A STUDY ON GAMIFICATION & ITS EFFECTS ON CONSUMER BEHAVIOUR

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Abstract: Gamification is now being used in a lot of fields such as education, learning, over the top platforms, marketing for B2B companies. The use of gamification has brought about a lot of change in consumer buying behaviour and motivation to make a purchase. The present study will focus on the factors that make gamification an important part of marketing campaigns and the effects it has on the consumers buying behaviour. With the advancement in technology, newer concepts like metaverse, AI, AR, VR, Blockchain and Gamification of platforms has become even more relevant. Technology is changing the way the buyers make the purchase decision and therefore marketers are also coming up with ways to implement technology in the way they market their products and services. Gamification creates a change in the buying behaviour of consumers by affecting their psychology and motivation positively. Gamification creates a change in the consumption pattern by creating a habit-forming tendency through the use of games especially designed to engage audiences with points system, scoring and winning. The natural desire to win becomes so strong that people get addicted to the game itself and fall in love with the user interface of the websites or apps that have these features. A game is designed at several levels to ensure the audience remains engaged and interactive. Retargeting of consumers thus becomes easier and so does repeat purchase. The research methodology used is descriptive research incorporated with collection of primary data through a self-constructed questionnaire & analyzing it through SPSS software to find the factor analysis & thus help in data reduction & interpretation for a sample size of 200.

The questionnaire included 20 questions, wherein 10 were based on gamification, game elements, awareness related to metaverse & gamification, increased purchase frequency resulting from the use of gamified content. The other 10 questions were based on broad factors of Self Determination Theory that is autonomy, relatedness & competence.

Keywords: Gamification, game design elements, consumer psychology, consumer behaviour, elements of gamification, scoring, points & badges, leader boards, avatars, self-determination theory, autonomy, relatedness & competence, Factor analysis & correlation using SPSS, intrinsic & extrinsic motivation.

1. INTRODUCTION

The study will examine role of Gamification in motivating individuals & the effect on consumer psychology by collecting primary data through a questionnaire distributed among a sample size of 200 participants. Use of gamification in NFT marketing and XR technology used by leading luxury retail stores, online gaming avatars in Metaverse, creation of virtual marketplaces by top brands like Gucci, Louis Vuitton is studied through this research. Formulation of questionnaire on the basis of parameters to include questions on Gamification, Marketing, awareness about Metaverse, Extended Reality, NFT marketing, virtual marketplaces, online avatars, popular games by luxury brands, ecommerce websites was done and then distribution to as many students and youth groups to obtain a sample size of 200 people. Contacting students from different departments of the University to circulate the questionnaire to students from different educational backgrounds to create more diversity and get more accurate results from larger sample size. Feedback was taken from faculty and peers on the quality of questions included in the questionnaire & made necessary changes. Identifying statistical tool to be used as Factor

Analysis on SPSS. Correlation between the factors has been depicted, KMO & Bartlett's test of sphericity. Learning about how to execute these tests on SPSS through YouTube videos to study factors of intrinsic and extrinsic motivation for gamification. Elements of gamification have been studied for various types of motivations & the factor loading of the different components for self- determination theory was carried out. Correlation between the factors has been depicted, along with KMO & Bartlett's test of sphericity. Significance of values obtained through different tests was studied.

2. LITERATURE REVIEW

(Haziri, Chovancova 2019) Gamification plays important aspect in influencing buying decision of consumers and in affecting their psychology through use of game elements. Game elements can be used both in utilitarian as well as hedonistic patterns to attract consumers to buy impulsively, to share information with consumers to promote consumer learning and also to resolve their queries and complaints. According to a 2018 report, gamers spend six hours on an average per week in playing games online. Over a certain

time, games have come to motivate customers and impact their behaviors. The researchers used the parameters of aesthetics, game design & dynamics to frame the questionnaire and identifying of gaps was done accordingly keeping in mind the players' reaction & response and the partial least squares- structural modeling carried out to analyze effect of gaming on the level of engagement & motivation. [1]

(Al- Zyoud, 2020) Advancement in technology has changed the way products and services are marketed and brought about a change in the strategies used by marketeers to attract customers. Co- creation has become more common and consumer insight and experience has led to more innovative methods of gamification & game design so as to retain the customers already acquired and use electronic word of mouth to attract new customer base. Consumers' engagement level becomes manifold when techniques like point systems and scoreboards, extended reality are used to provide better immersive experiences. Consumers can be relayed necessary branding messages & communication increasing the level of reinforcement & loyalty. The study used variance-based modelling to assess eWOM sharing & intention of purchase by customers. [2]

(Tobon, Ruiz- Alba, 2019) With the availability & affordability of smartphones, people use leisure time to surf ecommerce websites and look at varied choices available online as compared to visiting offline or physical stores that are located at far off places. Brands like Starbucks also possess their reward cards to enhance loyalty of the customers, Amazon Prime also promoted single free delivery for signing up to the streaming service for a month on free trial basis to increase their reach. Gaming is now widely being used in learning & the field of education. Gamification can be either reward based or meaningful wherein the former involves the usage of leaderboards, badges, points & achievements and the latter can be used for transformational learning and bringing about a change of beliefs in the long term. It can be used for motivating intrinsically when comprised of 6 factors ranging from play, source of information, way of reflection, engagement; choice and repeated exposition. In Psychology the self-determination theory explains the needs satisfied by gaming which include competence, autonomy as well as relatedness or belongingness. [3]

(Yadav, 2022) Gamification has a strong effect on the emotions experienced by the consumers and the deployment of game mechanics to enhance the app experience in the field of health & wellness has led to more of positive emotion generation as compared to negative ones. The consumers are more easily swayed by deploying advanced game like elements within apps which lead to significant rise in their intention of purchase. Positive or happy emotions when associated with the brand in question leads to higher engagement for the brand again leading to increased intent of purchase. Many leading brands for example Amazon & Nike use in-app game technique to motivate the customers into engaging better with the brand and therefore helping in more recall & reach for the mentioned brands. [4]

(Gupta, 2016) With the advent of gamification, it has not only brought about digital disruption in marketing but also how brands are going forward in advertising & promoting their varied products. As the gadget numbers used by families have increased so has their intent of purchase and more income in

disposable bracket has led to consumers shopping for widely publicized brands through the online mediums. This has also changed how retailing has drastically changed online and has come to involve more game like techniques. Gamification is now widely being used in public policies by the govt. of various countries for welfare & educating citizens. Learning in defense sector has also moved forward leaps & bounds by using war simulations & the like for the concept of serious games to influence personnels to display more learning ability. [5]

(Sheetal et. al 2022) Gamification & ethics have to be used by marketeers in intelligent manner as the use of such elements to influence the consumers could also be counted as some sort of manipulation as it does affect the users' autonomy. An example of this could be when reveal of original intent which employing gamification is not disclosed by the said brands so as to not thwart the consumers' engagement with them. Exploitation could also result when consumers invest a lot of their time & effort in exchange of no real rewards leading to dissatisfaction & rise in negative emotions. Therefore, the onus of usage depends on the marketeers so that gamification is used as tool to empower the customers and only results in positive emotions & behaviors among them. [6]

(Widjaja et. al 2021) The impact of gamification on the increase of impulsive buying is studied by the means of the study which showed how gamification trends lead to consumers having a changed behavior pattern from when gamification was not used by the application developers. It showed how content-based techniques of marketing are more often used to create awareness about the brand and do not contribute as much to sales or change in behavior as done by gamification technology & mechanics. The demographical aspect of the study showed how there wasn't much difference between men or women when it came to impulse buys in the presence of gamification. [7]

(Yi-Jen Ho et. al 2020) Gamification involves usage of badges & leaderboards to motivate the users to keep them glued to the platform & thereby increase engagement with them. The use of online methods of awarding badges has a significantly more positive response in motivating people & is linked to self-determination & helps in learning which is more likely self-paced. It does not need the users to brag about it but can be subtly displayed on the profiles, also there are a bunch of different courses that can be pursued which provide badges digitally. In contrast to leaderboards, which have more of a comparison method & may lead to feelings of being either superior or the opposite to your competitors. It also might lead to more dissatisfaction & unhealthy emotions which lead to decrease in engagement if creating more negative feelings as opposed to happy. [8]

(Schobel et. al 2016) The elements of gamification deployed in learning management & education technology has witnessed a rise in bundling of elements that are as follows:- badges, points, avatar, goals & leaderboard etc. Different consumers showed their likings by selecting different variety of options available to them in various combinations of elements. This study found out that points & levels which are more inclined towards motivating intrinsically were opted instead of leaderboards which increase competition & hamper learning affecting the psyche of consumers by depicting negative emotions of inferiority whilst comparing themselves with others. The paper investigated the patterns of users

engaged in LMS and their choices when it came to elements that were put in place for gamifying the experience. [9]

(Zhao, Cho 2022) Gamification in education & LMS has still witnessed ongoing research compared to the field of marketing & ecommerce use of gamification by giving incentives. The effect of richness brought in by symbols & satisfaction by achievement motivates intrinsically whereas fun as well as & spread via social contribute extrinsically in terms of contribution and effect of used elements in designing games. The relation existing between elements is then utilized in creating techniques of marketing which will definitely be more beneficial for consumers & marketers alike. Sharing rewards/ incentives with friends & family via social is gathering more momentum & leads to more engagement & awareness of the brand. [10]

(Brauer, Mazarakis 2022) Intelligent virtual assistants can also rely on gamification to increase level of motivation. The study was conducted to read effect of game elements in learning English language & pronunciation through an application that makes use of voice recognition & audio feedback to improve motivation & engaging experience. It introduced readers to less popular concept of audio gamification which is used because audios can transmit greater amount of information than text. It's also used by the narrator in guiding the user in all of the video games. In many instances, visual representation doesn't enforce learning as strongly as audio does. [11]

(Yan Xu et. al), 2020) A great instance of intrinsic motivation is enjoyment which drives the consumers to play the games repeatedly or to do continue with tasks that they naturally feel more enthusiastic about. Intrinsically people are also impacted by their environment & social circumstances & it can be thought of as more of an inbuilt mechanism in contrast to external parameters like competition & awards. The paper analyzed how autonomy, which helps people do their tasks according to their own selves & competence which creates a sense of being great at what you do are two factors that can be termed as intrinsic. Consumer enjoyment stems from the feeling when after meeting basic psychological needs including relevance, competence & autonomy, the consumer experiences a sense of fulfilment.[12]

(Kirill Vdov, 2020) Gamification has a very lasting impact on the mind of consumers, depending on the left & right halves of the brain the Octalysis framework is structured, the feelings of self-expression & creativity are controlled by the right half of brain leading to intrinsic motivator whereas analytical & logical left brain is associated with extrinsic motivator. Drivers towards top of the octagon contribute to White Hat gamification & are positive influences as compared to elements in the bottom of octagon which are negative & contributing to Black Hat. But the black hat ones are not very good for the consumer as they lead to pressure constantly. [13]

(R. Rialti, 2022) Millennials are attracted more towards advertising through gamification resulting in its major deployment as a marketing tool. The beliefs & attitudes of consumers have a direct effect on the equation between in-app purchases & use of gamification. Theory of Planned Behaviour & Use-Gratification Theory can be studied to evaluate how consumers derive their experience from Gamified Advertising or GAMEX & how it leads to creation of benefits & building intention to purchase through an application. Gamification can lead to triggering consumer experiences which they may want to replicate by incorporating fun & enjoyment into advergames hence promoting gamified advertising causing an increase in sales & effectiveness of advertising. [14]

(Mitchell et. al 2016) Gamification can be used for promoting positive behaviour & bringing forth behavioural change by combining it with social marketing practices. This increases positive engagement of the consumers with the brand itself while promoting positive social behaviour & practices which help society in general. The use of fitness apps like Fitocracy to promote daily physical fitness & exercise also have started implementing game like elements to promote increased usage & popularity of the app among the youth. The social marketers believe that positive social change can be brought about by focusing on the intrinsic motivators of humans & targeting the fulfilment of these basic needs of relatedness, competence & autonomy. [15]

(Merhabi, Petridis, 2021) The use of gamification in co-creation of brand value has been studied in this paper which examines role of 4 types of activities in exploring game elements. Co-creation activities can include things like word of mouth where consumers promote, forward or share posts or content about the brand with their community. Information can be obtained either by method of insight sharing where surveys, live data, voting are used or formless with recommendations & feedback. Gamification also helps in co-creation by contributing to activities like customer service with problem solving and random tasks associated with crowdsourcing platforms. [16]

(Azani Sari et. al 2019) Blind students face difficulties in learning due to absence of interactive mediums & usually resort to independent learning. To encourage the blind students, gamification helps a lot by increasing their enthusiasm & motivation. Learning apps like BrailleTouch which have eye freezing movements for entering texts in mobile, Taxology using gamification on Windows platform, Type in Braille for teaching typing on smartphones with touch feature etc. are making it possible to overcome the hurdles faced in learning by students afflicted with visually impairment. Based on their research, they would help the Indonesian schools with the content management after all the beta testers were elated with the experience provided by the application. [17]

(DiGregorio, Gangadharbatla, 2016) Gamified self has led to increased self-tracking through smartphones and other wearables that make use of applications with the tracking feature to study the consumer activities & track them effectively. This has created a lot of scope for self-improvement as the user becomes more self-aware and the power of knowledge becomes theirs to implement for their own betterment & improved standard of living. With the increase in connected devices in Indian households, tracking through the GPS sensors, accelerometers, pedometers becomes possible. The marketers can also leverage such personal information collected by apps to provide personalized recommendations to consumers on the basis of their contextual targets & the content consumption pattern resulting in better acceptance of technology. [18]

(Linda Schlegel, 2020) Gamified content is linked to self-determination theory & the trilogy of PBL- points; badges & leaderboards help the consumers feel a sense of satisfaction when they successfully achieve their objectives to climb up the ladder & progress to the higher level in the game. Studies

have also shown that it may lead to radicalization & increase in engagement with extremist groups through the formation of online communities many of which use gamification or the concept of rewards for accomplishing the objectives. Video games have been known to have violent content & are a platform for spreading extremist ideology through the use of technology such as the Patriot Peer App which has livestreaming feature for performance gamification. [19]

Kristiani et. al 2022) The best example of gamification in making learning interactive is use of apps like Quizizz by teachers in schools & universities for the students. This app can be used by teachers to develop their own quizzes which can be either graded or just for increasing engagement & motivation of students. These tests can be structured to include multiple choice questions on varied subjects & include a timer as well, this app also feature points & badges for getting answers correct & the students are able to see their performance in the form of a leaderboard which can be used to identify top performers for recognition & weak performers who need to devote extra efforts & time to achieve a better standing in the quiz. [20]

(Hristova et. al 2020) Gamified design helps in changing the communication pattern of youngsters. An example of this is gamified streaks on Snapchat where youngsters maintain streaks to get better rankings on the platform & it has a wide impact on their social communication as well & how they interact with their peers. To uphold the streaks, they need to make sure that they're exchanging one snap per day ranging from good morning to good night snaps or snaps meant for the mass sending feature. A lot depends on how others engage with their content & whether they reciprocate in the same way or not leading to development of the concepts of metagaming & reciprocity for more relevance within the audience. [21]

(Debbita Lin, Kaur et. al 2017) Kahoot! as a learning platform gained a lot of momentum within a research conducted on students of Malaysia. It was shown to reinforce learning & induce motivation and resulted in positive outcomes for teachers & course designers alike. As it is a free platform, it encourages students to make learning a part of their daily routines. It can be used to teach all kinds of subjects mostly media-related and in various languages to be able to cater to learners of all age groups. It facilitates the interaction of teachers with students building upon the pre- existing infrastructure, making use of the audio elements & graphical interface available to the learners. [22]

(Rojas Torrijos, Jose, 2020) Sports coverage through gamified elements is known to increase coverage & informational content for viewers. Ahead of important sporting festivals & world wide events like the Olympics & Football World Cups, the media outlets design their communication to relay the message through news games & gamified pieces which play a vital role in keeping the audiences entertained. Sports have the distinction of bringing communities & countries together and leveraging sports events makes sure of a greater brand awareness & recall as well as a higher return on investment for the brands. [23]

(Caroline S.L. Tan 2021) Gamified OTT services are gaining a lot of momentum & the OTT platforms are widely being used by brands to publicize their products & connect with audiences specific to their target group. The game design elements selected would have a variety of combinations and these were studied for their relevance in over-the-top media context. The combination of courses, controls & components are used to design interactive gamified experiences for users on OTT platforms. Many of them have started producing their original content which has led to the upsurge of competition in this field as well as the variety of content available to the consumers. [24]

(Daniel Moise 2013) Gamification can be treated as a Customer Relationship tool for managing & nurturing the brand's relationship with its customers as well as stakeholders. The use of loyalty programs makes the brand's vision of achieving loyalty more fruitful through gamification. Handling of the interactions with the consumers & recording their purchases daily ensures the maintenance of a verified database of consumers' personal info. which can be leveraged by brands to customize their communication for the consumers. It can be used for making more attractive & enticing catalogues by gathering consumer insights and tracking their purchase frequency to build more loyalty for the brands. [25]

(Wanick, Stallwood, 2023) Brands use storytelling across all media channels to develop a coherent message that resonates with the customers & helps the luxury fashion brands to maintain their relevance in the modern times by making their experiences gamified to suit the consumers' shift in consumption pattern of more digital content. The Ralph Lauren Winter Escape by Roblox ensured the brand's presence on the metaverse and changed the way consumers were interacting with the brand by having more scope for customization for avatars & the reward system for consumers. [26]

(Cedrola, Giovannetti, 2023) The possibility of in app purchases & digital avatars makes it feasible for youngsters to engage digitally with luxury fashion brands that they cannot afford at the moment but aspire to purchase in the future. It changes the way brands communicate their messaging & entice customers with online or phygital experiences. Brands like Lego, Balenciaga have their presence on pic Games platform, Gucci & Nike on Roblox, games like Fortnite sell a lot of avatar skins to reinvent the online character's appearance time and again to keep the consumers interested. Storytelling by brands is the new age method of building brand awareness & connect with consumers and helps in keeping the brand legacy alive. [27]

(Eulalia Rodriguez et. al 2013) Game elements have made their way into the field of interactive tourism by leveraging Augmented reality, scanning QR codes, Web 2.0 to deliver virtual visits to tourists in the comfort of their homes or while navigating their way across a World Heritage City. The modelling of the important landmarks was done through the website where users could select which route they would take up, any information about the monuments & sites they visit by scanning the QR codes linked to every image on the website. The use of smartphones & 3D animations in the field of tourism has revolutionized immersive experience for consumers. [28]

(Pedro Luis, Gonzalez 2013) University building & spaces can be available for virtual tours to prospective college students. This will help new students to tour the place & find their way around the campus with ease. It will also ensure virtual management of all the spaces by making them browsable & allowing interaction for students with disabilities. It will thus allow students to interact with university management more effectively, find informational content with ease across departments for example, research

papers & articles. The geolocation can also be tracked for updating students' attendance & ensuring their presence in the campus physically during college hours. [29]

(Dominik Gruntjens, Muller et. al 2013) Game based tours of the city much like geocaches are getting popular with the use of advanced authoring tools which help finish the tour within 90 minutes. It helps the tourists engage with other people & form online communities, becoming a part of conversations online. The gamified tours ensure a complete immersive experience and formation of strong social network of people with similar interests in places to travel. This can provide a great push to solo & women travelers who wish to tour a particular city but do not have company. Through online communities & social exchanges, they have a chance to socialize & go on real adventures after making friends in online excursions. [30]

(Jaipong 2023) Creators on TikTok also employ giveaways, referral codes for online shopping for which they get a commission. To understand TikTok marketing, it is essential to notice that its mostly used by younger generations & thus the content is also curated such that they are targeted. Mostly youth share & promote engagement with short format of videos like TikTok & keeping upto date with latest technologies and brands result in better reach through TikTok marketers. The Creator marketplace is very popular for content creation & influencer campaigns. The measurement of statistics through analytics suggest that gamifying the social media content has helped open new doors for content creators & marketers. [31]

(Sadana, Sharma 2021) Youngsters prefer OTT over traditional cable TV because of a variety of reasons which also include gamification of content. The consumption pattern has changed with the upsurge of many OTT platforms all of which provide their services to the consumer on the go. The marketers are also able to gather demographic data of consumers through form filling on these apps & such information is useful for targeted advertising. The OTT medium gamification is preferred because of convenience and lesser data charges, also the consumers can choose between content which allows for more private & closer screen viewing as compared to community viewing on linear TV. [32]

(Saleh Bazi et. al 2023) Luxury fashion brands are increasingly amping up their social media presence to engage with consumers. Delivering higher quality of content with an aesthetic value is of key importance to luxury brands which differentiate themselves on the basis of rarity & exclusivity. Gamifying the experiences result in an increase in loyalty & love for the brand which gets quadrupled when gamification of content makes it accessible & affordable for consumers all over the world to buy digital garments for the online avatars. Brands like LVMH, Dior & Gucci also have shifted most of their advertising budget to online mediums to garner more awareness of the brand & their products through the metaverse. [33]

(Sun, Xing 2022) Green consumer behaviour is brought about by integrating protection of environment with gamification by making use of achievement, enjoyment & social motivation to promote green consumption. Persuasion theory can result in attitudinal changes of the consumers by using persuasion to change their social behaviours. Gamification of persuasions systems can play a primary role in accomplishing the goal of sustainable development. Game stickiness also increases manifold with the exchange & communication of information to motivate the consumers to use resources more sustainably. The Ant Forest in China was researched in this paper using structural equational modelling. [34]

(Kocer, Tampio 2022) Cheating is potentially harmful in the context of online games for both the game makers & players. It decreases the motivation of those players who do not cheat. Activities performed by a human can be made to be mimicked by a bot and this type of cheating is referred to as botting. In games like Fortnite, cheating will allow players to win repeatedly defeating the whole purpose of the game by making it one sided. Cheating in online games is rather more harmful than physical games as hackers can steal the users' personal data and cause damage to important files stored in the device. Multiplayer games are thus more enjoyable and have limited scope for cheating through the use of scripts or bots. [35]

(Lao, Ki 2021) Fashion retailers made a shift from physical stores to virtual online stores during the pandemic. It was envisioned by the leaders of big fashion houses that mobile commerce would have greater sales than the traditional way of selling. Thus to accommodate to the new normal & have increased sales, most of the fashion companies moved online. VR feature was most widely used by these kinds of apps meant for smartphones wherein you could try the features before buying the product. Chinese company Alibaba also has a game called Taobao Life, where consumers can customize their online avatars for gaming purposes. To try on the clothes before making a purchase, Amazon also has a VR enabled fitting room for the consumers' convenience. [36]

(Hamari, Koivisto et. al 2014)Concept of gamification can be broken into many sub parts to understand the motivational influences which lead to consumption of such gamified content by the consumers. The outcomes as a result of gamification, changes in behaviour or behavioural outcomes, changes in the attitudes or psychological outcomes as well as changes either positive or negative in motivation levels termed as results of motivational affordance. The components of motivational affordances that were studied in this paper included feedback, challenge & progress; clear goals & story levels. Storytelling through the content is very essential for the brands as well. [37]

(Camilla Dahlstrom 2017) The study researched on whether tangible system of rewards are in fact a deterrent to intrinsic motivation and the causality of orientation determines whether the person would be involved in a control oriented feedback loop or an information oriented one thereby increasing or decreasing the intrinsic motivation accordingly. When a person perceived as controlling is denied the need for autonomy, automatically intrinsic motivation takes a dip. In contrast when a person perceived as informational is supported by the need for competence their intrinsic motivation rises because the intent is to gain information and increase self capabilities. [38]

(Ryan, Rigby et. al 2006) When gamification is used in computer online gaming, it also has certain effects on the well being of the consumers of that specific gamified content. It can alter their sense of well being by changing the way they experience the games, causing the plays to be fully immersed in the experience with the advent of advanced technologies of augmented reality. It can lead to changes in preference for any games to be played in future, continuing the play or not, affecting the mood, vitality & self esteem of the players when

they either win or lose the games leading to changes in behavioural patterns pre & post game scenario. [39]

(Conaway, Garay 2014) The gamification results obtained by websites can be used for the betterment of services in service marketing. This differs when we look at gamification from the viewpoint of customers & managers. The website of the enterprise is mostly a lucrative option for customers only when they have progress paths where customers can track & measure their performance continuously, possibility of increased social interactions, reward & feedback system to maintain enthusiasm & the website's attractiveness in terms of interactive UI - user interface & ease of use for the consumers. Completion of tasks when rewarded virtually increases the level of competence felt by an individual thereby increasing their social standing in networks. [40]

3. RESEARCH METHODOLOGY

The research methodology is descriptive research incorporated with collection of primary data through a self constructed questionnaire & analyzing it through SPSS software to find the factor analysis & thus help in data reduction & interpretation for a sample size of 200.

The questionnaire would include 20 questions, wherein 10 would be based on gamification, game elements, awareness related to metaverse & gamification, increased purchase frequency resulting from the use of gamified content. The other 10 questions will be based on how broad factors of Self Determination Theory that is autonomy, relatedness & competence can be rated by the participants based on different variables included in underlying factors by using Likert scale. The correlation matrix would be found out, as well as KMO & Bartlett's Test of Sphericity. The plotting of scree plot along with variance explanation by each of 3 factors will be discussed, component matrix will be found along with rotating the factors to obtain rotated component matrix.

4. RESEARCH OBJECTIVES

1. To establish how new trends in gamification are affecting consumers and what changes it has brought in the consumption pattern of consumers.
2. To analyse incorporating game elements in the design and their effect on intrinsic & extrinsic motivation.
3. To study contribution of factors such as autonomy, relatedness & competence for Self-determination theory in helping increase the purchase intention of consumers.

Suggesting changes to be made to involve gamification in devising marketing strategies and giving the customers an immersive experience.

5. QUESTIONNAIRE DESIGN-

The questionnaire comprised of 20 questions.
a) 5 questions on Trends in Gamification & Consumer Behaviour to establish how new trends in gamification are affecting consumers and what changes it has brought in the consumption pattern of consumers.
b) 5 questions on game elements affecting intrinsic & extrinsic motivation to analyse incorporation of game elements in the design and their effect on intrinsic & extrinsic motivation of consumers.
c) 10 questions on Self Determination Theory under the factors of autonomy, relatedness & competence to study contribution of these factors by their loadings & their role in increasing purchase intention of consumers.

Demographic questions to understand the sample participating in the survey.
1. Name
2. Gender
3. Age
4. Occupation
5. Income

TRENDS IN GAMIFICATION & CONSUMER BEHAVIOUR

A. **Establishing how new trends in gamification are affecting consumers and what changes it has brought in the consumption pattern of consumers. (5 questions)**

1. Gamification techniques in education help in keeping me motivated to learn.
2. Extended reality will boost brand value of luxury retail stores implementing avatars of consumers in the metaverse.
3. I have heard about instances where gamification has been integrated with NFT's.
4. AR/VR deeply affects consumer psyche & increases footfall in movie theatres, malls leading to more hedonic buying.
5. I'm likely to repurchase utilitarian products from e-commerce websites which use points scoring, badges, contests etc.

GAME ELEMENTS & IMPACT ON INTRINSIC & EXTRINSIC MOTIVATION

B. **Analysing incorporating game elements in the design and their effect on intrinsic & extrinsic motivation. (5 questions)**
6. Points scoring, badges keep me motivated intrinsically (from within).
7. Leader boards are highly competitive and make me feel bad about my performance.
8. My friends play games on websites which motivates me also to play and increases our bonding.
9. Gamified content is fun to engage with and increases level of enjoyment.
10. Sharing rewards, achievements with friends/ family gives me a sense of fulfilment.

SELF DETERMINATION THEORY QUESTIONS

C. **Studying contribution of factors such as autonomy, relatedness & competence for Self-determination**

theory in helping with the purchase intention of consumers.

Autonomy (4 items)

11. I feel in control when I engage with gamified content.
12. Gamification allows me the freedom to escape harsh realities of life.
13. Selecting my online avatar skins & features makes me feel powerful.
14. Pacing my learning according to my preferences gives me satisfaction.

Competence (3 items)

15. Getting rewards, achievements make me feel more competent than my peers.
16. I feel a sense of achievement on completing levels within a game.
17. The fun & enjoyment I feel when consuming gamified content is unmatched.

Relatedness (3 items)

18. I feel more connected with my friends when we play online games together.
19. I like sharing gamified content with friends & telling them about my rewards, achievements.
20. Our level of cooperation & communication increases when we engage in online games together.
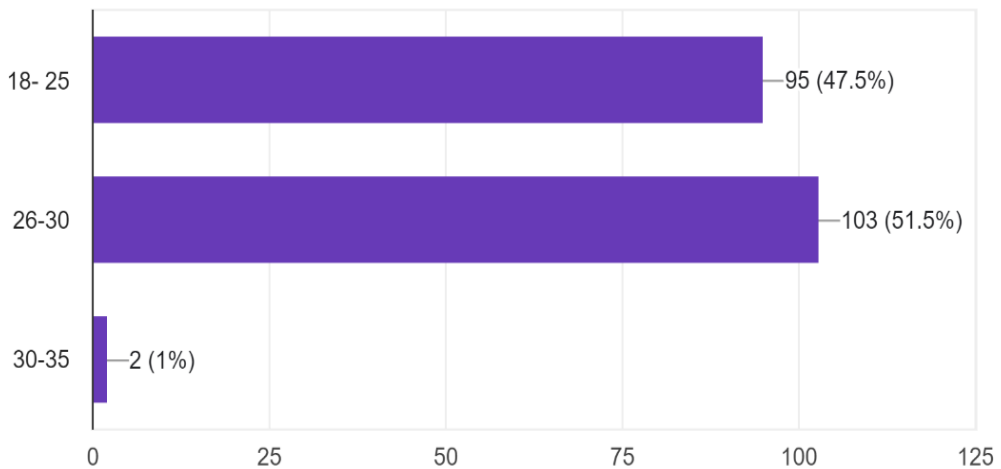
6. DATA ANALYSIS & INTERPRETATION

Gender
200 responses
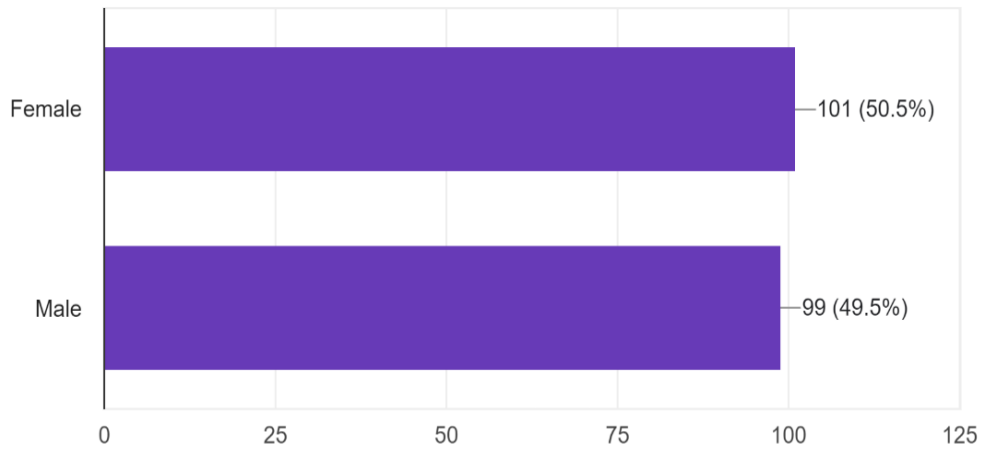
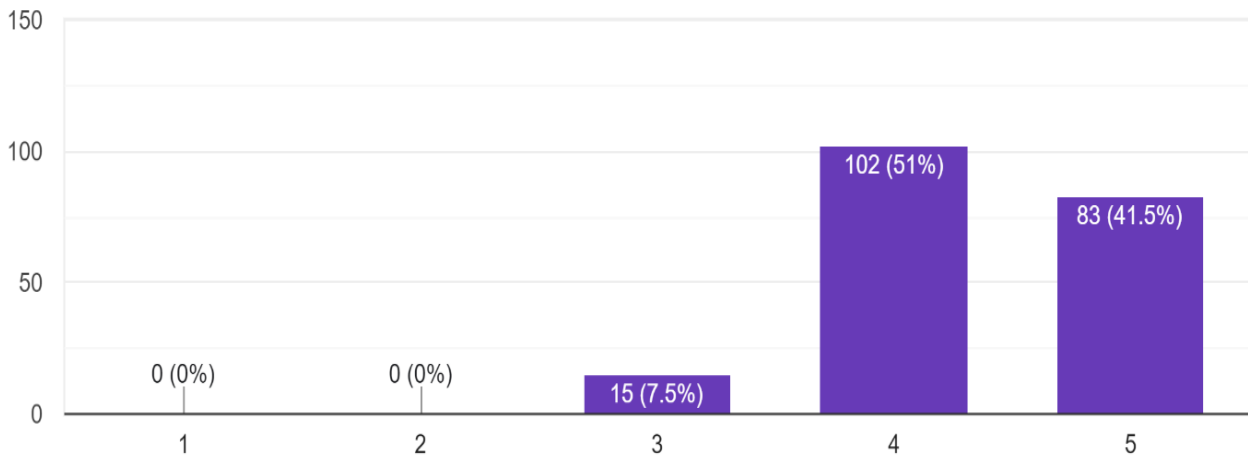**Interpretation:** 50.5 % were females & 49.5% males within a sample size of 200.

Age
200 responses

Interpretation: 47.5% of the population was within age group of 18-25 years as compared to 51.5% between the ages of 26-30 years.

## 1. Gamification techniques in education help in keeping me motivated to learn.

200 responses

Interpretation: 51% people agree & 41.5% people strongly agree that gamification increases motivation levels while learning making it fun and interesting.

2. Extended reality will boost brand value of luxury retail stores implementing avatars of consumers in the metaverse.
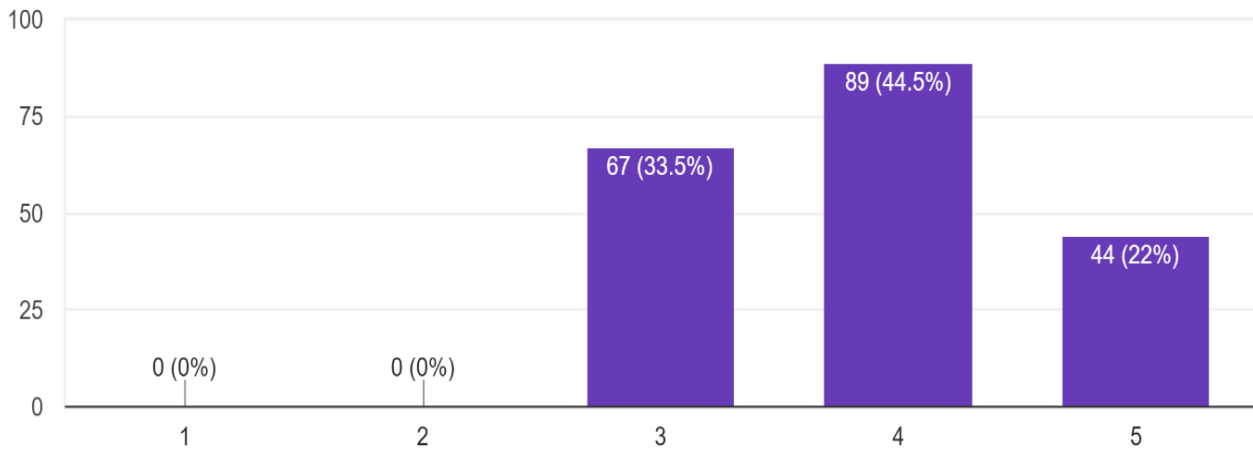
200 responses
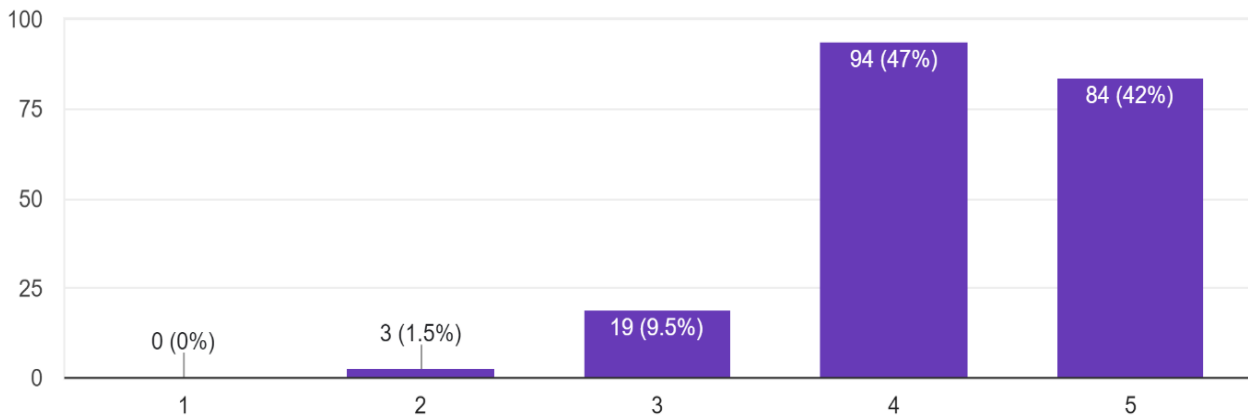
Interpretation: 47% agreed whereas 42 % strongly agreed that luxury stores will benefit from virtual marketplace created using avatars personalized according to their preferences.

3. I have heard about instances where gamification has been integrated with NFT's.
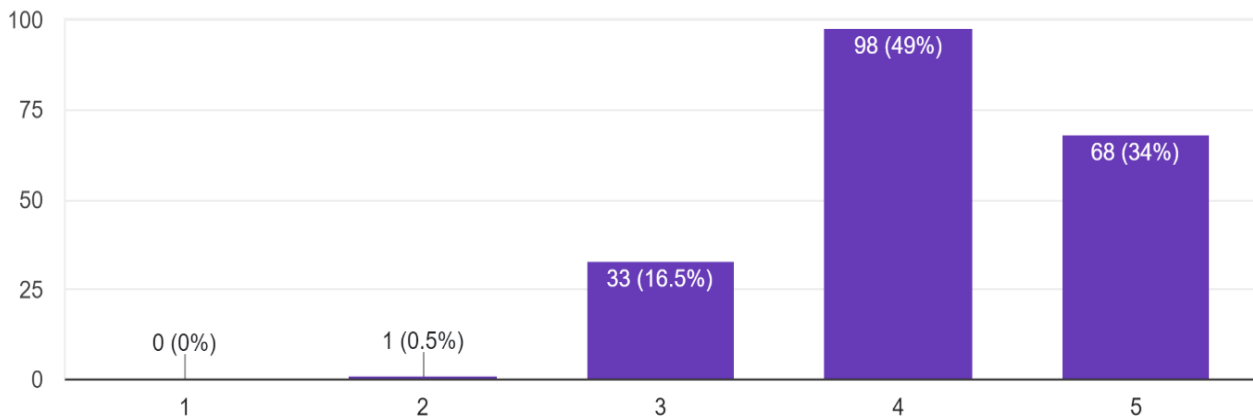
200 responses

Interpretation: Only 44.5% of people agreed, 22% strongly agreed of having heard about gamification integration with NFT for investment purposes.

4. AR/VR deeply affects consumer psyche & increases footfall in movie theatres, malls leading to more hedonic buying.
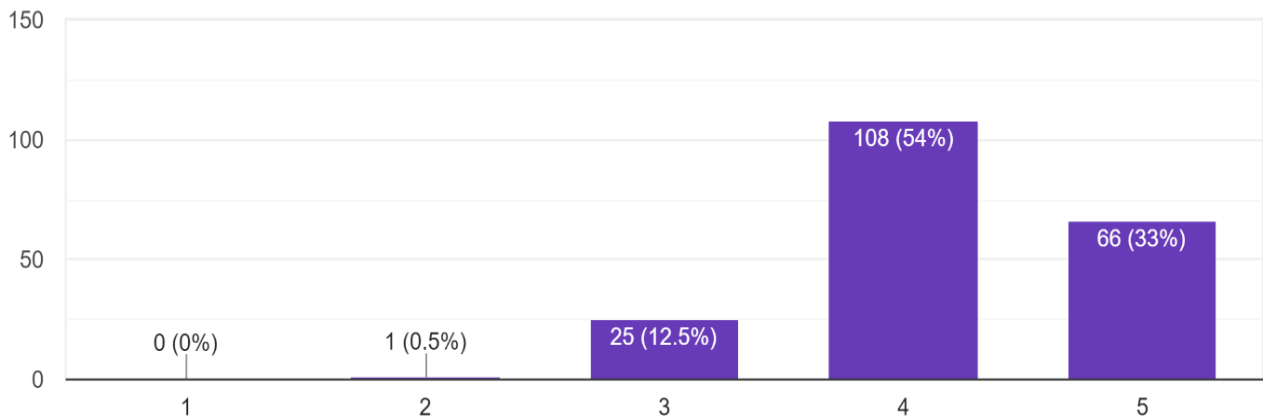
200 responses

Interpretation: 34% strongly agreed while 49% agreed that augmented reality/ virtual reality has a deep impact on consumer psyche & leads to more hedonic buying in malls, movie theatres.

5. I'm likely to repurchase utilitarian products from e-commerce websites which use points scoring, badges, contests etc.
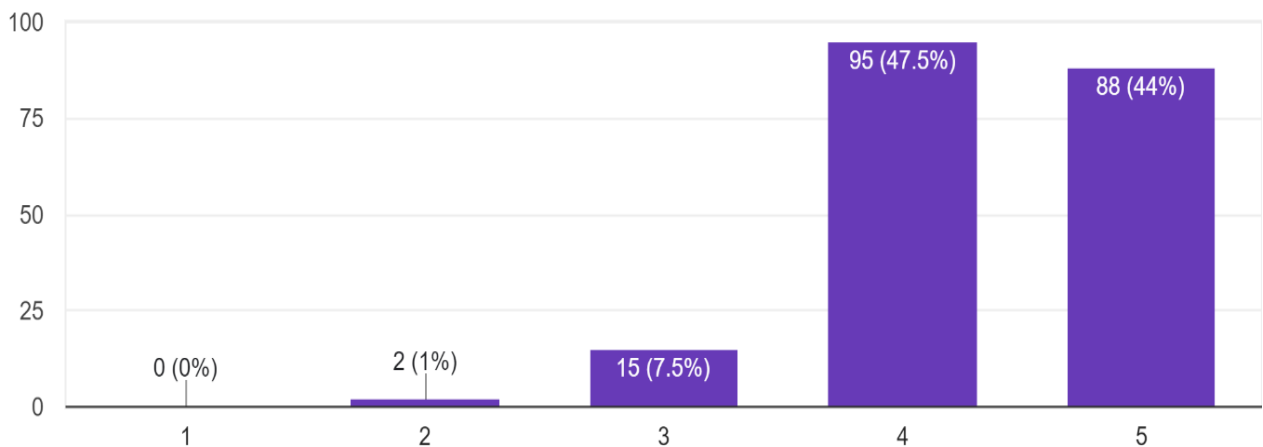
200 responses

Interpretation: 54% agreed while 33% strongly agreed that they would repurchase products of utility from such ecommerce websites which possess gamified content involving points scoring, contests & badges etc.

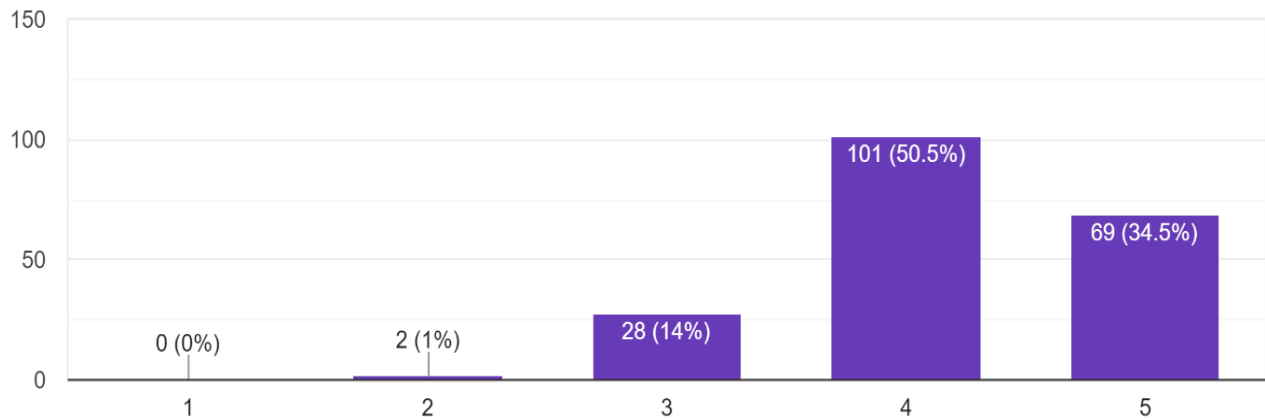## 6. Points scoring, badges keep me motivated intrinsically (from within).

200 responses

Interpretation: 47.5% agreed while 44% strongly agreed that scoring mechanisms of points & badges keeps them motivated from within to maintain their winning streaks.

7. Leader boards are highly competitive and make me feel bad about my performance.

200 responses

Interpretation: 50.5% agreed while 34.5% strongly agreed that leader board rankings made them feel bad regarding their performance leading to negative emotions & feelings of inferiority when compared with competitors.

8. My friends play games on websites which motivates me also to play and increases our bonding.

200 responses
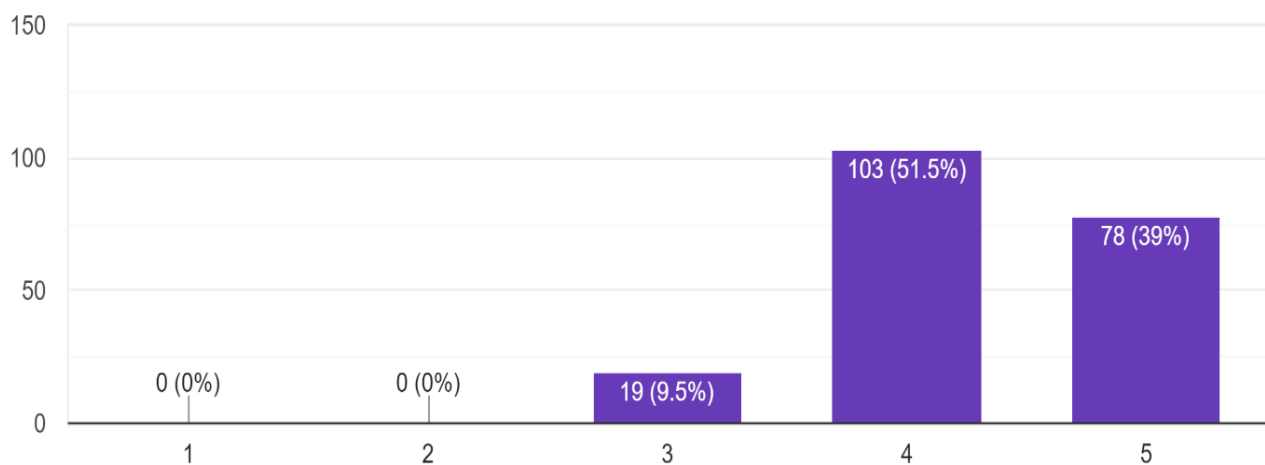
Interpretation: 51.5% agreed while 39% strongly agreed that they get influenced by their friends to indulge in online gaming together increasing their bonding & interaction.

9. Gamified content is fun to engage with and increases level of enjoyment.

200 responses
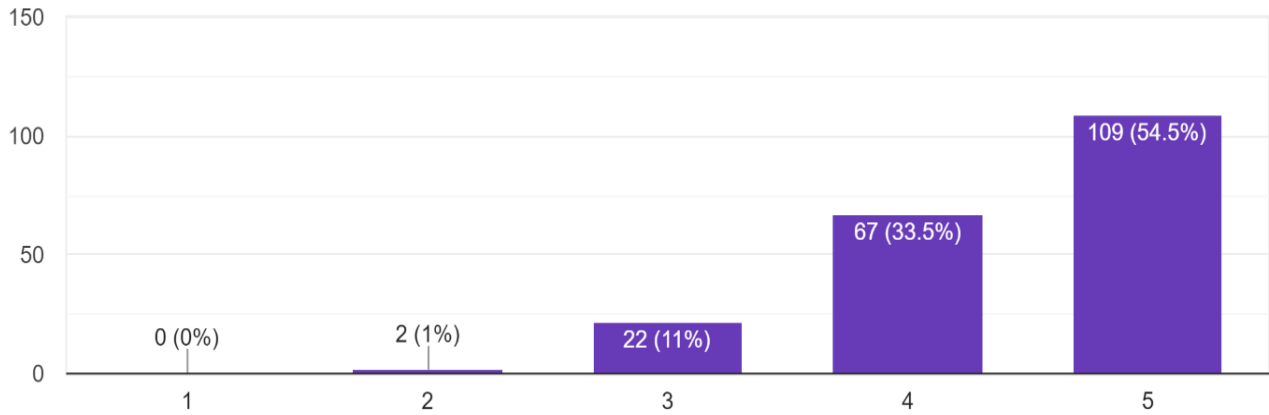
Interpretation: 54.5% strongly agreed while 33.5% agreed that they found gamified content fun to engage with and it led to an increase in their level of enjoyment.

10. Sharing rewards, achievements with friends/ family gives me a sense of fulfilment.

200 responses
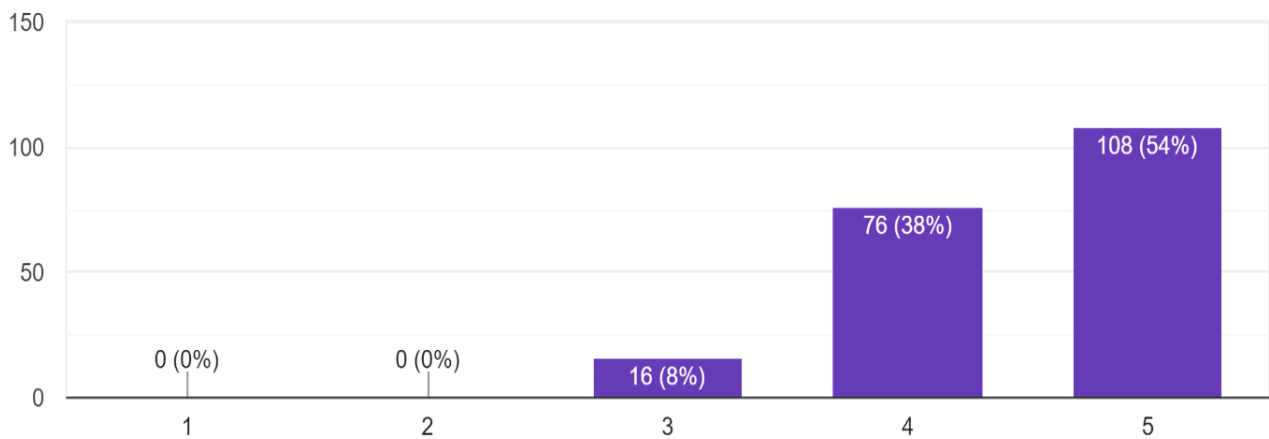
Interpretation: 54% strongly agreed while 38% agreed that enabling sharing of rewards, achievements by websites with friends & family gave them a sense of fulfilment & satisfaction.

7. STATISTICAL TOOL FOR DATA REDUCTION & SUMMARIZATION

FACTOR ANALYSIS FOR SELF DETERMINATION THEORY

AUTONOMY
1. SENSE OF CONTROL
2. ESCAPE ROUTE FROM REALITY
3. FREEDOM TO CHOOSE AVATARS
4. SELF PACED LEARNING

COMPETENCE
5. FEELING MORE COMPETENT THAN OTHERS
6. SENSE OF ACHIEVEMENT
7. FUN & ENJOYMENT

RELATEDNESS
8. CONNECTION WITH FRIENDS
9. SHARING REWARDS, ACHIEVEMENTS
10. BETTER COMMUNICATION & COOPERATION

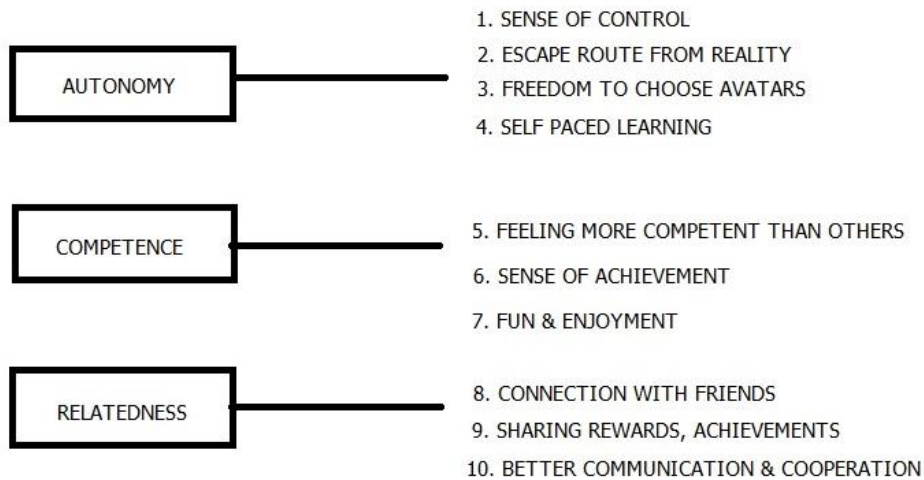|	
Autonomy Item 1	Item 1
Autonomy Item 2	Item 2
Autonomy Item 3	Item 3
Autonomy Item 4	Item 4
Competence Item 1	Item 5
Competence Item 2	Item 6
Competence Item 3	Item 7
Relatedness Item 1	Item 8
Relatedness Item 2	Item 9
Relatedness Item 3	Item 10

8. FINDINGS

Factor Analysis

Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
Item 1	1.000									
Item 2	.958	1.000								
Item 3	.886	.871	1.000							
Item 4	.921	.890	.840	1.000						
Item 5	.025	.014	.014	.034	1.000					
Item 6	.046	.084	.112	.129	.620	1.000				
Item 7	.013	-.042	.106	.070	.679	.559	1.000			
Item 8	-.053	-.072	-.027	-.017	.029	.029	.045	1.000		
Item 9	-.074	-.055	-.010	-.060	.007	.136	.154	.834	1.000	
Item 10	.022	.023	.036	.023	.028	.031	.110	.837	.791	1.000

Communalities :-

		Initial	Extraction
Item 1	Autonomy 1	1.000	.964
Item 2	Autonomy 2	1.000	.940
Item 3	Autonomy 3	1.000	.877
Item 4	Autonomy 4	1.000	.906
Item 5	Competence 1	1.000	.795

Item 6	Competence 2	1.000	.702
Item 7	Competence 3	1.000	.752
Item 8	Relatedness 1	1.000	.901
Item 9	Relatedness 2	1.000	.874
Item 10	Relatedness 3	1.000	.874

KMO and Bartlett's test of Sphericity

KMO Measure of Sampling Adequacy		.721
Bartlett's Test of Sphericity	Approx. Chi Square	1982.078
	df	45
	Sig.	.000

Rotated Component Matrix :-

Rotated Component Matrix is given below:-
Extraction method:- Principal Component Analysis (PCA)
Rotation method:- Varimax with Kaiser Normalization

			Component 1	Component 2	Component 3
Item 1	Autonomy 1	Sense of control	.981		
Item 2	Autonomy 2	Escape route from reality	.969		
Item 4	Autonomy 4	Self-Paced Learning	.950		
Item 3	Autonomy 3	Freedom to choose Avatars	.935		
Item 8	Relatedness 1	Connection with friends		.949	
Item 10	Relatedness 3	Better Communication & Cooperation		.933	
Item 9	Relatedness 2	Sharing Rewards, Achievements		.930	
Item 5	Competence 1	Feeling more competent than others			.892
Item 7	Competence 3	Fun & Enjoyment			.862
Item 6	Competence 2	Sense of Achievement			.834

Scree Plot: Eigen Value v/s Component Number
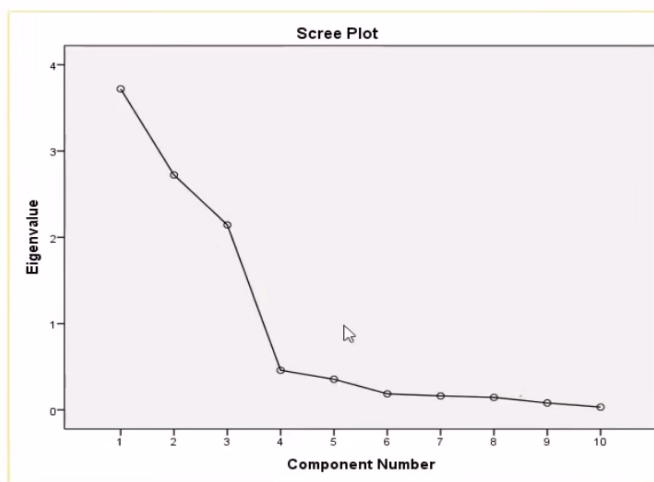
9. CONCLUSION

[1] New trends in gamification like extended reality, metaverse & augmented reality are gaining traction in the minds of the consumer & have been able to influence the consumer to change their consumption pattern more towards online as compared to digital.

[2] Incorporating game elements like points, badges in the design makes entire gamified experience very engaging & immersive for the consumers and has a positive effect on intrinsic motivation as compared to leader boards which cause negative emotions by increasing feeling of competition.
[3] The variables represent individual items or the questions. The items are interrelated and the loading occurs on the basis of 3 factors of self determination theory which are autonomy, relatedness & competence. The factor loadings determine if the components under the factors load together. The highest factor loadings are observed under Autonomy.

KMO measure of sampling adequacy amounts 7.22 is great because any value above 5 is acceptable and above 6 is considered very good. Bartlett's test of sphericity p- value amounts to .000 which is less than .001 meaning that the test results are statistically significant, a value below 0.05

The communalities table depict all initial values as 1.000 for all items. The extraction value tells proportion of variance for every variable explained by the factors. These values obtained for extraction are good as they are very high. The cumulative percentage of 3 factors obtained was 85.851 meaning that 85% of variance is explained by 3 factors of autonomy, relatedness & competence.

The three factors are above Eigen value of 1 in the scree plot, the other factors could not be extracted as they were all below the value of 1. The rotated component matrix depicts high factor loadings for the first four items coming under the category of autonomy.

For dimension reduction of factor loadings, we have chosen a value of .3 so that factor loadings below that are not displayed. We moved from direct oblimin or promax rotation to varimax roation as none of the values obtained with oblimin rotation were greater than 0.32 if the values were greater, then we could continue with oblimin.

The highest factor loading observed for component matrix with varimax rotation is 9.81 for sense of control and the weakest is 8.34 for sense of achievement showing that the consumers are more motivated by the autonomy as compared to their competence. All of the factors have high loadings but loadings of competence are comparatively lesser than relatedness. This shows that the factor loadings of relatedness or the feeling of being socially acceptable by friends & family and experiencing better relationships with them actually load higher than the feeling of competence.

This explains a very important aspect of consumer behaviour which says that people are primarily influenced by their family, peer groups and most of their purchase decision is made keeping in mind the beliefs of their social groups motivated by an intrinsically by a sense of belongingness.

10. RECOMMENDATIONS

1. Use of gamification in education by universities to increase motivation & better performance.
2. Promoting the use of gamification by leading brands to increase their presence and market share.
3. More brands should enter virtual marketplaces & interact with consumers through avatars.
4. Better financial knowledge & investments when NFT's are integrated with gamification.
5. Malls & movie theatres should have more AR/ VR based activities in gaming arenas.
6. Building of social communities by brands in the phygital space by opening gaming cafes.
7. Ecommerce websites selling utilities should have more gaming content to engage consumers.
8. Method of scoring, leader boards to be incorporated for employee improvement by corporates.
9. Gaming should be enjoyed with a bunch of friends for better cooperation & communication.
10. Allowing customization of avatars by companies to give consumers greater autonomy.
11. Students should engage with gamified learning content to increase their competence.

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