

## ***ABOUT THE JOURNAL***

*AAFT Journal* (AAFTJ) is a bi-annual print journal published in English language, twice a year (January and July). The Journal is published from 2025. AAFTJ aims to be the journal of choice among scholars studying creative fields across the discipline. The journal publishes impactful scholarship that shapes the discipline. As the official journal of Asian Academy of Film and Television (AAFT) it is peer-reviewed and is published half yearly. *AAFTJ* publishes articles in the following areas:

- Design
- Film and Television
- Journalism and Mass Communication
- Cinema
- Fashion and Lifestyle
- Interior
- Fine Arts
- Event Management
- Photography and Videography
- Hospitality and Tourism
- Music and Performing Arts
- Animation
- Data Science
- Apparel science and technology
- Digital Marketing
- Consumer behavior
- Social psychology
- History and culture
- Merchandising and retailing
- Textile and apparel industry
- Education and pedagogy

*AAFT Journal* is the official publication of Asian Academy of Film and Television (<https://aaft.com>). AAFT is a professional, educational association composed of scholars, educators, and students in the Film, Cinema, Music, Journalism, Photography, Animation, Performing arts, Fine arts, Events,

Hospitality, Tourism, Digital marketing, Health and Wellness, Fashion, Interior disciplines in higher education.

*AAFTJ* invites high-quality manuscripts relevant to the *AAFTJ* audience by demonstrating originality, strong theoretical/conceptual foundation, appropriate methods/approaches, significant results/outcomes, and valuable implications. Please refer to the following description for each track.

# PREFACE

## **Dear Researchers, Scholars, and Esteemed Readers,**

Welcome to this special edition of our journal, where the creative minds of AAFT students come together to explore, analyse, and contribute to the ever-evolving fields of media, arts, and technology. It is with great excitement that we present this collection of research, insights, and creative works that reflect the innovation, dedication, and intellectual curiosity that define our academic community.

As the editor, I am deeply honoured to oversee a compilation that not only showcases the academic rigor and creative flair of our students but also serves as a testament to the collaborative spirit that drives our institution. At AAFT, we believe that research is not just about finding answers but about asking the right questions—questions that challenge the status quo, inspire new perspectives, and pave the way for future discoveries.

**This journal is more than just a publication;** it is a celebration of the relentless pursuit of knowledge. Appetite for Learning. Every Article, Every Research, Every Creative Activity undertaken in these pages has retained within it, labour, investigation and a thirst for knowledge. The multiplicity of subjects focused on in the present publication is a reflection of the crossing of boundaries in subjects within the institution, which is not viewed as a limitation but one that encourages creativity.

**To our researchers and contributors:** Your work is the heartbeat of this journal. Through your research, you are pushing the boundaries of what is known, exploring the unknown, and contributing to a larger conversation that transcends the classroom. Your dedication to excellence and your commitment to advancing your fields are truly inspiring. This journal is a reflection of your intellectual journey, and it is my privilege to bring your work to a wider audience.

**To our readers:** Whether you are an academic, a practitioner, or simply someone with a passion for knowledge, this journal is crafted with you in mind. We invite you to delve into these pages with an open mind and a curious spirit. Engage with the ideas presented, challenge your own perspectives, and let the insights of our contributors spark new ideas and conversations.

This journal has been developed under the visionary guidance of Dr. Sandeep Marwah, whose dedication and leadership continue to inspire our academic community. Dr. Marwah's commitment to enriching creativity, innovation, and excellence in education has been a driving force behind the success of AAFT and its students. His guidance has been instrumental in shaping the ethos of our institution, where knowledge meets creativity, and education becomes a powerful tool for transformation.

As you explore the contents of this journal, I encourage you to see it not just as a repository of information but as a source of inspiration. It is my hope that the research and creativity contained within these pages will not only inform but also ignite your passion for discovery and innovation.

Thank you for being a part of this journey with us. May we together at all times push the frontiers of knowledge, evoke creativity, and forge a better future through education and research.

**Faqiha Choudhary**

## **AAFT Journal**

Edition: Jan – Jun 2025 Vol 1 Issue 1

### **Editorial Board**

**Editor-in-Chief** – Dr. Sandeep Marwah, Chancellor AAFT, [sandeepmarwah@aaft.com](mailto:sandeepmarwah@aaft.com)

**Managing Editor** – Ms. Faqiha Choudhary (PG Diploma in Film & Television Production, B.Com {Hons.}), [faqiha.choudhary@aaft.com](mailto:faqiha.choudhary@aaft.com)

### **Editorial Board Members**

Dr. Manoj Kumar Agarwal (Ph.D, M.Sc., M.B.A.), Academic Director, AAFT, [manoj.agarwal@aeg.edu.in](mailto:manoj.agarwal@aeg.edu.in), FC 14/15, Film City, Sec 16 A, Noida, Uttar Pradesh 201301

Dr. Himani Chaudhary, (Ph.D, M.Sc., Bed.) Academics Director, AAFT, [himani.c@aaft.com](mailto:himani.c@aaft.com), B122, Udyog Marg, Sec 5, Noida, Uttar Pradesh 201301

Mr. Rajiv Mathur (M.B.A, B.COM) Director, International Chamber of Media and Entertainment Industries, [rajiv.mathur@aaft.com](mailto:rajiv.mathur@aaft.com), FC 14/15, Film City, Sec 16 A, Noida, Uttar Pradesh 201301

Ms. Haripriya (M.B.A, PG Diploma in Event Management) Director, Events, AAFT. [ao@asc.edu.in](mailto:ao@asc.edu.in), FC 14/15, Film City, Sec 16 A, Noida, Uttar Pradesh 201301

Prof. Sivaganesh Babu (M.Sc, M.B.A), Dean, School of Fashion and Design, [sivag.ganesh@asms.edu.in](mailto:sivag.ganesh@asms.edu.in), B122, Udyog Marg, Sec 5, Noida, Uttar Pradesh 201301

Dr. Sayed Nawaz (PhD, M.A. {Journalism & Mass Communication}), Dean, School of Journalism & Mass Communication, [syed.nawaz@asms.edu.in](mailto:syed.nawaz@asms.edu.in), FC 14/15, Film City, Sec 16 A, Noida, Uttar Pradesh 201301

### **Published By:**

Asian Academy of Film and Television (AAFT), FC 14/15, Film City, Sec 16 A, Noida, Uttar Pradesh 201301

Contact – 8510097411

**Printed By:** Creative Design & Print, Joga Bai, Zakir Nagar.



ARTICLES	PAGE NO.
A Study on Fashion Rental - Awareness, Acceptance, Choice, and Expectations among Indian Customers by <b>Sivaganesh Babu</b>	8
A Study on Future of Fashion Rental Industry in Delhi – NCR by <b>Nishant Singh Rajput, Siva Ganesh Babu, Nidhi Talwar</b>	28
Investigating the Influence of Sustainability Trends on the Acceptance of Biodegradable Materials in Indian Fashion Preferences by <b>Shivani Pundir, Siva Ganesh Babu, Dr. Neema Papnai</b>	40
The accuracy of musical tempo memory: Extending and comparing the Western research to the Indian demographic to study the effects of globalization on musical memory by <b>Anjali Dhingra</b>	62
Perception of Correlation between Indian and Western music as a cathartic tool: A Comparative Study by <b>Devika Bajaj</b>	80

# A Study on Fashion Rental - Awareness, Acceptance, Choice, and Expectations among Indian Customers

**Sivaganesh Babu**

AAFT, School of Fashion and Design – Noida – siva.ganesh@asms.edu.in

## **Abstract:**

The notion of sharing and collaborative consumption (CC) to the fashion setting, by giving apparel and luxury resale, renting, or exchanging, has increased rapidly in the fashion sector. However, the main problem faced by fashion rental is the awareness and acceptance of rental commodities among Indian users. Though certain businesses have found success in this market, fashion renting remains a minority type of consumerism. So, the main aim of this research is to study fashion rental sustainability in Indian consumers VIA analyzing rental fashion in India. This investigation discusses the interest, awareness, acceptance, choice, and expectation of Indian customers in fashion rental and also discusses the impact of Awareness of Circular economy (ACE) and Fashion Rental Awareness (FRA) on Interest in Fashion Rental (IFR). An exploratory study with a descriptive design is employed in the research. The survey was conducted utilizing Google Forms, distributing it to 3 categories of people Gen X (87 F 64 M), Gen Y (86 F 76 M), and Gen Z (89 F 73M). As per the survey, it is discovered that fashion rental knowledge is predicted to be 66.10% among Indian clients, whereas Gen X awareness is 47.01% implying that Indian consumers accept fashion rental. Furthermore, the research reveals that fashion rental possesses a positive influence on the interest of Indian customers.

**Keywords:** Fashion rental, Indian consumers, Fashion Rental Awareness, Interest in Fashion Rental, and Sustainability.

## 1. Introduction:

### 1.1 Background study:

Fashion changes on a daily basis, with new trends emerging and disappearing till a major pattern emerges. In recent decades, India has established a new sector that is centered on sharing or renting clothing, electronics, and minor appliances. Teenagers are becoming increasingly interested in fashion rental [1]. Emerging macro-trends, like collaborative consumerism and the sharing economy, have utilized virtual tools to propel novel business concepts ahead, particularly in the fashion industry [2,3]. Collaborative Fashion Consumption (CFC) provides customers with alternative fashion usage by incorporating the sharing economy into the garment sector [4]. Sharing, gifting, exchanging, borrowing, leasing, renting, and 2<sup>nd</sup> hand purchasing all became more common as a result of CFC [5]. Though the linear commercial paradigm, notably fast-fashion (FF), dominates the trade, an alternate business paradigm (lease/rental, resale, and exchange), especially rental featuring a deeper environmental and social emphasis, is gaining traction [6]. The alternate business paradigm allows customers to choose the common practice of acquiring new, affordable, high-quality clothes or other accessories for brief durations of time [4]. This fashion rental is also environmentally friendly since commodities are shared among multiple clients by reducing the carbon footprint of each individual.

The market for special events such as Indian weddings prompted conventional fashion rental enterprises to move to physical locations. Current fashion rental corporation has established a digital service to deliver the proper goods temporarily and has redefined clothes as a service, utilizing new logistics and technology. As a result, digital fashion rental sites providing a broad variety of items, including everyday trendy garments, designer brands, purses, and extras, have sprung up. Customer demand for a means of accessing fashion products in a better, affordable, and practical manner has

expedited the growth of access-based consumerism in the fashion sector, as e-commerce innovation has enabled it to be feasible for digital fashion renting to develop increasingly effective and accessible [7]. Researchers have coined the renting trend as collaborative consumption (CC). An attempt at CC is at its budding stages in India; companies like Rentitbae, Flyrobe, Clothing Rental, and Stylease are a few thriving rental companies in India. The influencers, through their posts, market the products digitally and influence their followers, ergo the customers in looping them to make an influential decision on the consumption of the fashion products. More studies reveal that digital marketing is ascending to its peak, and influencers play a vital role in consumer attraction [8,9].

## **1.2 Role of culture in consumer adoption:**

Various customer behaviours and reactions to a similar stimulus may be reflected in different cultures. Culture has been proven to impact consumer shopping behaviour, enthusiasm, and goods preferences [10]. Since culture encompasses a collection of principles, conventions, and representations that guide human conduct, people's perceptions of fashion renting and internet shopping may differ between cultures. Cultural characteristics continue to be important determinants of consumption behaviour in various nations, owing to the fast rise in financial and technical improvements among nations [11]. As a result, its prevalence of usage varies by nation, area, and group. The cultural analysis of Chinese and American customers provides a full insight into the role and barriers to CFC via fashion renting and buying intentions. The analysis of the two nations shows that culture has a significant effect on the adoption of fashion renting by clients from other nations. The disparity between customers in fashion renting consumption is rationalized by the effect of cultural and financial circumstances in every nation. The uniqueness between the two cultures influences how customers respond to fashion renting [12].

### 1.3 Challenges and opportunities in the Fashion rental business:

Many fashion merchants are both interested in and concerned about the success of the access-based fashion marketing strategy [13]. Though it is commonly assumed that the representational aspect of garment goods impedes access-based consumption, [14] suggest that politics, consumerism, and ease promote customers to engage in certain behaviors. Users, on the other hand, do not possess access-based goods and are therefore exempt from the hazards and consequences that come with ownership. More notably, because of the significant rise in garment and fashion-related goods as a result of FF efforts to prevent "fashion datedness," apparel harm, and quality problems, fashion retail companies endeavor to fix such concerns without jeopardizing their economic health. On the contrary, there is indeed a significant drive for more sustainable approaches to clothes consumption, which has aided the expansion of digital fashion rental sites, as the fashion sector has historically been vilified as among the globe's worst polluters [15]. One of "the key concerns confronting fashion" is sustainability, which has developed as a buzzword. Fashion rental is proposed as a means of achieving sustainability in the fashion business. Despite some success for businesses in this market, fashion rental remains a limited type of consumption for the time being, to remove perceived hurdles and promote sustainable fashion practices [16]. Low consumer awareness, cultural acceptance, and insufficient laws are all major issues. Companies are devising novel ways to minimize the sociocultural prejudice connected with used apparel and raise awareness, including online discussions with fashion experts and the provision of tailored sizes [17,18]. The global corona restriction has produced significant changes in how individuals want to lead their lives, forcing consumers to reconsider their purchasing habits and raising awareness of the detrimental environmental consequences of their FF purchases. Clearly, businesses must spend on extra promotional initiatives

in India to boost awareness of fashion rental, including with the help of fashion influencers, and sustain excellent customer service [19]. Access-based garments, like the time-honored habit of exchanging and sharing clothes with one another, can place greater focus on sustainable consumption by reducing garbage and concentrating on higher consumer fulfillment [20]. Hence, this paper tries to study the fashion rental sustainability in Indian consumers by analyzing the awareness and acceptance level of rental fashion among Indian consumers.

## **2. Literature Review:**

### **2.1 Awareness:**

Customers' awareness of clothes donation and disposal in a variety of forms as garment trash, has increased in recent days and has become a worldwide issue. Several studies had addressed customer awareness by utilizing the component of the circular economy and customer disposal, in the context of the properties of the sharing economy demonstrated by fashion rental. The circular economy was primarily built on a sustainable method to recycle via clothing donation and customer discard studies. The main motives for garment donation were centered upon sustainability and ecological ideals [21,22].

Cheap rates, on the contrary, have been proven to be a factor for users to participate in CC of high-fashion commodities [23], as they offer these commodities available to customers who would not normally have access to them. Even though premium rental consumption offers a strong business proposal, young Indian users were currently unprepared to share their luxury consumption. This was because of poor awareness and education about these innovation strategies within the general public. The willingness to consume was similarly revealed to be favourably connected to previous sustainable behaviour. According to new research published by MasterCard, 70% of Indian shoppers value "sustainable" shopping [24]. As a result, merchants can raise awareness amongst millennials regarding

ways collaborative consumption, like renting, can help long-term sustainability. They must educate customers regarding ways collaborative corporate approaches assist the sector in closing resource loops by reducing the usage of unused resources, extending the goods utilization period, and reducing trash [25].

## **2.2 Acceptance:**

Customers could use access-based consumerism to check out novels and other things without having to purchase them. Trading, renting, lending, 2nd-hand purchasing, leasing, etc [26]. There are some novel pathways in fashion developed by CC. Firms like Girl Meets Dress, Rent the Runway, and Lending Luxury have achieved growth in the fashion renting sector all over the world. Swishlist, FlyRobe, DatetheRamp, Liberent, and Wrapd are among the enterprises that rent out fashion attire in India. An online survey with 369 respondents was performed throughout India. The hypotheses were tested utilizing multiple regression analysis. The findings verified the favourable impact of anticipated depreciation, prior sustainability behaviour, subjective standards, attitude, and behavioural control on intent to rent garments, and also the unfavourable impact of frugality.

Firms aren't interested in making a quick buck and recognize that the major demand for renting fashion has yet to emerge. Four case enterprises cite sustainability as a key component of their operations and were involved in a variety of measures to boost appropriate fashion consumption [27].

*"As more people learn about sustainability, the acceptance of rental garments will grow. It will establish the new normal, but it will take time."*

## **2.3 Choice:**

As a result of a survey on the variables influencing consumers' decisions from the perspectives of Indian and Canadian consumers [28]. The study implies that it is vital to highlight that while

purchasing garments, individuals consider aesthetic, humanitarian, psychological, and sustainability qualities in addition to utilitarian benefits. Individuals may use varied factors to determine their goods choices and purchasing selections depending on their life phases and socio-cultural situations. The two major evaluation factors, according to both surveys, were suitability and comfort. To assess garment goods, Indian customers focused extra strongly on 'no child labour' and 'no animal skin usage' indications than their Canadian equivalents. Building a database to detect customers' evaluation criteria and buying decisions might be beneficial in the long run. Big data analysis could aid in gaining a better grasp of customer choices and purchasing habits.

Researchers looked at the threat perception in fashion rental businesses as one of the different projected dangers that exist in the sharing economy and influence customer choices. Initially, whenever a customer chooses to purchase, he or she is concerned about prospective economic consequences [29]. According to [30], it was considered a hurdle to fashion renting since certain users may see renting rather than buying as a waste of wealth, since they were concerned about not obtaining enough usage out of whatever they bought. Furthermore, studies in the sharing economy have revealed that financial hazard has a detrimental impact on purchasing intent.

## **2.4 Expectations:**

"The extent to which a person seems to have a favourable or unfavourable assessment of a conduct in query, giving rise from negative or positive behavioural expectation regarding implementing a specific conduct, graded by the perception assessment of linked consequences from certain conduct," refers to Attitude implied by [31]. To put it another way, online fashion behaviour intentions are centered on the probability that a customer would choose to rent things online. This shows how an individual's expectation about digital access-based consumption of fashion commodities and apparel,

and the prospective repercussions of renting fashion products digitally, are evaluated by their online fashion rental attitude.

Due to the inappropriate dumping of textile goods, the garment and textile sector generates a great deal of contamination and generates a mountain of garbage. It was necessary to develop a framework that would not just minimize pollutants but also ensure the textile firm's long-term viability implied by [9]. Renting clothing or using a sharing or collaborative environment were two examples of those alternatives. The current research focuses on India's rapidly expanding online clothing rental industry. The study discovered consumers' expectations for renting clothing online and investigated the demographic characteristics of those who have done so in Delhi-NCR. Customers have utilized numerous online garment rental services on various occasions, according to the findings, but there was a necessity to promote renting apparel for sustainability and pollution management.

## **2.5 Research Objectives**

The objectives of the research are as follows -

1. To investigate the Interest in Fashion Rental among Indian Customers and analyze.
2. To investigate the Awareness of Fashion Rental among Indian Customers and analyze.
3. To analyze the impact of Awareness of Circular economy (ACE) and Fashion Rental Awareness (FRA) on Interest in Fashion Rental (IFR)

## **2.6 Research Questions**

The research questions are as follows -

1. Is there any difference among the Generations in Interest?
2. Is there any difference among the Generations in Awareness?

## **2.7 Research Hypothesis**

The research hypothesis is as follows -

1. **H1 - Fashion Rental is not accepted by Indian Customers.**
2. **H2 - Fashion Rental Awareness is very dismal among Indian Customers.**
3. **H3 - Awareness of Circular economy, Fashion Rental has a positive impact on Interest in Fashion Rental.**

### **3. Materials and Methods:**

This section describes the research design, sample size, research methodologies, sampling technique, data collection, and statistical analysis that were employed in the research. The feasibility of the chosen survey method, and also the evaluation of the data acquired and the survey's quality, are explored.

#### **3.1. Research Design, Sample Size, and Data Collection:**

The study investigated the awareness of fashion renting among Indian consumers utilizing a descriptive survey research approach. For the current study, a total of 562 respondents were contacted. The primary data was gathered through a survey that was circulated to all three groups (Gen X, Gen Y, and Gen Z) of participants utilizing Google Forms.

#### **3.2. Research methodology:**

The methodology can be utilized while collecting and analyzing both qualitative and quantitative data, and also when combining different methodologies. The survey was made with Google Module, a free tool for creating and managing surveys [32]. This study utilized both primary and secondary data analysis to pursue research aims beyond the original investigation. Secondary data analysis utilizes previously gathered data for the purpose of previous investigations. This could be a new way of looking at the subject or new questions. The survey approach was commonly utilized to determine if the independent and dependent variables were linked.

### 3.3. Target Population

The survey was conducted utilizing a Google form, distributing it to all three 3 generations of people. Out of a total of 562 responses, 87 were rejected due to incomplete or inconsistent data. Among the total respondents, members of Gen X accounted for 151 respondents (87 females and 64 males), Gen Y accounted for 162 respondents (86 females and 76 males), and Gen Z accounted for 162 respondents (89 females and 73 males). In total, there are 262 female respondents and 213 male respondents who took part in the survey.

### 3.4. Sampling technique:

The data for this investigation were collected utilizing a stratified random sample method. Sampling can include the chosen component of the aggregate or totality from which the aggregate or totality is assessed or assumed. Furthermore, to identify the significant elements of the participants for future studies, the actual age factor was utilized rather than the chronological designations of Generation X, Generation Y, and Generation Z, due to the work's goal. It was feasible to accurately split the samples into distinct age groups in this manner. Descriptive Research was employed as the descriptive statistics instrument for the sample characterization and validation from a methodology standpoint. It's a collection of approaches for describing the fundamental properties of data acquired in an investigation [33]. It offers a brief description of the material and observations gathered utilizing some methodologies. It sets the foundation for any quantitative data assessment, along with a simple graphical assessment. The following three hypotheses were tested utilizing the hypothesis testing approach.

1. **H1 - Fashion Rental is not accepted by Indian Customers.**
2. **H2 - Fashion Rental Awareness is very dismal among Indian Customers.**

**3. H3** - Awareness of Circular economy, Fashion Rental has a positive impact on Interest in Fashion Rental.

Hypothesis testing technique is utilized for data processing and interpretation, and it is among the most trustworthy statistical tools available. It is commonly used to test social and economic aspects [34].

### **3.5. Data Collection Procedures**

The study uses both primary and secondary data to verify that the analysis is valid and reliable. The researcher prepared a survey and conducted it using Google Forms by distributing it to all 3 generations of people to obtain primary data. Secondary data was gathered through an examination of published literature and other relevant sources. The data were acquired from a variety of sources, including Medline/PubMed, the Centre for Reviews and Dissemination, the Cochrane Library, Ingenta, and OVID.

### **3.6. Statistical method**

The Standard Statistical Package for Social Sciences (SPSS) version 23 was utilized to examine quantitative data in this research. Following data collection and compilation, data analysis was performed. Different analytical approaches were utilized to interpret the results.

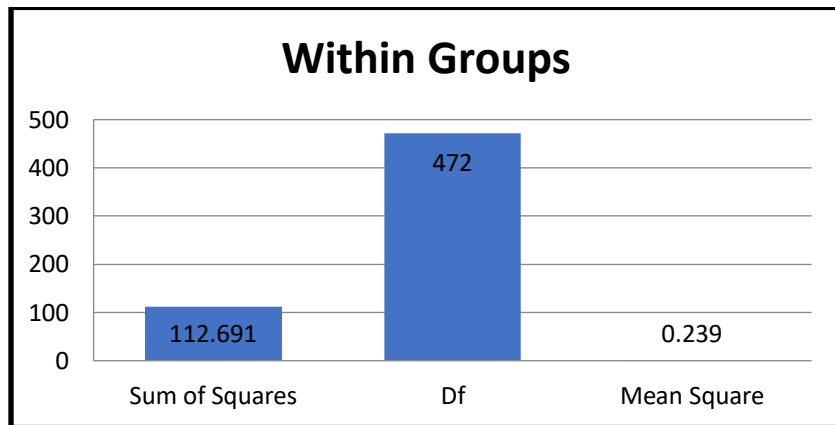
## **4. Results and Discussions**

**Problem 1:** To investigate the Interest of Fashion Rental among Indian Customers and to analyze.

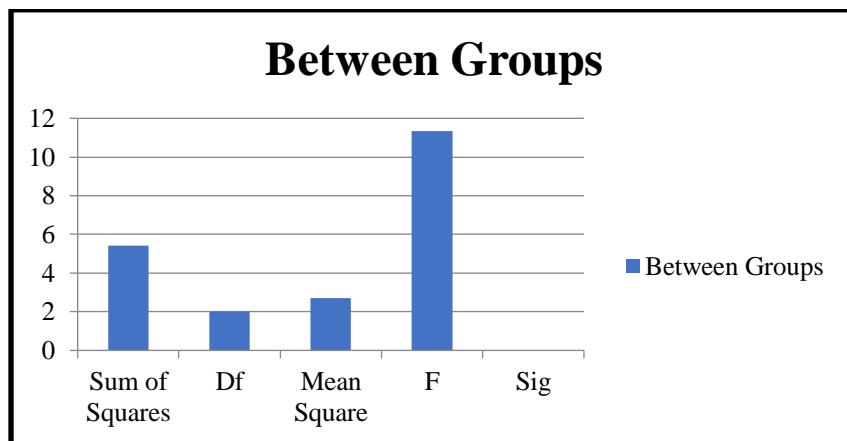
**H1:** Fashion Rental is not accepted by Indian Customers (People have an emotional bonding or personal association with their dress. Sometimes the dress is their image.)

**Table 1: ANOVA Results of Fashion Rental Interest**

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	5.414	2	2.707	11.339	.000
Within Groups	112.691	472	.239		
Total	118.105	474			



**Fig 1.1 ANOVA Results of within groups for Fashion Rental Interest**



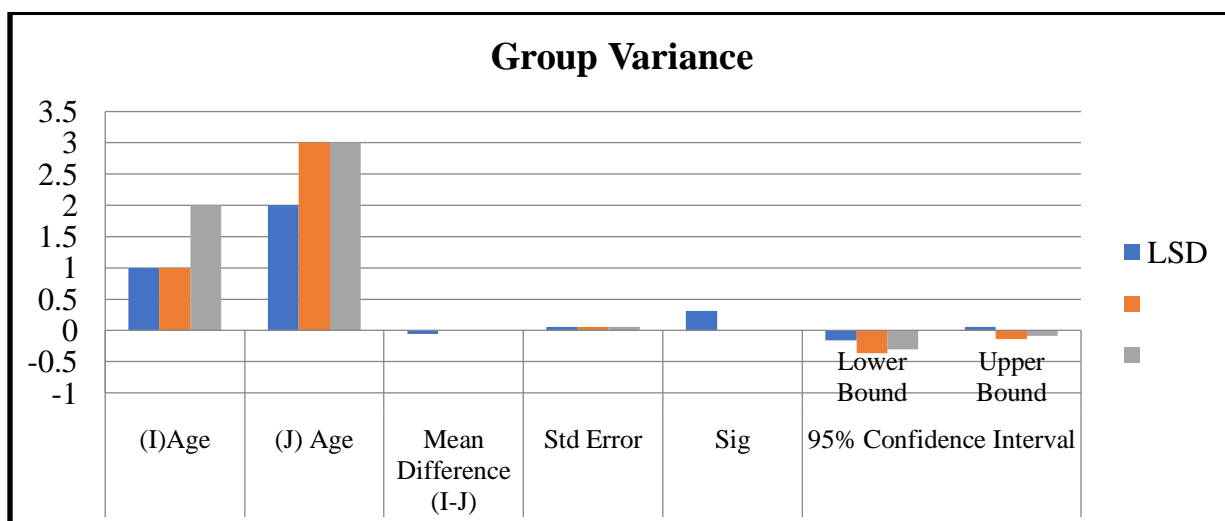
**Fig 1.2 ANOVA Results of between-groups for Fashion Rental Interest**

The hypothesis tests whether interest in fashion rental varies among the generations. Participants were divided into 3 groups (Gen X >42, Gen Y 21-41, and Gen Z <21) who were interested in fashion rental. ANOVA results (table 1, fig 1.1, 1.2) suggest that there is a statistically significant difference between groups as demonstrated by one-way ANOVA LSD Post Hoc test ( $F(2,472) = 11.39, p = .000$ ).

**Table 2 Group Variance: Dependent Variable Interest in Fashion Rental**

	(I)Age	(J) Age	Mean Difference (I-J)	Std Error	Sig	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	1.00	2.00	-.05556	.05429	.307	-.1622	.0511
	1.00	3.00	-.25170*	.05527	.000	-.3603	-.1431
	2.00	3.00	-.19614*	.05527	.000	-.3047	-.0875

The mean difference is significant at the 0.05 level.



**Fig 1.3 Group Variance: Dependent Variable Interest in Fashion Rental**

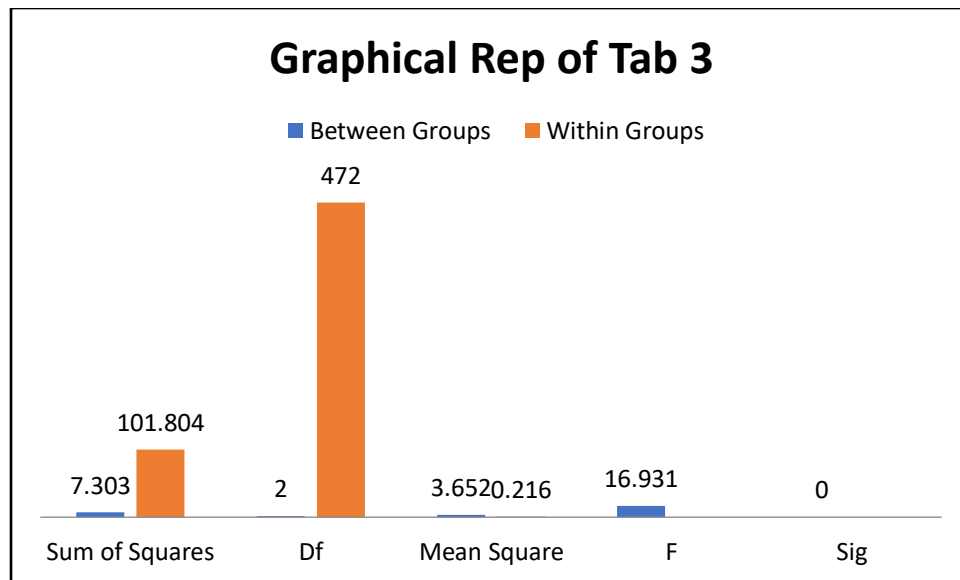
The ANOVA test (table 2, fig 1.3) analyzed the variation with in the groups showed that the Gen Z (M=1.3642, SD = .48270) is more interested than Gen X ( $p = .000$ ), Gen Y (M=1.4198. SD = .49505) is more interesting than Gen X ( $p = .000$ ). There is no statistically significant difference between the Gen Z and Gen Y ( $p = .307$ ). Hence, the hypothesis that Fashion Rental is not accepted by Indian customers is rejected.

**Problem 2:** To investigate the Awareness of Fashion Rental among Indian Customers and to analyze.

**H2 :** Fashion Rental Awareness is very dismal among Indian Customers

**Table 3 One One-Way ANOVA Results Awareness of Fashion Rental**

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	7.303	2	3.652	16.931	.000
Within Groups	101.804	472	.216		
Total	109.107	474			

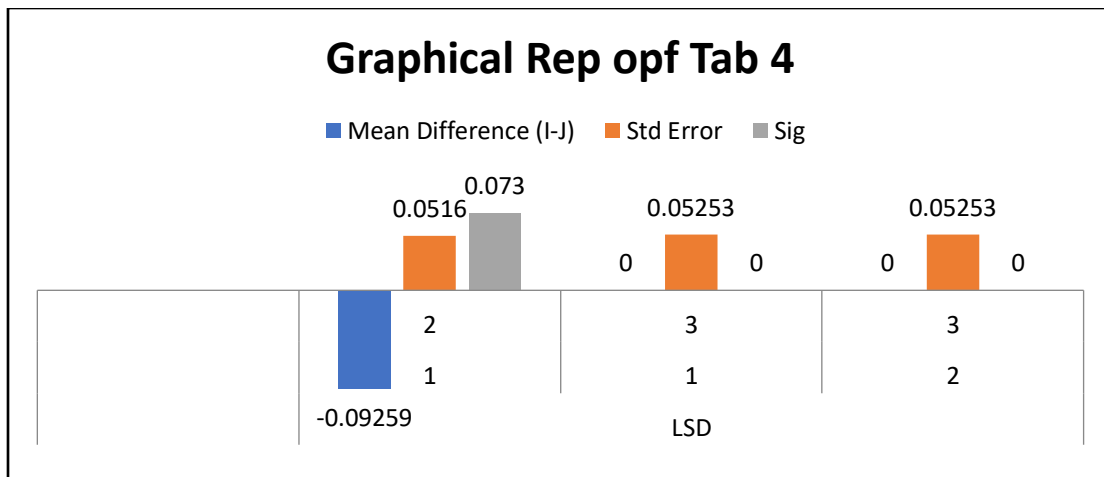


**Fig 2.1**

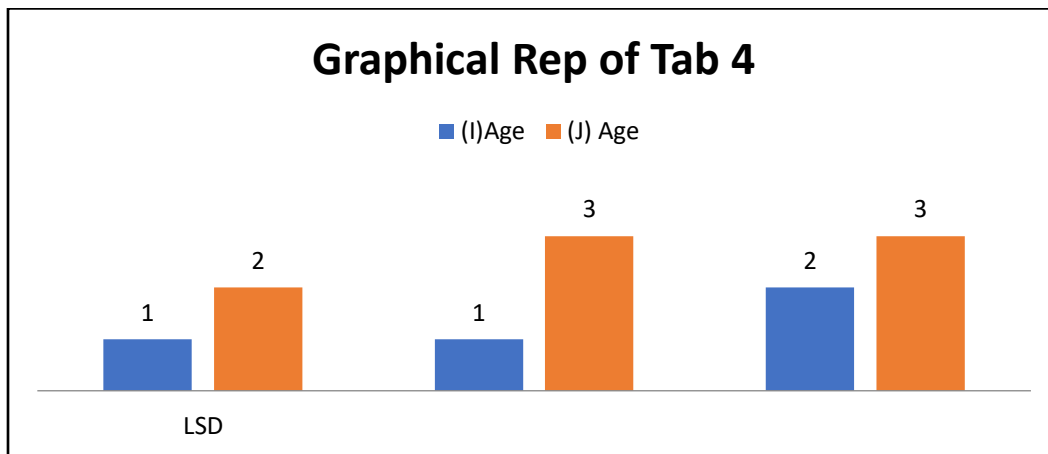
The hypothesis tests whether awareness of fashion rental varies among the generations. Participants were divided into 3 groups (Gen X >42, Gen Y 21-41 and Gen Z <21) who were interested in fashion rental. ANOVA results (table 3, fig 2.1) suggest that there is a statistically significant difference between groups as demonstrated by one-way ANOVA LSD Post Hoc test ( $F(2,472) = 16.931, p = .000$ ).

**Table 4 Group Variance: Dependent Variable Awareness in Fashion Rental**

	(I)Age	(J) Age	Mean Difference (I-J)	Std Error	Sig	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	1.00	2.00	-.09259	.05160	.073	-.1940	.0088
	1.00	3.00	-.29961*	.05253	.000	-.4028	-.1964
	2.00	3.00	-.20701*	.05253	.000	-.3102	-.1038
The mean difference is significant at the 0.05 level.							



**Fig 3.1**



**Fig 3.2**

The ANOVA test (table 4, fig 3.1, 3.2) analyzed the variation within the groups showed that the Gen Z (M=1.2307, SD = .40400) is more interested than Gen X ( $p = .000$ ), Gen Y (M=1.2963 SD = .45804) is more interested than Gen X ( $p = .000$ ). There is no statistically significant difference between the Gen Z and Gen Y ( $p = .307$ ).

**Problem 3:** To analyze the impact of Awareness of Circular economy (ACE) and Fashion Rental Awareness (FRA) on Interest in Fashion Rental (IFR)

**H3:** Awareness of the Circular economy, Fashion Rental has a positive impact on Interest in Fashion Rental

**Table 5: Regression Analysis of ACE, AFR on IFR**

Hypothesis	Regression Weights	Beta Coefficient ( $\beta$ )	R <sup>2</sup>	F	t-Value	p-Value	Hypothesis A/R
H3	ACE→ IFR	.125	.215	64.715	6.480	.000	Accepted
	AFR→ IFR	.304			6.448	.000	

The hypothesis tests, there is any significant impact of awareness of the circular economy on interest in fashion rental. The dependent variable IFR was regressed on the predicting variable ACE to test the hypothesis. ACE significantly predicted IFR,  $F(2,472) = 64.715$ ,  $p < 0.05$ , which indicates that ACE can play a significant role in shaping IFR ( $\beta = .125$ ,  $p < 0.05$ ). AFR significantly predicted IFR,  $F(2,472) = 64.715$ ,  $p < 0.05$ , which indicates that ACE significantly influences in shaping IFR ( $\beta = .304$ ,  $p < 0.05$ ). The results clearly indicate a positive effect of IFR. Moreover, the  $R^2 = .215$  depicts that the model explains 21.5 of % Variance of Int FR (Table 5).

## 5. Conclusion

The fashion rental sector is part of the larger circular economy framework, and it is recommended as a means of achieving sustainability in the fashion industry. Despite some success for enterprises in this industry, fashion rental is now a limited sort of consumption. to eliminate perceived impediments and encourage sustainable fashion methods. The primary goal of this research is to analyze rental fashion in India. The study also discusses Indian customers' awareness, acceptability, choice, and expectations. According to the findings, Indian customers accept the rental fashion. Finally, the study found that fashion

rental has a favorable impact on interest in fashion rental. Furthermore, studies on awareness of online fashion rentals and their implementations might be conducted.

### Reference:

- 1) Gnanamkonda, V., Koundinya, C., & Nandamuri, P. P. (2019). Executive Garment Rental Service—A Study on Consumers' Preferences. *Theoretical Economics Letters*, 9(2), 327-335.
- 2) Möhlmann, M. (2015). Collaborative consumption: determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behaviour*, 14(3), 193-207.
- 3) Teece, D. J. (2010). Business models, business strategy and innovation. *Long range planning*, 43(2-3), 172-194.
- 4) Iran, S., Geiger, S. M., & Schrader, U. (2019). Collaborative fashion consumption—A cross-cultural study between Tehran and Berlin. *Journal of Cleaner Production*, 212, 313-323.
- 5) Neerattiparambil, N. N., & Belli, S. M. (2020). Why Rent a Dress?: A Study on Renting Intention for Fashion Clothing Products. *Indian Journal of Marketing*, 50(2), 20-34.
- 6) Nielsen, K. S., & Gwozdz, W. (2018). Report on geographic differences in acceptance of alternative business models.
- 7) Cartner-Morley, J. (2017). Spotify for fashion: does renting clothes signal the end for our wardrobes?. *The Guardian*, 1.
- 8) Baek, E., & Oh, G. E. G. (2021). Diverse values of fashion rental service and contamination concern of consumers. *Journal of business research*, 123, 165-175.
- 9) Agarwal, M., & Kant, R. (2020). Exploring Online Apparel Rental Behaviour of Consumers as a Sustainable Method. *International Journal of Research in Social Sciences*, 10(2), 87-96.
- 10) Davis, L., Wang, S., & Lindridge, A. (2008). Culture influences on emotional responses to on-line store atmospheric cues. *Journal of Business Research*, 61(8), 806-812.

- 11) Kim, J., Yang, K., & Kim, B. Y. (2013). Online retailer reputation and consumer response: examining cross cultural differences. *International Journal of Retail & Distribution Management*, 41(9), 688-705.
- 12) Lang, C., Seo, S., & Liu, C. (2019). Motivations and obstacles for fashion renting: A cross-cultural comparison. *Journal of Fashion Marketing and Management: An International Journal*.
- 13) Nicolaou, A., & Vandevælde, M. (2017). Retailers respond to rise in renting clothes and goods. *Financial Times Online*, 22.
- 14) Park, H. R., Kshetry, V. R., Farrell, C. J., Lee, J. M., Kim, Y. H., Won, T. B., ... & Paek, S. H. (2017). Clinical outcome after extended endoscopic endonasal resection of craniopharyngiomas: two-institution experience. *World neurosurgery*, 103, 465-474.
- 15) Mukendi, A., & Henninger, C. E. (2020). Exploring the spectrum of fashion rental. *Journal of Fashion Marketing and Management: An International Journal*.
- 16) Sweeny, G. (2015). Fast fashion is the second dirtiest industry in the world, next to big oil. *Retrieved*, 5(30), 2017.
- 17) Size, F. M. (2019). Share & Trends Analysis Report By End Use. *By Product (Ventilated, Non-Ventilated), By Region, And Segment Forecasts, 2025*.
- 18) Arrigo, E. (2021). Digital platforms in fashion rental: a business model analysis. *Journal of Fashion Marketing and Management: An International Journal*.
- 19) Hagel, M. (2020). Has Covid-19 brought an end to clothing rental?.
- 20) Johnson, K. K., Mun, J. M., & Chae, Y. (2016). Antecedents to internet use to collaboratively consume apparel. *Journal of Fashion Marketing and Management: An International Journal*.
- 21) Degenstein, L. M., McQueen, R. H., McNeill, L. S., Hamlin, R. P., Wakes, S. J., & Dunn, L. A. (2020). Impact of physical condition on disposal and end-of-life extension of clothing. *International Journal of Consumer Studies*, 44(6), 586-596.

- 22) Patwary, S. (2019). Consumer Clothing Behavior and Associated Environmental Impact.
- 23) Armstrong, C. M. J., & Park, H. (2017). Sustainability and collaborative apparel consumption: Putting the digital 'sharing' economy under the microscope. *International Journal of Fashion Design, Technology and Education*, 10(3), 276–286.
- 24) Golikeri, P. (2018). Luxury goes green.
- 25) Gill, A., Lopes, A. M., & Kaye-Smith, H. (2016). Practicing sustainability: Illuminating 'use' in wearing clothes. *Cultural Studies Review*, 22(1), 32-58.
- 26) Neerattiparambil, N. N., & Belli, S. M. (2020). Why Rent a Dress?: A Study on Renting Intention for Fashion Clothing Products. *Indian Journal of Marketing*, 50(2), 20-34.
- 27) Adam, M., Strähle, J., & Freise, M. (2018). Dynamic capabilities of early-stage firms: Exploring the business of renting fashion. *Journal of Small Business Strategy*, 28(2), 49-67.
- 28) Rahman, O., Fung, B. C., & Kharb, D. (2021). Factors influencing consumer choice: a study of apparel and sustainable cues from Canadian and Indian consumers' perspectives. *International Journal of Fashion Design, Technology and Education*, 14(2), 151-161.
- 29) Youn, S. Y., & Lee, K. H. (2019). Proposing value-based technology acceptance model: Testing on paid mobile media service. *Fashion and textiles*, 6(1), 1-16.
- 30) Lang, C. (2018). Perceived risks and enjoyment of access-based consumption: Identifying barriers and motivations to fashion renting. *Fashion and Textiles*, 5(1), 1-18.
- 31) Lee, S. H., & Huang, R. (2020). Consumer responses to online fashion renting: exploring the role of cultural differences. *International Journal of Retail & Distribution Management*.
- 32) Boone, H. N., & Boone, D. A. (2012). Analyzing likert data. *Journal of extension*, 50(2), 1-5.
- 33) Zenga, M. (2014). *Lezioni di statistica descrittiva: Seconda edizione*. G Giappichelli Editore.
- 34) Pauli, F., Torelli, N., & Trevisani, M. (2008). *Statistica: esercizi ed esempi*. Pearson Italia Spa.

## **A Study on Future of Fashion Rental Industry in Delhi – NCR**

**Nishant Singh Rajput**, AAFT School of Fashion and Design

**Siva Ganesh Babu**, Dean, School of Fashion and Design

**Nidhi Talwar**, Assistant Professor, School of Fashion and Design

### **Abstract**

The fashion industry is undergoing a critical transformation as it grapples with the environmental and social consequences of fast fashion. Characterized by a high-volume, low-cost production model, fast fashion contributes significantly to global resource consumption and textile waste. As demand for apparel grows with the global population, sustainability concerns have intensified. In response, alternative consumption models such as fashion rental are gaining popularity, particularly among younger consumers seeking more ethical, affordable, and flexible options. Fashion rental services align with the sharing economy, prolonging product lifecycles and reducing the environmental impact of clothing through repeated use. Platforms such as Rent the Runway, Le Tote, and By Rotation exemplify the global rise of rental models. However, while rental services offer clear benefits, they face operational and perceptual challenges, including concerns about garment quality, financial risks, and limited empirical validation of their sustainability claims. This study explores the evolution, current dynamics, and future potential of the rental garment industry, focusing on its capacity to reduce waste, shift consumer behavior, and offer scalable solutions for sustainable fashion.

**Key Words:** Fashion Rental, Sustainability, Alternative Consumption, Waste Reduction, Sustainable Fashion.

### **1. Introduction**

The fashion industry is facing a growing sustainability crisis, largely driven by the dominance of fast fashion. This sector relies on a high-volume, low-cost model that consumes vast resources and generates significant environmental waste [1]. With the increasing global population and rising living standards, the demand for textiles and apparel continues to grow [2], exacerbating these issues. A key contributor to this unsustainable trend is the

overwhelming focus on cheap, disposable clothing. In response, the younger generation has shown a shift towards more sustainable consumption practices, with a growing interest in alternative models such as clothing rental [3].

Textile recycling is the process of reusing or reprocessing fiber materials, worn garments, and textile waste collected during the production process. Reusing garments can lower manufacturing emissions and resource consumption, making it a sensible and sustainable approach. However, customer attitudes and practices around recycling, remanufacturing, and textile disposal vary, affecting the effectiveness of sustainability efforts [4]. Customers continue to buy more fashion items than they need, leading to an increase in waste. This is particularly relevant given the rise of fast fashion. Consumers can now buy more fashion items at lower prices, but these are often worn for shorter periods. Fast fashion encourages frequent purchases, pressuring consumers to keep up with rapidly evolving trends. Many customers constantly buy the latest fashion items in an attempt to stay on trend, surpassing their needs or financial means and resulting in ownership hassles and unnecessary accumulation [5]. Though Fashion Rental is popular, the evolution, current dynamics, and future potential of the rental garment industry, focusing on its capacity to reduce waste, shift consumer behavior, and offer scalable solutions for sustainable fashion, acceptance in Delhi NCR, Motivation, Challenges and acceptance needs to be studied so that it can be positioned accordingly.

## **2. Background**

### **2.1 Fashion Rental**

Fashion rental systems, which align with the principles of the sharing economy, present a promising alternative to traditional consumption patterns. Research suggests that everyday fashion rental could be an effective solution, offering the potential for steady customer engagement and significant environmental benefits [6]. Fashion rental services have become a guilt-free model due to their ecological and cost-effective characteristics. They help customers save money, prevent waste, avoid commitment, and stay stylish in an ethical manner. The appeal of renting aligns with changing consumer values, emphasizing access over ownership [7]. According to a survey on cyclical retail possibilities by Mintel, 60% of men and 57% of women between 18 and 34 would consider renting, highlighting a growing trend towards rental fashion [7]. A more modern business model is fashion renting, where clients rent an item for a set period rather than purchasing it. Rentals prolong the product lifecycle, addressing the fashion industry's tendency for consumers to make impulsive purchases in search of "newness." Rather than being used only once and discarded, items can be used by multiple individuals through rental services, ensuring continuous usage [8]. The leasing model, particularly in the fashion industry, is recognized for its potential to reduce environmental impact while enhancing competitiveness and customer value [9].

Despite the potential of fashion rental platforms, challenges remain. The fashion sector significantly contributes to landfill waste, with textiles accounting for 7% of global landfill content. Thus, the fashion industry needs a comprehensive overhaul to address garment waste and its environmental footprint [10]. Fashion rental, through access-based consumption, offers a viable strategy to reduce both the financial and environmental costs of clothing ownership [11]. However, the development of fashion rental business models is still in its infancy, particularly in markets such as New Zealand, where the sector shows promise but lacks full maturity [11]. The clothes rental model, which was created decades ago, is the foundation of a shared wardrobe. The leasing model is growing quickly in the Internet age. People can now rent a variety of clothing types more easily and swiftly. Numerous apps, such as Goddess Pai and YiErSan, demonstrate this shift. However, the model is still in the exploration phase, indicating potential for further evolution [12]. In addition to business model innovation, effective reverse logistics—supported by technological advancements—plays a crucial role in improving customer satisfaction, reducing operational costs, and increasing revenue within the rental industry [13].

Renting formal and casual clothing is a globally growing Product-Service System (PSS). One well-known example is Rent the Runway, a company established in New York City that provides designer garments for subscription-based rental. Large global apparel firms and start-ups are increasingly offering clothing rentals, demonstrating the industry's ongoing expansion [14]. The advent of new digital platforms has enabled the sharing economy to introduce several disruptive business model developments in the past decade. Customers can rent, borrow, and trade idle capacity instead of purchasing, challenging traditional retail and promoting sustainability [15]. Wedding and dance/drama shops currently dominate Taiwan's clothing rental market, offering services to customers attending banquets or significant events. However, consumption patterns are typically transient. Researchers anticipate that more garment rental businesses will focus on online services, as network technology plays a greater role than clothing technology in the rental industry. Amaze Fashion launched AMAZE apparel rental in Taiwan in 2016, marking a step toward digital integration in the market [16]. Globally, numerous fashion-sharing platforms operate successfully. In the U.S., where the online fashion rental industry began with Rent the Runway, other platforms like Le Tote have emerged. Similar platforms exist worldwide, such as By Rotation in the U.K., Dress You Can in Italy, and Ms. Paris in China, showcasing the global expansion of rental fashion [17].

Although fashion rental platforms are recognized as sustainable alternatives to fast fashion [18], empirical data supporting their environmental claims remain limited [19]. Additionally, customers face several challenges when engaging with fashion rental services, including concerns related to financial risks, garment quality, and inconsistencies with personal values and lifestyle choices [20]. In favor of brand-new fashion items, discussions on rental fashion products have received little attention in the academic literature. However, studies have analyzed customers' experiences and attitudes toward renting fashion products online, highlighting the growing interest in alternative consumption models [21].

## **2.2 Sharing Economy**

The sharing economy—which involves borrowing or renting—is upending traditional categories because consumers are demonstrating a strong demand for the sharing-based economy. According to a survey, 44% of US individuals are aware of the sharing economy, and 86% of them believe it makes living more affordable, 83% believe it makes life easier and more efficient, and roughly 81% believe that sharing items is less expensive than owning them separately. According to a 2011 BAV Consulting survey, 77% of millennials and 66% of all consumers favored a simpler lifestyle with fewer belongings [3].

In parallel, the apparel and fashion industry has a significant negative influence on the environment because of its high energy and water compensation, greenhouse gas emissions, hazardous waste creation, and toxic effluent discharge into the water system [9]. The fashion industry has historically used more resources than it should have, and our world's resources are limited. Most clothing is produced and distributed in a linear fashion, with precious virgin resources being turned into trash at every stage of the value chain. Fast fashion, also referred to as the "take-make-dispose" paradigm, is centered on cheap costs and high volume. According to this linear perspective, the fashion system's detrimental effects on the environment and society continue to increase exponentially, with over \$500 billion USD in value lost annually as a result of underusing garments and failing to recycle [11].

## **2.3 Collaborative Consumption**

In response to these challenges, platforms for renting out clothing are vulnerable to a number of sustainability issues that are present in the sharing economy as a whole. But fashion rental platforms were only one aspect of a larger industry discussion that was gradually shifting the fashion industry in the direction of a more sustainable future [15]. The term "collaborative consumption" describes a consuming process that uses a variety of facilitation mechanisms, including sharing, trading, renting, and similar activities, to achieve the goal of collectively using the same commodity throughout varying time periods.

In this context, the idea of renting is generally in opposition to the usual perspective of consumption or usage, which leans more toward "permanent ownership." Customers purchase the ownership of a product during a typical purchase or sale, but when renting, they purchase the use or utility time of a product that is owned by a service provider or rental company [2]. Fashion rental is often not influenced by a rental company's clear explanation of its service offer and related terms, but it does play a significant role in easing customer concerns, particularly those related to product quality and liability [6].

## **2.4 Collaborative Fashion Consumption**

Collaborative Fashion Consumption (CFC) is a component of the sharing economy that comprises peer-to-peer lending, fashion rental platforms, clothing libraries, and exchanging. The latter is predicated on the notion that idle capacities—in this case, clothing—are shared with the ultimate objective of optimizing their utilization [18]. Fashion products have developed quickly in recent years, but because of their short lifespans, the fast fashion sector also has an adverse effect on society and the environment. Fast fashion companies have begun implementing sustainable strategies and practices in response to these growing environmental and social issues [4].

From a consumption model perspective, by paying an access charge, consumers can use a product for a certain amount of time under access-based consumption, but the provider retains legal ownership. One type of collaborative consumption is access-based consumption, sometimes referred to as non-ownership consumption [5]. Consumers' reported satisfaction of sharing objects with others has been connected to the fashion rental experience. Additionally, renting allows consumers to concentrate on enjoying the use of products without having to worry about a significant ownership burden [8]. Historically, the majority of the products were previously shared among intimate friends, family, and neighbors. The idea of sharing has steadily developed into a successful business strategy in recent years. The network relationships between people, cooperative consumption, and approved economies were represented in the development of this sharing economy business model [16]. Subjective norms highlight the significance of other people's perspectives in influencing an individual's decision to rent clothing online. Online fashion rental services are excellent for the environment since they promote sustainable consumption practices like sharing and reusing clothing and reduce the need for regular purchases [21].

## **2.5 Research objectives**

1. To explore the current landscape of the rental garment industry in Delhi NCR, including the types of services offered, target demographics, and key players in the market.
2. To assess consumer attitudes and behavior towards renting garments, focusing on factors such as affordability, sustainability, convenience, and fashion consciousness.
3. To examine the operational challenges faced by rental garment businesses, including inventory management, logistics, hygiene, and customer retention.
4. To evaluate the role of digital platforms and social media in the growth and promotion of rental fashion services in the Delhi NCR region.

5. To analyze the potential for growth and future trends in the rental garment industry, including shifts in consumer preferences, market expansion opportunities, and the role of sustainability in shaping future demand.
6. To provide strategic recommendations for the positioning of rental businesses to foster sustainable growth and increased adoption of garment rental practices in Delhi NCR.

### 3. Methodology

To gain a deeper understanding of the rental garment industry, interviews were conducted with employees at rental clothing stores using a survey questionnaire. Participants were divided into two categories: one as fashion rental operators and the other as customers. The fashion rental operators (FRO) were selected based on their prior experience of managing rental operations, and no specific criteria of selection were applied in the case of customers. The sampling technique followed was snowball sampling. Close-ended questions were used to encourage employees to share their insights, experiences, and challenges within the rental clothing industry. A comparative analysis was then carried out between FROs and customer responses to identify alignments and disparities in their views. The result operation was annualized in comparison to the previous studies, and important data is presented graphically. This approach helped uncover recurring themes and significant takeaways regarding sustainable fashion, operational challenges, and consumer behavior in the rental sector.

The geographical identification of the survey location of the fashion rental operators are as follows.

#### 1- DRESS LIKE A CELEBRITY

(<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390ce3aa5309bf0f:0xddcba978a8a4a4b4?entry=s&sa=X&ved=1t:8290&hl=en-in&ictx=111>)

#### 2- LALJEES

(<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390ce3ad4f9443b1:0x513c5e04a10ac432?entry=s&sa=X&ved=1t:8290&hl=en-in&ictx=111>)

#### 3- DRESS MASTERS-RENT AN OUTFIT

(<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390ce37948e7d593:0xc7e4346417d78fb3?entry=s&sa=X&ved=2ahUKEwiQzLLi1ISNAxURi68BHRvZA9MQ4kB6BAgCEAA>)

#### 4- HOUSE OF SHERWAINS

<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390ce36db3be7437:0x42622546c57ad972?entry=s&sa=X&ved=1t:8290&hl=en-in&ictx=111>)

#### 5- VEDA CLOTHING

<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390d182488d5a5ff:0xad17620cc2dd044e?entry=s&sa=X&ved=1t:8290&hl=en-in&ictx=111>)

#### 6- STYLE ICON

<https://maps.google.com/maps/place//data=!4m2!3m1!1s0x390d18bcf1522161:0x190e53bcef9af87a?entry=s&sa=X&ved=1t:8290&hl=en-in&ictx=111>)

The results obtained were analyzed for differences or commonalities among FROs and customers. The obtained result was graphically represented, compared with the previous study.

## 4. Results and discussion

The survey indicates that both customers and retail employees hold a positive outlook on the future of the rental garment industry, though their confidence levels vary. While 59.3% of customers believe the industry will experience notable growth and become mainstream within the next 5 to 10 years, 100% of FROs share this view, supporting previous research that fashion rental is likely to go mainstream [18].

When asked about the effect on traditional retail, 40.7% of customers feel rental services will coexist with conventional retail models, and 33.3% think it will encourage retailers to innovate. Only a small fraction (3.8%) foresee significant disruption. Among FROs, 50% consider rentals a complementary service, while 25% have already observed retailers adapting in response—aligning with findings that rental acts as an innovative channel next to traditional retail [17].

In terms of how brands are responding to the rental trend, 40.7% of customers believe brands are directly adopting rental models, 33.3% note collaborative efforts through partnerships, and 18.5% sense reluctance. On the other hand, employees report only 25% direct adoption but a higher 50% through partnerships. This shows a gradual transition, consistent with studies on platform-based, partnership-driven rental growth (8,15).

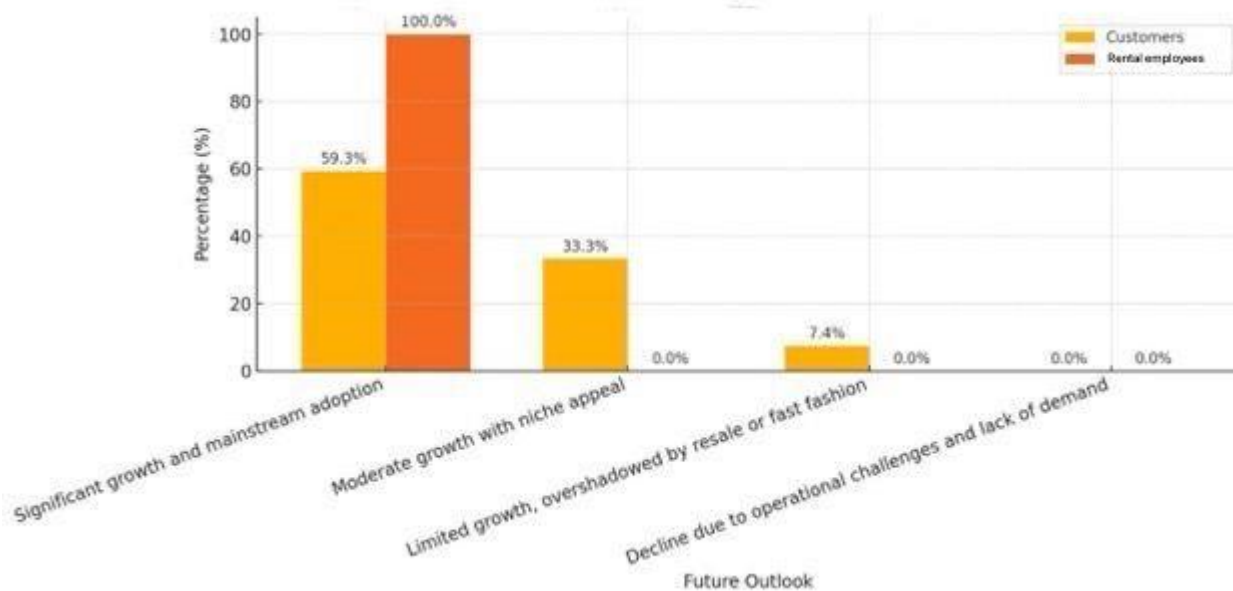


Fig 4.1

Scope of Fashion Rental over 5-10 Years Retailer and customer view

1. Though the study agrees about the future of fashion rental, there is a significant difference in the motivation behind the adoption of fashion rental. Environmental concerns and financial benefits are the motivations for (48%) and (30%) of customers, respectively, confirming the previous research (19, 21). Social media influence and desire for status are considered major motivations by FROs, which confirms the findings of (5) that image and trendiness drive FROs.
2. Sustainability as a motivation factor for acceptance of F. R. has mixed sentiment. FROs equally agree and disagree, while only 37% of customers consider it a motivational factor. In general, both the customers and FROs feel that there is a significant imbalance between pricing and sustainability impact in reality.
3. In agreement with previous findings (1, 21), Gen Z and Millennials, accounting for 42% are leading F. R. acceptance, mainly because it is affordable. Gen Z being drivers of F. R. adoption and environmental concerns being their major motivation, they feel that though rentals increase the usage of products, cleaning costs and chemicals, pollution during transportation doesn't conform to their expectation of environmental friendliness, agreeing with previous research findings (9, 14). Hygiene & Health concerns are outstanding factors according to both customers and FRO's echoing previous studies (1,20). FRO's inventory management as additional operational challenges, which is in line with previous studies (4, 13).

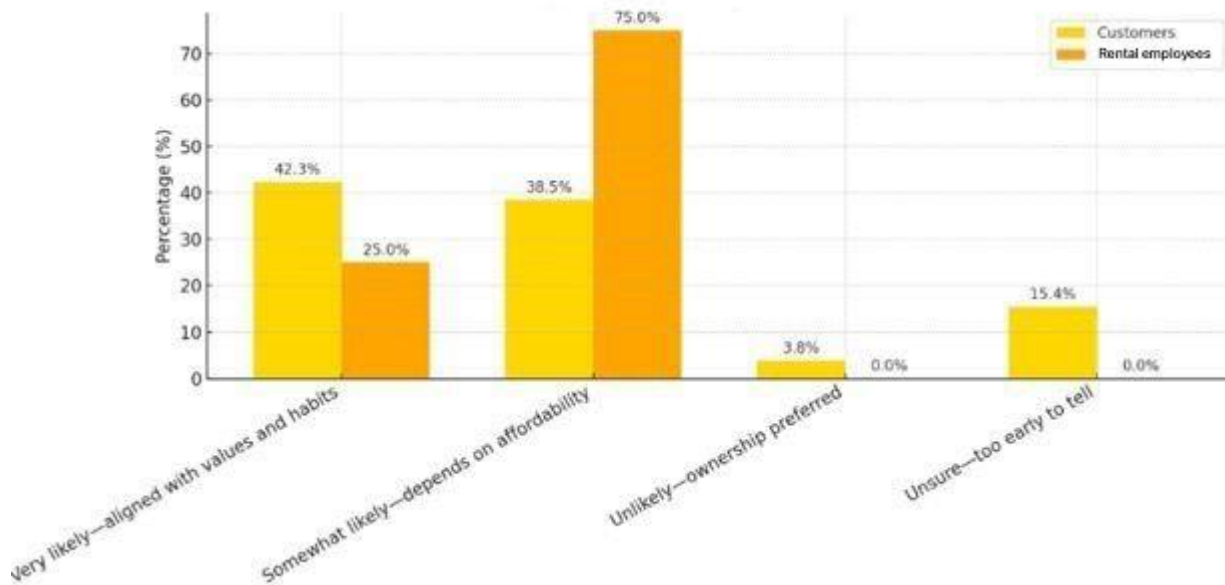


Fig 4.2 Scope of clothing rental going mainstream: Customer and retailer view point .

1. Though health hygiene is an outstanding factor, 74% of customers and 100% FROs find quality and as predominant challenges, reinforcing previous findings (10). There is a significant difference between internal & External priorities, where customers focus on hassle-free returns, personalized styling, while FROs focus on inventory freshness.
2. Mismatch between technological adoption and expectation poses another challenge in providing an excellent customer experience (2). As fit is a challenge for Gen Z, 70% of them prefer AI-based personalization, while freshness of inventory is the concern of FRO's 75% of them prefer virtual try-ons.
3. F R Model is also a challenge that needs to be addressed. The subscription model is not a model that is accepted in Delhi NCR. This finding agrees with previous findings (6) that a one-time event-based rental model is what is popular among costings of Delhi NCR, while 51% of customers are open to a hybrid model.
4. Positioning of F R among customers is also a major challenge. Delhi NCR customers are different from Global customers in the digital first trend (7), Social Media Marketing and Influencer marketing dominate the Digital trend. Sustainability messaging and Eco-conscious identity have a greater appeal among customers, amounting to 60% following the trend (21). Brand collaboration is more acceptable than traditional marketing, supporting the shift towards experience and platform-driven marketing (12).

## 5. Conclusion

The study reveals a highly optimistic outlook for the rental garment industry in Delhi NCR, with **59.3% of customers** expecting significant growth within 5–10 years and **100% of rental employees** sharing this confidence. While **40.7% of customers** believe rental will coexist with traditional retail and **33.3%** expect it to push retailers to evolve, **50% of employees** already see it as complementary, and **25%** observe active adaptation by brands. However, customers may overestimate direct brand involvement (**40.7%**) compared to employees who report more **partnerships (50%)** than direct adoption (**25%**). Growth drivers also differ: **48.1% of customers** are motivated by environmental awareness, while **50% of FROs** emphasize social media influence. Sustainability strongly impacts **37% of customers**, yet only **25% of FROs** see it as a dominant factor, prioritizing price and style instead. Regarding younger consumers, **42.3% of customers** and **75% of FROs** foresee rental adoption driven by affordability and access. Operationally, **hygiene** concerns are high (**59.3% customers, 100% employees**), but customers worry more about logistics (**40.7%**) while FRO's focus is on inventory (**25%**). **AI personalization** is favored by **70.4% of customers**, whereas **75% of FROs** value virtual try-ons. While **51.9% of customers** prefer hybrid rental models, employees (100%) favor one-off event-based rentals. Marketing is clearly digital-first, with **59.3% of customers** and **100% of FROs** favoring social media campaigns. Overall, while both groups anticipate strong growth, customers are more value-driven and sustainability-focused, whereas employees take a trend-oriented and operationally grounded approach. Bridging these perspectives through better communication, positioning, technology, and service innovation would be crucial for scaling the fashion rental business in Delhi NCR.

## 6. Limitations of the study

Area of study and sample size are recommended that for a broader perspective, the research could be extended with a different age category and to a larger area.

The study is limited to Delhi NCR respondents, gender imbalance, and age category being 18-30 is also a limitation.

## 7. Bibliography

1. Clube, Rebecca K., and Mark Tennant. “Exploring Garment Rental as a Sustainable Business Model in the Fashion Industry: Does Contamination Impact the Consumption Experience?” *Journal of Consumer Behaviour*, vol. 19, no. 4, 2020, pp. 359–70.
2. Kumar, Vishal, et al. “Investigation of Rental Business Model for Collaborative Consumption—Workwear Garment Renting in Business-to-Business Scenario.” *Resources, Conservation and Recycling*, vol. 182, 2022, p. 106314.
3. Gnanamkonda, V., et al. “Executive Garment Rental Service—A Study on Consumers’ Preferences.” *Theoretical Economics Letters*, vol. 9, no. 2, 2019, pp. 327–35.
4. Hu, Z. H., et al. “Sustainable Rent-Based Closed-Loop Supply Chain for Fashion Products.” *Sustainability*, vol. 6, no. 10, 2014, pp. 7063–7088.
5. Lang, Carsten. “Perceived Risks and Enjoyment of Access-Based Consumption: Identifying Barriers and Motivations to Fashion Renting.” *Fashion and Textiles*, vol. 5, no. 1, 2018, pp. 1–18.
6. Bodenheimer, Miriam, et al. “Drivers and Barriers to Fashion Rental for Everyday Garments: An Empirical Analysis of a Former Fashion-Rental Company.” *Sustainability: Science, Practice and Policy*, vol. 18, no. 1, 2022, pp. 344–56.
7. Zhang, Lei, et al. “Riding the Wave of Fashion Rental: The Role of Power Structures and Green Advertising.” *Transportation Research Part E: Logistics and Transportation Review*, vol. 168, 2022, p. 102946.
8. Fani, Valentina, et al. “Design Product-Service Systems by Using a Hybrid Approach: The Fashion Renting Business Model.” *Sustainability*, vol. 14, no. 9, 2022, p. 5207.
9. Monticelli, Andrea, and Marta Costamagna. “Environmental Assessment of the Rental Business Model: A Case Study for Formal Wear.” *Environment, Development and Sustainability*, vol. 25, no. 8, 2023, pp. 7625–43.
10. Batham, M. *Consumer Perception Towards Rental Clothing*, 2023.
11. Gyde, C., and Lisa S. McNeill. “Fashion Rental: Smart Business or Ethical Folly?” *Sustainability*, vol. 13, no. 16, 2021, p. 8888.
12. Mu, Xinyao, and Chen Li. “Research on Clothing Rental Model under Sharing Economy.” *E3S Web of Conferences*, vol. 253, 2021, p. 01075.

13. Roul, Amrita, and Ritanjali Dash. "Reverse Logistics in Clothing Rental." *ASBM Journal of Management*, vol. 17, no. 1, 2024.
  14. Piontek, Felix M., et al. "Environmental Implication of Casual Wear Rental Services: Case of Japan and Germany." *Procedia CIRP*, vol. 90, 2020, pp. 724–29.
  15. Brydges, Taylor, et al. "Platforms and the Pandemic: A Case Study of Fashion Rental Platforms during COVID-19." *The Geographical Journal*, vol. 187, no. 1, 2021, pp. 57–63.
  16. Tu, Jin-Chuan, and Chih-Lun Hu. "A Study on the Factors Affecting Consumers' Willingness to Accept Clothing Rentals." *Sustainability*, vol. 10, no. 11, 2018, p. 4139.
  17. Arrigo, Elisa. "Digital Platforms in Fashion Rental: A Business Model Analysis." *Journal of Fashion Marketing and Management: An International Journal*, vol. 26, no. 1, 2022, pp. 1–20.
  18. Amasawa, E., et al. "Can Rental Platforms Contribute to More Sustainable Fashion Consumption? Evidence from a Mixed-Method Study." *Cleaner and Responsible Consumption*, vol. 8, 2023, p. 100103.
  19. Johnson, Emma, and Andrius Plepys. "Product-Service Systems and Sustainability: Analysing the Environmental Impacts of Rental Clothing." *Sustainability*, vol. 13, no. 4, 2021, p. 2118.
  20. Grilló-Méndez, A. J., et al. "Risks Associated by Consumers with Clothing Rental: Barriers to Being Adopted." *Journal of Fashion Marketing and Management: An International Journal*, 2024.
  21. Ahmed, B., El-Gohary, H., Khan, R., Gul, M. A., Hussain, A., & Shah, S. M. A. (2024). The Influence of Behavioral and ESG Drivers on Consumer Intentions for Online Fashion Renting: A Pathway Toward Sustainable Consumption in China's Fashion Industry. *Sustainability*, 16[22], 9723.
  22. Oscarson, Fredrik. *Requirements of Implementing a Circular Leasing & Rental Model on Technical Garments: Challenges and Opportunities in the Swedish Outdoor Industry*, 2020.
-

# "Investigating the Influence of Sustainability Trends on the Acceptance of Biodegradable Materials in Indian Fashion Preferences".

**Shivangi Pundir**, AAFT School of Fashion and Design

**Siva Ganesh Babu**, Dean, AAFT School of Fashion and Design

**Dr. Neema Papnai**, Associate Professor, AAFT School of Fashion and Design

## **ABSTRACT**

This study examines the acceptance of biodegradable materials in the Indian fashion system through an evaluation of the awareness, attitudes, and behaviours of the urban consumers. The data was gathered through a mixed-methods sampling approach where the structured surveys were sent to 112 respondents in 5 large metropolitan cities through Google Forms and handed out through printed questionnaires at retail stores and shopping malls. The qualitative information was supplemented by additional interviews using in-depth interviewing, instilling additional feelings and cultural determinants within chosen participants. The analysis of quantitative data was carried out in SPSS, with descriptive statistics, correlation, and regression analysis being the main helping measures in analysing quantitatively oriented data. Qualitative data were coded along with themes using NVivo. The measures examined were the consumer perception of biodegradable/eco-friendly fashion, the role of Bollywood cinema/ celebrities on choosing environmentally friendly fashion, and the obstacles, which are price, access to eco-friendly fashion, and design. It reports the presence of such average awareness (70%) and low adoption rate (35%), cost (50%), and lack of products available (35%) as the main barriers. The results support that novelty marketing, such as celebrity endorsement of sustainable fashion and easy access to such products, is necessary in spurring the adoption of sustainable fashion within India. Such a methodological introduction to the topic offers a multi-faceted view of influence upon the acceptance of biodegradable fashion in the environment of an emerging market.

**Keywords:** *Biodegradable Materials, Sustainable Textiles, Eco-friendly Fabrics, Green Fashion, Eco-conscious Consumerism,*

## I. INTRODUCTION

The fashion industry is among the most critical to the deteriorated environment, producing approximately 10 percent of overall carbon emissions, 20 percent of heavy industry vehicles, and a large proportion of fabric waste [1-2]. In recent decades, the fashion industry has earned itself some form of scrutiny to environmental impact, where there is a worldwide trend towards sustainable procedures [3]. Among the possible sustainable solutions, one can mark the use of biodegradable materials in fashion as a potential path towards cutting down the environmental impact of the industry [4]. Natural materials like organic cotton, hemp, and bamboo, as well as biodegradable synthetics, have been viewed as alternatives to conventional materials like polyester, nylon, and conventional cotton and have been seen as the solution to reducing amounts of landfill textile waste [5].

The use of biodegradable materials is an emerging interest in the context of India, which is a country that symbolizes one of the biggest emerging markets in the fashion industry across the globe [6]. Even as sustainability trends have been gathering momentum across the globe, the Indian fashion industry continues to be at a very early stage of accepting the changes [7]. The fashion market in India is experiencing a boom rate of growth with its population of over 1.4 billion people, a more urbanized population, and a growing disposable income [8]. But the degree of awareness and acceptance of sustainable and biodegradable materials among the Indian consumers is less clear, and moreover, in this way, how they match the holistic tendencies of sustainability in the industry [9].

The aim of the study here is to establish how the sustainability trends are affecting the biodegradable material acceptance in the Indian fashion domain [10]. This research is necessitated by the necessity to determine how such factors as consumer awareness, cultural values, sensitivity towards prices, and environmental factors contribute to the readiness of the Indian consumers to use biodegradable products in the fashion industry [11]. It also focuses on determining the barriers to adoption and the influence of different stakeholders in creating sustainable practices, such as the fashion designers, manufacturers, and retailers [12,13].

### **Sustainability Trends in Global Fashion**

The need for sustainability in the textile industry has increased over the last few years as consumers and businesses around the globe are becoming more conscious about the social and environmental consequences of textile manufacturing [14]. The fashion industry is responsible for about 10 percent of

carbon emissions in the world and 20 percent of the industrial water pollution, thus contributing to the current climate crisis and the degradation of the environment [2, 15]. A counter-reaction to these issues has led to the interest in seeing more environmentally friendly alternatives, and biodegradable materials are amongst them due to the possible reduction of the negative impact on the environment in the long run [16].

Biodegradable materials are clothing and fabrics that disintegrate when left out in the environment with the components of nature like water, air, and bacteria [17]. Organic cotton, hemp, and wool have always been considered biodegradable, whereas new developments in the field of biodegradable synthetics have led to the introduction of novel biodegradable materials, including polylactic acid (PLA) fabrics composed of renewable raw materials [2]. Biodegradable materials have multiple advantages compared to regular materials, such as the lack of accumulation of these products in landfills, lower microplastics pollution, and lower reliance on fibers of petroleum origin [18].

Even in the global setting, extensive advancements have been witnessed in utilizing biodegradable and other sustainable materials in fashion in many Western countries [19]. As a report by the Ellen MacArthur Foundation notes, up to a point in 2030, turning the fashion industry into a circular one, including the utilization of biodegradable materials, will save the industry up to \$500 billion in annual costs by 2020 [20]. Moreover, there is a rise in the sustainability trends that are affecting consumer behavior, and more consumers are expressing an interest in sustainable fashion alternatives [21]. Evidence presents that more than 60 percent of the consumers in Europe and North America are willing to pay a premium price for sustainable fashion products, which has a gradual acceptance elsewhere, including India [22].

### **Consumer Behavior and Preferences in India**

The situation is especially important in India, where a wide range and a fast-growing fashion market are on the verge of defining the future patterns of consumer behaviour through the shapes of sustainability trends [23]. But studies on Indian consumer attitudes towards sustainable and biodegradable fashion are comparatively scarce, and to some extent, the usage of such materials is at a trial stage [24, 25]. One of the most important factors that shape consumer preferences in India is the awakening of ecological concern [26, 27]. All individuals surveyed by Nielsen claimed that 73 percent of them were ready to pay

a higher price to buy a product that is produced sustainably [28]. Such environmental awareness will contribute to the increase in demand for sustainable fashion materials, including biodegradable ones [29]. The other important factor that has been found to affect consumer behavior in India is its price sensitivity [30]. Although in the West sustainability can be a feature of higher prices, a large number of Indian consumers attach more importance to affordability, and this, in turn, means that the use of biodegradable substances will be difficult to popularize [31]. A recent study conducted at the Indian Institute of Fashion Technology (IIFT) revealed that although an increasing number of Indian consumers are now willing to consider the idea of sustainable fashion, price serves as the main obstacle to the large-scale implementation of sustainable fashion [32, 33]. This, consequently, requires a sustainable fashion brand to identify means of providing biodegradable material at reasonable rates to be an attractive market to more people [34, 35]. Also, the consumer preferences in India are highly influenced by cultural issues [36, 37]. The Indian fashion market is also known for the fact that there is a strong attachment to traditional materials like cotton, silk, and wool, which have cultural and historical origins [2]. Another barrier that needs to be addressed is cultural resistance to bringing in new biodegradable materials in this scenario, and needs to be addressed with the imparting of knowledge to the consumer on the environmental upsides of using biodegradable materials [38]. In order to promote the use of biodegradable materials in mainstream in India, fashion brands will have to weigh the trends of cultural preferences against the increasing popularity of sustainable commodities [39, 40].

A study [41] suggests that the growing adoption of modern materials in Indian fashion is influenced by global exposure to sustainability trends. However, they note that regional differences in awareness and attitudes may impact the success of biodegradable material integration in India's diverse market [42, 43]

### **Role of Stakeholders in Promoting Sustainability**

To make biodegradable materials take root in India, it is necessary that designers, manufacturers, retailers, and policymakers work together [37]. Designers have the responsibility of including sustainable materials in their line, whereas manufacturers should focus on ensuring the mode of production goes in line with environmental norms [23, 37]. The role of retailers is to ensure sustainable fashion products are available to consumers and inform them on the impact of their decisions on the planet [44]. The role of policymakers is also possible as they can encourage the usage of biodegradable materials and come up with a system of regulations, which will foster sustainability in fashion [45].

It is not something completely new; the Indian government has already started to approach the process of sustainability promotion in the industry, where fashion is not an exception [46]. Such green initiatives as enabling a clean India (promoted under the name of the new Swachh Bharat Mission) or making India more sustainable (sustainable textiles as part of the Make in India initiative) will lead to a more sustainable fashion industry [47]. Nonetheless, the engagement of the private sector, both brands and retailers, is also crucial in fuelling the transition to biodegradable materials [48].

### **Research Problem and Objectives**

Despite the growing attention to sustainability trends in the fashion industry, there is limited research on the acceptance of biodegradable materials among Indian consumers. This research seeks to address the gap by exploring the factors that influence the acceptance of biodegradable materials in the Indian fashion market [4, 49]. Specifically, the study aims to:

1. Investigate the key drivers influencing the acceptance of biodegradable materials in Indian fashion.
2. Examine the impact of sustainability trends on consumer preferences for biodegradable materials.
3. Identify barriers to the adoption of biodegradable materials and explore strategies to overcome these barriers.
4. Assess the role of industry stakeholders in promoting the use of biodegradable materials in the Indian fashion market.

### **Significance of the Study**

This research would help in the knowledge of the impact of the trend of sustainability on consumer behavior in an emerging country such as India. The results will be useful in educating fashion labels, designers, and policymakers aiming at propagating the use of biodegradable materials in India [35]. Besides, the study will provide practical suggestions on how to work on the obstacles to the uptake and maximize consumer interest in sustainable fashion. Filling this gap in the literature, the study will clear the way to further research in the field of sustainable fashion in developing economies [50].

## **II. MATERIALS AND METHODS**

### **2.1 Research Approach: A Fusion of Insight and Analysis**

This study adopted the mixed methods design that is characterized by blending both quantitative strengths and qualitative richness to uncover the intertwining trends that characterize consumer behavior with regard to the use of biodegradable materials in the fashion sector. The convergence of numerical data and personal stories gave a multi-dimensional perspective on how sustainability trends are reorganizing Indian fashion. Having used the data of large-scale surveys and the collected in-depth observations of the course of interviews, the studies intended to shed light on the role of identifiers determining the acceptance of eco-friendly materials and their implementation on the fashion canvas.

## **2.2 Instruments of Exploration**

### **The Survey: A Window into Consumer Perceptions**

The data collection was based on a well-prepared questionnaire. The invented instrument was developed to obtain a rich perspective of consumer behavior, and thus it was based on past studies and validated scales used in sustainability and fashion consumerism studies. The questionnaires were designed and versatile with a type of closed-ended questions (Likert scale, multiple choice, yes/no) to collect measurable data, and the open-ended questions were open to personal perceptions, experiences, and concerns about biodegradable fashion.

The primary aim of the survey was to address several key aspects:

- Awareness and understanding of biodegradable fashion materials.
- Willingness to embrace sustainable fashion, even at a higher price point.
- The role of media (such as Bollywood) and cultural traditions in shaping consumer preferences.
- The barriers preventing the adoption of eco-friendly fashion products.

To ensure broad reach, the questionnaire was distributed through two primary channels:

1. Google Forms: The online survey targeted the urban consumers, as they are used to programs based on the internet. The online survey was distributed via Google Forms. This approach enabled a wide-ranging demography, enabling the participation of different groups of people in different cities to be included in the answers.
2. Printed Questionnaires: The paper version of the survey was available which considered the fact that all survey participants are not connected to the digital world and promptly gave out papers of the survey at the retail stores and malls in those five cities of India that are considered to be the

most dynamic ones Bengaluru, Mumbai, Delhi, Gurgaon, and Ghaziabad. The method achieved inclusivity, as it captured the opinions of people who discourage the use of smartphones or rely on in-person interaction.

### **The Interviews: Beyond the Numbers**

The survey identified statistical patterns, whereas the semi-structured interviews went deeper to identify emotional and cultural tensions that run in the background of things and determine the fashion choices. In the quest to know more about the story of sustainability, the following interviews looked into individual accounts and understanding of the concept in terms of how it exists between individuals at the micro level, and how it also exists within the larger culture of any group of people such as how Bollywood influenced fashion or how the use of natural fibers has been a deeply embedded tradition in India or how individuals perceive played into the larger idea of sustainability in the world at large.

The interviews were guided by a set of questions that sought to explore:

- Personal motivations for considering eco-friendly alternatives.
- The role of cultural identity and media influence in shaping sustainable choices.
- Barriers such as high costs, durability concerns, and limited availability.

To ensure accuracy, each interview was audio-recorded (with consent) and later transcribed for in-depth analysis. A flexible interview format was used, allowing participants to speak freely, ensuring that their voices were captured in all their authenticity.

### **Secondary Data: The Broader Context**

Secondary sources were also used to supplement the analysis in this study, besides the primary data collected. Global reports by companies such as the Ellen MacArthur Foundation and Textile Exchange gave information on the trends in sustainable fashion. Other sources used to contextualize the main findings included government publications and academic articles accessed using databases like JSTOR, ScienceDirect, and Google Scholar that presented a background of both environmental regulation and sustainability concepts, as well as a history of the biodegradable materials market.

## **Tools of Analysis: From Numbers to Narratives**

**Quantitative Analysis:** The survey-based numerical information has been analysed with the help of such tools as IBM SPSS Statistics, the Microsoft Excel application. Descriptive statistics gave a basic insight into consumer attitudes, whereas inferential statistics (Chi-square tests and regression analysis) were utilized to understand whether there were correlations between elements such as income level, media intake, and willingness of the consumer to use biodegradable fashion materials.

**Qualitative Analysis:** Interview transcripts were run through the NVivo software program, a facility that enabled thematic coding. This was done by first looking out for the patterns emerging and then compiling them in thematic areas, one of them being inspiration towards sustainability, cultural factors, and perceived inhibitors. The qualitative results were then intertwined with quantitative data, delivering a more detailed image of how the consumer approaches sustainable fashion, providing a more nuanced picture of the consumer's journey toward sustainable fashion.

## **2.3 Methodological Journey**

### **Sampling Strategy: Handpicking a Diverse Consumer Base**

The purposive sampling technique was used in order to inform the diverse gamut of knowledge about the attitudes towards sustainable fashion. It targeted the urban Indian consumers, especially those aged between 18 to 50 years, as they are the main decision-makers in the modern fashion market. It was well-targeted so that it could capture the variety in the following dimensions:

- Gender
- Income levels
- Educational backgrounds
- Fashion consumption patterns

**Quantitative Survey:** There were 112 cities as the target of the survey respondents. The selection of these cities was strategically done with respect to the cultural mix of the city, diversity of socio-economics, plus the excellent store of fashioning retail stores.

Qualitative Interviews: In further detail, 1015 study members were chosen based on a purposive and snowball approach. This method gave researchers a chance to reach people who were greatly interested or had experience in sustainable fashion.

### **Data Collection: Bridging the Digital and Physical Divide**

Data was collected in a period of six months, and after this, the flow of responses was continuous.

Surveys: The online survey link was distributed on social media, through email, and in QR codes at a few retail stores and malls. At the same time, paper questionnaires were placed in those places. The combination of the two methods allowed capturing the feedback of the digitally connected population and the less tech-savvy.

Interviews: These took place in-person, or online (through video conferencing) at the convenience of the participant, and according to precautions about COVID-19. Interviews took an average of 30 to 45 minutes each, and permission was obtained in advance in case there was a need to transcribe accurately.

### **Data Analysis: The Magic of Merging Numbers and Stories**

#### **Quantitative Analysis:**

Descriptive Statistics: Frequencies and percentages assisted in the description of the main aspects of the sample, whereas the central tendency measures (mean, median) allowed understanding the trends in consumer attitudes.

Inferential Statistics: The chi-square test was used to discuss correlations between demographic factors and the willingness of consumers to use sustainable fashion. The willingness to adopt biodegradable materials was analyzed using regression analysis to determine the impact of various variables, such as age and income.

#### **Qualitative Analysis:**

Thematic Coding: NVivo was used to analyze the interview transcripts and establish emerging themes that occurred along the lines of motivations, cultural influences, and barriers. This enabled the researcher to examine the underlying cause of the numbers as well as comprehend the forces that either encourage or discourage the embrace of eco-friendly fashion.

## **2.4 Ethical Considerations: Ensuring Integrity in Research**

Ethical considerations were highly observed during the study. An informed consent form was provided to all the participants describing the aim of the study, the voluntary nature of participation in the study, and the confidentiality of their answers. All the personal information was anonymized, but all the respondents were absolutely safe. Also, it was presented that the participants could withdraw after making some decisions about the study at any given moment, without any repercussions. All of the data was stored safely, and not everyone had access to it.

## **2.5 Study Limitations**

Despite the rigorous design, certain limitations were acknowledged:

**Sampling Bias:** The ideal type of purposive sampling used in this study, despite its effectiveness in identifying the target populations with a particular demographic, reduces or restricts the generalizability of the results obtained to the general perspective of the Indian population.

**Self-Reported Data:** There was a possibility of social desirability bias in the answers as the participants could have exaggerated their adherence to sustainability.

**Temporal Shifts:** The results may be based on the current trends but may require updating after regular intervals, as the preferences of the people in the market are constantly changing and, especially in the fashion industry, changing ever so fast

## **III. RESULTS AND DISCUSSIONS**

The most important results of the research study, which dwelt upon the perceptions, attitudes, and behaviours of urban Indian consumers towards biodegradable fashion, are delicately outlined. The study involved an in-depth analysis of the experiences of both quantitative surveys and qualitative interviews, which allowed for determining a degree of awareness about sustainable fashion, how ready people are to use it, and which factors hinder its broad adoption in the Indian fashion industry. Also, the role of the Bollywood cinema in building consumer attitudes towards eco-fashion was discussed.

The study sought to address three primary research objectives:

1. To evaluate urban consumers' perceptions of biodegradable fashion.
2. To investigate the role of Bollywood in promoting eco-fashion.
3. To identify the primary barriers and motivators influencing the adoption of biodegradable materials in fashion.

Results and discussion are divided into two sections: the quantitative results given by the surveys and the qualitative results based on the in-depth interviews. Both involvements enable the findings of the two sources to be combined to give an all-around recognition of the determinations influencing the decision-making process of consumers concerning biodegradable fashion in India.

### **3.1 Quantitative Results**

#### **3.1.1 Demographic Overview**

The survey sample consisted of 112 respondents from five major cities: Bengaluru, Mumbai, Delhi, Ghaziabad, and Gurgaon. The demographic breakdown is as follows:

Age: percentages of the participants were 45 percent 18-30 years, 35 percent 31-40 years, and 20 percent 41-50 years.

Gender: 58 percent of them were female and 42 percent were male.

Occupation: 40 per cent were engaged in the work life under the private equity, 25 per cent were in academia, and 35 per cent as business owners or labourers in other sectors.

Income: 30 percent were between 30,000-50,000, 35 percent were in 50,000-75,000, and 35 percent were above 75,000.

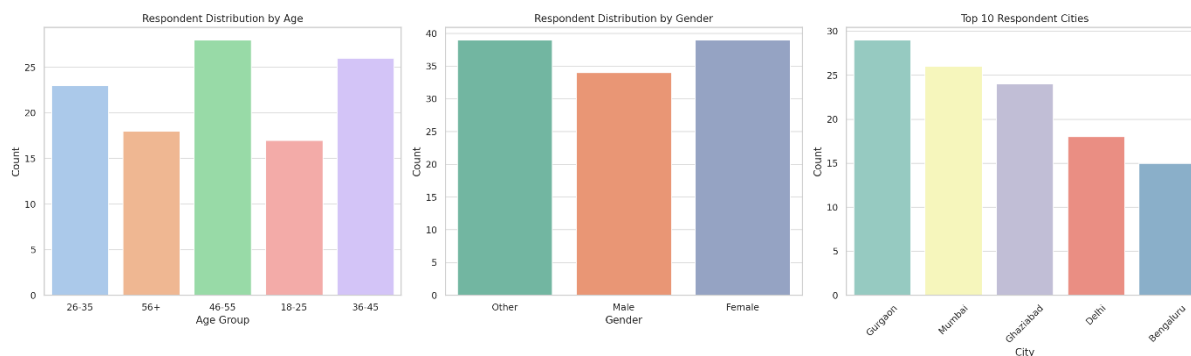


Fig.1. Respondents Distribution by (a) Age, (b) Gender, (c) City of livelihood

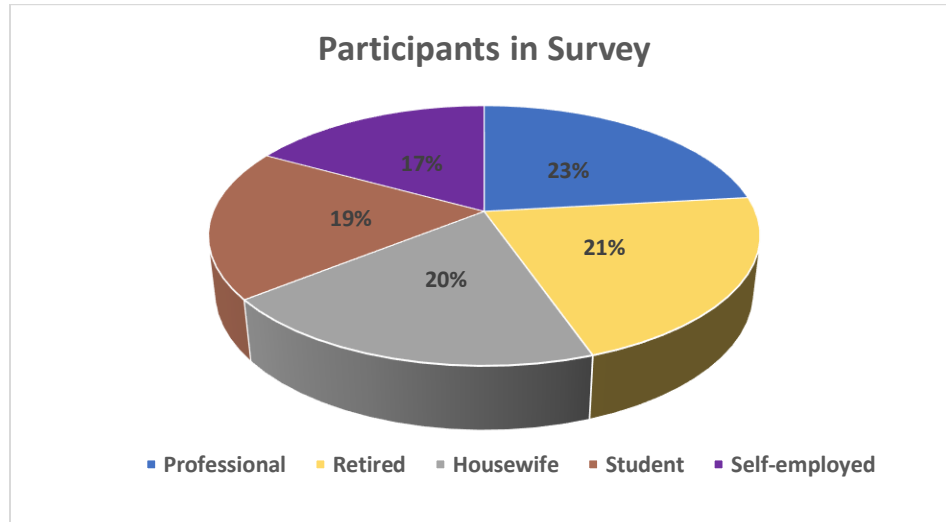


Fig. 2. Participants in the survey by category

### 3.1.2 Descriptive Statistics

The survey results had several interesting trends, as follows:

**Eco-Friendly Fashion:** The average result was 2.98, which depicts a reasonable interest in biodegradable fashion among those who responded.

**Bollywood impact:** The average was 2.87, and the impact of Bollywood on the fashion choices was moderate yet evident.

**Sustainability Concern:** Moderate concern levels concerning sustainability were identified (mean = 2.95), but in not all cases was sustainability prioritized over other dimensions. **Government Initiatives:** The respondents mostly agreed on the role of the government initiatives, with a mean of 3.06.

**Willingness to Pay More:** There is a lack of responses in this category, and therefore, participants were not certain, or this question was of no use to them.

### 3.1.3 Consumer Awareness and Perception of Biodegradable Fashion

The level of awareness of biodegradable fashion materials was also moderate 70% of people said that they are familiar with this concept, but only 45 percent said they are aware of the brands that provide biodegradable fashion items. This indicates the existence of a disconnection between awareness and actual utilisation of such materials.

Perceived Benefits: In a large percentage (60%), biodegradable fashion is important in terms of environmental sustainability, yet 25 percent considered it a short-term trend.

Intent to Buy: 55 percent offered an intent to buy biodegradable fashion, whereas only 35 percent did the same as purchases during the past year. This shows that though there is awareness, intentions are not always translated into acts.

### 3.1.4 Barriers to Adoption

The primary barriers identified include:

Cost: Half of the respondents mentioned the high prices as one of the key impediments to adoption.

Short supply: 35% cited that there are no available recycled goods in stores.

Design and Style: 30 percent considered that biodegradable fashion designs were not as trendy as ordinary, conventional fashion items.

Attention: Although 70 percent of respondents were aware of biodegradable fashion, 40 percent were not informed on where to get such products or how to recognize them.

**Table 1:** Barriers to Adoption by Occupation

Occupation	Lack of Awareness	Lack of Availability	Cost	Design Issues
Housewife	7	3	5	7
Professional	9	5	9	3
Retired	5	5	9	5
Self-employed	5	10	3	1
Student	4	9	2	6

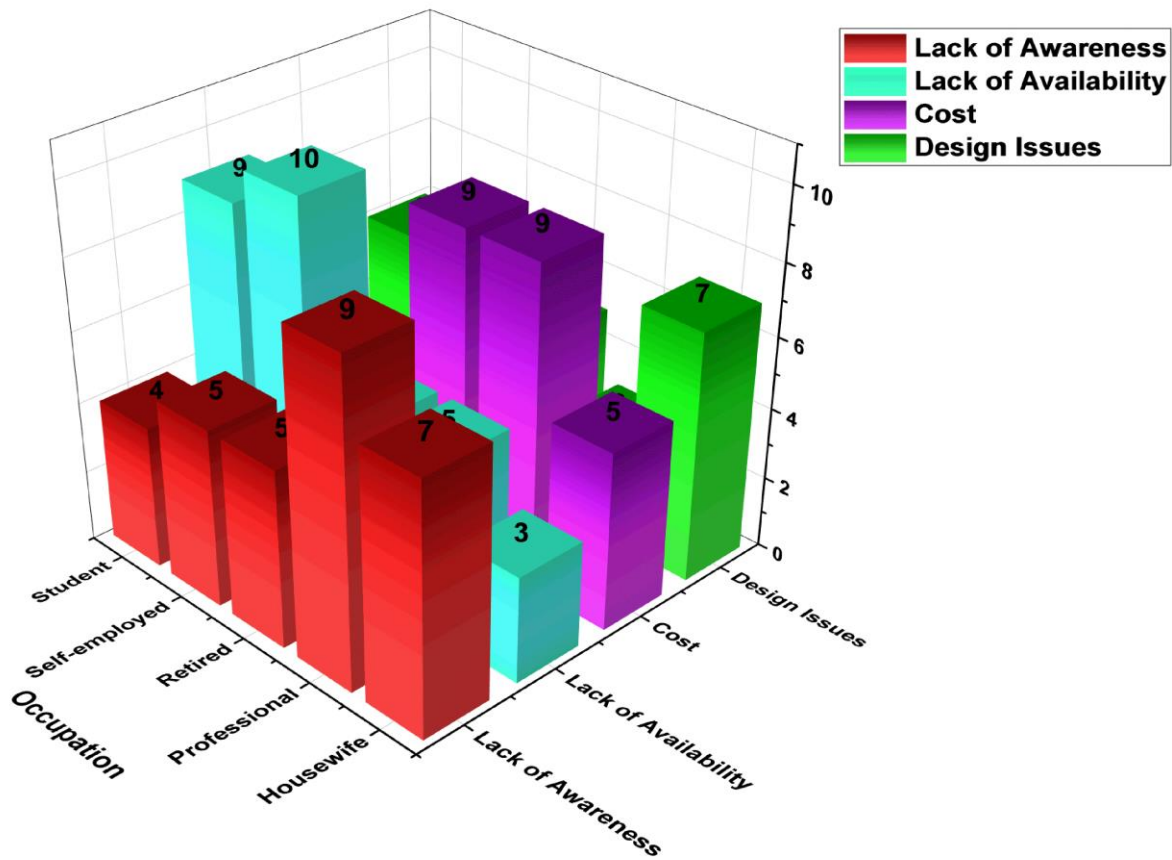


Fig. 3. Barriers to Adoption by consumers of various occupations

### 3.1.5 Influence of Cinema and Celebrities

The role of Bollywood in shaping fashion trends was evident:

65 percent of the respondents confirmed that the celebrities of Bollywood impacted their attitude towards sustainable fashion to a large extent. 45% referred to a particular celebrity, e.g., Dia Mirza and Akshay Kumar, as the representatives of environmentally sensitive fashion. 55 % of the respondents said that films on eco-friendly fashion would increase the chances of them wearing biodegradable fashion.

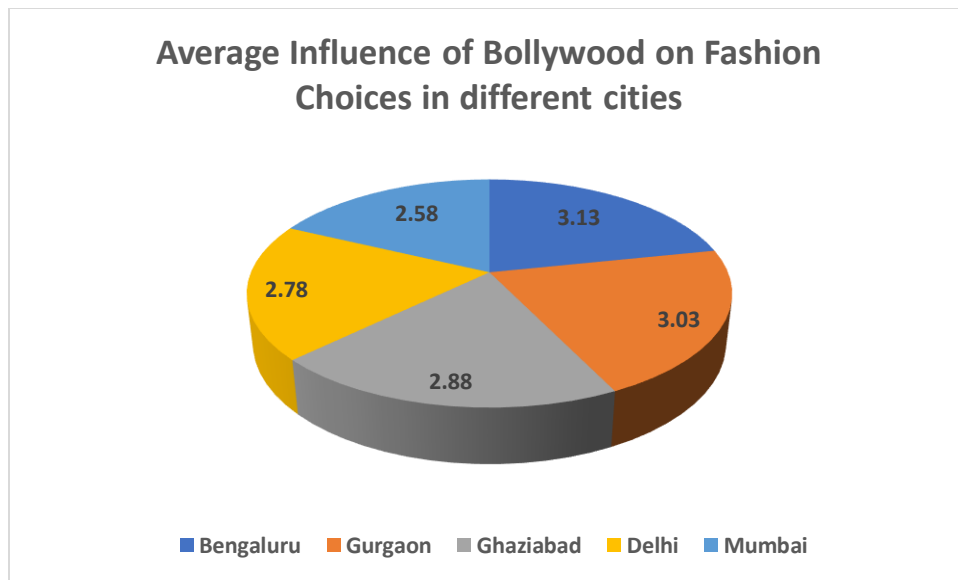


Fig. 4. Average Influence of Bollywood on Fashion Choices in different cities

### 3.1.6 Statistical Analysis

**Income and Willingness to Adopt:** There was a strong positive relationship between income levels and willingness to adopt biodegradable fashion ( $r = 0.68, p < 0.01$ ).

**Gender:** Females (60 %) showed greater interest in biodegradable fashion than males (45 %).

**Age Group:** More of the younger participants (18-30 years) responded in favour of adopting biodegradable fashion (70%) than the other participants in the 31-50 years age group (50%).

## 3.2 Qualitative Results

### 3.2.1 Interview Themes

From the qualitative interviews, several themes emerged:

**Environmental Concerns:** Interviewees said that they have increasingly become interested in the environmental concerns of fast fashion and the low pollution levels brought about by traditional textile

manufacturing. Cultural and Social Impacts: The strong position of Bollywood in shaping the tastes of people in dressing was discussed. The participants have noted that the adoption increase could take place under the influence of celebrities promoting sustainable fashion. Accessibility and Design Difficulties: Lack of access to biodegradable fashion and ugly designs were reported by many interviewees, and they did not buy this kind of fashion because of these reasons. Pricing and perceived value: The more expensive nature of the biodegradable fashion was an issue raised numerous times. Although the participants were quite ready to purchase more eco-friendly products and pay more, they estimated that the prices were too high at the moment. Celebrity Effect - The respondents said that in case Bollywood celebrities promoted biodegradable fashion, they would be better motivated to buy such products.

### **3.2.2 Quotes from Interviews**

- "If celebrities wear biodegradable fashion, I might be more interested." – Participant 1
- "Bollywood has a huge influence. If they wore more eco-friendly clothes, I'd consider it." – Participant 2
- "The cost is a big issue. The price doesn't justify the benefit for me." – Participant 3
- 

## **3.3 Discussion**

### **3.3.1 Consumer Perception of Biodegradable Fashion**

The results indicate that although there is a modest degree of awareness relative to biodegradable fashion, there is a notable difference between awareness and actual buying behavior. High costs, short supply lines, unattractive design, etc., are considered the major impediments to adoption, which must be mitigated to boost acceptance. More concern was expressed by the young consumer populations, especially in the age bracket of 18-30 years, on the issue of eco-friendly fashion, indicating a potential market in the urban populations who tend to be rather young and environmentally friendly.

### **3.3.2 Role of Cinema and Celebrities**

The statistics reveal that Bollywood can play a great role in enhancing sustainable fashion. To increase adoption, respondents believed that the social pressures of celebrity ideas and the popularity of fashion based on environmental concerns in movies can help. Indian Bollywood celebrities possess the

exceptional capability to influence the forms and designs of the fashion industry and shape the behavior of the consumers, especially the younger generation.

### **3.3.3 Barriers to Adoption**

Cost, scant supply, and design issues, as the main obstacles, should be conquered to bring biodegradable fashion into common use. To reduce these barriers, the brands should resort to reducing the costs of production, making the products available more widely in retail stores, and making them more modern and trendier, which would reach a wider audience.

### **3.3.4 Implications for the Fashion Industry**

The findings suggest several actionable steps for promoting biodegradable fashion in India:

**Making Costs for Production Lower:** The brands must aim to decrease the costs of production with new ways of production.

**Enlarging Availability:** More eco-friendly fashion should be achieved in mainstream places to shop.

**Working with Bollywood:** Making Bollywood celebrities work with biodegradable fashion can be a great way of changing the minds of the people.

**Determining the best biodegradable, stylish, and trendier designs:** The industry needs to concentrate on how to make biodegradable fashion more stylish and trendier, especially to the younger consumers.

This study demonstrates that the biodegradability of fashion is increasingly expressed in India, though it stresses that there are major challenges to implementing it. The popularity of Bollywood stars is a valuable way to popularize eco-fashion, and overcoming the barriers discovered will be vital to raising the readiness of people to use biodegradable resources in their purchases. The findings can have significant implications for the fashion industry in India, which needs to pay more attention to the aspects of affordability, availability, and style to adapt more people to the change of fashion preferences toward more sustainable ones.

## **IV. CONCLUSION**

This research explored the level of adoption of biodegradable fashion in the urban India consumer environment, which lacked awareness levels but indicates huge barriers to its widespread dissemination. The survey was conducted using a sample of 112 individuals by carrying out the survey in five metropolises of India- Bengaluru, Mumbai, Delhi, Ghaziabad, and Gurgaon, and the level of awareness

of biodegradable fashion materials is reported to be 70%. But just 45 percent were aware of particular brands that sell such products and it means that there is a compromise between awareness and real market penetration. Although 60 percent of respondents understood the environmental advantages of biodegradable fashion, only 35 percent had bought it within the last 12 months, as well, indicating the difficulties of translating knowledge into action.

The major barriers encompass cost, which was mentioned by 50 percent of respondents and lack of availability, which was 35 percent. There was also the design factor, whereby 30 percent of the participants described the absence of trendy ranges with biodegradable fashion. Additionally, 40 percent of the respondents indicated that though they had heard of biodegradable fashion, they had no idea of the location of such products or how to spot them in the market.

Culturally, 65 percent of the respondents affirmed that Bollywood celebrities were very instrumental in making them choose their contemporary style of fashion. This also ranked as a reason where respondents said they would be keener to embrace sustainable fashion approaches due to films that highlight the use of eco-friendly fashion for the environment (55%). This evidence implies that Bollywood can easily make a major contribution to sustainable fashion.

In order to circumvent such obstacles, the fashion sector should embark on reducing prices, raising supply, and providing fresh fashions. Moreover, the use of celebrities in promoting biodegradable fashion through media would go a long way in ensuring consumers rush to adopt such a practice, moving India towards an era of more sustainable fashion.

## **V. REFERENCES**

1. Gomes, Kamol, et al. "Sustainability Transformation in the Textile Industry—The Case of Wastewater Management." *Business Strategy and Development*, vol. 7, no. 1, 2024, doi:10.1002/bsd2.324.
2. Bao, Hui Ying, et al. "A Systematic Review of Biodegradable Materials in the Textile and Apparel Industry." *Journal of the Textile Institute*, vol. 115, no. 7, 2024, doi:10.1080/00405000.2023.2212848.
3. Jain, Sheetal, and Sita Mishra. "Luxury Fashion Consumption in Sharing Economy: A Study of Indian Millennials." *Journal of Global Fashion Marketing*, vol. 11, no. 2, 2020, doi:10.1080/20932685.2019.1709097.

4. Rathi, Rubal, et al. "Exploring Young Consumers' Adoption of Secondhand Luxury: Insights from a Qualitative Study." *Journal of Fashion Marketing and Management*, vol. 28, no. 1, 2023, doi:10.1108/JFMM-11-2022-0236.
5. Na, Youngjoo, and Dong Kyu Na. "Investigating the Sustainability of the Korean Textile and Fashion Industry." *International Journal of Clothing Science and Technology*, vol. 27, no. 1, 2015, doi:10.1108/IJCST-08-2013-0085.
6. Jain, Minakshi. "Glocal Fashion: Impact of Globalization on Indian Garment and Textile Sector." *CLEAR International Journal of Research in Commerce & Management*, vol. 8, no. 9, 2017.
7. Brooksworth, Frederica, et al. *Fashion Marketing in Emerging Economies: An Introduction*. 2023, doi:10.1007/978-3-031-07326-7\_1.
8. Ray, Subhasis, and Lipsa Nayak. "Marketing Sustainable Fashion: Trends and Future Directions." *Sustainability (Switzerland)*, vol. 15, no. 7, 2023, doi:10.3390/su15076202.
9. Glal El-Den, Roba, et al. "Environmental Sustainability and Innovations in the Fashion Industry." *Journal of Textiles, Coloration and Polymer Science*, vol. 0, no. 0, Feb. 2024, pp. 0–0, doi:10.21608/jtcps.2024.259736.1314.
10. Saricam, Canan, and Nazan Okur. *Analysing the Consumer Behavior Regarding Sustainable Fashion Using Theory of Planned Behavior*. 2019, doi:10.1007/978-981-13-1265-6\_1.
11. Mousumi Sengupta, and Nilajan Sengupta. *Sustainable Fashion: The Issues, Challenges, and Prospects*.
12. Davis, G., and J. H. Song. "Biodegradable Packaging Based on Raw Materials from Crops and Their Impact on Waste Management." *Industrial Crops and Products*, vol. 23, no. 2, 2006, doi:10.1016/j.indcrop.2005.05.004.
13. Claxton, Stella, and Anthony Kent. "The Management of Sustainable Fashion Design Strategies: An Analysis of the Designer's Role." *Journal of Cleaner Production*, vol. 268, 2020, doi:10.1016/j.jclepro.2020.122112.
14. Saricam, C., et al. "Determination of Consumer Awareness about Sustainable Fashion." *IOP Conference Series: Materials Science and Engineering*, vol. 254, no. 17, 2017, doi:10.1088/1757-899X/254/17/172024.
15. Provin, Ana Paula, et al. "Circular Economy for Fashion Industry: Use of Waste from the Food Industry for the Production of Biotextiles." *Technological Forecasting and Social Change*, vol. 169, 2021, doi:10.1016/j.techfore.2021.120858.
16. Rai, Pawankumar, et al. "Recent Advances in the Sustainable Design and Applications of Biodegradable Polymers." *Bioresource Technology*, vol. 325, 2021, doi:10.1016/j.biortech.2021.124739.

17. Mehta, Sunidhi. "Biodegradable Textile Polymers: A Review of Current Scenario and Future Opportunities." *Environmental Technology Reviews*, vol. 12, no. 1, 2023, doi:10.1080/21622515.2023.2227391.
18. Moon, Karen Ka Leung, et al. "Popularization of Sustainable Fashion: Barriers and Solutions." *Journal of the Textile Institute*, vol. 106, no. 9, 2015, doi:10.1080/00405000.2014.955293.
19. Abbate, Stefano, et al. "Sustainability Trends and Gaps in the Textile, Apparel and Fashion Industries." *Environment, Development and Sustainability*, vol. 26, no. 2, 2024, doi:10.1007/s10668-022-02887-2.
20. MacArthur FE. "A New Textiles Economy: Redesigning Fashion's Future." *Ellen MacArthur Foundation*, 2017.
21. Barauna, Debora, et al. "BIOMATERIAL EXPERIMENTAL DESIGN PRACTICES AS AN STRATEGY FOR SUSTAINABLE FASHION." *MIX Sustentável*, vol. 8, no. 2, 2022, doi:10.29183/2447-3073.mix2022.v8.n2.95-108.
22. Ray, Subhasis, and Lipsa Nayak. "Marketing Sustainable Fashion: Trends and Future Directions." *Sustainability (Switzerland)*, vol. 15, no. 7, 2023, doi:10.3390/su15076202.
23. RAJESH R. "STUDY OF BIODEGRADABLE MATERIALS IN CONSUMER PRODUCTS." *EBSCO Logo Connecting You to Content on EBSCOhost*, vol. 11, no. 1, 2023, p. 29.
24. Nittala, Rajyalakshmi. "Green Consumer Behavior of the Educated Segment in India." *Journal of International Consumer Marketing*, vol. 26, no. 2, 2014, doi:10.1080/08961530.2014.878205.
25. Kushwaha, Gyaneshwar Singh, and Nagendra Kumar Sharma. "Educated Young Consumer Purchase Behavior towards Green Products." *International Journal of Green Computing*, vol. 6, no. 1, 2015, doi:10.4018/ijgc.2015010105.
26. Rathi, Rubal, et al. "Exploring Young Consumer's Adoption of Secondhand Luxury: Insights from a Qualitative Study." *Journal of Fashion Marketing and Management*, vol. 28, no. 1, 2023, doi:10.1108/JFMM-11-2022-0236.
27. Saha, Indranil, et al. "A Study on Consumer Awareness towards Green Fashion in India." *Smart Innovation, Systems and Technologies*, vol. 134, 2019, doi:10.1007/978-981-13-5974-3\_42.
28. Pereira, Vijay, et al. "An Exploratory Study into Emerging Market SMEs' Involvement in the Circular Economy: Evidence from India's Indigenous Ayurveda Industry." *Journal of Business Research*, vol. 142, 2022, doi:10.1016/j.jbusres.2021.12.053.
29. Gassler, Birgit, et al. "Exploring Consumers' Expectations of Sustainability in Mature and Emerging Markets." *Journal of Global Marketing*, vol. 29, no. 2, 2016, doi:10.1080/08911762.2015.1133869.

30. Teli, M. D., et al. “Economical and Sustainable Price Sensitive Fashion and Apparels Marketplace.” *Recycling from Waste in Fashion and Textiles*, 2020, doi:10.1002/9781119620532.ch13.
31. Chakraborty, Swagata, and Amrut Sadachar. “Can a Connection with the Indigenous Cultural Values Encourage Sustainable Apparel Consumption?” *Journal of Fashion Marketing and Management: An International Journal*, vol. 27, no. 1, Jan. 2023, pp. 80–99, doi:10.1108/JFMM-07-2021-0191.
32. Gupta, Karnika, and Narendra Singh. “Consumer Attitude towards Sustainable Living in India.” *Social Responsibility Journal*, vol. 17, no. 3, Apr. 2021, pp. 301–20, doi:10.1108/SRJ-03-2018-0081.
33. Bardey, Aurore, et al. *Fashioning the Future Generation: Generation Z Indian Consumers’ Attitudes Towards Western and Indian Fashion*. 2023, doi:10.1007/978-3-031-07078-5\_2.
34. Busalim, Abdelsalam, et al. “Consumer Behavior in Sustainable Fashion: A Systematic Literature Review and Future Research Agenda.” *International Journal of Consumer Studies*, vol. 46, no. 5, 2022, doi:10.1111/ijcs.12794.
35. Rahman, Osmud, et al. “Factors Influencing Consumer Choice: A Study of Apparel and Sustainable Cues from Canadian and Indian Consumers’ Perspectives.” *International Journal of Fashion Design, Technology and Education*, vol. 14, no. 2, 2021, doi:10.1080/17543266.2021.1898681.
36. Karadayi-Usta, Saliha. “A Novel Neutrosophical Approach in Stakeholder Analysis for Sustainable Fashion Supply Chains.” *Journal of Fashion Marketing and Management*, vol. 27, no. 2, 2023, doi:10.1108/JFMM-03-2022-0044.
37. Nauwelaerts, Ysabel, and Margot Vingerhoets. “The Role of Different Stakeholders in the Transition to a Sustainable Fashion Industry in Europe.” *International Journal of Sustainable Fashion & Textiles*, vol. 2, no. 2, 2023, doi:10.1386/sft\_00032\_1.
38. Etuk, Dr. Aniebiet, et al. “SOCIOLOGICAL FACTORS AND CONSUMER BUYING BEHAVIOUR TOWARDS FASHION CLOTHING.” *International Journal of Applied Research in Social Sciences*, vol. 4, no. 2, 2022, doi:10.51594/ijarss.v4i2.305.
39. Pandey, Ritu, et al. “Textile Intangible Cultural Heritage of the World.” *Handbook of Museum Textiles: Volume I Conservation and Cultural Research*, 2022, doi:10.1002/9781119983903.ch2.
40. Roy, Rupayan, et al. *Threads of Tradition*. 2024, pp. 1–37, doi:10.4018/979-8-3693-2113-3.ch001.
41. Gupta, Ms Juhi, et al. “Swachh Bharat Abhiyan: A Catalyst For Sustainable Development.” *Journal of Positive School Psychology*, vol. 2022, no. 9, 2022.
42. Neethu, M. S., and R. Bhuvanewari. “The Global Clothing Oversupply: An Emerging Environmental Crisis.” *Nature Environment and Pollution Technology*, vol. 23, no. 1, 2024, doi:10.46488/NEPT.2024.v23i01.051.

43. Kinley, Tammy R., et al. "Bollywood Influence on Clothing Selection of Indian Consumers." *Journal of Global Fashion Marketing*, vol. 14, no. 4, 2023, doi:10.1080/20932685.2023.2197919.
44. Song, J. H., et al. "Biodegradable and Compostable Alternatives to Conventional Plastics." *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 364, no. 1526, July 2009, pp. 2127–39, doi:10.1098/rstb.2008.0289.
45. Gupta, Anupama. "Sustainability Policies for the Fashion Industry: A Comparative Study of Asian and European Brands." *Indian Journal of Public Administration*, vol. 65, no. 3, 2019, doi:10.1177/0019556119844581.
46. Gulhane, Sujit, and Ranjit Turukmane. "Effect of Make in India on Textile Sector." *Journal of Textile Engineering & Fashion Technology*, vol. 3, no. 1, 2017, doi:10.15406/jteft.2017.03.00084.
47. Gupta, Karnika, and Narendra Singh. "Consumer Attitude towards Sustainable Living in India." *Social Responsibility Journal*, vol. 17, no. 3, Apr. 2021, pp. 301–20, doi:10.1108/SRJ-03-2018-0081.
48. Jastram, Sarah, and Anna-Maria Schneider. "Sustainable Fashion Governance at the Example of the Partnership for Sustainable Textiles." *Uwf UmweltWirtschaftsForum*, vol. 23, no. 4, 2015, doi:10.1007/s00550-015-0377-0.
49. Nath, Vishnu, and Rajat Agrawal. "Barriers to Consumer Adoption of Sustainable Products – an Empirical Analysis." *Social Responsibility Journal*, vol. 19, no. 5, Apr. 2023, pp. 858–84, doi:10.1108/SRJ-12-2020-0495.
50. Mukendi, Amira, et al. "Sustainable Fashion: Current and Future Research Directions." *European Journal of Marketing*, vol. 54, no. 11, Feb. 2020, pp. 2873–909, doi:10.1108/EJM-02-2019-0132.

# **The accuracy of musical tempo memory: Extending and comparing the Western research to the Indian demographic to study the effects of globalization on musical memory**

**Anjali Dhingra, BPA 4B, AAFT School of Music**

## ***Abstract***

Research in the West, particularly studies, has shown remarkable accuracy in musical memory. Participants could recall the Tempo of a piece with a high degree of precision, and 72% of reproductions were within 8% of the original Tempo.

This research focuses on extending the results to the Indian demographic, centered around Delhi and the NCR regions. The hypothesis formulated was that the tempo recollection accuracy percentages obtained from the Indian sample size are likely to be close to that of the Western sample, due to the increased globalization and technological access, thus enhancing and affecting the subjects' musical exposure equally in both regions. To test this, 108 voluntary participants (50.92% musicians, 49.07% non-musicians) were asked to sing the chorus/hook of any of their favorite songs, and the reproduced Tempo was noted by tap tempo detection. This recalled Tempo was then compared to the original tempos of the songs, and an accuracy percentage was calculated.

***Keywords:*** *Tempo, bpm, globalization, tactus, musical memory.*

## **I. INTRODUCTION**

Musical Tempo can be defined as the speed of the music – how fast its meter pulses in time. It is measured in BPM (Beats Per Minute). Musical Tempo can be regarded as an important aspect of musical memory, as it affects how the brain perceives a composition, emotionally and physically. Slower tempos are regarded as indicative of a more relaxed, sad, or introspective piece. In comparison, faster tempos are generally more upbeat, energetic, and associated with joy and

energy [3]. Several musical compositions, usually of the Western classical music history, operate on tempo markings like Andante, Allegro, Largo, Presto, etc., which focus on retaining the specific emotion of the music through a subjective interpretation of its speed, rather than the exact Maelzel's Metronome BPM performance direction.

Musical Tempo Memory can be described as the process of recollection and reproduction of the Tempo of a particular musical composition. It lies within music's surface/performance characteristics [4], containing exact Tempo, pitch, and timbre information. This contrasts with storing information like the time signature and meter of a song, which lies under the information of the abstract structure of music, containing memory for relative pitches and durations.

Daniel J. Levitin and Perry R. Cook experimented with the sample size of students at Stanford University, California [1], to discover that when the participants sang any popular song from memory, 72% of their recalled Tempo fell between  $\pm 8\%$  of the actual Tempo of the composition. Later, this research was extended to study the cognitive procedures involved in musical memory on a larger sample size [2].

This research aimed to reproduce the same results in New Delhi and Delhi NCR, India, and test how accurately the subject can reproduce the Tempo of their favorite song from memory.

Globalization can be defined as the increasing interconnectedness of cultures across the globe, mainly due to advancements in technology, markets, and sociocultural awareness. Its effects can be seen in changing curricula and repertoires in education [7] and music consumption [8].

US music holds a strong position in the modern global music consumption [8]. Cultural Centrality is positively correlated to domestic cultural consumption: A country's cultural interests in foreign audiences and exports are directly proportional to the country's participation in consuming domestic cultures and vice versa [9] [10]. Moreover, this correlates directly with a country's ability to endorse the production and broadcast of national art and media if it attains the expertise of production and the economy to do so [12]. This relation affects the audience's preferences in a particular region: even though the people in a country are inclined to consume more culturally and linguistically relevant media, the market can engross them in the entertainment and media of other similar cultures [12] [13].

The hypothesis of this research is formulated below—

H1: The accuracy percentages derived from the sample size based in India would likely be close to that of the Western sample, considering the effects of globalization and technology making music listening and exposure widely accessible in the contemporary period.

H2: The accuracy percentages of musicians for tempo recollection would be higher than those of non-musicians.

## **II. METHODS**

This section is divided into three subsections: Participants, Procedure, and Materials. These subsections describe the survey-specific questions asked to participants, the procedure adopted to calculate the Tempo and its accuracy score, and the results obtained from the research.

### **2.1 PARTICIPANTS**

The sample size consisted of 108 Indian individuals from the 15-45 age category, with a representation of both Musicians (50.92%) and non-musicians (49.07%). The study included 57.40% male subjects and 41.67% female subjects.

The survey consisted of three crucial questions: weekly music listening rates, self-determination of one's interest in music, and the years one has been practicing music. Most of the subjects reported high weekly music-listening rates ('On a scale of 1-5 (1—never; 5—everyday) how frequently do you listen to music in a week?')—85.18% reported that they listened to music every day (5), 8.33% selected 4, while 6.48% opted for three or lower.

In a self-reporting scale of 1-5, 6% of the subjects rated themselves as 'non-Musicians' (1), 41% as 'Music Loving Non-Musicians' (2), 22% as 'Amateur Musicians' (3), 27% as 'Semi-Professional Musicians' (4) and 4% as 'Professional Musicians' (5). The sample size consisted of varying number of years the participants practiced music (Instruments, Singing, Writing, Sound Engineering, Music Production, Music Theory etc.) - 37.03% reported 0 years of music practice, 26.85% responded with 1-4 years, 18.52% with 5-9 years, 13.89% with 10-14 years, while 3.70% answered they have practiced music for 15 years and above.

The above statistics are represented as pie charts in Figure 1, Figure 2, and Figure 3.

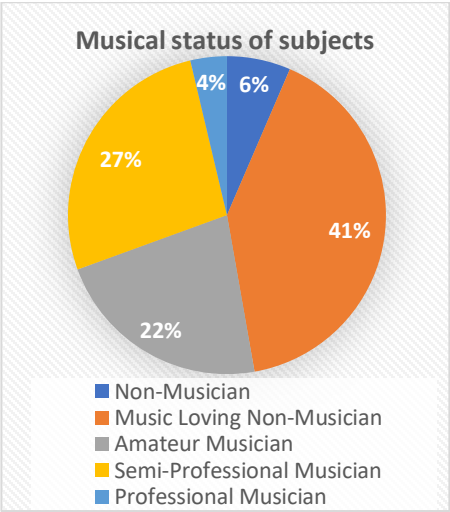


Figure 1: Musical status of subjects

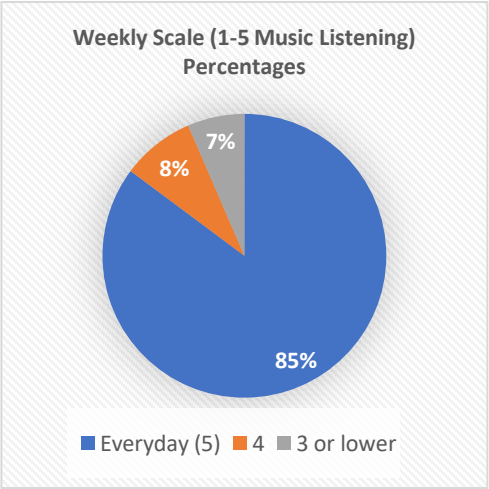


Figure 2: Weekly scale percentages

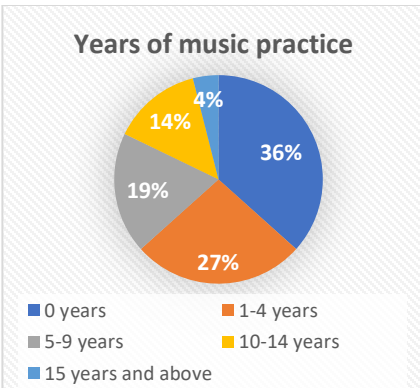


Figure 3: Years of music practice

## **2.2 PROCEDURE**

The subjects were approached in person, both individually and in groups. It was realized that approaching groups for the study was better, as the rapport formation was easier when the individuals were assessed along with their groups. Some of the responses were also collected through text, where the participants were asked to record and share an impromptu voice note of themselves singing the song. 75% of the surveys were held in person, while the remaining 25% were gathered through text.

With informed consent, the subjects were told the study's purpose and scope and asked to sing one of their favorite songs from memory. After the subjects selected the song and mentioned it, they were asked to snap their fingers along the pulse of the song they sang. Finger snapping/tapping was encouraged to engage the motor system because of better performance in motor tasks [5] [6]. The freedom to hum the melody was provided if the participants were uncomfortable or hesitant to sing.

The Tempo was established by recording the tap speed over a four-bar phrase while subjects sang, and then taking the average. Subjects sang until their singing Tempo stabilized, and the final Tempo was recorded.

## **2.3 MATERIALS**

This section outlines the procedures for selecting songs for participants, evaluating their tempo accuracy, quantifying that accuracy with a scoring formula, gathering survey data, and analyzing and comparing the collected information.

### **2.3.1 SONG**

The participants were free to choose a song of their choice, but it was encouraged that they select a popular song that they had been listening to in the past, and sing the chorus or hook of it. This liberty was provided so that the subjects only sang the songs they were most familiar with and comfortable with. The song familiarity did not become an indirect variable for the results obtained, and the performance accuracy increased [5]. It was ensured that they recall the song impromptu from memory and had not listened to it lately. Out of the sample, 80.55% sang Hindi/Bollywood/Indie songs while 19.44% sang English songs.

### **2.3.2 ASSESSMENT OF TEMPO**

The mobile application "Metronome Beats" was used for tap tempo detection for convenient portability. The 'Tap Tempo Detection' feature of the application was used. Tap Tempo works by calculating the time differences (in BPM) between two consecutive physical taps on a button displayed on screen. It is used to evaluate the speed of a performance.

### **2.3.3 MUSICAL TEMPO ACCURACY SCORE**

The recalled Tempo was then compared to the original Tempo of the song, and the following formula derived an accuracy percentage-

If Recalled Tempo < Original Tempo, then,

*Accuracy Percentage =*

$$100 - \left[ \frac{(Original\ Tempo - Recalled\ Tempo)}{(Original\ Tempo)} \times 100 \right]$$

If Recalled Tempo > Original Tempo, then,

*Accuracy Percentage =*

$$100 - \left[ \frac{(Recalled\ Tempo - Original\ Tempo)}{(Original\ Tempo)} \times 100 \right]$$

In addition, the recalled Tempo's deviation from the 8% of the original Tempo was also calculated to compare the findings to the research by [1].

### **2.3.4 SURVEY QUESTIONS**

The following questions were asked to assess the level of musical expertise the subjects had (these questions were taken from the research study [2]-

Firstly, a self-rating scale for the evaluation of their musical status was provided

- 1 – I am a Non-Musician
- 2 – I am a Music-Loving Non-Musician
- 3 – I am an Amateur Musician
- 4 – I am a Semi-Professional Musician
- 5 – I am a Professional Musician

Then, the participants were asked to provide their approximate years of practicing music (Singing, Instruments, Music Production, Sound Engineering, Theory, etc.). They were followed by their self-rating of how frequently they listen to music in a week (1—never; 5—every day).

### **2.3.5 DATA ANALYSIS AND COMPARISON**

The hypotheses were analysed by comparing musical expertise and the accuracy percentage of the subjects' tempo memory. Further, the results were extended to be compared to the findings of [1] and [2] to assess the Indian results against the Western results. Several other factors, like age and sex, were also utilized to draw deeper understandings of the effect of globalization and growing access and exposure to technology for the newer generations and different groups.

### **III. RESULTS**

The larger Indian demographic sample showed the overall tempo recollection accuracy percentage of 91.43%, with 69.44% of responses lying above or at 90% accuracy. While [1] reported 72% of results lying within the  $\pm 8\%$  deviation of the original Tempo, the Indian sample achieved 59.26% of its responses within the 8% difference (Figure 4).

Figure 5 shows the bivariate scatterplot between the original tempos of the song and their recalled BPM by the subjects in India, which is also compared with Figure 1 in the paper [1]. Figure 6 is compared to Figure 2 of paper [1] and shows the deviation percentage of the Tempo recalled to the actual tempos.

The accuracy percentages of Musicians (92.69% accuracy, with 56.36% of the results lying within  $\pm 8\%$  deviation) and Non-Musicians (90.06% accuracy, with 62.26% of the results lying within  $\pm 8\%$  deviation) did not have much difference (Figures 7 and 8). 53.33% of musicians' reproductions exceeded 90% accuracy, and 46.67% of non-musicians' (Figure 9).

Figure 10 explores tempo accuracy according to the approximate number of years of music practice as reported by the subjects. Figure 11 studies tempo accuracy concerning the participants' self-reported musical status, and Figure 12 compares the accuracy to individuals' weekly music listening frequency.

Figures 13 and 14 provide the performances of males and females in the study, while Figure 15 distributes the results according to age groups.

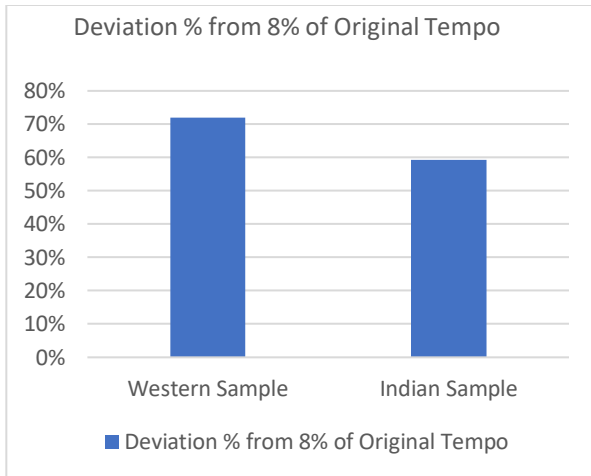


Figure 4 : Deviation Percentage from 8% of Original Tempo

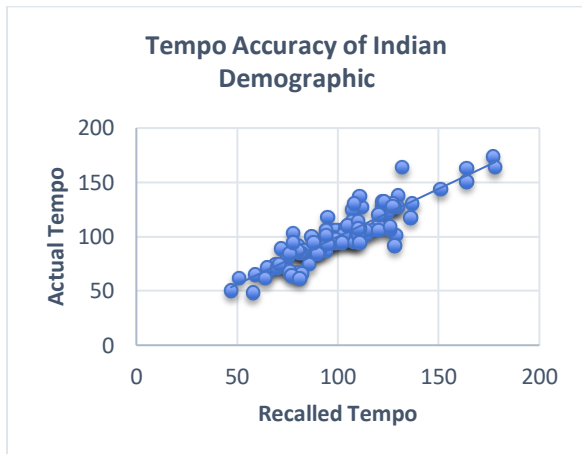


Figure 5: Tempo accuracy of Indian demographic

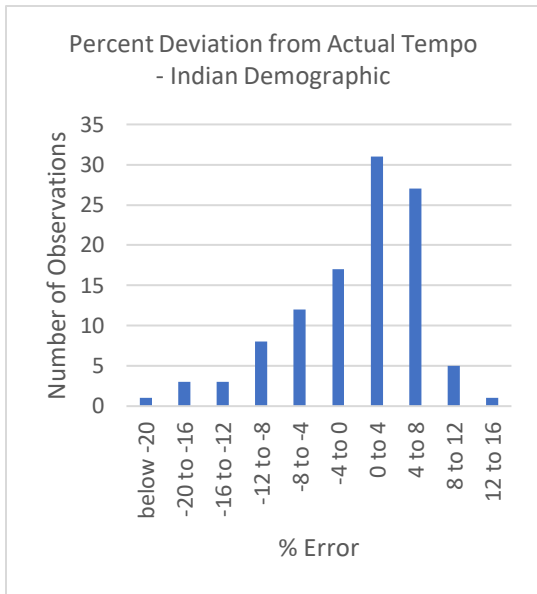


Figure 6: Percent deviation from actual tempo for Indian demographic

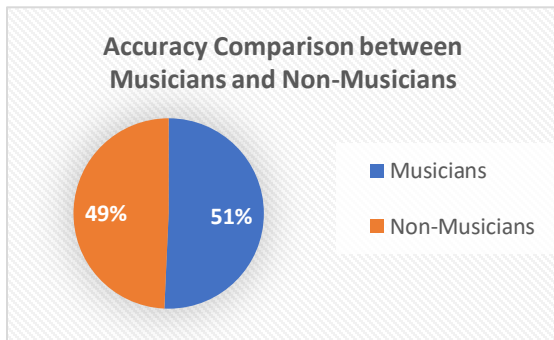


Figure 7: Accuracy comparison between musician and non-musicians

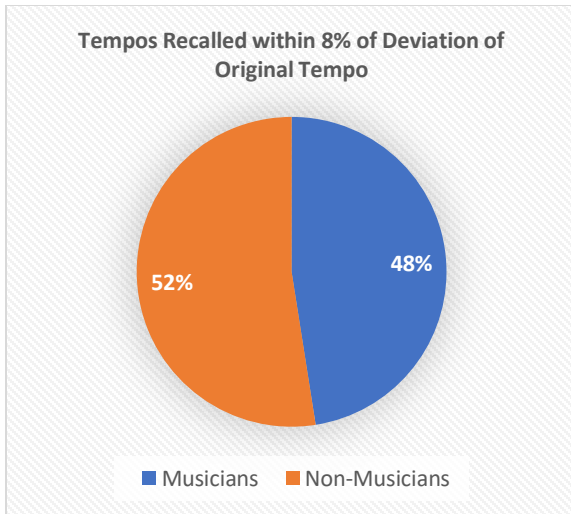


Figure 8: Tempos recalled within 8% of deviation of original tempo

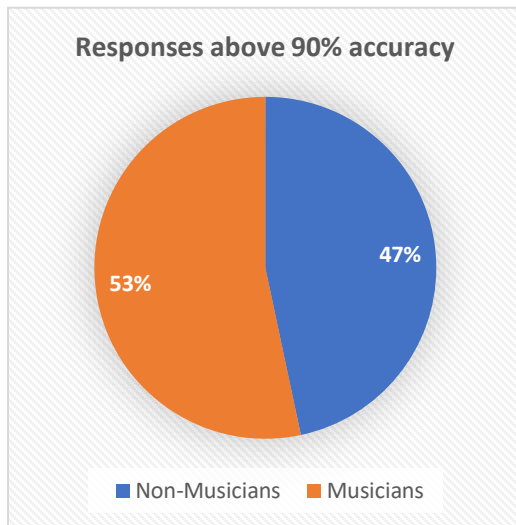


Figure 9: Responses above 90% accuracy

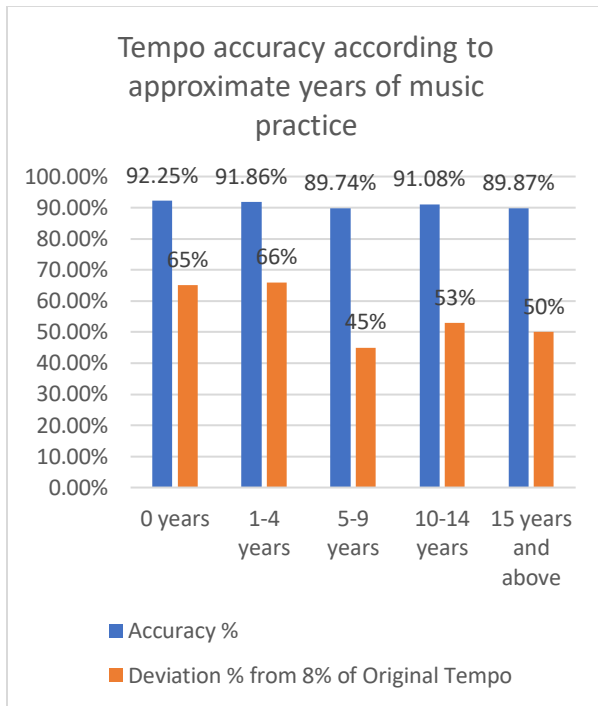


Figure 10: Tempo accuracy according to approximate years of music practice

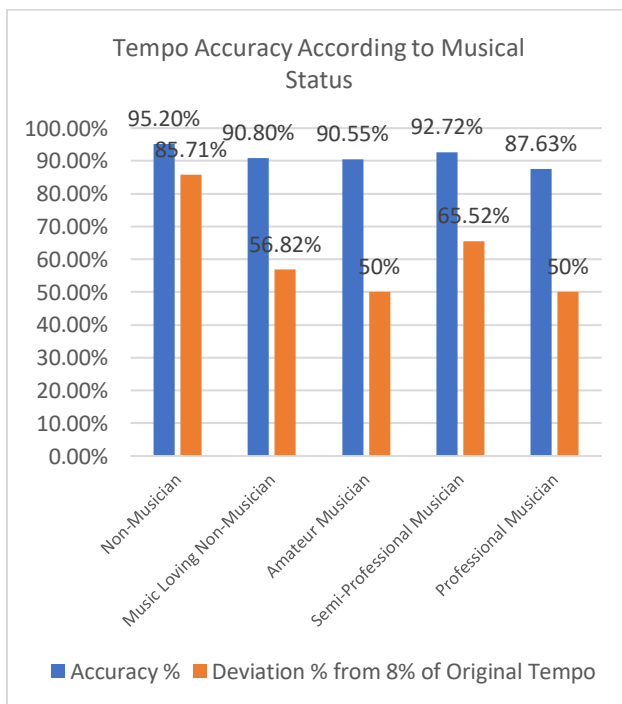


Figure 11: Tempo Accuracy According to Musical Status

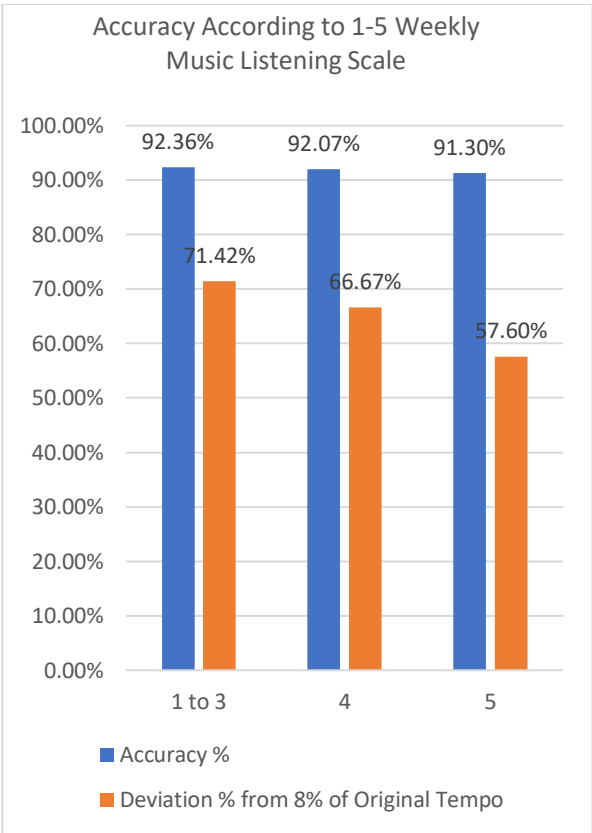


Figure 12: Accuracy according to 1-5 weekly music listening scale

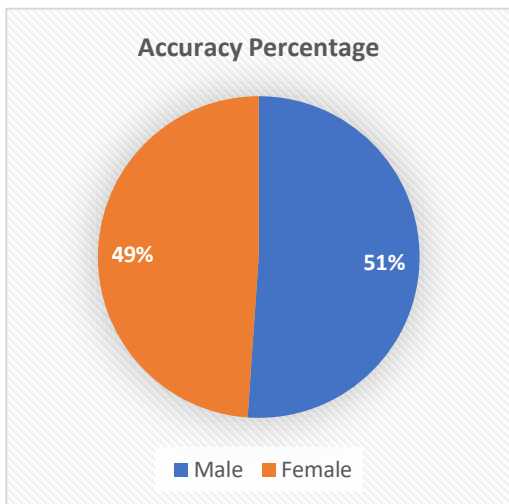


Figure 13: Accuracy percentage between male and female

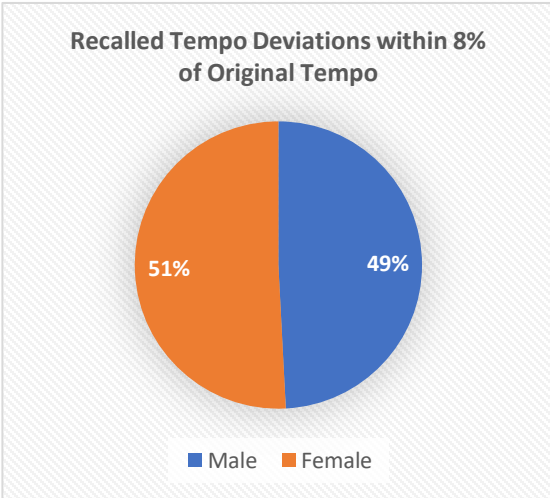


Figure 14: Recalled tempo deviations within 8% of original tempo

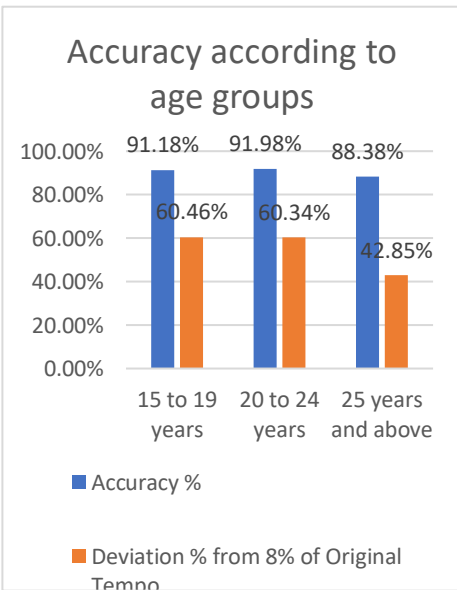


Figure 15: Accuracy according to age groups

## **IV. DISCUSSION**

The deviation percentage from  $\pm 8\%$  of the original tempos of the Indian sample was 12.74% lower than that of the Western sample. There are several reasons for this result. Primarily, the sample size of [1] was 46, while the sample size of this study was 108. Even though [1] studied two trials per subject, where each participant sang two different songs from memory, the representation of the sample was still limited to 46 individuals. A larger sample size, such as the one in this study, tends to produce less extreme yet more reliable results.

Another reason could be the cultural differences between India and the Western states, which affected an individual's exposure to music and listening trends. In India, Film/Bollywood music has been dominating the music industry until lately, with film music accounting for 50% of the music consumption, after declining from 80% and paving the way to the recent artist-focused model in the country, owing to the growth of digital streaming [15]. International genres only account for 8% of Indian music listening [14]. In comparison, the USA music sales reveal a non-dominating genre distribution of music, including Rock, Pop, Hip hop, R&B, Country, Religious, Jazz, and Classical [14]. Exposure to a greater variety of music in the West than in India may account for the difference in the results.

Another interesting finding in this study was that the tempo memory accuracy did not reveal significant differences between musical statuses and music consumption frequencies. In other studies conducted [16] [18], similar results were obtained where musical experience did not carry any remarkable difference in the speed-keeping accuracy of the subjects. This supports the theory that speed and time perception are naturally constituted over basic physiological and physical bodily movements, which are periodic and rhythmic, such as breathing, heart rate, walking, etc. (called 'Spontaneous Tempo or Tactus') [17] [18]. Therefore, music perception carries both biological mechanisms and cultural influences [19].

## **V. CONCLUSIONS**

To address the H1, Western music listening trends have been more diverse in terms of genres than in India, where most music consumption is still derived from Film music [14]. This indicates a wider exposure of music in the West than in India, in terms of the variety of music, possibly leading to the difference in tempo recollection accuracy between the two regions. However, India's music

consumption has been increasing steadily due to the boom of digital streaming markets in the region. Due to this, the country is expected to overtake the USA as the largest music streaming market globally [20]. This has also increased inclusivity for more independent artists and genres lately [14].

In addition, addressing the H2 brings us to support the biological aspect of time keeping, called *tactus*, which is present innately in humans. Therefore, musical experience has little effect on tempo recollection accuracy in the sample.

To sum up the study, cultural exposition can play a major role in the perception of music, but at the same time, basic musical understandings like Tempo are aided by the functioning of the human auditory and physiological systems [21].

## VI. REFERENCES

[1] Levitin, D.J., Cook, P.R. Memory for musical tempo: Additional evidence that auditory memory is absolute. *Perception & Psychophysics* 58, 927–935 (1996). <https://doi.org/10.3758/BF03205494>

[2] Vigl, J., Koehler, F. & Henning, H. Exploring the accuracy of musical tempo memory: The effects of reproduction method, reference tempo, and musical expertise. *MemCogn* (2024). <https://doi.org/10.3758/s13421-024-01543-6>

[3] Liu Y, Liu G, Wei D, Li Q, Yuan G, Wu S, Wang G, Zhao X. Effects of Musical Tempo on Musicians' and Non-musicians' Emotional Experience When Listening to Music. *Front Psychol.* 2018 Nov 13;9:2118. doi: 10.3389/fpsyg.2018.02118. PMID: 30483173; PMCID: PMC6243583.

[4] Trainor LJ, Wu L, Tsang CD. Long-term memory for music: infants remember tempo and timbre. *Dev Sci.* 2004 Jun;7(3):289-96. doi: 10.1111/j.1467-7687.2004.00348.x. PMID: 15595370.

- [5] Janata P. Acuity of mental representations of pitch. *Ann N Y Acad Sci.* 2012 Apr;1252:214-21. doi: 10.1111/j.1749-6632.2011.06441.x. PMID: 22524362.
- [6] Jakubowski, K., Farrugia, N., & Stewart, L. (2016). Probing imagined tempo for music: Effects of motor engagement and musical experience. *Psychology of Music*, 44(6), 1274–1288. <https://doi.org/10.1177/0305735615625791>
- [7] Pang, Nicholas Sun-Keung. “Globalization in the One World: Impacts on Education in Different Nations.” *Bulgarian Comparative Education Society* (2013)
- [8] O. Lesota, E. Parada-Cabaleiro, S. Brandl, E. Lex, N. Rekabsaz, and M. Schedl. Licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). Attribution: O. Lesota, E. Parada-Cabaleiro, S. Brandl, E. Lex, N. Rekabsaz, and M. Schedl, “Traces of Globalization in Online Music Consumption Patterns and Results of Recommendation Algorithms”, in Proc. of the 23rd Int. Society for Music Information Retrieval Conf., Bengaluru, India, 2022.
- [9] Heilbron, J. (1999). Towards a Sociology of Translation: Book Translations as a Cultural World-System. *European Journal of Social Theory*, 2(4), 429-444. <https://doi.org/10.1177/136843199002004002>
- [10] Janssen, Susanne, et al. “Cultural Globalization and Arts Journalism: The International Orientation of Arts and Culture Coverage in Dutch, French, German, and U.S. Newspapers, 1955 to 2005.” *American Sociological Review*, vol. 73, no. 5, 2008, pp. 719–40. JSTOR, <http://www.jstor.org/stable/25472555>. Accessed 17 May 2024.
- [11] Verboord, M., & Brandellero, A. (2018). The Globalization of Popular Music, 1960-2010: A Multilevel Analysis of Music Flows. *Communication Research*, 45(4), 603-627. <https://doi.org/10.1177/0093650215623834>

- [12] Straubhaar, J. D. (1991). Beyond media imperialism: Assymetrical interdependence and cultural proximity. *Critical Studies in Mass Communication*, 8(1),39–59. <https://doi.org/10.1080/15295039109366779>
- [13] Sinclair, J., (New Patterns in Global Television: Peripheral Vision)
- [14] KPMG (India entertainment industry, Focus 2010: Dreams to reality, A CII-KPMG report)
- [15] Dmitry Pastukhov (Indian Music Industry Analysis: Streaming, Live Industry, Bollywood, 2022 Trends, and More)
- [16] Fine, Philip & Bull, Stephen. (2009). Memory for tactus and musical tempo: The effects of expertise and speed on keeping time.
- [17] Sundberg, J., Frydén, L., Friberg, A. (1995). Expressive Aspects of Instrumental and Vocal Performance. In: Steinberg, R. (eds) *Music and the Mind Machine*. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-642-79327-1\\_5](https://doi.org/10.1007/978-3-642-79327-1_5)
- [18] Gratton I, Brandimonte MA, Bruno N. Absolute Memory for Tempo in Musicians and Non-Musicians. *PLoS One*. 2016 Oct 19;11(10):e0163558. doi: 10.1371/journal.pone.0163558. PMID: 27760198; PMCID: PMC5070877.
- [19] Peretz I. The nature of music from a biological perspective. *Cognition*. 2006 May;100(1):1-32. doi: 10.1016/j.cognition.2005.11.004. Epub 2006 Feb 20. PMID: 16487953.
- [20] Jacca-RouteNote (Is India the world’s biggest music streaming market?, Digital Music News)
- [21] McDermott JH, Oxenham AJ. Music perception, pitch, and the auditory system. *Curr Opin Neurobiol*. 2008 Aug;18(4):452-63. doi: 10.1016/j.conb.2008.09.005. Epub 2008 Oct 2. PMID: 18824100; PMCID: PMC2629434.

# **Perception of Correlation between Indian and Western music as a cathartic tool:**

## **A Comparative Study**

Name - Devika Bajaj

Email- devikabajaj114@gmail.com

### **ABSTRACT**

This research study tries to find out the correlation between Indian and Western music traditions in terms of their ability to induce emotions in an individual and for an individual to express them. The hypothesis here is that, irrespective of the differences in the origin, development, and characteristics of Indian and Western Music, they both interlink with one another when analyzed from an emotional perspective. Both music traditions, though they differ largely in their approach and techniques, help individuals come to terms with their emotions, understand and process them, therefore, leading to catharsis.

It also attempts to find out the relation between a person's musical learning, her/his views on the correlation of Indian and Western Music, and the emotional impact that their preferred Music draws.

94 sample size was achieved through a survey questionnaire distributed among people of different age groups, cities, educational backgrounds, and musical training. One response was eliminated due to incomplete answers, reducing the sample size by one. n=93

Findings suggest that for a majority of people, both musical traditions are neither very high nor very low in terms of their correlation. Irrespective of their views on correlation, they agree on Music being a highly effective cathartic tool, this statement being applicable for both Indian and Western music listeners.

“Music is the shorthand of emotion.” — Leo Tolstoy

## INTRODUCTION

Every culture gives us new insights regarding different perceptions surrounding Music.

Percussion in India, through instruments like the dhol, pakhawaj, and mridangam, creates the essence of what we call the festive Indian Music, while the wind chamber orchestra relocates us into an entirely different world of Western Music. This research paper attempts to study the various differences that occur in Indian and Western music traditions by examining their origins, development, and characteristics, and trying to understand the correlation between both musical traditions from a psychological and, more specifically, an emotional perspective.

"The universal generic concepts argument (Elliott, 1995, 1996; Swanwick, 1988b, 1999), posits that the music of each different culture has its own particular characteristics, but all that music is united by certain universal characteristics" [1], bringing into the picture the concept of 'Culture Universal'. Cultural universalism is a way or perspective that helps us draw a parallel between the values and behavioral patterns of two distinct cultures [2]. J.H. Kwabena Nketia [3], in his paper on Ethnomusicology, examines how cultural universalism gives rise to the cross-cultural study of art and Music, in the same way that it gives rise to the study of concepts like reflex actions in human beings, the psychology of friendships, and the theories of emotion formation within cultures.

Hypothesis - In spite of the differences that appear in the origin, development, and characteristics of Indian and Western music traditions, they tend to correlate with one another when analyzed in terms of their ability to induce emotions in an individual and help them express those emotions, leading to catharsis.

Research Objectives - The objective of this study is to find out whether or not Indian and Western music traditions correlate in terms of their ability to evoke emotions in an individual and facilitate expression. It attempts to analyze several parameters such as the general perception of Music and differences in those perceptions based on individual preference between Indian and Western Music, the relation between preferred genre and its ability to evoke emotions, the perception of Music as a cathartic tool, and the amount of difference in the viewpoints of Indian and Western music listeners.

## **ORIGINS AND DEVELOPMENT OF WESTERN MUSIC**

### **Western Music - A Journey Towards Harmony**

Western Music has been defined as the cultural Music of Europe and America. The prehistoric evidence of Music has been traced through certain images, instruments, writings, and Music that have survived till the modern era. Concepts such as diatonic scales, modes, etc. were found on Sumerian clay tablets, one of the very few written records that came into sight. Greek philosophers influenced Music through their writings and believed in its potential to generate certain emotions, using the term 'ethos' to define this phenomenon. [4]

Polyphony was introduced with the emergence of Gregorian chants and the Notré Dame style of Music composed by Léonin and Pérotin. Roman philosopher Boethius used letters to depict the accurate pitch [5]. Harmony was created by singing the fourth or fifth interval above the main melody. Therefore, this set the stage for contemporary Western Music.

The Renaissance period brought varying perspectives related to art, Music, culture, etc. Music became a tool for expression. Claudio Monteverdi, who was well known for his polyphonic style of Music, was a pioneer in the coming of Opera, a highly recognised form of Western Classical Music developed in Italy. [4] Expression through emotions was its key. As said by Joseph Kerman, "In a verse play, those all-important feelings which make the difference between scenario and work of art are supplied by the poetry; in an opera, by the music." [6]

## **ORIGINS AND DEVELOPMENT OF INDIAN MUSIC**

### **Indian Music - A Journey Towards Love**

The roots of Indian Music can be traced back through scriptures (Shastras) that form the basis of religion, philosophy, and art as we see it today. Scriptures are a body of texts that include information related to discoveries and ideas of people on philosophy, religion, art, culture, and

heritage, etc. Nātyasāstra was the earliest treatise on Music written in the 3rd century B.C. - 5th century A.D. by Sage Bharat. Melody, being the most fundamental concept in Music, was introduced. The concept of Raga was introduced in the 9th century [7]. Indian Music was a blend of the cultural Music of various tribal communities, Tamils, related cultures, and Aryans, amongst many others. This caused a division in Indian Music on a geographical basis. East Indian music was different from North Indian, also called 'Hindustani classical music', and different from 'Carnatic music' that prevailed in the South. [8].

Scholars who wrote about Indian Music belonged to different schools of thought, united on the common grounds of the Sanskrit language in which most Music was composed. [7] Music was considered a powerful tool for meditation and was mostly composed for worship in temples. Different styles of Music came into play. Each with a unique characteristic and purpose to it. The most famous ones were thumri, khayal, ghazal, etc.

The Muslim conquest in Deccan (14th century) had a noticeably positive impact on the Music of that time. Persian and Arabic elements started introducing embellishments. Islamic Music was played in Indian courts. Amir Khusro, a Sufi poet and singer, left behind a legacy of Qawwālīs, a popularly sung style of Music even in the modern era. Khayāl Gayaki, literally meaning 'singing the thought', was profound in terms of emotions and allowed improvisations. [9]

### **Characteristics of Western Music - First, Third, and Fifths**

Melody is a fundamental tool in the understanding of Music. The melody is generally what the piece is about (Aaron Copland, What to listen for in Music (1939) - [10] ). In the initial stages of melody formation, it was extracted from hymns, chants, and other forms prevalent in the historic periods and was known as *cantus* or *cantus firmus*, which translates to "fixed song". Melody is a monophonic concept, while the concept of harmony has been taken from the polyphonic understanding of Music as mentioned in the preceding section. Pitch, pitch class, rhythm, intervals, and time signature are a few of the other important concepts to the theoretical as well as practical understanding of Music.

A melody is created when several notes with a certain distance between them are played or sung in time. This distance is called an *interval*. Intervals determine consonance or dissonance.

Although consonance and dissonance are subjective terms, the first, third, fourth, and fifth intervals are perceived as consonant, considering their ability to create the perception of "good" sound when played together. Consonant intervals facilitate the formation of harmony. *Functional harmony* with the first, fourth, and fifth intervals was common in classical Music and is still relevant [10].

### **Characteristics of Indian Music - A Story of Embellishments**

Indian Music is based on melody, i.e., a sequence of notes played in a given order. Meanwhile, Western Music is more harmonic in nature, i.e., a group of notes played simultaneously, which is not captured by a single dominant note [11].

Indian Classical Music is divided into Hindustani music, popular in North India, and Carnatic Music, prevailing in the South. Melody and rhythm form the basis of both Hindustani and Carnatic music. The term *Raga* is used to define the melodic framework, while *taal* refers to the rhythm cycle in which a bandish (in Hindustani music) or Kriti (in Carnatic Music) is sung. Every Raag belongs to a *thaata* and follows a rigid structure. In Hindustani Classical music, it starts slowly with the *alap*, a section where the notes of the Raga is introduced through the consonant 'a', proceeds towards the *bandish* that adds words to these notes, introduces the *alankar* section where the notes are sung in the form of Sargam and leads to the *taan*, a section where a part of the bandish is sung followed by a fast combination of the notes. [8]

There are some rules specified for ragas. To be classified as a raga, it must have a minimum of five notes. Each Raga follows a specific way to approach the desired notes. This is called the *chalan*. Two ragas can belong to the same thaata but differentiate from each other based on *chalan* as well as the emotional content. *Bhava* and *rasa* are terms that help us understand the emotional aspect of Indian Music. *Bhava* is the emotion present in the Raga, defining its essential purpose. *Rasa* is emotion evoked in the listener, making room for subjective experiences. [12]

Though the terms are defined in the same manner, Carnatic Music has a comparatively different structure.

## **METHODS**

The study was conducted through a survey questionnaire distributed among people from different cities, age groups, educational backgrounds, and musical learning backgrounds.

The questionnaire contains four sections with a specific set of questions. Each question has a certain degree of correlation with the questions before and after it. Sections have been divided, and questions have been designed with the goal in mind. In the first section of the questionnaire, people are asked to give their demographic details for the purpose of validation, along with some other questions such as the kind of Music they have been brought up listening to, the genre they prefer listening to most, and the reason behind it. The last two questions provide us with data that is helpful in studying the views that individuals with different musical backgrounds have on the correlation between Indian and Western music traditions. [Annexure 1]

Based on individual preference, as asked for in the previous section, the questionnaire is split into two parts, Indian and Western Music, for the purpose of comparison and analysis, with both sections carrying identical questions. The initial few questions are constructed to understand people's perception of Music and the degree to which it affects their daily life. The last question presents a choice between contemporary and classical Music. (Contemporary Indian and Indian Classical for Indian Music and Contemporary Western and Western Classical for those interested in Western Music)

Questions in the third section assess the emotional impact of Music on people of different cultures, cities, age groups, educational backgrounds and musical learning. The last question asks people to express their views on Music as a cathartic tool. The respondents choosing 'yes' or 'sometimes' are sent to the last section that elaborates on the same question and interrogates the reason behind Music as a cathartic tool.

## **LIMITATIONS**

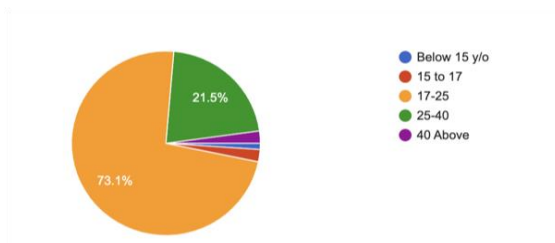
The questionnaire could reach only the Indian audience. Therefore, the perspective of those who have been brought up listening to Western music, specifically Western classical music, could not be achieved.

Most responses were gathered from North Indian residents as compared to other regions.

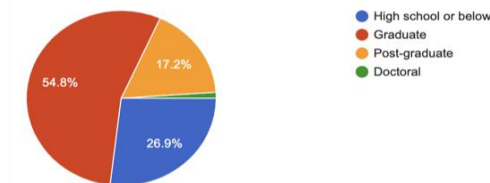
## RESULTS

n=93

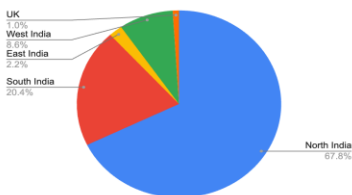
### DEMOGRAPHIC DETAILS



AGE GROUP



EDUCATIONAL BACKGROUND



GEOGRAPHICAL AREA

## Unique Statements and Their Counts

Statement	Count
I have learned / I am learning music and would like to take it up as a profession	27
I have learned / I am learning music	20
I have learned music/instrument for a brief period in my life (such as childhood)	17
I have never learned but would like to learn at some point	10
I am a working musician / music educationist	10
...	...

Musical Learning (Most observed responses)

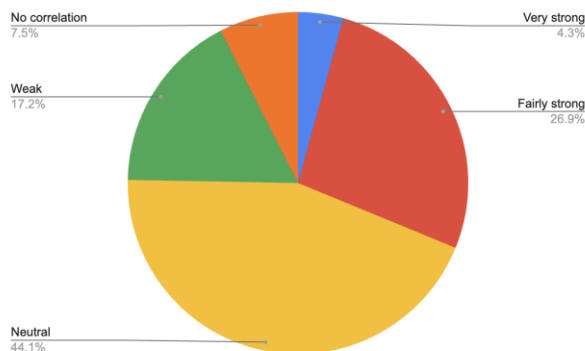
59 (63.44%) people opted for Indian Music, while 34 (36.55%) out of 93 chose Western Music.

The majority of the respondents, 44.1% out of 93 people, say that both musical traditions are neither very high nor very low in terms of their correlation with one another, by showing a neutral response with the number 3 on the linear scale. Out of 44.1%, 16.12% are consumers of Western Music, while 27.95% are Indian music listeners.

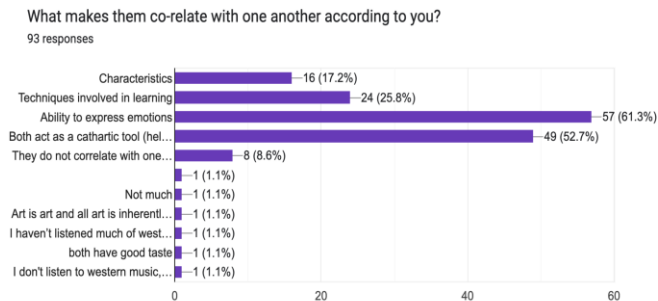
25 respondents, i.e., around 26.88% say that both musical traditions have a fairly strong correlation, 15.05% of whom prefer Indian Music, while the rest 11.82% prefer listening to Western Music.

4.30% of the total respondents feel that they correlate with each other very strongly by choosing the highest number 5 on the linear scale, out of which 3.22% are consumers of Western Music, while 1.07% are Indian music listeners.

17.2% believe in a weak correlation between both musical traditions by choosing the number 2 and 7.5% say that they do not correlate with each other in terms of anything, therefore, responding with the number 1.

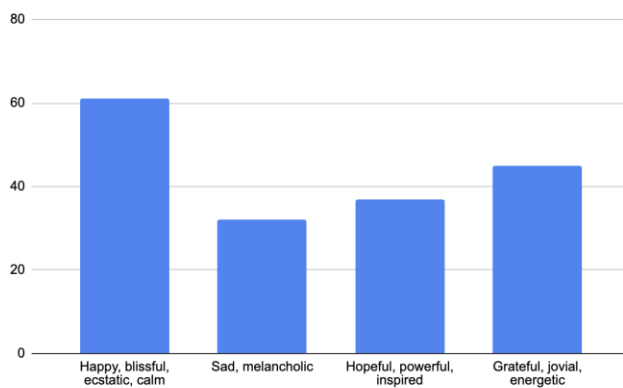


Out of 44.1% of people who responded with the number 3, saying that there is neither a very high nor very low correlation between Indian and Western Music, most of them, 27.95% responded by saying that the correlation exists because of their ability to express emotions, leading to catharsis.



Most of the respondents, irrespective of their answer on the linear scale, say that both traditions correlate with one another based on their ability to evoke emotions and how they act as a cathartic tool, amongst other things.

When asked about the set of emotions that their preferred music genre frequently evokes, most people responded with the two sets of emotions, happy, blissful, ecstatic, and calm being the first set, and grateful, jovial, and energetic being the second set, amongst other sets of emotions.



(Preference of music genre out of Contemporary Indian, Indian Classical, Contemporary Western and Western Classical and what emotions it helps evoke)

Through analysis of subjective responses, it has been found that around half of the respondents 49.46% have defined Music in terms of feeling or emotions by using words like emotion, expression, calm, relaxation, healing, etc. while others have defined it through varying terms as life, passion, art, focus, mathematics, etc.

The majority of the respondents, 46.23% of 93, say that Music is a fairly effective tool in catharsis by choosing the number 4 on the linear scale, irrespective of their view on the correlation between Indian and Western Music.

32.25% believe that Music is a very effective source of catharsis.

Out of the 4.30% people who believe that Indian and Western Music have a very strong correlation, 2.15% agree on Music being a very effective tool in catharsis, and the rest 2.15% say that Music is a fairly effective cathartic tool.

Out of the 26.9% who say that Indian and Western Music fairly correlate with each other, 12.90% also agree on Music being a highly effective cathartic tool, 10.95% consider Music to be an effective source of catharsis, while 2.1% say it is a moderately effective cathartic tool.

Out of the 44.1% of people who say that both music traditions correlate with each other moderately, 33.33% people consider Music a highly effective cathartic tool.

Of those who believe in a weak correlation between Indian and Western Music, 13.97% out of 17.20% agree that Music is highly effective in catharsis and even the ones who say that Indian and Western Music do not correlate with each other in terms of anything, 4.3% out of 7.5% say that Music is a cathartic tool.

The following tables divide this data further into preferred music genres and the viewpoint of people on the correlation of Indian and Western Music, and Music as a cathartic tool:

Correlation	Catharsis	Linear Scale
very strong	highly effective	5
strong	effective	4
neutral	moderate	3

TABLE 1

Responses on linear scale (WESTERN)	5	4	3	2	1
Correlation between both music traditions	3.22%	11.82%	16.12%	3.22%	2.10%

TABLE 2

Responses on linear scale (INDIAN)	5	4	3	2	1
Correlation between both music traditions	1.07%	15.05%	27.95%	13.97%	5.37%

TABLE 3

Total Responses on Linear Scale	5	4	3	2	1
Correlation between both music traditions	4.30%	26.88%	44.10%	17.20%	7.50%
Music as a cathartic tool	32.25%	46.23%	17.20%	3.22%	1.07%

TABLE 4

The data presented through the tables helps us understand that even though some people disagree that a positive correlation exists between Indian and Western music traditions,

they agree on the ability of Music to induce and express emotions, therefore leading to catharsis. People who prefer Western music believe in both the correlation between Indian and Western musical traditions and the cathartic abilities of music compared to those who prefer Indian music.

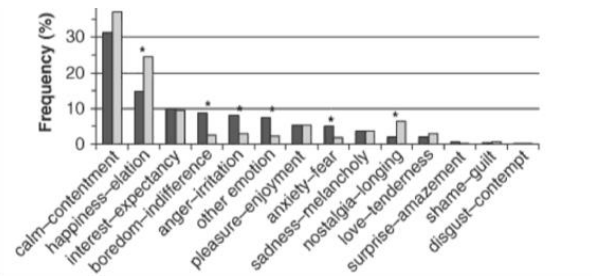
## CONCLUSIONS

Both quantitative and qualitative data establish a positive correlation between Music and emotion (TABLE 4, column 2 - Music as a cathartic tool). The responses achieved on the linear scale regarding the correlation between Indian and Western Music help us conclude that, according to most people, both music traditions are neither very high nor very low in terms of their correlation (44%). They correlate based on their ability to evoke emotions and facilitate catharsis, amongst

other features such as techniques and characteristics. (27.5% out of the 44% validated the same) Further research is required to achieve more conclusive data.

## DISCUSSIONS

The book "Oxford Handbook of Music Psychology" by Susan Hallam, Ian Cross, and Michael Thaut mentions certain studies that were conducted to find out the ability of Music to induce emotions. Juslin and Laukka (2004) found that participants reported emotions 55% of the time when they listened to music.



It also studies the emotional responses of people listening to music and mentions that most people respond with emotions of happiness, elation, and nostalgia-longing compared to others, such as sadness, anger, frustration, etc.

"Handbook of Music and Emotions: Theory, Research and Applications" by Patrik N. Juslin, John Sloboda mentions different theories of emotions according to psychology and studies how they correspond to Music as a tool for inducing emotions in an individual, and helps them express those emotions.

It examines the role of various musical elements responsible for the emotional reaction to Music, ranging from its melodic, dynamic, and harmonic structure.

Juslin and Vastfall, in their paper, mention the six mechanisms through which Music evokes emotions in an individual.

Further research is suggested to study the factors contributing to individual perceptions regarding the correlation between two music cultures that differ from each other based on their characteristics and stylistic features, as well as the factors contributing to catharsis through Music, irrespective of the culture it belongs to.

## ACKNOWLEDGEMENTS

I would like to thank AAFT (Asian Academy of Film and Television) School of Music for giving me the opportunity to research a topic that best suits my interests. I thank all my faculty members, starting from my research facilitator, Mr. Umesh Bisht, who guided me at every step of the research and helped me learn through each step. I thank my mentor, Mr. Amritpal Singh, who made me believe in my capability to complete this paper. I would extend my gratitude to Ms. Tanya Sharma, ma'am, and Mr. Mohit Arora, Sir, for their guidance and perspective throughout this journey, along with Ms. Chhavi Srivastava, ma'am, who gave me useful insights on the characteristics of Indian Classical Music.

## REFERENCES

- [1] Zenker, R. a. R. (2000b). Understanding Music Cross-culturally : Philosophical Examination. *Understanding Music Cross-culturally :Philosophical Examination*. <https://doi.org/10.14288/1.0054822>
- [2] APA dictionary of psychology. (2007). *Choice/Choice Reviews*, 44(06), 44–3029. <https://doi.org/10.5860/choice.44-3029>
- [3] Nketia, J. H. K. (1984). Universal Perspectives in Ethnomusicology. *The World of Music*, 26(2),3–24. <http://www.jstor.org/stable/43560981>
- [4] Paxman, J. (2014). *A Chronology of Western Classical Music 1600-2000*. Omnibus Press.
- [5] Burkholder, J. P., Grout, D. J., & Palisca, C. V. (2019). *A History of Western Music (Tenth International Student Edition)*.

- [6] Kerman, J. (1956). *Opera as drama*. <https://ci.nii.ac.jp/ncid/BA49345215>
- [7] The Routledge companion to philosophy and music. (2011). In *Routledge eBooks*. <https://doi.org/10.4324/9780203830376>
- [8] Deva, B. C. (1995). *Indian Music*. Taylor & Francis.
- [9] Jairazbhoy, N. A. (1995). *The Rāgs of North Indian Music: Their Structure and Evolution*. Popular Prakashan.
- [10] Horton, C., Byrne, D. A., & Ritchey, L. (2020). *Harmony through melody: The Interaction of Melody, Counterpoint, and Harmony in Western Music*. Rowman & Littlefield Publishers.
- [11] Agarwal, P., Karnick, H., & Raj, B. (2013). A Comparative Study Of Indian And Western Music Forms. In *ISMIR* (pp. 29-34).
- [12] Kaufmann, W. (1965). Rasa, Raga-Mala and performance times in North Indian Ragas. *Ethno Musicology*,9(3),272.<https://doi.org/10.2307/850238>

#### [ANNEXURE 1]

<https://forms.gle/d981pPKphtYyD8Zb7>

The questions have been set unrequired for the purpose of viewing the document. Although the form divides into two, Indian and Western music, based on individual preference, the questions included in both sections are the same. Proceeding further without choosing a particular genre will by default lead to Contemporary Indian music section.

