



Future Of Online Gaming – A Study On The Impact Of Internet Penetration On Gaming Ecosystem In India

DR. M J Xavier¹ and C Trini Sharon²

¹ Professor of Business Analytics and Marketing, Loyola Institute of
Business Administration

² PGDM Student, Loyola Institute of Business Administration

Abstract

This study investigates the future of online gaming in India, with a focus on the impact of internet penetration on the gaming ecosystem. Data was collected through surveys and focused group interviews, with survey takers predominantly from Kerala and Tamil Nadu. The study not only highlights the importance of the gaming industry to the Indian economy, but also demonstrates the growing interest in gaming beyond just a means of killing time. Furthermore, the research identifies pain points that need to be addressed to improve the gaming experience for players in the future, including the need for better performance specifications. The findings of this study provide valuable insights for gaming companies to enhance their offerings and cater better to their customers' needs.

In conclusion, the rise in internet penetration has been a major driving force for the growth of the gaming ecosystem in India. It has led to the emergence of new game developers, the rise of mobile gaming, and the growth of e-sports in the country.

KEYWORDS: Internet Penetration, gaming ecosystem, mobile gaming, e-sports.

Introduction

The Evolution: Internet penetration in India

The online gaming industry has witnessed a massive evolution over the years due to the advancement of the internet and technology. With the increasing penetration of the internet and the widespread adoption of smartphones, online gaming has become a popular pastime for people of all ages. The global gaming market has grown tremendously over the years, with a compound annual growth rate (CAGR) of 12% from 2020 to 2025, according to a report by MarketsandMarkets.

In India, the gaming industry has also experienced rapid growth, driven by factors such as rising disposable income, increasing internet penetration, and the availability of affordable smartphones. The Indian gaming market is estimated to reach \$2.8 billion by 2022, growing at a CAGR of 21%, according to a report by KPMG, whereas the actual gaming market in India in the same year was at \$1.05 billion as per Statista records. And the Indian Market in the online gaming industry is forecasted to reach \$2.03 billion by 2027.

The COVID-19 pandemic has also had a significant impact on the gaming industry, as people were forced to stay indoors and looked for new ways to entertain themselves. This led to a surge in online gaming, with many people turning to mobile games and esports for entertainment and social interaction.

The gaming revolution has brought about a plethora of popular online games, such as PUBG, Call of Duty, Fortnite, and many more. These games have attracted a vast number of users and have become an integral part of the entertainment industry.

Apart from entertainment, the gaming industry also has the potential to bring benefits to various sectors. For instance, gamification can be used to enhance employee engagement and training, while the healthcare sector can utilize gaming technology for rehabilitation and therapy.

A report by Nazara Technologies Ltd. highlights the immense potential of the Indian gaming market and the need for innovation in game development to cater to the diverse Indian audience. Another report by KPMG titled "Beyond the tipping point: A primer on online casual gaming in India" explores the trends, challenges, and opportunities in the Indian gaming industry. Additionally, the "Beyond 2021: Where does gaming go next? Asia-Pacific gaming market and consumer research report" commissioned by Google for games offers insights into the future of the gaming industry in the region.

Furthermore, participants in surveys have shown general to advanced knowledge of gaming specifications and the relevant pain points in a gamer's journey. This knowledge can be utilized to shape a better gaming experience alongside technological advancements.

In this study, we aim to explore the impact of internet penetration on the gaming ecosystem in India, focusing on the growth of the industry, popular online games, and the potential benefits it can bring to various sectors. The study will utilize data from various reports and surveys to gain insights into the future of the online gaming industry in India.

Literature Review

Beyond 2021: Where does gaming go next? Asia-Pacific gaming market and consumer research report commissioned by Google for games:

Trends in-game engagement and spending between February 2020 and June 2021. The Asia-Pacific area is covered in this paper. The series is the outcome of research undertaken by Newzoo on behalf of Google, and it includes market analysis, trend research, and consumer research. The report focuses on Asia Pacific and the gaming trends pre and post covid. Newzoo focuses on three main variables for each market: players, paying gamers, and revenues (also known as consumer spending). A market, according to Newzoo, is a country or geographic region combined with one or more game segment(s), such as PC, console, or mobile. The data for

this research came from an online survey devised and conducted by Newzoo in April and May 2021 among 6,415 respondents from Asia-Pacific, including mainland China, Japan, South Korea, Vietnam, Taiwan, and India. Quotas were established to ensure that each market received a nationally representative sample of gamers. At the time of the poll, respondents ranged in age from 18 to 65 years old and playing video games on any platform.

Beyond the tipping point A primer on online casual gaming in India by KPMG 2021:

The purpose of this research is to explain what internet gaming, particularly online casual gaming entails and how it might be seen, an insight picture of the world of onlinecasual gaming in India was also provided. In terms of consumption, it is the largest segment.

To understand this better the whole value chain of internet casual gaming in its current form as in the landscape was available in this report.

The potential for online casual games as well as the aspects things must be considered to construct a successful Model of monetization for Ads and In-App Purchases (IAPs). This though was focused on online casual gaming and leaned towards the mobile gaming segment, it did give an understanding of the gaming trends within the industry, the esports and different technologies that powered its fast phase growth mended with my research topic, "Gaming ecosystem 5 years down the line". These insights furthermore let me put forth a questionnaire comprised of gaming style, online game viewing platforms, where the gaming industry is headed, the peripheral preferences while gaming and where you see yourself in this industry.

The esports industry clocked Rs 3 billion in FY21: FICCI-EY report:

This article talks about the growth seen in Esports in India. This also talks about the gamers on various devices and the momentum it has gained in mobile esports tournamentsand the PC segment. It touches upon the various complex games developed and the competitive gaming that is at its peak now.

The e-Sport industry clocked the best Indian e-Sports team by Andrew Boggs:

This short yet informative article by Boggs, help me understand the different gaming organizations that are present and are competing in the tournaments, digging deep helped me understand the internal hierarchy of the organization and its clangs.

Nazara Technologies 2021 DRHP Report:

Nazara Technologies operates in the fast-growing mobile gaming market in India and offers a variety of games across multiple genres such as casual, sports, and puzzle. The company has a strong portfolio of popular games and a growing user base in India, as well as in other markets such as Africa and the Middle East.

The company's IPO report highlighted its strong financial performance, with revenue growing at a compound annual growth rate of 30% from FY2017 to FY2020. The report also highlighted the growing trend of mobile gaming in India and the potential for further growth in the market.

Significance of the Study/ Research Gap Identified

The significance of this study lies in addressing the research gap on the impact of internet penetration on the gaming ecosystem in India and its potential to improve the gaming experience of players. Online gaming has become a popular activity in India, with an increasing number of players taking part in online games, which has contributed to the growth of the gaming industry. However, there are still several pain points and challenges faced by gamers that hinder their performance and experience.

This research aims to address these issues by identifying the pain points faced by gamers and how technological advancements can be utilized to improve their gaming experience. By exploring the impact of internet penetration on the gaming ecosystem in India and analysing the current popular online games, this research will provide insights into the future of online gaming and its potential to enhance the performance of gamers.

General Objective

The key objective of the research is to identify what the gaming industry will look like in 5 Years.

Specific Objectives

- To study the hours spent by gamers on gaming
- To study gamers' preference for laptop specifications
- To study where gamers consume online gaming content.
- To study the hindrance faced by gamers while gaming
- To study the gamers, view on changing gaming ecosystem
- To understand gamers' end goal when it comes to gaming

Assumptions And Hypothesis

In this project a major assumption is the respondents to the questionnaire are in the age interval between 15 to 30 and have decent knowledge about software specifications requirements when it comes to buying a laptop, they could easily state their needs when it came to buying a laptop and relate it to the hindrance they face.

One question asked the survey takers to rank the laptop brands based on their first pick, this gave me an insight into the competitors in the market and draw analysis of the type of products offered by them. Another assumption is that employment had very less effect on the amount spent on gaming, this was surprising but fair to understand as the purchase was made by the parents but the instigators are our target audience who are the sole target. There is a various test conducted in this research to check if the assumptions are valid or not.

Hypothesis:

Age vs Hours of gaming

H0: There is no relationship between age (Generation Z and Millennials) and the hours they spend on gaming

H1: There is a relationship between age (Generation Z and Millennials) and the hours they game.

Age vs Platform for viewing

H0: There is no relationship between the age (Generation Z and Millennials) and the platform used to view gaming content

H1: There is a relationship between age and the platform used to view gaming content.

Employment vs Preferred gaming Device

H0: There is no relationship between employment and their device for gaming.

H1: There is a relationship between employment and their device for gaming.

Employment vs hours of gaming

H0: There is no relationship between employment and hours of gaming

H1: There is a relationship between employment and hours of gaming

Employment vs Price they spend on a device

H0: There is no relationship between employment status and the amount spent on the gaming device.

H1: There is a relationship between employment status and the amount spent on the gaming device.

Sampling Design

Sampling is a strategy that enables us to designate a sample from a portion of the population in a straightforward, methodical manner. In this study, employed, enrolled students, jobless, and self-employed people make up the sample group. A sample of 250 respondents was gathered, the majority of them were from Tamil Nadu and Kerala in south India.

Methods and tools for data collection

One of the most crucial aspects of the research is the gathering of data. The responses your target audience provides during the data collection process will be used to understand the problem statement. Some of the techniques used for gathering data include surveys, focus group interviews, and questionnaires.

The questionnaire method is the one used to collect the data for this study.

A list of questions was prepared with utmost diligence and was approved by the research faculty before distributing the forms to members of the Gen Z and Millennial age groups. One of the most effective ways to gather data was through the use of questionnaires, which allowed for the rapid collection of large amounts of information.

Statistical analysis was the technique used for data analysis. Data collection, analysis, interpretation, presentation, and data modelling are all included in statistical analysis. Descriptive and inferential analysis are the two primary types of data analysis. A variety of conclusions can be drawn from the inferential analysis, which compares the level of significance of each variable to the categorical variable.

The tools used for analysis are :

Microsoft Excel IBM SPSS Statistics

Basic data cleaning was done to remove the non-gamers and outliers. This revised data was used for analysis and the Chi-square was done over the collected data

Chi-Square

It is a statistical test which is used to compare two categorical variables and tells the relationship between the two variables

An overall strategy for moving the research forward is provided in this chapter. The specifics of the research topic, its development, and the study's design are covered in this chapter. The chapter also discusses the study's objectives, Data types and sources used in the study, how the data is collected, and the research tools used for analysis.

Data Analysis and Interpretation

The information gathered from the respondents is manipulated, condensed, and put into an interpretable format in this chapter after it has been collected. The insights and patterns that will aid in achieving the research's goals are then discovered using the data.

Demographic profile of the respondents

Based on the secondary analysis, a basic idea of the demographics was drawn. In most of the reports, the age group from 15 – 35 years seemed interested in gaming. Taking this into account and the other factors, the questionnaire was prepared listing five demographic-based questions to understand the type of individuals that the gaming industry attracts.

Based on the survey, which was taken by 250 respondents. The majority of individuals belonged to Generation Z and the Millennials generation. That is there was a surge in number seen by age group 15 years – 30 years. The survey did see a male-leaning mass with 83% being male and 17% female. When we look at the location that drew these responses, it was predominantly Kerala, Tamil Nadu and Maharashtra.

The questionnaire was developed to learn more about the attitudes, preferences, perspectives, and buyer journey of the Gen Z and Millennial generations toward gaming. The study was conducted with the assumption that Gen Z and Millennials will be the target masses that would draw major leads in the gaming segment. By putting themselves in the shoes of gamers, it will be advantageous for gaming companies like Dell, HP, ASUS etc. to position & develop new products that consumers will find appealing and would buy in the future.

PROFILE OF RESPONDENTS

Gender

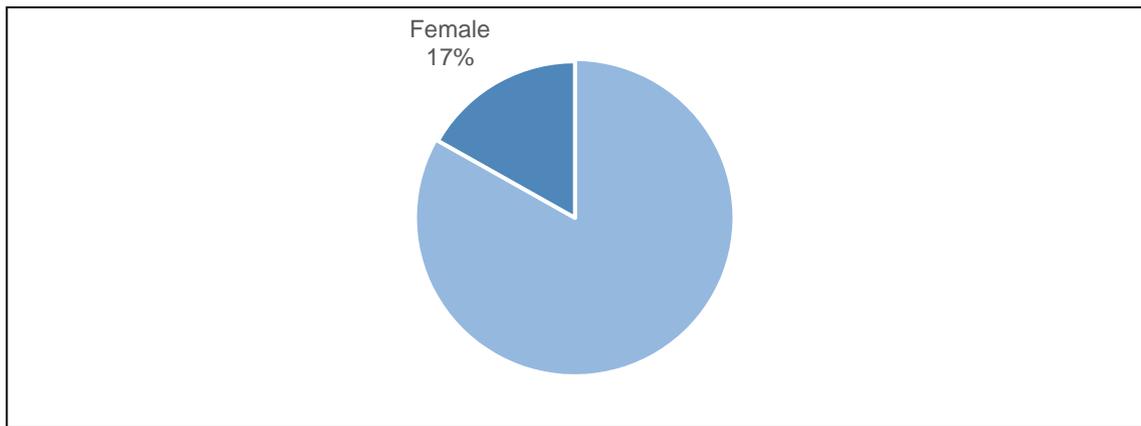


Figure1: Pie Chart displaying the Gender of the Respondents

The above pie chart shows us the distribution of gender in the group of respondents. Among the 250 people who responded to the questionnaire, 83% were males and 17% were females.

Age Group

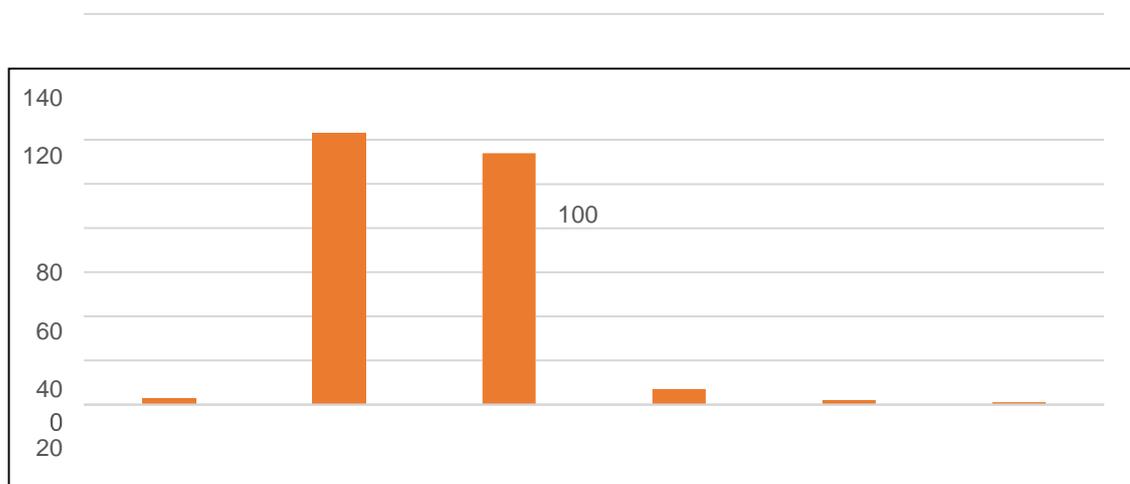


Figure2: Bar graph showing the age group that has taken the survey

The survey is highly leaning toward the age group of 17 – 30 years. This shows the target age group that is showing interest in this segment.

Employment status



Figure3: Bar graph showing the employment status of survey takers

The above table shows a clear idea about the employment status of our respondents. The survey is influenced majorly by employed individuals and students.

Analysis of customer behaviour

Reason for gaming on PC/Laptop

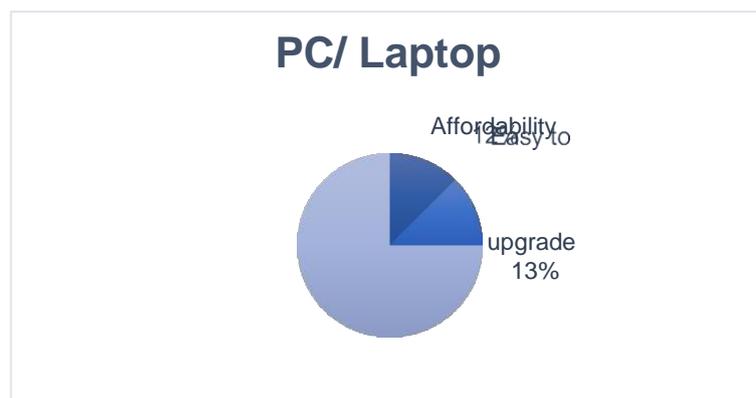


Figure4: Pie chart showing the reason for customer to choose PC/Laptop over other device.

Screen size topped the rank when put together followed by affordability and ease to upgrade.

Age vs Hours of gaming:

What's your age? * How long do you play? (Weekly) Crosstabulation

Count		How long do you play? (Weekly)					Total
		< 5 hrs	> 16 hrs	10 hrs	15 hrs		
What's your age?	10 – 16 Years	0	1	0	1	1	3
	17 – 23 Years	16	46	22	25	14	123
	24 – 30 Years	13	55	12	26	8	114
	31 – 37 Years	0	0	4	1	2	7
	38 - 44 Years	1	0	0	1	0	2
	45 Years > Above	0	1	0	0	0	1
Total		30	103	38	54	25	250

Figure5 : Pivot table showing age vs hour of gaming

Chi-Square

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.591 ^a	20	.096
Likelihood Ratio	28.925	20	.089
N of Valid Cases	250		

a. 20 cells (66.7%) have expected count less than 5. The

Figure6 : Chi-Square test Result showing P value 0.096

The above data was run on SPSS and the chi-square test shows 0.096 which is greater than 0.05 this shows that there is no relation to age to that of hours of gaming. This particular question was asked to know how long are our devices put on test while gaming. 47% spend less than 5hrs gaming per week, on the other end 25% spend 10 hrs gaming per week. Let's break this down even further, Majority of the ones who game less than 5 hrs & about 10 hours fall under 17 - 30 years age bracket.

Age vs Platform of viewing

What's your age? * What platforms do you use to watch online gaming content? Crosstabulation

Count		What platforms do you use to watch online gaming content?							Total
		Booyah!	Loco	Mixer	Twitch	YouTube	YouTube, twitch, Facebook, loco, rooter etc	YouTube and twitch	
What's your age?	10 – 16 Years	0	0	0	1	2	0	0	3
	17 – 23 Years	0	1	2	16	63	1	1	84
	24 – 30 Years	2	0	0	23	56	0	0	81
	31 – 37 Years	0	0	0	2	3	0	0	5
	38 - 44 Years	0	0	0	1	0	0	0	1
	45 Years > Above	1	0	0	0	0	0	0	1
Total		3	1	2	43	124	1	1	175

Figure7: Pivot table showing Age vs online viewing content

Age group 15 - 30 yrs. watch online content on YouTube & Twitch.

YouTube is the highest preferred viewing platform taking 72%, followed by Twitch at 22% Got a few showing inclinations towards other online gaming content platforms like Rooter & Loco.

Employment vs Price

What is your Employment Status: Are you currently...?	₹1,03,000 – ₹1,33,000	₹1,34,000 > Above	₹10,000 - ₹ 40,000	₹41,000 - ₹71,000	₹72,000 - ₹1,02,000	Grand Total
Employed	7	9	37	27	19	99
Student	5	8	37	24	16	90
Grand Total	12	17	74	51	35	189
% Total	6	9	39	27	19	100

Figure8 : Pivot table showing Employment Status to the expenditure.

Max expenditure lies btw 10k - 40k, that is about 39% of students and employees spend this much on gaming. Followed by 27%, spending 41K - 71K, Next 19% spending 72K - 1,02,000 on gaming devices.

Gaming Genre

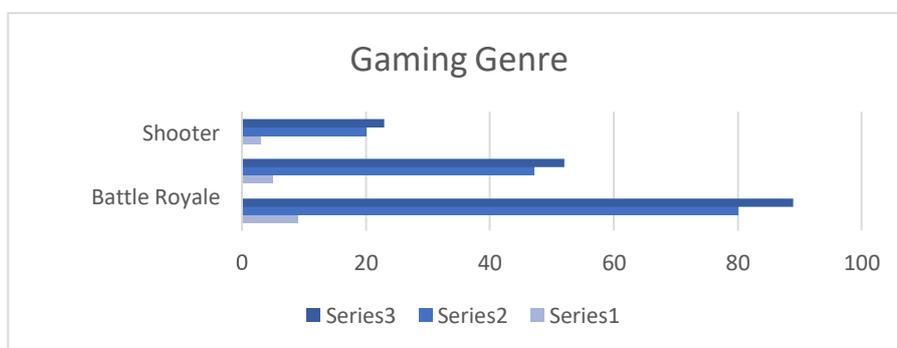


Figure9 : Preferred gaming genre

According to the survey, most of the respondent showed high inclination towards Action & Adventure genre, followed by Battle Royale. These Two genre has gained momentum in eSport. As we know, eSport is at a boom and will surely help us generate max revenue if we step into the sponsoring/ hosting tournaments ourselves.

Ranking of their first pick in laptop brand

Count of Rank the laptops	Rank the laptops be	ACER - PREDATOR	ASUS - REPUBLIC OF GAMERS	DELL - ALIENWARE	HP - OMEN	HP - PAVILION	LENOVO - LEGION	MSI	Grand Total
10 – 16 Years					1			2	3
17 – 23 Years	7		38	35	9	7		8	107
24 – 30 Years	9		21	31	22	2		7	101
31 – 37 Years	1		2	2	2				7
38 - 44 Years					1				1
45 Years > Above								1	1
Grand Total	17	61	68	35	9	18	12	220	
% Total	8	28	31	16	4	8	5	100	

Figure10 : First preference when comes to laptop brands

The competitors from the survey were DELL Alienware, ASUS – ROG followed by HP Omen.

Gaming Peripherals

What are the additional gadgets you would use to better your gaming experience?

Monitors	111
Gaming Keyboard	136
Gaming Mouse	147
Gaming Headsets	142
Controllers/ Consoles	85
Gaming Pads	41
Gaming Chair	66
Gaming Microphone	49
Cooling Pads	62
Other	6

Figure12 : Gaming peripherals preference for better gaming experience

When asked what would they possibly invest to better their gaming performance, most of them preferred Gaming mouse followed by Gaming headset and then investing on gaming Keyboard. On the other hand, when asked regarding their usage of existing keyboard or an external.

60% preferred purchase of external keyboard and mouse while gaming on laptops. This validated the information that I obtained while interviewing few of the gamers, where they did mention how the pressure could possibly destroy the laptop thus a good investment on external mechanical gaming keyboard along with mouse is a game changer. This HP can focus and offer peripheral combo offers while a purchase is being made.

Hinderance faced while gaming

Hinderance	Response	% Total
Overheating	152	38
Limited storage space	66	16
Low Graphic support	82	20
Low FPS	90	22
Other	11	3

Figure13 : Table showing hinderance faced while gaming

The three major hinderance faced by gamers while they game on their devices are Overheating, Low FPS & Low Graphics support. The overheating is understandable, when clubbed with high-end Processor with that of powerful GPU, The overall system tends to heat up and thus battery gets drained. This is where HP comes with its unique, tempest cooling technology. The recent press event too focused on the same, the key hero was their cooling tech. The other 2 hinderance comes with devices of lower price range, not supporting high tech games.

Gaming setup

What type of gaming setup you have now?	Total	%
A customized home gaming studio	59	27
A personal computer desk	127	58
I prefer gaming cafes	8	4
Other	26	12
Grand Total	220	100

Figure14 : Table showing the gaming setup that gamers have for gaming

58% of the respondents have a personal computer desk whereas 27% have a customized home gaming setup. There are few who have mentioned, "they do prefer gaming cafes".

FUTURE OF GAMING

Where according to you is gaming headed?	Respondent Count
Virtual & Augmented Reality Gaming	122
Metaverse gaming	97
Blockchain technology gaming	24
Gaming On Modular Laptops	46
Next Gen Graphics	112
Other	16

Figure15 : Table showing where the gaming is headed

To a question "Where according to you is gaming headed?" The max respondents believe it may be headed in VR & AR, Next Gen graphics & Metaverse. This again fetches to the changein ecosystem and what WE can do to be capture the young gamers.

Purpose of gamers to game:

Where do you see yourself in gaming field?	Total	%
I am looking to Influence more gamers	21	9.5
Long term goal of turning into a profession	34	15.5
I play for fun	163	74.1
Other	2	0.9
Grand Total	220	100

Figure16 : Table showing where do you see yourself in gaming field

"This question, where do you see yourself in this field?" answers how serious or which level are they in gaming. 74% play for fun, 15% are seeking to turn it into profession, 10% are seeking to be influencers in this field. This above data holds relevance as we understand where these individuals be heading in few years and what would be their possible shift in requirements.

Based on the data analysis and interpretations performed in the prior chapter, the key findings, suggestions, and conclusions that are more practical and application-focused are explored below.

Findings based on questionnaire to understand customer perception

According to the survey, males were found to be the majority in terms of preference for PC/Laptop purchase, with 83% being male and 17% female. Their preference for purchase was mainly focused on screen size, and 67% preferred to make their purchases through ecommerce. The top two genres that gained momentum in Esporta were Action & Adventure followed by Battle Royale. When it comes to ranking laptops based on their first pick, the top three are Dell Alienware, Asus, and HP Omen, with affordability being the top priority for 50% of respondents, followed by graphics card (24%) and processor (17%).

The majority of gamers spend less than 5 hours (47%) or around 10 hours (25%) gaming per week, with most falling under the 17-30 age bracket. The top platforms for game viewing were found to be YouTube and Twitch, with 72% and 22% respectively. The max expenditure on gaming devices was found to be between 10k - 40k, with 39% of students and employees spending this amount. The main hindrances faced by gamers while gaming on their devices were overheating, low FPS, and low graphics support. To improve their gaming performance, most respondents preferred investing in a gaming mouse, followed by a gaming headset and then a gaming keyboard. 60% of respondents preferred purchasing an external keyboard and mouse while gaming on laptops.

Finally, 74% of respondents played games for fun, while 15% were looking to turn it into a profession and 10% were seeking to become influencers in this field. These data points provide insights into the gaming preferences and habits of individuals, including their possible shifts in requirements in the future

Suggestions for future studies

The survey was circulated among a small group of individuals among who were from South India.

For a topic this wide, a sample size of 1000 would validate most of the answers to the trends in this industry and shape a better insider view for this project. Conducting more of focused based interview would help understand preference of gamers and track similar liking or mindset towards the gaming industry and the changing ecosystem.

Conclusion

In conclusion, companies looking to seize the rapid growth of the gaming segment in India need to be proactive and innovative in their approach. This means investing in cutting-edge technology, developing engaging and diverse content that appeals to a wide range of audiences, and leveraging digital platforms to reach and engage with players. Additionally, companies should also focus on building strong partnerships with local game developers, platform providers, and retailers to better understand and cater to the unique needs and preferences of the Indian market. By adopting these strategies, companies can effectively capitalize on the rapid growth of the gaming segment in India and establish themselves as key players in this exciting and rapidly evolving industry.

The company needs to position itself in an eye of a gamer rather than that of a commercial using laptop. Esport is showing growth, this could be a insight that HP can use to push its communitydriven marketing campaigns to acquire more loyal customers. A tie up with companies that are providing better VR & AR peripherals that would draw more realism towards gaming, bettering the whole experience of a gamer.

Reference

- [1] *Beyond 2021: Where does gaming go next? - think with google.* https://www.thinkwithgoogle.com/_qs/documents/13327/Beyond_2021_-_Where_does_gaming_go_next.pdf
- [2] *Beyond the tipping point: A Primer on Online Casual Gam KPMG.* <https://home.kpmg/in/en/home/events/2021/06/beyond-tipping-point-primer-online-casual-gaming-india.html>
- [3] *The esports industry clocked Rs 3 billion in FY21: FICCI-EY report SEBI.* https://www.sebi.gov.in/filings/public-issues/mar-2021/nazara-technologies-limited-rhp_49469.html
- [4] Online, B.W. (2021) *Financialexpress, The Financial Express.* <https://www.financialexpress.com/brandwagon/the-esports-industry-clocked-rs-3-billion-in-fy21-in-2019-ficci-ey-report/2279835/>
- [5] *Nazara Technologies Limited - RHP SEBI.* https://www.sebi.gov.in/filings/public-issues/mar-2021/nazara-technologies-limited-rhp_49469.html
- [6] *Gamification Market Growth Drivers & Opportunities MarketsandMarkets.* <https://www.marketsandmarkets.com/Market-Reports/gamification-market-991.html>
- [7] Clement, J. *Topic: Video game industry, Statista.* <https://www.statista.com/topics/868/video-games/>
- [8] Rivers, A. and Person (2021) *The evolution of gaming and esports business, KPMG.* <https://kpmg.com/uk/en/blogs/home/posts/2021/04/the-evolution-of-gaming-and-esports-business.html>