

SCALE DEVELOPMENT INITIATIVE FOR OTT SERVICES (OVER-THE-TOP) USAGE BEHAVIOUR IN INDIA

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ABSTRACT

The demand for OTT Services in India witnessed a stupendous rise, especially during and after COVID-19. Multinational players such as Amazon Prime and Netflix have attracted millions of Indian viewers. This research is an attempt to develop and validate a scale for OTT usage behaviour. Based on the existing literature and previous investigations, a draft questionnaire was designed. By testing it on a sample of OTT users (n=65), factor-wise reliability, and overall construct reliability were examined. By using Exploratory Factor analysis with varimax rotation, three factors (Perceived Ease of Use, Content Variety, and Perceived Experience) were extracted, accounting for a combined variance of 59.2%. Based on these results a revised scale was formulated. This research contributes to a knowledge base on OTT usage behaviour in the post-pandemic era. The study can be used as a base for any further investigations on behavioural aspects related to OTT usage in India.

Keywords: OTT Usage behaviour, Perceived Usefulness, Perceived Ease of Use, Social Interaction, Pleasure seeking behaviour.

Introduction

India witnessed a telecom revolution during the last decade. Affordable smartphones, relatively cheaper internet access charges, and a sustained rise in disposable income resulted in a surge in the smartphone population in the country. According to TRAI (Telecom Regulatory Authority of India), total wireless connections grew at a CAGR of 5.6% during FY2010-23 to reach 1143 million in March 2023. Currently, India is the second largest telecom market globally by total subscriber base.

The aggressive entry strategy adopted by Reliance Jio, a venture by Indian business Barron, Mr. Mukesh Ambani resulted in a price war in the telecom sector, ultimately benefiting the end user. According to an investor presentation by Reliance Industries (parent company of Reliance Jio), the per capita data usage in India has increased from 6.7 GB in March 2018 to 22.4 GB per month in December 2022.

The digital revolution brought OTT (Over-the-top) services to the Indian markets. OTT is a system of providing television and film content over the internet at the request and to suit the requirements of the individual consumer. These platforms provide a viewer with a wide variety of content to choose from along with the flexibility of deciding the timing of the show at his/her convenience.

According to a report by Research and Markets OTT market in India stands at INR 249 billion, which is expected to grow at 16.6% CAGR to reach INR581 billion by 2027. Due to low-cost data plans and a rise in demand for short-duration video content, the OTT segment is expected to garner a 7-9% share of the revenue pie of the Indian entertainment industry. According to industry reports, there exist 46 different national and regional OTT players in India with Disney + Hotstar leading the market with 61 million subscribers in October 2022.

In 2019, India witnessed the deadly pandemic of COVID-19, putting severe restrictions on movement and gathering in public places. Retail, hospitality, and movie exhibition industry were some of the most suffered sectors due to such restrictions. This phenomenon helped the OTT segment post stupendous growth in subscription and viewership as it offers a wide variety of content with a convenient option of watching it from home. Considering the popularity of this medium and restrictions on the functioning of movie halls, many producers released their films on OTT platforms, resulting in further demand.

Also the OTT platforms paved the way for new age web series content which allows users to watch a particular episode in a shorter duration such as 35-40 minutes compared to a movie of a duration between 150 to 80 minutes, to be consumed at one go in a movie hall. Due to higher customisation in terms of content and genre, OTT platforms gained popularity for international content and movies based on niche themes.

When compared with India, OTT platforms are in a matured stage in developed countries such as the USA and China. Naturally, researchers have been studying behavioural patterns associated with various OTT platforms for over the last decade now. Pleasure-seeking Lifestyle of an individual and expectancy of life were found to have a positive correlation with the adoption of OTT services in Taiwan- Li (2020). The author claims that since people with a pleasure-seeking lifestyle do not wish to adopt a technology that is difficult to operate and OTT provides an easy way to browse and watch any program, people with a pleasure-seeking lifestyle tend to opt for OTT more.

A systematic literature review of the existing knowledge base was presented by Vaidya, Fernandes & Panda (2022) identifying and highlighting major themes associated with adoption and usage behaviour pertaining to OTT services. The study marked the need for a comprehensive study covering all major constructs in a single framework in the context of emerging markets for OTT services such as India. Also, a study on willingness to pay for these services to be explored considering India as a highly price-sensitive market.

Considering favourable demographic conditions, the digital revolution, and the entry of international players such as Amazon Prime and Netflix, the competition in the OTT space for the acquisition of subscribers is expected to heat up further. In such a scenario, it is imperative to explore various behavioural aspects such as adoption, customer satisfaction, and loyalty in regard to services offered by various OTT platforms in India. This research aims at developing a scale (questionnaire) for exploring determinants of a user's intention to use OTT platforms.

Literature Review

Models Based on Human-Technology interactions

Studies on human and technology interactions are being carried out since the industrial revolution took place in developed parts of the world. The investigations gained momentum, especially after the invention of computers and equipment based on similar technology. The review of such models is as follows

Technology Acceptance Model by Davis (1989)-In this seminal work a model for explaining the attitude and intention of a user to use a particular technology was designed and validated. Perceived Usefulness (the degree to which a particular technology improves performance or adds value to a work that is being carried out by a user) and Perceived Ease of Use (simplicity or ease in terms of using a particular technology) were validated as determinants of attitude which in turn was observed to act as the predictor of behavioural intentions.

An extended TAM (Technology Acceptance Model) was developed by adding entertainment, cost, and variety to the four main constructs to explore determinants of consumer's adoption of OTT services in New Zealand-Lee, Lim (2019). Interestingly, the study concluded that none of the predictors proposed (Perceived Ease of Use, Perceived Usefulness, Cost, Entertainment, and Variety) acts as a determinant of a user's OTT adoption. The authors underlined a need to test the same construct on a diversified sample as the study considered respondents from a specific age group only.

As a successor to TAM constructs a framework was developed called UTAUT (Unified Theory of Acceptance and Usage of Technology) by integrating key constructs in usage and behavioural intentions related to technology interactions-Venkatesh, Morris & Davis (2003). After integrating constructs from eight different theories, the study proposed and validated the perceived likelihood of adopting the technology, which is dependent on the direct effect of four key constructs, namely performance expectancy, effort expectancy, social influence, and facilitating conditions.

Adopting UTAUT theory and applying it to OTT purchase intentions in a study carried out in China, it was found that perceived value, social influence, and personal innovativeness all have a significant positive effect on OTT purchase intention, while perceived cost negatively affects consumers' intention to subscribe- Shen (2023).

Studies on OTT Adoption/usage behaviour in the Indian Context

In the Indian context, the authors found some evidence of studies on adoption/usage intention in OTT services. The summary of various such studies is as follows

The emergence and future of OTT services in India and related aspects such as user engagement (content-wise and duration-wise) were discussed by Sundaravel, Elangovan (2020). The paper anticipates OTT garnering a greater market share in the near future which would hamper Television and Movie exhibition markets severely. Similar results were obtained by Yeole (2022).

Factors such as Growth, Benefits of OTT, and dimensions of service quality, Integrated Marketing, and Communication were identified as determinants that act as an influencer in customers' selection of a particular OTT platform- Ghalawat, Yadav & Kumar (2021). The study concluded with a need for a better focus on customer service aspects by the OTT operators as the customers were seen subscribing to a platform if the perceived service quality is satisfactory.

In a similar study, factors such as overall user experience, usage of smart devices, and growing internet penetration were identified as growth drivers for the growth in demand for OTT platforms in India-Vidya, Govind (2022). In the case of the impact of demographic factors, gender, and occupation has a positive correlation with usage duration while age was found to have an insignificant impact on both, usage intentions and usage duration.

In a study to explore the reasons behind a shift from television to OTT services, three factors such as 'user behaviour', 'technological flexibility', and 'customer-centric content' play a very significant role in determining whether a customer would shift from normal television to OTT-Patnaik, Patra & Mahapatra (2022). The research argued that OTT marketers need to carefully design service packing as the respondents gave higher preference to a platform that allows access to content through two or more instruments at the same time.

Based on various investigations in the Indian and global context and the collation of various constructs used by the previous researcher and validation results from major investigations, a list of variables to be considered in research framework was prepared, which is discussed under research methodology subsequently.

Objective of the Study

The objective of the study is "To develop and validate a scale for exploring determinants of OTT user's usage intentions"

Scope of the study

Since the study aims at exploring determinants of OTT usage behaviour and developing a scale for analysing behavioural intentions, the scope of the study is restricted to a sample of respondents who are above 18 years and have experience of using any of the OTT platforms available in India for the subscription.

Research Methodology

Based on the previously validated scales and various factors considered by previous researchers while exploring the causal relationship in OTT usage behaviour, a research framework was proposed. Five factors (Perceived Ease of Use, Perceived Usefulness, Content Variety, Social Influence, and Pleasure Seeking Behaviour) were proposed as possible determinants of an OTT user's behavioural intentions.

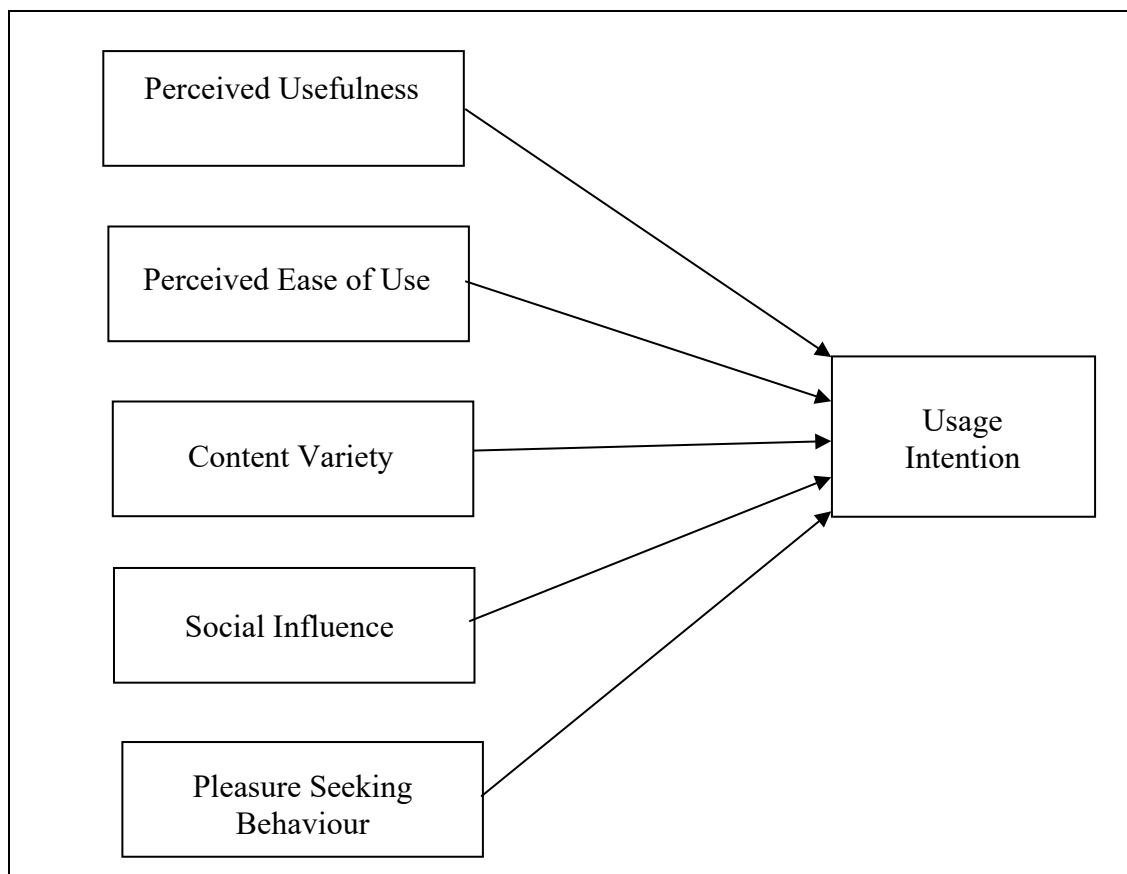


Figure 1: Research Framework

Instrument Design

Instrument Design is an important step in conducting empirical research. Since the researchers had the objective of developing a scale for usage intentions amongst OTT users, historical investigations on the same subject were studied and scales validated by the previous research involving OTT usage behaviour studies and application of TAM (Technology Acceptance Model) were collated together. Gupta, Verma & Narang (2021)-6 statements, Lee, Lim (2019)- 11 statements, Menon (2022)-6 statements, Sarrina Li (2017)-2 statements and Shen (2023)- 1 statement was used to design a draft questionnaire. Along with 26 statements pertaining to 6 variables, questions related to demographic details were designed and integrated into the questionnaire.

Data Analysis

Demographic Details of the Sample- Since the research aimed at understanding usage behaviour amongst OTT users, while selecting every sample respondent, it was ensured that the person is an active user of any of the OTT service providers. Data was collected from 67 respondents, out of which 2 entries were rejected due to incomplete data. Out of 65 valid entries, 58% were male and 42% of them were females. The 22-27 age group was observed to have maximum participation with a 60% share. 43% of the respondents stated that they spend 1 to 3 hours daily on OTT platforms and 85% of the respondents spend below 500 rupees per month for availing OTT services. 40% of the sample participants have more than 3 years of experience in using OTT platforms.

	Category	Respondents	%
Gender	Male	38	58%
	Female	27	42%
	Total	65	100%
Age Group	18-21	3	5%
	22-27	39	60%
	28-35	10	15%

	36-45	11	17%
	Above 45	2	3%
	Total	65	100%
Daily time spent on OTT	Less than 1 hour	31	48%
	1 to 3 hours	28	43%
	More than 3 hours	6	9%
	Total	65	100%
Monthly spending on OTT	Less than Rs. 200	28	43%
	Rs. 200 to Rs. 500	27	42%
	Above Rs. 500	10	15%
	Total	65	100%
OTT Experience Usage	Less than a year	16	25%
	1-3 years	23	35%
	More than 3 years	26	40%
	Total	65	100%

Table 1: Demographics of Sample (n=65)

Reliability Analysis: To ensure the reliability of the instrument and suitability of the data for further statistical analysis, Cronbach's Alpha was measured by using SPSS 22.0. The overall reliability of the instrument with 26 items stood at 0.901, well above the prescribed threshold of 0.7 (Nunnally, 1967). Except Social interaction (Alpha=0.615) and Pleasure Seeking Behaviour (Alpha=0.689), all other factors reported a reliability quotient above 0.7, a threshold prescribed. Since reliability for PSB was observed to be slightly below the threshold, the factor was considered for further calculations. However, Social Interaction was dropped from Exploratory Factor Analysis (EFA) due to poor reliability score.

Construct	Items	Reliability (Cronbach's Alpha)
Perceived Ease of Use	4	0.755
Perceived Usefulness	5	0.797
Content Variety	5	0.844
Social Interaction	3	0.615
Pleasure Seeking Behaviour	3	0.689
Usage Intentions	4	0.754
Overall Reliability	24	0.944

Table 2: Factor wise and Construct Reliability, derived from SPSS

KMO and Bartlett Test: KMO (Kaiser-Meyer-Olkin) and Bartlett Test are the two statistical tests used before EFA to examine the strength of the partial correlation between the variables. KMO values closer to 1.0 is considered ideal and above 0.8 is generally considered as a threshold, which in the case of this study stands at 0.805, meeting the criteria. Bartlett Test is a test that computes the probability that the correlation matrix has significant correlations among at least some of the variables in a dataset, a prerequisite for factor analysis to

work. Bartlett's test score of 0.00 indicates the suitability of the dataset for further statistical analysis such as EFA.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.805
Bartlett's Test of Sphericity	Approx. Chi-Square	719.67
	Df	190
	Sig.	0.000

Table 3: KMO and Bartlett Test, derived from SPSS

Exploratory Factor Analysis (EFA) - For exploring the latent factor structure underlying the dataset collected, Principal Component Factor Analysis with Varimax rotation was applied. Four independent variables (Perceived Ease of Use, Perceived Usefulness, Content Variety and Pleasure Seeking Behaviour) pertaining to 17 items were considered for EFA. The process of factor extraction produced 4 factors with a cumulative contribution of 70.3%. Criteria of a minimum of three items with a rotated factor loading of 0.6 and above was applied for the selection of the factors. As the first three factors fitted into the mentioned criteria, these three factors with 59.2% variance contribution were considered for further analysis. The details of the factors extracted are as below,

Factor 1: Content Variety (CV): Content Variety emerged as the strongest factor with a contribution of 20.4% to the total variance explained. Content Variety talks about a wide range of shows, movies, and news a viewer can enjoy through OTT. The factor also considers elements such as a great choice offered to a viewer in terms of different genres and exclusive content available on OTT.

Factor 2: Perceived Ease of Use (PEOU): The construct of PEOU was adopted from TAM (Technology Acceptance Model) by Davis (1989). Since the base model talks about human-technology interaction, and was validated in different geographical and contextual settings, the researchers felt the need to consider this factor in the research framework. In line with the historical results, PEOU emerged as the second most important factor, contributing 19.6% variance. This dimension considers ease of operation, learning to operate OTT, and hassle-free usage of OTT services while watching a movie or a show.

Factor 3: Perceived Experience (PE): The newly emerged factor was named 'Perceived Experience' considering all elements related to a user's experience while using OTT services such as happiness derived while using the platform, clear interaction with the system, and improved movie (content) watching experience. The factor contributed 19.2% to the total variance explained under EFA.

Factor	Items Description	Loading	Variance
Content Variety	OTT platforms offer a wider range of content, be it shows, movies, news.	.867	20.4%
	TV can't match OTT in terms of Content broadcasted	.693	
	I like OTT as it offers a great choice to users in terms of different content type	.670	
Perceived Ease of Use	It is easy for me to become skilful at using OTT services	.803	19.6%
	Learning how to use OTT services is easy for me	.771	
	Using OTT services reduces my hassle in watching movies/content	.657	

Perceived Experience	I feel happy when I use OTT services	.875	19.2%
	I feel that there is more content in different languages on OTT platforms than on normal TV	.758	
	OTT services improve my experience of watching movies/TV content	.690	
	My interaction with OTT services is clear and understandable.	.651	
	I can watch shows and movies on OTT from anywhere which is very useful to me	0.616	

Table 4: Rotated Factor Loading, derived from SPSS

Conclusion

The study is an attempt to design and validate a scale for analysing Usage Behaviour amongst OTT users. A structured questionnaire having 26 statements pertaining to 6 different independent and dependent variables was designed and tested on a sample of 65 respondents. After checking for the construct-wise and overall reliability of the instrument, one variable (Social Interaction) was dropped from further analysis. By using Principal Component Factor analysis with Varimax rotation, three factors were extracted accounting for 59% of the total variance explained. Based on the results of this study, it can be concluded that three factors (Perceived Ease of Use, Content Variety, and Perceived Experience) can be proposed as the determinants of an OTT user's intention to use a specific platform. Based on factor analysis a revised scale of 15 items was formulated.

Managerial Implications & Future Agenda of Research

Amidst the growing popularity of OTT platforms in India, this research designed and validated a scale for the usage intentions of an OTT user. The scale can be further tested on a large/diverse sample and the strength of a specific predictor and its direct impact on usage behaviour can be examined. This research is expected to contribute to an evolving knowledge base on OTT usage behaviour. Since this industry segment is still in its nascent stage, the scale developed by this study can be used as a foundation for further investigations in this subject matter. The results can be beneficial to OTT service providers for gaining insights into behavioural patterns of users.

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