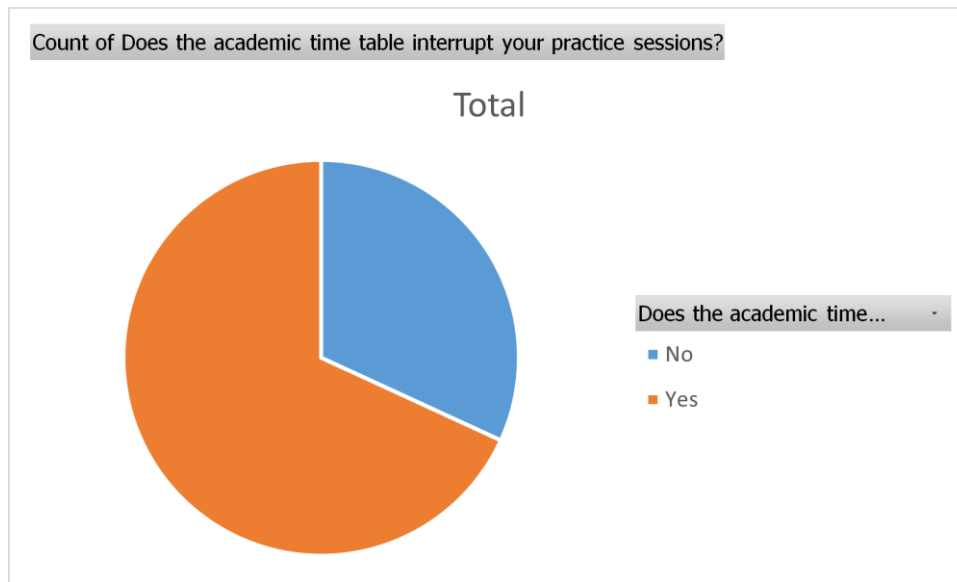
This bar graph represents the satisfaction towards the accessibility of play areas in university of Kelaniya. In swimming we can only see a dissatisfaction among students because they don't have a swimming pool in the university premises. But in Volleyball students most of the students are fully satisfied about their play area. Either Volleyball players are satisfied, according to the overall sports there is a dissatisfaction among students about the play areas that they are given from the university.



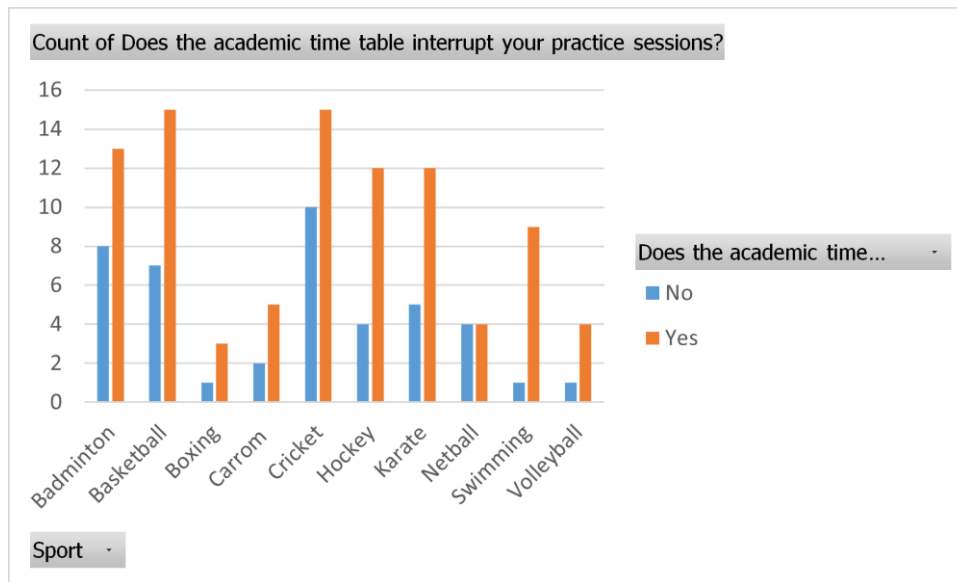
This bar graph represents the satisfaction of students towards the professionalism of coaches in sports in university of Kelaniya. In here we can see a considerable dissatisfaction only in Badminton while in other sports we can see a most of students have a average satisfaction about the professionalism of their coaches. So we can conclude that on average students are satisfied about the professionalism of their coaches in the university.



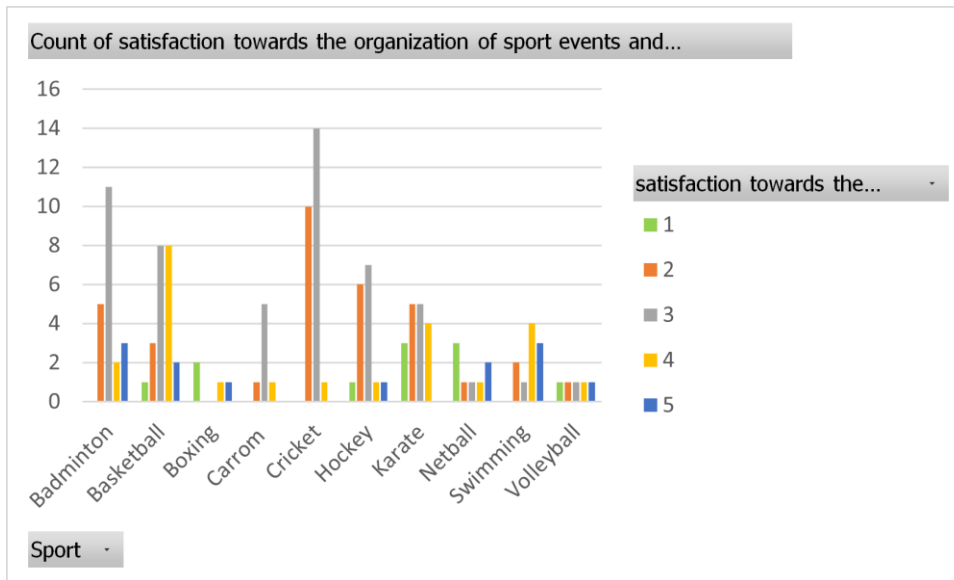
This pie chart represents the student's intention about the need of an additional staff member to manage sports in university of Kelaniya. According to the pie chart most of the students say that it is better to have additional staff for the sport management. The conclusion is students will be more satisfied if the university increase the number of staff members in sport management.



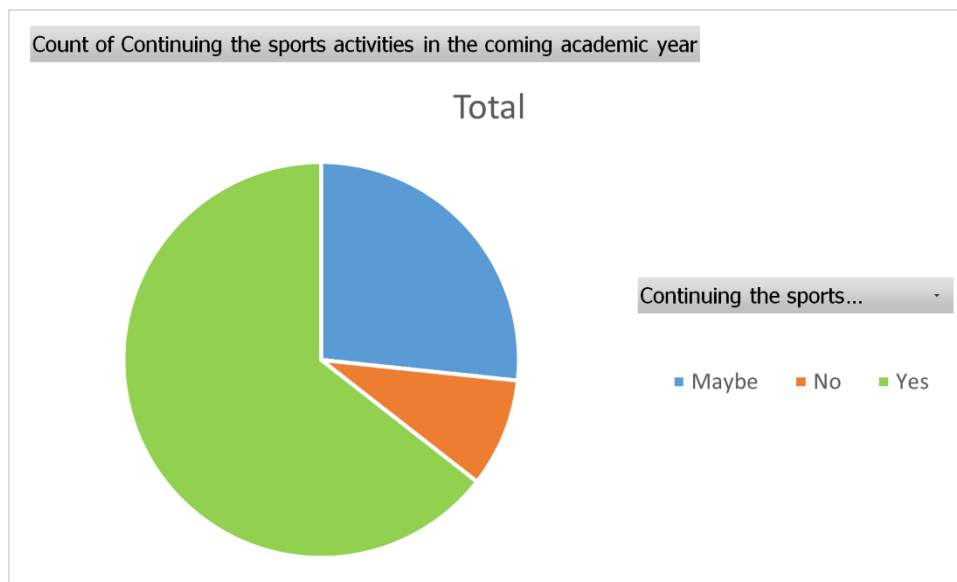
This pie chart shows the impact of academic time table to students' practice sessions. Most of the students' opinion is that the academic time table does interrupt their practice sessions. So, we conclude that there should be a renewal of the academic timetable.



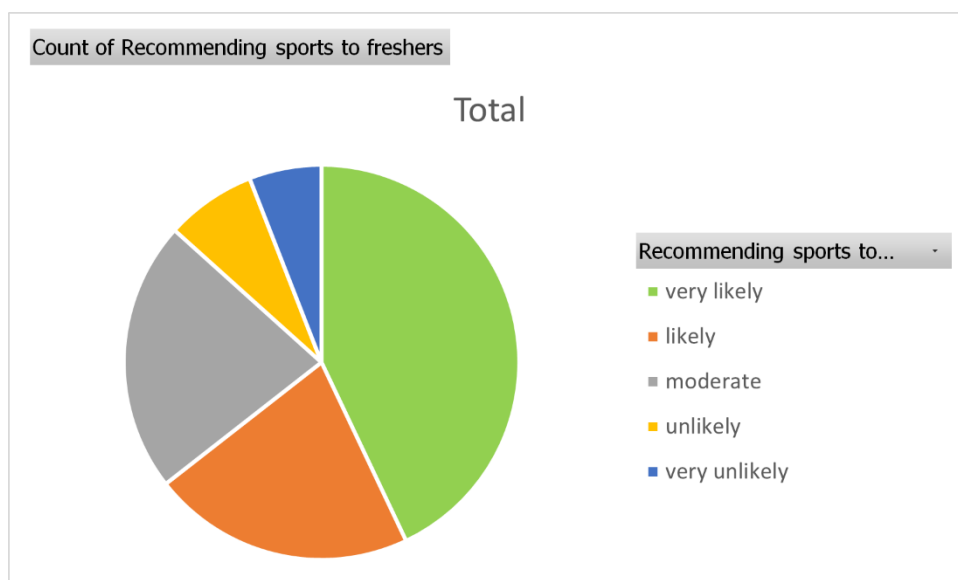
This bar graph represents the impact of academic time table for each sport separately in university of Kelaniya. We can see a considerable interruption from academic time table to the practice session of each and every sport. This confirms further that there should be a rearrangement of academic time table.



This bar graph shows the student satisfaction towards the organization of sport events in university of Kelaniya. According to this we can conclude that In each sport most of the students are satisfied about the organization of sports events in the university except volleyball and swimming.



This pie chart represents the students' decision on whether or not to hold sports next in academic year. According to the pie chart we see that most of the students are willing to continue their sport activities in next academic year onwards.



This pie chart shows the students' recommendation of sports to the freshers in university of Kelaniya. It shows that most of the students highly recommend their juniors to engage in sports while the minority say that not to engage in sports to freshers. According to our conclusion we say that most of the undergraduates recommend sports to their freshers.

Overall conclusion drawn from all graphs

According to the scope of the above graphs, our overall conclusion is that the students do not have enough time to engage in sports activities due to the amount of learning activities. Moreover it is clear that they cannot be satisfied with the availability, innovation and cleanliness of sport equipments and playing stations too. However, in the face of these obstacles it seems that their insertion is to continue to engage in sport activities and to recommend freshers to engage in sports.