GROUP NO: 7

ANALYSIS OF THE TV VIEWING EXPERIENCE OF XAVIERITES

GROUP NO: 7

ST. XAVIER'S COLLEGE- AUTONOMOUS, MUMBAI

DEPARTMENT OF STATISTICS

TYBSC- GROUP PROJECT

TITLE OF THE PROJECT: TV Series and You

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GROUP NO: 7

Aim:

To study the TV series viewing experience of Xavierites.

Purpose:

Entertainment is an essential facet of life. In recent times we have witnessed an increase in the number of various TV series viewing platforms which offer diverse options to the viewers. The purpose of this survey is to understand the industry and to identify what Xavierites prefer to view in their leisure time. We want to know what keeps people absorbed in some series and leave some unfinished. This survey could be valuable to the entertainment industry.

Objectives:

- To find the time spent by Xavierites on TV series
- To study the effect of time spent in watching TV series on their grades
- To identify which genre is most preferred among Xavierites
- To identify the popularity of different viewing platforms among Xavierites
- To analyse the expenditure by Xavierites on various platforms
- To analyse the viewing pattern of TV series by Xavierites

Target Population:

Students pursuing a graduate degree from St. Xavier's College, Mumbai.

Sample Size:

We are considering a random sample of size 100 to conduct the analysis.

Confidentiality Clause:

This survey is only for the purpose of studying the TV series viewing experience among the students of St. Xavier's College. All information will remain strictly confidential and will solely be used for statistical research. Your sincere and honest response will be greatly appreciated.

GROUP NO: 7

STATISTICAL ANALYSIS

INTRODUCTION

In the age of technology, digital media companies like Netflix, Hotstar, Amazon Prime, etc. are steadily raking in the profits due to the growing appeal of TV shows. Thus, the main aim of our study was to understand the viewing patterns and all other factors that contribute to the TV viewing experience. Through our questionnaire, we aimed to understand the reasons behind choosing to view or to discontinue TV shows among various other objectives.

For our sample, we chose a hundred Xavierite students from the degree college. This was done by assigning a number to each student and then proceeding to select a random sample in Microsoft Excel. Hence, we opted for a random sample to minimize bias rather than a stratified random sample in which there would be equal number of students from each stream. The responses were then collected through WhatsApp with the help of Google Docs.

Although our aim was to collect 100 responses, there were a few non respondents as well as a couple of people who couldn't be contacted. Thus, our final sample size turned out to be 92. Out of which 31 are males and the rest are females. As mentioned above, since we didn't opt for stratified random sampling, the number of students in each stream are not equal in our sample. BA and BSc had the most representation with 34 and 30 students respectively. BMM came in third with 10 students. BSc (IT), BMS and BVoc had 8,7 and 3 respondents respectively. Similarly, the sample comprises of 30 Third Year students, 25 Second Year students and 26 from the First Year.

The following analysis is for the first objective i.e. time spent by Xavierites watching TV shows. The respondents were asked how frequently they watched TV shows and consequently how many hours they spent with regards to the previous question.

ANOVA was used to analyze if there is a significant difference in the time spent by FY, SY and TY students. ANOVA or Analysis of variance is a compilation of different statistical methods used to check if there is a significant difference between various groups. It relies on simple algebraic calculations.

We first start by formulating our null hypothesis. The null hypothesis states that there is no significant difference between the groups being analyzed. The alternative hypothesis states that the groups are significantly different.

SOURCE	DF	SS	MSS	FCAL	FTAB
Treatment	2	2722.902779	1362.45	0.2611	3.111
Error	78	406622.6532	5213.1109		
Total	80	409345.556			

Since we have three years, i.e. FY, SY and TY, our df or degrees of freedom for treatment will be 2. Similarly, we have a total of 81 responses. Hence are total df will be 80.

Our test statistic follows F distribution. The decision criteria is to reject the null hypothesis if Fcal > Ftab at 5% level of significance. The Ftab value is obtained from the F distribution table. From the table it is evident that our Fcal value is less than the Ftab value. Hence, we **do not reject** our null hypothesis.

This means that there is no significant difference in the time spent by students studying in the three years of degree college on tv shows. Hence, the year of education doesn't necessarily affect the decision of how much time one should spend on watching TV shows.

For this objective a few of the responses couldn't be included in the analysis due to vague answers provided by those respondents. They include, "there are more important things in life", "in the vacation", "whenever I want" and so forth.

In addition, the total average time spent by a Xavierite on TV shows is 82 minutes daily, which is around an hour and a half. Average time spent by first year students on TV shows is 90 minutes, whereas second year students spend about 82 minutes. Similarly, final year students spend around 75 minutes of their time per day on TV shows.

GROUP NO: 7

In order to analyze the objective to study the effect of time spent by Xavierites in watching TV series on their respective grades, we proceeded by evaluating the Karl Pearson's Correlation Coefficient between the time spent per day in minutes in watching TV series and the percentage of marks scored.

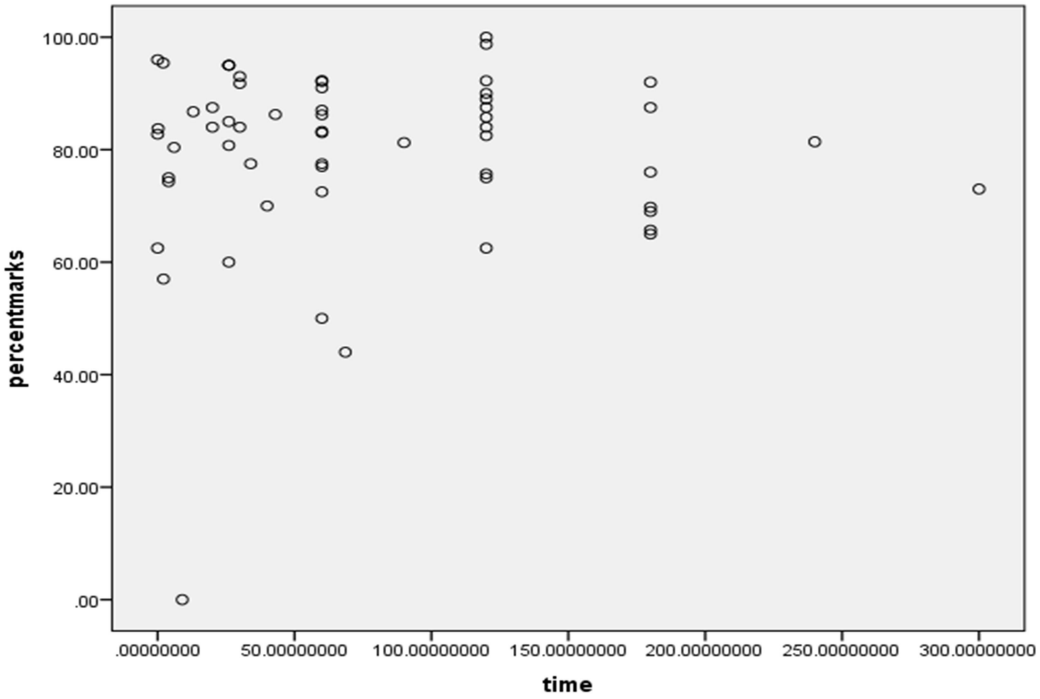
Correlation Table

		time	percent
time	Pearson Correlation	1	.034
	Sig. (2-tailed)		.800
	N	57	57
percent	Pearson Correlation	.034	1
	Sig. (2-tailed)	.800	
	N	57	57

It is evident from the above table that the correlation coefficient (r) is **0.034** which is a very small number almost close to 0 indicating that time spent in watching TV series and grades have a **very low positive correlation.**

The scatter plot for the same is given below. It can be seen that the points are scattered and do not form any pattern indicating a very low correlation.

GROUP NO: 7

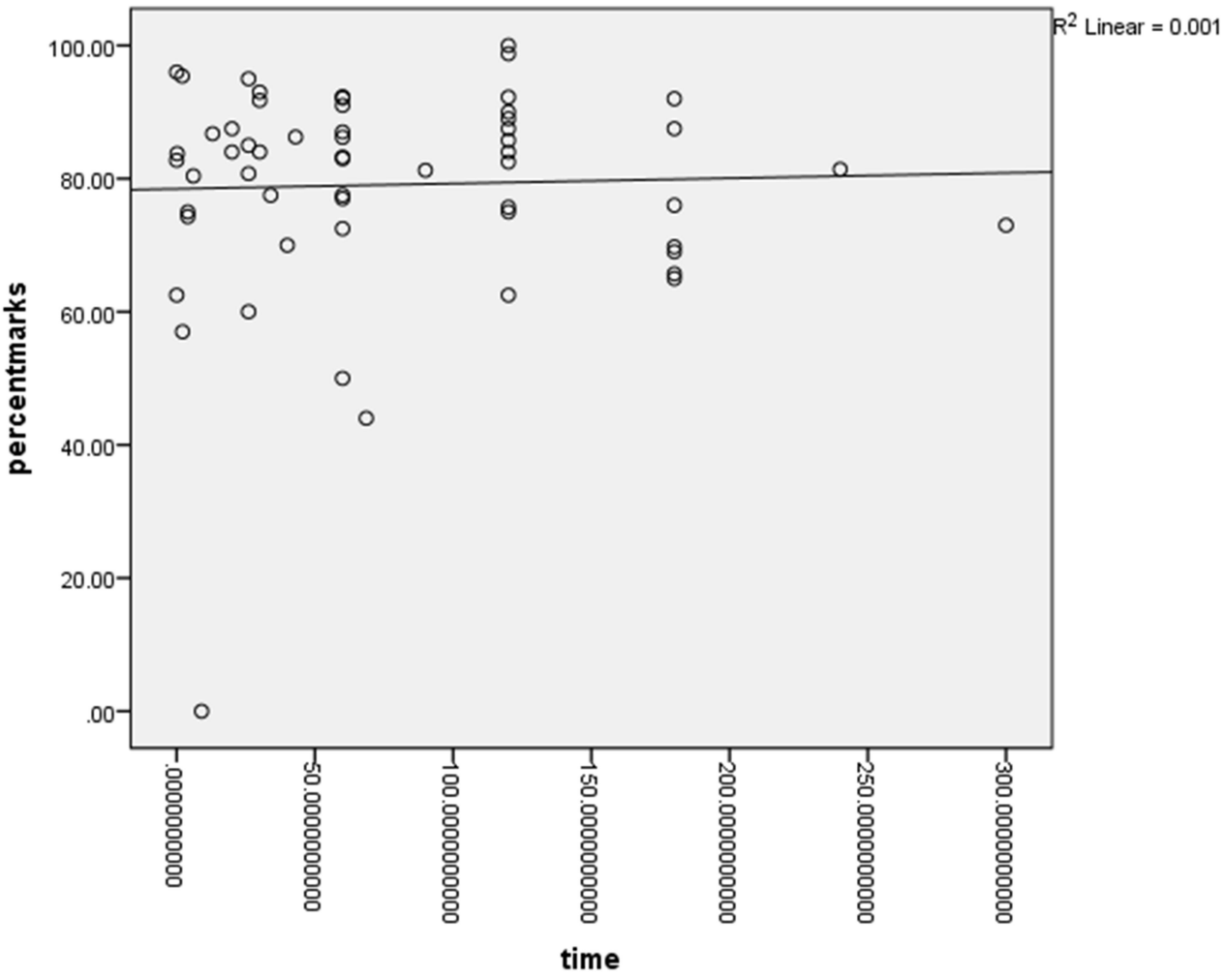


Here clearly the time spent in watching TV series is the independent variable (X) and the grades obtained is the dependent variable (Y).

Using the Method of Least Square, we find the line of best fit Y= a + bX where a denotes the intercept and b denotes the slope of regression line of y on x.

Here the line of best fit is given by **Y= 78.465 + 0.008X.**

The line is plotted in the above scatter diagram and is given below.

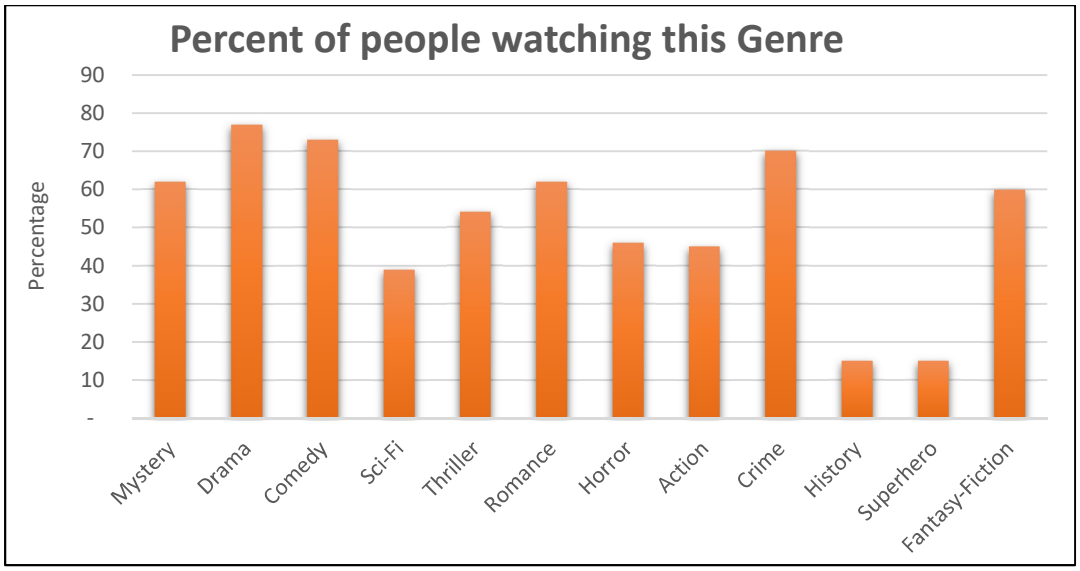


The Coefficient of Determination is used to determine whether the line of best fit is a good fit to the data. It is the square of Karl Pearson's product moment correlation coefficient (r^2). The line is a good fit if r^2 is nearer to 1 else it is nearer to 0.
Here the Coefficient of Determination is $0.034^2 = 1.156 \times 10^{-3}$. This essentially implies that 0.1156% of the variation in the dependent variable i.e. grades obtained is because of the variation in the independent variable i.e. the time spent in watching TV series.
The value of r^2 very close to 0 thus indicating that line Y= 78.465 + 0.008X is not a good fit for the data.

For our next objective, i.e. to identify which genre is most popular among Xavierites, respondents were asked to select the TV series they have watched/are watching from the 40 TV series provided. They also had an option of providing the TV series they have watched but is not mentioned in the list. The responses collected, were then sorted into 12 different Genres.

The following chart tells us what percent of Xavierite watch what particular type of genre.

GROUP NO: 7



Majority of people like to watch Drama (77%) genre TV Series.73% and 70% Xavierite's like to watch Comedy and Crime genre respectively. The least preferred genre is History and Superhero.

In order to find how many numbers of shows for a particular genre Xavierites like to watch, we calculated mean. The following table is the mean of the number of shows watched by the respondents of each genre: -

Genre	Average
Mystery	1.315217391
Drama	4.52173913
Comedy	3.576086957
Sci-Fi	0.706521739
Thriller	1.02173913
Romance	1.782608696
Horror	0.836956522
Action	0.695652174
Crime	2.054347826
History	0.163043478
Superhero	0.163043478
Fantasy-Fiction	1.282608696

To compare the means of each genre, we applied Large Sample Test. We compared means of each genre with one another to see if there is a significant difference between them or not at 1%LOS.

Hypothesis:

H0: The mean of genre(i) = the mean of genre (j) ; where i &j are different genres

H1: The mean of genre(i) > the mean of genre(j)

GROUP NO: 7

Test Statistic:
Z = [mean(i)-mean(j)]- / sqrt([var(i)/ni+var(j)]/nj] ;where ni=nj=92
Z ~ Normal (0,1)

Level of significance = 1%

Z (alpha value) = 2.32

Decision Criteria: Reject H0 if Z>Z(alpha)

Results:

The given table has the Z values for each different genre. For e.g. in the first row second column, the value is Z values for mean of Drama vs mean of Mystery.

	Mystery	Drama	Comedy	Sci-Fi	Thriller	Romance	Horror	Action	Crime	History	Superhero	Fantasy-Fiction
vs Mystery	0.000	7.811	6.126	-3.592	-1.709	2.103	-2.825	-3.947	3.152	-8.300	-8.300	-0.183
vs Drama	-7.811	0.000	-1.823	-9.492	-8.687	-6.417	-9.169	-9.641	-5.693	-11.175	-11.175	-7.987
vs Comedy	-6.126	1.823	0.000	-7.982	-7.084	-4.632	-7.621	-9.641	-3.859	-9.861	-9.861	-6.309
vs Sci-fi	3.592	9.492	7.982	0.000	2.099	5.225	0.886	-0.082	6.150	-4.897	-4.897	3.667
vs Thriller	1.709	8.687	7.084	-2.099	0.000	3.661	-1.232	-2.399	4.673	-7.502	-7.502	1.635
vs Romance	-2.103	6.417	4.632	-5.225	-3.661	0.000	-4.595	-5.551	1.037	-8.919	-8.919	-2.348
vs Horror	2.825	9.169	7.621	-0.886	1.232	4.595	0.000	-1.064	5.558	-6.088	-6.088	2.840
vs Action	3.947	9.641	8.142	0.082	2.399	5.551	1.064	0.000	6.480	-5.867	-5.867	4.089
vs Crime	-3.152	5.693	3.859	-6.150	-4.673	-1.037	-5.558	-6.480	0.000	-9.628	-9.628	-3.419
vs History	8.300	11.175	9.861	4.897	7.502	8.919	6.088	5.867	9.628	0.000	0.000	9.069
vs Superhero	8.300	11.175	9.861	4.897	7.502	8.919	6.088	5.867	9.628	0.000	0.000	9.069
vs Fantasy	0.183	7.987	6.309	-3.667	-1.635	2.348	-2.840	-4.089	3.419	-9.069	-9.069	0.000

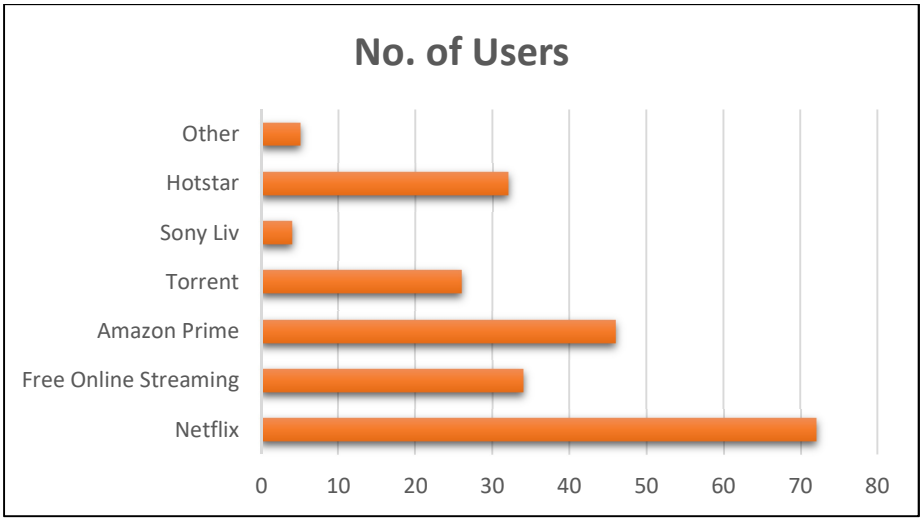
From the above table we understand that, the mean of Mystery does not differ significantly from the mean of Thriller, Romance and Fantasy, whereas it differs significantly from the mean of Sci-Fi, Horror, Action, History, Superhero, Drama, Comedy and Crime at 1% LOS. On comparing it with Drama, Comedy and Crime we get to know that their mean is greater than

Mystery's, while the mean the means of Sci-Fi, Horror, Action, History, Superhero, Drama, Comedy and Crime is less than Mystery's.

Similar conclusions can be drawn for the remaining genre.

Hence, if an industry wants to make a TV show for Xavierite's, we recommend them to make Drama-Com-Crime show which has some touch of all these three genres. As these three genres are the most watched and preferred genres.

Given below is the analysis of the next objective which is regarding the most popular viewing platform among Xavierites. Respondents were given a list of frequently used viewing platforms to choose from and the results were tabulated using tally bars. This was done to find the frequencies of each platform in order to represent it on a graph.



From the above Bar Chart, we can easily conclude that Netflix is the most popular viewing platform with around 72 Xavierites as viewers. Amazon Prime follows next with an approximate difference of around 26 viewers. It is to be noted that Free Online Streaming and Hotstar had approximately the same number of viewers after Amazon Prime.

Besides the mentioned list of platforms, around 5 respondents had other platforms on which they viewed different shows. These included platforms like T.V and YouTube.

As a suggestion, Netflix should continue streaming the same shows and perhaps even try to increase the number of shows in order to gain more popularity. Amazon Prime should try to incorporate more series on their platform in order to increase their viewer count. Also, if a producer wishes to release their next TV show targeting college students, a suggestion could be releasing the show on Netflix in order for the show to be successful.

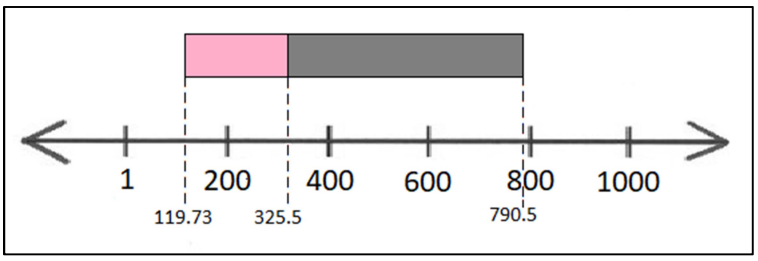
After analysing the popularity of different platforms among Xavierites, the next objective is to analyse the expenditure done by Xavierites on these platforms. Respondents were given a list of intervals varying from Rs.1 to above Rs.1000 with a class size of 200 in each case. In order to analyse the results properly, we decided to use quartiles and deciles to properly understand the spread of the data.

Upon calculating the quartiles using the formula for grouped data, the following values were found:

1st Quartile (Q1) : 119.73

2nd Quartile (Q2) : 325.5

3rd Quartile (Q3) : 790.5



From the Box Plot, we can say that 25% of the population spend below Rs.119.73, 50% of the population spend below Rs.325.5 and 75% of the population spend below Rs.790.5.

Since Q1 is not too far from the median (Q2), we can conclude that there is not much dispersion among the smaller values of the data set. Since Q3 is farther away from the median, then there is greater dispersion among the larger values of the data set.

This can be better explained through the Interquartile Range (IQR). The calculated value of **IQR was 670.77**. This implies that the spread of approximately 50% of the population spend around Rs.670.77 on different viewing platforms.

For better understanding of the data, deciles were calculated as well. The results are as follows:

D1	48.19
D2	95.88
D3	143.57

Reasons to Discontinue	Number of people (Frequency)

D4	191.26
D5	325.5
D6	469.07
D7	604.5
D8	868.19
D9	1014.5

The deciles divide the data into 10 equal subsections and is ranked from lowest to highest value. The first decile (D1) suggests that 10% of the population spend less than Rs.48.19 on viewing platforms. D2 suggests that 20% of the population spend less than Rs. 95.88 and so on until D9.

It is clear from the both the quartiles and deciles that an average of Rs.325.5 is spent by Xavierites on various platforms to view shows.

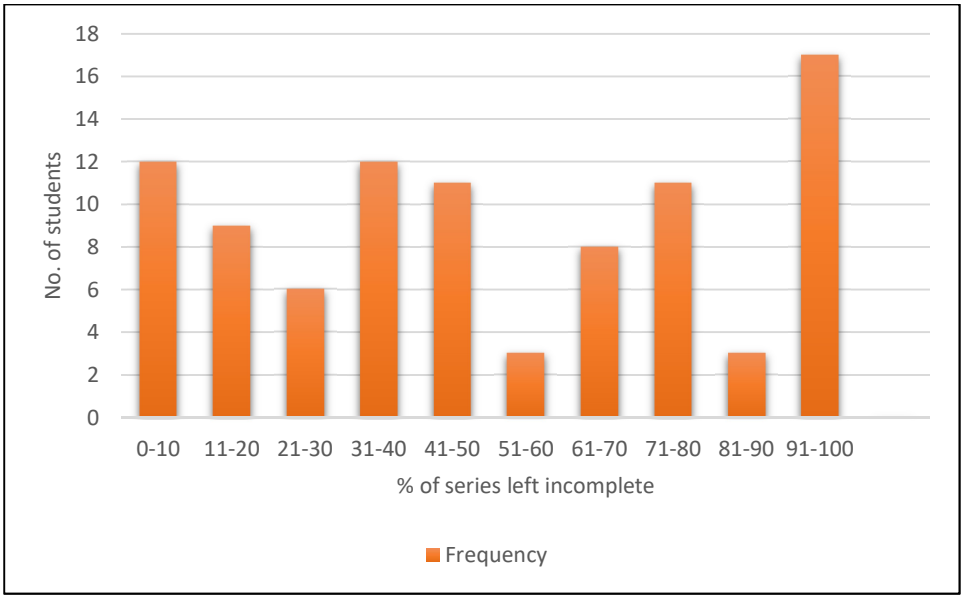
We shall now analyze our final objective which is the viewing pattern of TV series by Xavierites'**.** To do so we studied how many respondents complete what percentage of the Series they initially started with. We also studied as to why they leave a series without completing it.

The dropout rate

We analyzed how frequently do Xavierites' drop out of watching any series. The data that was collected is summarized below:

Percentage of series left incomplete	Frequency of Respondents
0-10	12
11-20	9
21-30	6
31-40	12
41-50	11
51-60	3
61-70	8
71-80	11
81-90	3
91-100	17
Total	**92**

Didn't have enough time	53
Lost Interest midway	43
Lost the track of the on-going show	12
Didn't renew the subscription of the viewing platform	5
Others	8

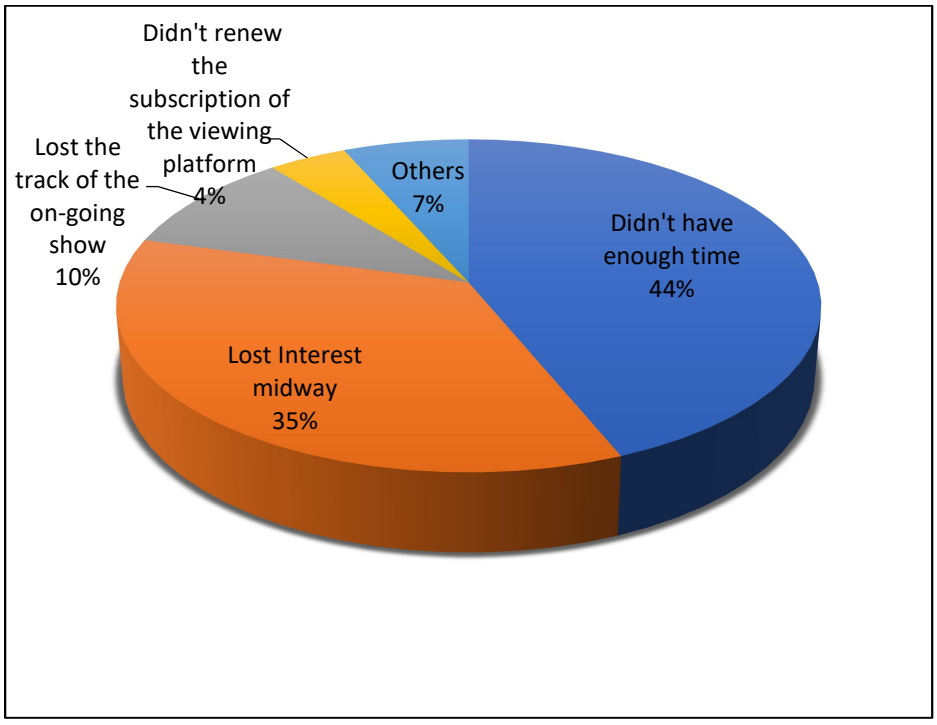


From the bar graph above it can be seen that most of the respondents (17 students or 18.47%) have not completed a single series they started with. Whereas 12 respondents (or 13.04%) have completed all the series they started with. Whereas 11 respondents (or 12%) have watched half of the series they started with.

Our data does not have much variation therefore no trend can be seen here.

GROUP NO: 7

Reasons for Xavierites discontinue a series



Upon being questioned about why do Xavierites quit a series midway, a varied set of responses were noted other than the ones given as a choice. This question was a multiple choice one where most of the students (44%) said that they didn't have enough time for it. This reason seems much valid considering the hectic College Schedule.

Losing interest midway was also one of the major concerns among Xavierites (35%), this is attributed to the very picky nature of teenagers and the availability of vast variety to choose from. If a show needs to market itself in our college, they should definitely focus on the content; how to make it interesting for an age group of 18 to 21, how it shouldn't be very long to follow.

We also see that renewing the subscription wasn't among the major issues (4%).

The other reasons as given by Xavierites are as follows:

- **Repetitive Content**: On doing some secondary research about the various series available at different platforms, it was discovered that few series have the similar story line for example: Sacred Games and Mirzapur. Also, there are a few series which do not have a story line at all or loose the track of their main plot midway for example Little things; making them too redundant to watch
- **Too many seasons**: Since one of the major reasons with College students to discontinue a series is lack of time therefore a series with many seasons (like 10-12 seasons, with 15 episodes per season on an average) mostly remain not so popular among Xavierites. It becomes extremely hard to follow. While conducting the survey on one to one basis, a few Xavierites told about how

difficult it was for them to follow some series like SUITS (prime original series; a long one) and Big bang theory.

Conclusion

After conducting the survey and analyzing the data collected, we see that our purpose of study was achieved. We were successful in understanding the TV series viewing pattern of Xavierites'. Some of the main insights drawn from the analysis are: there is no significant difference in time spent on TV shows between students of different classes (both year wise and stream wise). On analyzing the effect of TV series viewing habits on the grades of the students we find that there is a very low positive correlation between the time(in minutes) Xavierites spend in watching TV series daily and the grades they obtain indicating that there are several other factors affecting a student's grade and a variation in the time spent on TV series might or might not lead to a variation in the grades obtained.

We also tried to understand the preferences of students based on the types of genres they watch. The most popular genre among Xavierites is Drama followed by Comedy, Romance. The least favorite is History and Superhero.

On studying about the platform, the students choose and the expenditure they do on the respective platforms we find that the most popular platform among Xavierites is Netflix followed by Amazon Prime. Approximately the same number of viewers uses Free Online streaming and Hotstar. Also, we find that 25% of the population spend less than Rs. 119.73 and 75% of the population spend less than Rs. 790.5 on different viewing platforms. On an Average, 50% of the population of Xavierites spend approximately Rs. 325.5 on various viewing platforms.

Apart from all this we also analyzed whether Xavierites' complete a series they start or do they leave it midway and if they leave it midway then why. We find that about 20% of the students leave all the series without completely watching them. This dropout rate is majorly attributed to the issues of time management. We also see that losing interest midway also accounted for the dropout rates (35%).

The following errors were created while doing this project:

1. Although initially we aimed for a sample of size 100 but we have worked with a sample of size 92. This is because some people did not respond to our survey and some people were unapproachable and hence, we weren't able to contact them. So non respondents haven't been dealt with properly while conducting the survey.

2. Due to a technical or network issue some responses were recorded more than once, but this has been taken care of while doing the analysis by considering each response only once.

3. The First-year students did not get their results when the survey was being conducted, so they haven't been considered while analyzing the effect of time spent in watching TV series on the

grade of a student. Thus, this objective has been analyzed only on the basis of the data obtained from second and third-year students.

4. The question regarding as to why do Xavierites discontinue a series was misunderstood by many respondents as was observed from their responses, therefore all the possible reasons for leaving a TV series midway might not have been listed in the report.

5. Regarding the question of How often you watch TV series in the questionnaire the option of 'Other' shouldn't have been given, because that made some respondents write huge explanations and answers that cannot fit into the criteria given by us as options. To incorporate people who do not watch TV series we could have given an option of Never instead of other.

Further Studies Indicated

Our survey can be used by any film industry with small changes if it wants to study the preferences of college students. This study also indicates the need of a research on hoe to reduce the dropout rates midway and to develop the supporting marketing strategies.

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