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Resilience and Innovation in a Post COVID-19 Era

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About the NIFT Journal of Fashion

The NIFT Journal of Fashion (NJF) is an annual research journal with a specific theme of wide-ranging significance reflecting critical thinking on multiple perspectives of fashion in the broader areas of emerging trends and best practices in design, technology, management as well as fashion education. The objectives of this journal are to encourage knowledge sharing through original articles on topics of current and emerging significance with a view to the future of fashion; and to highlight theories, practices and pedagogy of fashion education in the domains of design, technology and management.

NJF that commenced in 2022 is a double-blind peer-reviewed and open-access journal in English language. The journal invites high quality research articles from academicians, scholars and fashion professionals for wider dissemination.

The journal expresses gratitude to the peer reviewers for their efforts to provide insightful remarks and feedback on the research articles.

MESSAGE

I am delighted to learn that National Institute of Fashion Technology (NIFT) is releasing the inaugural issue of the annual 'NIFT Journal of Fashion' (NJF) documenting the research excellence of faculty members and students to create a vibrant innovation atmosphere across different NIFT campuses.

The contribution of NIFT towards fashion education in the streams of design, technology and management has been instrumental in creating a highly professional resource pool for the fashion industry. This contribution has helped NIFT become one of the top fashion institutes in the world. The increasing technological advancement of the apparel and textile industry makes it important for research in specialized areas of fashion technology.

The fashion industry has tremendous potential and I am sure that NIFT will surpass the expectations by meeting even higher standards in the future. I am confident that NJF will serve as a valuable resource for wider academia and fashion professionals, given the extension of NIFT's capacity building acumen to the organized industry, craft sector and other emerging local and global developments.

I would like to congratulate all the stakeholders involved in bringing out this journal and wish NIFT success in all its future endeavors.

Piyush Goyal
Minister of Commerce & Industry,
Consumer Affairs, Food & Public Distribution and Textiles
Government of India

MESSAGE

It gives me immense pleasure to announce the launch of the NIFT Journal of Fashion (NJF) that marks the 36-year journey of the National Institute of Fashion Technology which has now extended across its 18 campuses across India. Fashion education in NIFT has charted a distinctive local-national-global pathway with dynamic intersection of the apparel and accessories industry, as well as the handloom and handcrafting sector. Domestic and international linkages have steadily increased in light of NIFT's increasing sphere of academic excellence.

I am confident that the annual NJF will provide an important platform for sharing new insights on fashion and emerge as a reference point for the industry. I congratulate the NIFT Publication Unit for its consistent work, Editorial Board members who have given their time to peer-review the manuscripts, and those who have contributed to the creation of this inaugural issue.

I wish NJF a great success.

Shantmanu, IAS
Director General, NIFT

MESSAGE

The release of the first volume of the NIFT Journal of Fashion marks a significant milestone for National Institute of Fashion Technology. The annual double blind peer reviewed journal endeavors to publish quality research in the different domains of fashion including design, communication, management, technology and education. The journal will serve as a medium to share multiple perspectives of relevance among the academia and fashion industry.

The first volume of NJF on the theme 'Resilience and Innovation in a Post COVID-19 Era' includes fourteen research articles that focus on the impact of the pandemic on different aspects of fashion, from business, consumer buying behavior, emerging trends to craft practices and education. I congratulate all the authors who are part of the first volume of NJF. I take this opportunity to also convey my appreciation to Head Publication, Unit In-charge Publication, and the Editorial Board for their insightful reviews that have facilitated in ensuring the quality of articles for publication, and hope that the journal continues to maintain high standards of research, and contribute to furthering intellectually stimulating experience to its readers.

Vandana Narang
Dean Academics, NIFT

From the Editor's Desk

We welcome you to the inaugural issue of the peer-reviewed NIFT Journal of Fashion that seeks to facilitate conversations and synergistic collaborations between the fashion academia, industry and crafts sector.

Against the backdrop of COVID-19 in India, Ansari, et al. apply the Technology Acceptance Model to examine the rise in consumer motivations and engagement with smart wearables that influence brand loyalty. Jayaraman, et al. ascertain the impact of the pandemic on the Indian apparel industry through market assessment by developing appropriate strategies to ensure its sustenance and growth. Singha, et al. discuss the influence of IPR on consumer behavior and its implications for growth of the fast fashion industry. Rana and Muthian present color as a culture-specific element, predicting changes in Indian consumer preferences from traditional to experimental palettes. Raturi analyzes the influence of branded entertainment on viewers buying attitudes to build a strong emotive connect for increasing possible conversion of intentions to actual purchases. Bairagi and Goswami analyze fashion consumption and disposal patterns among college students during pandemic restrictions. Banu, et al. examine the rise in home-based beauty services, increasing preference for inclusive and gender-neutral beauty and personal care products. Arora and Dixit discuss the adaptive strategies of e-commerce platforms that reinforce the crucial role of sustainability in the fashion and lifestyle e-commerce space. Roy and Bairagi illustrate the positive corelation between creativity and resilience among the artisans of Mysore Rosewood inlay craft. Munshi discusses the support systems which increased the resilience of artisans of turnwood lacware craft in Channapatna. Chowdhury and Divakala present a case study on the pedagogy of making an improvised dress form using upcycled materials for online draping sessions in the Fashion Design program. Palit explores the effectiveness of online museum archives under a mentored hybrid model of craft studies. Sood and Dhingra analyze the challenges and opportunities inherent in digital museums and repositories of textiles, dress and crafts, and the possibility of a 'phygital' future. Jha draws on the work of Gilles Deleuze and Félix Guattari on rhizomatic learning to examine the nature and effectiveness of online pedagogies and learning outcomes in craft research and documentation.

We hope this journal will stimulate the flow of new conversations and research to advance the domain of fashion.

Banhi Jha
Editor-in-Chief

Ruby Kashyap Sood
Associate Editor

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When Fashionology meets Healthology: Examining the Impact of User Engagement on Brand Advocacy and Loyalty for Smart Wearables

Nagma Sahi Ansari, Noor Malhotra and Ritu Malhotra

Abstract

COVID-19 has accelerated the use of technology and consciousness of individual and community health. The upsurge in consumption trends for smart wearables during the pandemic draws attention to technological innovation and user behavior. Smart wearables are no longer driven solely by the need for fitness but also by fashion choices. Studies on user engagement involving interactive technology have been limited to examining functionality, which points to the need to consider other motivations. To address this gap, this research examines the influence of users' extrinsic and intrinsic motivational dimensions which includes functionality, healthology, hedonism and self-congruity on users' engagement with smart wearables, further hypothesizing that engagement with smart wearables influence brand loyalty and advocacy. Data was collected during the COVID-19 pandemic from 177 respondents in India and abroad. This article develops and empirically tests a comprehensive research model using path analysis. The results indicate that both extrinsic and intrinsic motivations have significant and positive impact on user engagement which, in turn, influences brand loyalty and advocacy. These outcomes are explained by borrowing theoretical insights from the Technology Acceptance Model (TAM). The results find support in the diffusion of innovation and trickle across theories. The concept of fashionology is integrated with healthology to study consumer engagement. The study posits that gamification can influence users' behavior through meaningful integration of technology. The study concludes that the users' motivations for smart wearables driven by innovative technology points to technology adaption in keeping with the fitness and fashion-conscious image. This research contributes to the body of knowledge on the role of self-congruity in positively affecting user engagement with smart wearables.

Keywords: User engagement, smart wearables, brand loyalty and brand advocacy, extrinsic and intrinsic motivations, gamification, Technology Acceptance Model (TAM), trickle-across theory

Introduction

The global shutdown provoked by the COVID-19 pandemic leading to enforced sedentary lifestyles has seen arise in health and fitness regimes. Trackers like Fitbit and smartwatches have become modes of measuring physical workouts and calorie tracking. There has been accelerated growth in technology driven innovation especially with wearable devices defined as "electronic technologies or computers that are incorporated into items of clothing and accessories which can comfortably be worn on the body" (Wright and Keith, 2014, p. 204). While the major technology players continue to evolve ways of engaging users through innovative digital platforms, the increasing popularity and commercialization of smart wearables have attracted significant academic and industry attention (Oh and Kang, 2020). Through the efficient use of gamification, the smart wearable industry has been continuously developing technology to ensure that users smoothly adapt and uninterruptedly interact with devices and integrate them into their daily routines for a seamless experience. Gartner Inc. predicts that worldwide spending on wearable devices will reach USD 93.83 billion in 2022, an increase of 36 percent from USD 69 billion in 2020 (Rimol, 2021). This upsurge is attributed primarily to the rise in remote work and interest in health monitoring devices. Referring to research by International Data Corporation affirming India's position as the third largest market for smartwear, The Indian Express reported a triple digit growth of 144.3 percent (March 4, 2021) in the wearables market dominated by smartwatches.

Smartwatches are defined as "wearable computers that can perform various daily tasks to help users to deal with their daily work" (Hsiao and Chen, 2018, p.104). The prediction based on the analysis by McKinsey & Co. (2021) estimates that smartwatches will capture an additional USD 1.3 billion in revenue from the mid-market segment by 2025 from young consumers who are likely to opt for smartwatches as their first purchase, instead of traditional watches. The pandemic has significantly fast-tracked smart wearable usability primarily due to tangible benefits such as health and sports tracking. Despite its growing importance, human-computer interaction (HCI) and user engagement have received little attention (O' Brien and Toms, 2008; Oh, Bellur and Sundar, 2018), and have provided limited insight into the factors that drive consumers

towards the engagement and conative outcomes, thereof. This study aims to fill this research gap by developing and testing a comprehensive research model that examines the factors that influence users' engagement with smart wearables resulting in behavioral outcomes.

User engagement

There are diverse definitions of user engagement across academic disciplines. Hollebeek (2011, p.787) defines customer engagement as a two-way interaction between the consumer (user) and the object (brand) defining it as "…the level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in direct brand interactions". User engagement in using smart wearables results from utilitarian (usefulness), hedonic (pleasure) and social motivations. This article studies a specified area of user engagement in relation to customer engagement, and hypothesizes how engagement of customers within the category of smart wearables, both intelligent and interactive, is affected by both intrinsic and extrinsic factors, brand loyalty and advocacy. Asimakopoulos, S., Asimakopoulos, G. and Spillers (2017) discuss how wearable devices are increasingly being used to track health, and how the user experience affects long term loyalty. With the expansion in the market for smart wearables, researchers are looking at Technology Acceptance Model (TAM) and engagement within the user communities. Kim, Y., Kim, D., and Wachter (2013, p.361) explain how "…engagement is related to user experience characterized by attributes of challenge, positive affect, attention, feedback, novelty, interactivity, perceived user control, and others. Thus, engagement is beyond the concept of acceptance that is a subset of engagement." Engagement embodies several dimensions that are affective, cognitive, experiential and co-creative, where embracing new technology adds to the overall engagement. In a similar vein, Xiao, et al. (2021) present gamification as a strong contributor to increasing user engagement across platforms. Stages of user engagement are introduced as engagement-disengagement-re-engagement, wherein as "...compared with traditional instruction, gamified/gameful impartation can provide contextualized, interactive learning contents and was reported to contribute to self-efficacy and a longer retention of knowledge" (ibid., p.4808).

Fashionology

The pandemic has altered behavior and shifted consumption patterns. Smartwatches as smart wearables, are not only recognized and used for their technological benefit

but also as fashion accessory (Hein and Rauschnabel, 2016). This leads into the terrain of fashionology, defined by Yuniya Kawamura (2005, p.40) as "…a sociological investigation of fashion [that] treats fashion as a system of institutions that produces the concept as well as the phenomenon/practice of fashion". Kawamura further relates how, "…fashionology integrates both micro and macro levels of social theory i.e. symbolic interactionism and structural functionalism" (ibid., p.40). Structural functionalism operates around the institutionalized systems of manufacturing, supply chain and consumption. This article works within the perspective of 'symbolic interactionism', a term coined by Herbert Blumer (1986) to explain the basic premise on which individuals interact with objects based on the meanings ascribed to the latter which, in turn, emanate from interactions with society, and are interpreted by them when dealing with objects in specific circumstances. Individuals aligned with their self-image developed over a period and the external world through interactions with objects of their liking. These interactions align with the consumer's self-image developed over a period in relation to the object in question. The theoretical approach of symbolic interactionism supports the perceived connection between individuals and their liked objects, which can, in turn, lead to the creation of self-identity by the individual. This theory is extended to view the ways in which the consumer has agency over purchasing decisions incongruence with perceived self-image to create a social identity that may be mirrored using the social value of smart wearables notably smartwatches.

Smartwatches are purchased by consumers not only for their utilitarian benefits of computing personalized information for health-related metrics but are also perceived as a lifestyle-driven acquisition considered nothing short of a fashion accessory. Symbolic association with the brand of a smartwatch acts as a subtle sign for wearers to distinguish themselves from others through their health-laden purchases. Yet, consumerism is so deeply embedded in the tendency to identify with products and brands that a smartwatch on the wrist signals the implicit value of having 'arrived'. This study posits fashionology as an underlying reason for the use of smart wearables which extends beyond its association with fitness. Further, examining fashionology as a contributing factor towards brand advocacy and loyalty for smart wearables can be valuable to brands. Similar to psychology of fashion consumers, smart wearables produce both intrinsic and extrinsic motivations leading to user engagement. Fashionology as a contributing factor for stronger brand advocacy and loyalty adds new knowledge to academic text on smart wearables and consumption patterns.

Gamification

User experience is translated through gamification in smart wearables. With increasing interdisciplinarity among technology, culture and society, innovative strategies of user engagement and experiences emerge. Gamification "…broadly refers to technological, economic, cultural, and societal developments in which reality is becoming more gameful, and, to a greater extent, can afford the accruing of skills (e.g., skills related to problem-solving, organization, mood regulation, leadership, and empathy); motivational benefits (e.g., intrinsic motivation, goal commitment, self-regulation, and developing a long term view); creativity; playfulness; engagement; and overall positive growth and happiness" (Hamari, 2019, p.1). Gamification gives a glimpse of how systems and strategies for engagement are on the turn. Gamification in enhancing user engagement is gaining popularity amongst marketers who are using it to lure potential consumers (Yang, Asaad and Dwivedi, 2017). Oh and Kang's (2020) study on user engagement in newer platforms/devices through user interface design (gamification) and interaction with the system, TAM expands the scope of user engagement. A study by Vanduhe, Nat and Hasan (2020) shows the addition of gamification on Moodle, an open-source learning platform, leads to increased user engagement originating from usability as well as ease of using technology, confirming the relevance of TAM in analyzing how gamification can draw attention.

Gamification helps shape behaviors and may nurture increased activity and engagement of the user, which could prove beneficial for various organizations. Yang, Asaad and Dwivedi (2017, p.461) relate how "…gamification with multi-media can also have special characteristics of interactivity among users and sensory immersion, which makes it livelier and closer to audiences than other media". Gamification offers rewards and therefore, motivates users to engage with the interface on intrinsic as well as extrinsic levels, as they undergo an experiential journey. This may result in the users' evaluation of the brand (Herrewijn and Poels, 2013) in use and act as "…catalyst to improving their loyalty to a brand, product or service" (Yang, Asaad and Dwivedi, 2017, p.461). Gamification is the underlying key mechanism for enhanced user experience in smart devices that enables assessment of user engagement. Brands such as Apple, Samsung, Fitbit, MI and Oppo are increasingly using gamified user interfaces for easy adoption of technology resulting in improved user engagement. This also leads to consumer-related attitudinal and behavioral outcomes including brand loyalty and advocacy.

Technology Acceptance Model (TAM)

Developed in 1989 by Fred D. Davis, Richard P. Bagozzi and Paul R. Warshaw, the Technology Acceptance Model (TAM) is based on behavioral intention (BI) of users and relates to how users change their attitude towards new technology. Several factors influence user's acceptance of new technologies, of which two core constructs are notable: perceived *usefulness* which is defined as degree to which the user anticipates a positive enhancement in their suggested task performance; and perceived *ease of use* which refers to the degree to which a person believes that using a particular system would be free of effort. Lesser the effort in its use, higher is the degree of acceptance and adoption of technology (ibid.). TAM has widely been used for disciplines such as education, product development, user interface design and innovation. Segars and Grover (1993) extended TAM for studying technology adoption amongst users for effectiveness, usefulness, and ease of use. Later, Davis and Venkatesh (2000) revisited TAM to test the voluntary and mandatory settings in which the user is situated. Their findings led to modifications encapsulated in TAM 2. Subsequently, Venkatesh, et al. (2003) posited a unified theory of acceptance and use of technology (UTAUT) which has been used extensively in information systems.

TAM is applied to the current study as it facilitates understanding of user behavior towards smart wearables as a new form of technology integrated with their everyday activities. The model sheds light on user perception of the usefulness of technology used in smart wearables for recording health-related activities. It also helps to understand how user interface designed by different brands lead to varying outcomes in user satisfaction, loyalty, and word-of-mouth referrals. The research model is conceptualized and tested in three stages. The first stage proposes the functional, health-related, hedonic and self-congruity dimensions to examine their linkages with user engagement of smart wearables such as Apple smartwatch, Samsung Galaxy watch, Fossil smartwatch, Fitbit, MI smartwatch, Oppo smartwatch and Huawei smartwatch. The second stage hypothesizes the relationship between engagement with brand loyalty and brand advocacy. The third and final stage posits that user loyalty to smart wearables influences brand advocacy. Five hypotheses are proposed at different stages of this study. Three central questions are addressed:

– Do extrinsic and intrinsic motivations influence users' engagement with smart wearables?

– Does satisfied user experience directly lead to brand advocacy for smart wearables?

– Is self-congruity an instrumental dimension toward engagement in the context of smart wearables?

Literature Review and Hypotheses Development

The article develops and tests theoretical explanations emerging from extrinsic and intrinsic rationales on user engagement with smart wearables, and empirically examines the role of user engagement on brand loyalty and brand advocacy.

Influence of extrinsic motivations (functional and healthology) on user engagement

User behavior towards the adoption of smart wearable is, at its helm, driven by both intrinsic and extrinsic motivational factors (Ryan and Deci, 2000). Extrinsic motivation in physical activities characterizes behavior that is centered on tangible benefits such as an individual's physical health, appearance, fitness, usability, and social approval. Further health benefits may affect the adoption of smart wearables. Adam Greenfield (2006) developed the concept of 'everyware' to describe ubiquitous technologies as a pervasive trend of smart technologies transcending human lives while converting experiences into computational data. Gilmore (2016) extends the concept of everyware to further study smart technology for wearable fitness devices. Dehghani, Kim and Dangelico (2018) conjoined health and technology to coin the term 'Healthology'. Chuah (2019, p.3) gives an account of consumers who use smart wearables for health benefits, relating how "…wearables give them instant motivations to progress towards their goals through the personal data-based insights (e.g., sleep, eating, and exercise)". In addition, Clinch, Meztger and Davies (2014) have asserted that the functional aspects such as usability and ease of use for smart wearables may contribute to initial consumption patterns among users and create long term changes in users' behavior towards health benefits, will require habitualization. Gilmore (2016, p.10) explains, "…habits can only exist, it seems, when quantifiable data [as recorded by smart wearables] and qualitative experience [user engagement] mutually reinforce each other, be it in observably shaping one's body to a more normative measure of 'fit' or experiencing more of their everyday surroundings and spaces". In a world where users are continuously documenting their experiences and/or allowing smart technologies to record their data, functionality and healthology become motivating factors for increased user engagement using smart wearables. Hence, the following hypothesis is proposed:

H1: *Extrinsic motivations will lead to user engagement with smart wearables.*

Influence of intrinsic motivations (hedonic and self-congruence) on user engagement

Intrinsic motivation relates to engagement in any physical activity that characterizes pleasure-seeking and psychological satisfaction (Ryan and Deci, 2000). With the

introduction of concepts of self-image and brand image by Gardner and Levy (1955), theories of self-congruence gained popularity. Self-congruence is the match between the perceived self-image of the consumer and the constructed product image by brand marketers (Sirgy, 2015). Japutra, Ekinci and Simkin (2019, p.5) argue, "…that practitioners [marketers] use self-congruence to build strong emotional brand attachment". A study on smart wearables by Said, et al. (2021, p.16) relates the factor of self-congruence to the consumption of smartwatches claiming that it "… often leads the general public to make inferences about the owner, and in the context of this study, the smartwatch would signal the status of the user. As an example, the main reason a person buys a Fitbit smartwatch is not to prevent from being late, but to show to the others that he can afford such a watch". Self-congruence has both direct and indirect implications on brand loyalty. Kressmann, et al. (2006, p.962) acknowledge that "…the direct effect from self-congruity on brand loyalty equals the predictive power of functional congruity and brand relationship quality on brand loyalty".

Another determinant in intrinsic motivation is the impact of hedonic motivations on consumption. Bentham (1986) described the primary motives of pleasure and pain as drivers and determinants of the behavioral experience. Kahneman and Riis (2005) furthered this as 'decision utility' (utilitarian) and 'experience utility' (hedonic). Hedonic motivation refers to a consumer's willingness to engage with a brand based on their pleasure derivation from it (Higgins, 2006). In the context of hedonic motivations for consumers of smart wearables, research indicates the role of innovative technology on providing pleasure had its positive effect on consumption (Kim and Shin, 2015; Hong, Lin and Hsieh, 2017). Dehghani, Kim and Dangelico (2018) also reiterate that hedonic motivation plays a positive role in long term use of smartwatches. The study of user engagement with smart wearables long term consumption pattern, requires the study of intrinsic motivations for both hedonic and self-congruence. Hence, the following hypothesis is proposed:

***H2**: Implicit motivations will lead to user engagement with smart wearables.*

Influence of user engagement on brand loyalty

Technology is becoming seemingly ubiquitous in our everyday interactions. Engagements that inevitably incorporate consumer experiences with technology are increasingly gaining currency to understand and decode behavioral patterns in consumption, experiences, and aesthetics (O'Brien and Toms, 2008; Attfield, et al., 2011; Oh and Kang, 2020). Through extensive multidisciplinary literature review and exploratory study of users engaged in web searching, online shopping, webcasting and gaming applications, engagement was defined in conceptual and operational terms in the previous segment on user engagement. Building on previous research, semi-structured interviews were

conducted with the users of four applications to explore their perception of being engaged with the technology.

The diminishing attention span of user interactions has informed designers to not only create systems for interaction but to lead them towards engaging experiences (Overbeeke, et al., 2002). O'Brien and Toms (2008) define engagement as positive attitude towards interaction through increased attention involving sensory capacities. Further, Lehmann, et al. (2012, p.164) define user-engagement as "…the quality of the user experience that emphasizes the positive aspects of the interaction, and in particular the phenomena associated with being captivated by a web application, and so being motivated to use it". A section of the academia has been engaged in deciphering the nature and extent of user engagement emanating from interactions via websites rather than smart-interactive technologies. In their study on user engagement and smart wearables, Oh and Kang (2020, p.316) postulate how "… users can be engaged with not only the content of the website but also its interface design and interaction with the system". It is interesting to observe how technology adoption creates a positive/negative impact on user engagement with the brand. If the interface allows for interactivity and plays on previously learned behavior in using a new design interface, the ease of use of TAM and usability for the consumer may be increased. With the growing demand of smart wearables, it is opportune to understand its impact in user engagement which, in turn, influences brand advocacy and loyalty. Borrowing from O'Brien's (2016) theoretical perspectives on user engagement, the User Engagement Scale (UES) is proposed to examine John Dewey's Philosophy of Experience (Archambault, 1974) and Mihaly Csikszentmihalyi's Flow Theory. While the Flow theory draws on flow as a state of experience which is "…characterized by enjoyment, challenge, intrinsic motivation, focused attention, positive reinforcement, clear goals, personal control, and temporal dissociation" (Csikszentmihalyi, 1990, p.10), it further takes into account the user who aligns their goals based on their biological needs with social and self-motivations. On the other hand, Dewey's philosophy of experience works on principles of continuity which is the idea of habit as an experience that modifies future experiences and engagements. It uses 'objective and internal conditions' wherein users interact with smart systems as informed by their needs and desires as well as social settings. The current paper utilizes these theoretical underpinnings to test the following hypotheses on the ways in which both extrinsic and intrinsic motivations affect user engagement which in turn, shape user behavior on brand loyalty and advocacy.

H3: *User engagement with smart wearable will lead to brand loyalty.*

H4: *User engagement with smart wearable will lead to brand advocacy.*

Influence of brand loyalty on brand advocacy

The theory of self-congruity leading to brand loyalty is further exalted by loyal consumers through word-of-mouth engagement and advocacy for the brand (Lowenstein, 2011). As stated by Machado, Cant and Seaborne (2014, p.957), "… consumers fondly remember the memorable experiences and share them with peers and family, they could generate an increase in sales through the power of word-of-mouth and consumer loyalty". The theory of reasoned action (TRA) links individual attitudes, intentions, subjective norms, and behavioral outcomes. Sharing information i.e., brand advocacy transpires through intentional behavior motivators like attitudes and norms (Fishbein and Ajzen, 1975). Kemp, Childers and Williams (2012) suggest a model of self-brand connection conjoining self-congruence and brand advocacy to emphasize that attitude towards a brand is based on perceived brand quality and brand uniqueness that fosters a positive self-brand connection that may lead to consumers indulging in brand advocacy. Previous research in this area have focused on digital marketing strategy (Parida and Kumar, 2020), user engagement (Oh and Kang, 2020), motivations on fitness tracking (Asimakopoulos, S., Asimakopoulos, G. and Spillers, 2017). The current research examines the users' symbolic association with smartwatch brands.

Technology adoption may be understood as a sociological model that describes the adoption or acceptance of a new product or innovation, according to the demographic and psychological characteristics of defined adopter groups. Adoption of new technology is explained by how users identify innovation as predicted by its use. Such a product is likely to gain popularity and witness an increased market share as it spreads from innovators to early adopters to early majority through positive word-of-mouth (Roger, 2003). Similarly, the trickle-across theory of fashion (Robinson, 1975) explains the swift dissemination of fashion styles among the consumers from similar socio-economic backgrounds, almost at the same time. In similar vein, it is argued that the spread of smart wearable among users is akin to the spread of newly introduced fashion style in the want of acceptance among the potential consumers of similar socio-demographic characteristics. Hence, the loyalty from satisfied consumers spreads rapidly through word-of-mouth referral or brand advocacy to potential consumers. Based on this, the following hypothesis is posited:

***H5**: Loyalty for smart wearable will lead to brand advocacy.*

Research Design and Methodology

Data collection process

Sampling frame

For this study, online data was collected from 177 users of smart wearables in India and abroad. At the commencement of data collection, consumers were screened through their active use of the product and were asked to provide responses based on the brand of the smart wearable owned by them. Seven brands of smart wearables were considered, namely Apple smartwatch, Samsung Galaxy watch, Fossil smartwatch, Fitbit, MI smartwatch, Oppo smartwatch and Huawei smartwatch. At the outset of the study, only those respondents who had purchased at least one of these seven brands were included. The second section of the questionnaire collected data on the respondents' demographic characteristics such as gender, nationality and age. Further sections of questionnaire included measures for examining (a) extrinsic and intrinsic motivations for smart wearables, (b) user engagement, and (c) the consumer's brand loyalty and brand advocacy.

Demographics of respondents

The average age of the respondents was 30 years. 69 percent of the total sample were men.

Psychometric evaluation of study measures

The study used established measures from apriori literature with minor modifications for adjustment to the context. Initial assessment of scales was performed by calculating the reliability scale with Cronbach's alpha reliability coefficient value which was 0.886 ($\alpha > 0.7$).

Exploratory factor analysis

The exploratory factor analysis (principal component analysis with varimax rotation method) yielded five distinct factor solutions that explained 69.58 percent of the total variance. The factor solution showed a KMO of 0.858 with statistically significant Bartlett's test at 1% level of significance. All the factors were found to have high level of internal consistency reliability measured using Cronbach's alpha.

Testing of Hypotheses and Results

Path analysis was used to test the hypotheses and the model fit (Table 1; Figure 1). The absolute measure of fit based on the non-centrality parameter suggested that data fit of model was close to the acceptable value.

Table 1: Path coefficients and fit indices

Hypotheses	Path coefficient	P-Value	Result	CMIN/ DF	RMSEA	CFI
H1	User Engagement <-- Functional and Healthology	0.001*	Supported	6.540	0.177	0.955
H2	User Engagement <-- Hedonic and Self Congruity	0.000*	Supported			
H3	Brand Loyalty <-- User Engagement	0.000*	Supported			
H4	Brand Advocacy <-- User Engagement	0.014**	Supported			
H5	Brand Advocacy <-- Brand Loyalty	0.000*	Supported			

Note: Standardized regression coefficients are shown along the path.

**Significant at p ≤ 0.01; **Significant at p ≤ 0.05.*

Model with Path Coefficients

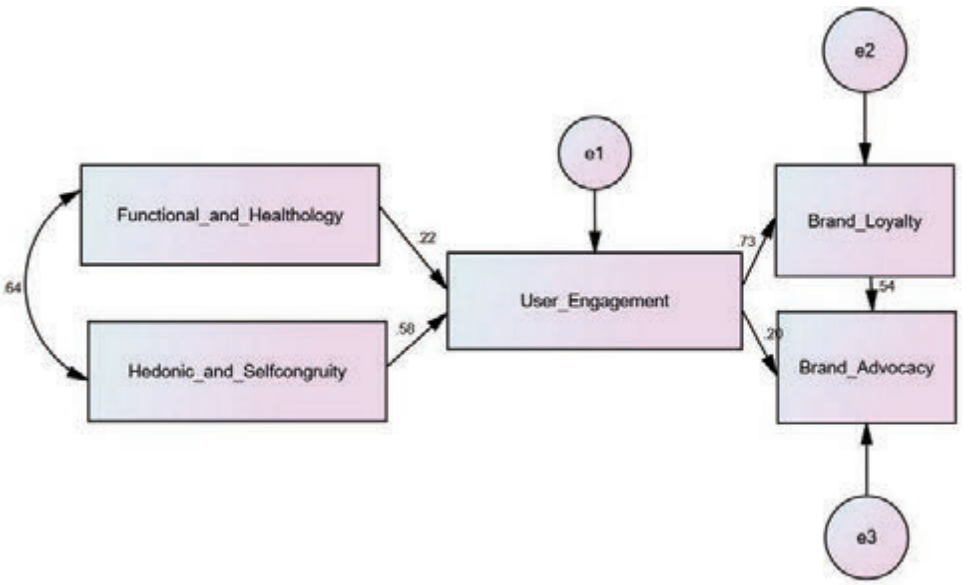

Figure 1: Depiction of conceptual model with standardized path coefficients

Conclusions

Theoretical implications

The present study is novel in its contribution to the three aspects related to consumer engagement for smart wearables. *First*, developing an understanding of the ways in which explicit and implicit motivations drive users' experience with smart wearables; *second*, testing the impact of users' engagement on brand advocacy for smart wearables during the pandemic when health concerns take predominance over other consumption choices; and *third,* establishing the relationship of users' psychological dimension with engagement for smart wearable thus bridging the gap of self-image with healthology. References to theoretical concepts of TAM, diffusion of innovation, and trickle-across theory explain the arguments, thus advancing the understanding of interactive and gamified technology, and consumer behavior. Dimensions of the users' self-image with engagement were examined and plausible results were found indicating a positive relationship between user engagement and brand advocacy. This makes meaningful contribution to both theory and practice in the realm of consumer behavior and product innovation.

Managerial implications

The findings show that functionality, health, hedonism and self-image jointly played a role in influencing how users evaluate engagement with smart wearables. Results of this study may be of use to producers for developing technology-driven innovative products focussing on the ease of use that results in enhanced engagement and adaption. It may help the industry to understand the form and design of communication through efficient gamification for successfully positioning their brand for smart users. Brand managers would benefit from differentiating the new product on the basis of its innovative features for health and appearance conscious consumers.

Limitations and Directions for Future Research

Some limitations have been identified in this study. *First,* data from a larger sample population may yield better findings. *Second,* the effects of mediation can be examined for understanding the indirect relationship between variables. *Third,* there is a need for developing a scale specifically for measuring user engagement with smart wearables. *Fourth*, the model may be tested for assessing additional antecedents of user engagement to evaluate differences in the results specifically in the context of users' attitudinal and behavioral outcomes. Future research can be conducted to study

the difference in outcomes of the engagement effect separately on gendered use of technology. Cross-cultural study can be undertaken for future research endeavors to determine the generalizability of the model.

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COVID-19 and Indian Apparel Industry: A Logistic Regression Model to assess the Impact on Operation, Development and Sustenance

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Abstract

The persistence of COVID-19 continues through its variants to disrupt several business sectors which causes a ripple-effect to adversely impact the global economy. The short-term impact of this pandemic is well documented but its long-term impact is yet to be understood in its entirety. It therefore, becomes imperative to understand and analyze the impact of the pandemic from the perspective of the Indian apparel industry. While several works focused on the pandemic and its impact on businesses amidst lockdown and restrictions imposed to curb the spreading of COVID-19, this study highlights the status of apparel manufacturing business during the aftermath of the first wave and the looming threat of the ongoing pandemic. This study was undertaken to ascertain the impact of the pandemic on the Indian apparel industry with focus on the dependency on geographical hubs for sourcing, supply chain, organizational functions and operations. Data was collected from 53 strategists and key decision makers from diverse apparel manufacturing organizations in India. Logistics regression models were developed using R programing for analysis with a view to enable the Indian apparel industry and government machinery to assess the impact of identified factors. Based on the analysis, machine learning model using logistic regression was developed in R to enable real-time assessment of market situation for developing appropriate strategies to ensure growth and sustenance of this industry. Insights from the logistic regression models urge the industry and the government machinery to assess the imminent impact of identified factors for taking appropriate measures to develop strategy for industry sustenance. The researchers suggest policy moderation and ratification of schemes to address issues pertaining to administrative procedures for sourcing, buying and logistics, along with booster packages to increase investments augmenting these activities.

Keywords: COVID-19, apparel production, machine learning, R programing, logistic regression

Introduction

The crisis wrought by the COVID-19 pandemic escalated with its second wave, impacting every facet of human life and livelihoods at the national and global levels. It had a crippling impact on the global economy in recent times (Onyema, 2020), comparably worse than that of the Great Depression (Baldwin, 2020). Control and mitigation of its debilitating effects required the imposition of total or partial lockdowns that led to an abrupt halt in the manufacturing, transportation, retail, and hospitality sectors impacting organizational engagement with stakeholders (Xifra, 2020). The impact has been particularly visible in supply chains and operations (Samson, 2018). Spending patterns during the pandemic indicated that reduced income levels led to prioritization of purchasing essential goods like food and hygiene products over clothing (Andersen, et al., 2020). There were increased online searches to find ways for repurposing homewear leading to further drop in demand for apparel and accessories (Choi, 2020). As a result, most apparel manufacturing firms started to diversify into production of face masks and PPE kits to generate income in market segments with scope for higher sales. Globally, the garment production and supply chain has been one of the worst affected sectors (Bain 2020; Anner, 2020; Clean Clothes Campaign, 2020). The dependence of the textile industry supply chain on geographical hubs faced added disadvantage caused by the particularly significant centers of production being designated as critical 'red zones'. The crisis hit the garment industry in Asia and the Pacific particularly hard, affecting millions of workers and enterprises in the supply chains and with observed ripple effects across a number of dimensions (ILO, 2020). The apparel manufacturing sector was hit by four key factors– raw material supply disruption, supply value chain dysfunction, labor unavailability and insufficient demand from buyers. The garment industry in Ethiopia and Kenya took a hit due to worldwide retail closure and the resultant drop in export orders (Kassa, 2020). Orders worth USD 6 billion were cancelled in Bangladesh (Kamruzzaman, 2020) causing havoc on the earnings of apparel workers who are dependent on daily wages as apparel manufacturers were unable to support the operators with steady income (Sen, 2020). In particular, the disproportionate impact on women who make up the majority of the region's garment workers, further exacerbated existing inequalities. Another effect of the pandemic has been the imposition of unprecedented cost-cutting measures. Firms across the world have reduced expenditure on salaries of personnel with high-skill

competencies, though the hiring of personnel for low-skill jobs have not been affected to the same extent. The fact that small-scale firms have been impacted more severely and have ceased hiring, was indicative of the need for additional government support (Campello, 2020).

Prior to onset of the pandemic, the Indian economy was predicted to increase at a rate of 4.8 percent by the end of 2020 (International Monetary Fund, 2020). It was expected that the labor-intensive and knowledge-intensive sectors would maintain the growth momentum (McKinsey Global Institute, 2020). However, during the initial months of the nationwide lockdown, the expected contribution by the manufacturing and construction sectors of one-fifth of the GDP, came to a standstill (Kumar, 2020). The increasing spread of the pandemic has had a negative effect on the stock market (Ashraf, 2020). India's competitive advantage in the apparel sector has been attributed to integrated supply chain management practices incorporating comprehensive dimensions of strategic supplier partnership, customer relationship, information sharing, and process integration. However, the widespread and catalytic implications of the 2020 COVID-19 pandemic on the supply chains of the fashion industry cannot be overstated. Supply Chain practices faced a downslide as disruption of supply from China impacted manufacturing in India, further reducing opportunities for profitability (FICCI, 2020). The announcement by the Government of India to encourage self-reliance through initiatives encapsulated in the *Atmanirbhar Bharat* scheme, was a boost for the value chain. On 12th May 2020, Prime Minister Narendra Modi announced a stimulus package of INR 20 trillion (USD 270 billion) to reduce the debilitating effects of the lockdown that pushed many companies to the brink of bankruptcy. Studies indicate that flexibility in supply chains in the fashion industry (Mcmaster, et al., 2020) can be further strengthened by increasing the pool of small-scale suppliers. Another strategy is to develop local suppliers and near-shore suppliers. Many brands have diversified their product range to include loungewear, comfortable casualwear, and other specialized products to combat the spread of the virus. There is increased demand for more flexibility in manufacturing and operations to identify supply chain concepts that can help in containment of disruptions using suitable tools that can enable connections among multidimensional concepts (Bevilacqua, et al., 2020).

While the lockdown and subsequent imposition of containment and sanitization have reduced footfall and increased operational costs in physical stores, selling through omnichannels including digital selling platforms (Alves, 2020) are helping the fashion retail sector cater to changing demand for style variations (Mcmaster, et al., 2020).

Studies on perceptions of individuals and companies were Modeled using logistic regression (Umaña-Hermosilla, et al., 2020). Logistic regression is used for modeling the probability of the outcome into one of two or more classes, given an input variable. Problem with two classes is called a two-class or binary classification and more than two classes is called a multi-class classification. This method is very dynamic and adaptable for dichotomous classification prediction. R programing is an open-source programing platform which has been used with good success in predictive modeling (Lantz, 2019). It is used for statistical computing for analyzing and graphical representation for visualizing data. It provides various features and resource required for data analysis, visualization, data mining and developing machine learning models. At this uncertain time, the use of predictive modeling as a statistical technique to predict future behavior can prove to be an important tool to formulate a proactive stimulus for the recovery of the apparel manufacturing industry in India.

Research Methodology

While it is evident that global disruption across business sectors due to the widespread COVID-19 pandemic has adversely impacted the economy, there is a need for the analysis of its long-term influence. Existing works focused more on the pandemic and its impact on businesses amidst lockdown and restrictions imposed to curb the spreading of COVID-19. Hence, designing a study for identifying factors impacting the apparel manufacturing business during the pandemic and assess its impact on the Indian apparel industry became essential. Logistics regression models were developed using R programing to enable the Indian apparel industry and the government machinery to assess the impact of identified factors based on which real-time monitoring of market situation to develop appropriate strategies through machine learning growth and sustenance of the Indian apparel manufacturing industry becomes possible.

This research aims to understand the effects of the pandemic from the perspective of the Indian apparel industry through its impact on the supply chain, organizational functions and operations. The industry's dependency on geographical hubs for raw material supply is considered to understand critical production problems. R language provides the best prototype to work with machine learning models, one of the most effective open-source platforms for statistical programing used to identify factors that have high impact and to develop assessment models. The study also proposes measures that can catalyze development and sustenance of the Indian apparel industry against the backdrop of the ongoing COVID-19 and its after-effects. The study was conducted involving 53 key decision makers and strategists representing

the top management at the level of CEOs, Managing Directors and Vice Presidents of selected apparel manufacturing organizations. To gather primary data, a structured questionnaire was designed to record the opinions of the respondents on various aspects including sourcing, order management, resource management, logistics, demand and supply of materials that influence business operations, development and sustenance. The logistic regression model was chosen for analyzing the impact of identified factors through the probability of an event that occurs depending on the value of the independent variables for determining the association between business operation and factors affecting the Indian garment industry during the pandemic (Feng, et al., 2014). The classification was done by estimating the probability of an observation being part of a particular class, to confirm significance of specific factor in that category.

Analysis

Views of the respondents regarding the impact of COVID-19 on the Indian apparel manufacturing industry are tabulated at Table 1 listing various attributes that affect business.

Table 1: Impact of variable factors on Indian apparel manufacturing business during first wave of COVID-19

COVID-19 Impact vs Indian Apparel Industry		**Sourcing difficulties**		**Employees unable to reach office/ factory**		**Problems related to logistics**		**Cancellation of orders**		**Not receiving new orders**		**Brick and mortar store business**		**Online sales commitment completion**		**Warehousing difficulties**		**Sales channel challenges**	
		N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Respondents Opinion	Not affected	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
	Slightly affected	2	2	2	2	4	0	3	1	3	1	4	0	4	0	4	0	4	0
	Moderately affected	4	8	8	4	8	4	5	7	5	7	9	3	12	0	11	1	9	3
	Strongly affected	10	26	11	25	13	23	13	23	11	25	18	18	26	10	23	13	20	16
Total		17	36	22	31	26	27	22	31	20	33	32	21	43	10	39	14	34	19

From Table 1 it is evident that the pandemic continues to affect the manufacturing business strongly as strongly agreed by 68 percent of the decision makers/strategists. Less than 10 percent of the respondents mentioned that their business has not been impacted due to the pandemic situation. The respondents felt that the COVID-19 pandemic has had a strong impact on the Indian apparel manufacturing industry (Figure 1).

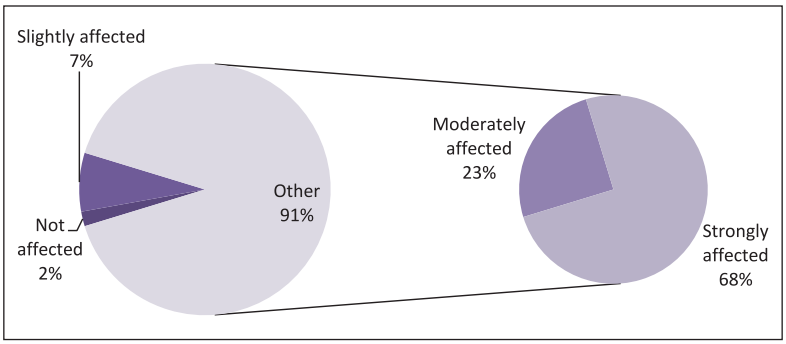

Figure 1: Impact of COVID-19 pandemic on the Indian apparel manufacturing industry

To identify factors that have significant impact, χ^2 test was administered. The results are tabulated in Table 2.

Table 2: Tabulated χ^2 values and order of impact of the factors affecting Indian apparel manufacturing business during the first wave of COVID-19

S.No.	Factors	χ^2 Value	Order of Impact
1	Problems related to logistics	9.905	1
2	Employees unable to reach office/factory	6.435	2
3	Brick and mortar store business	5.974	3
4	Online sales commitment completion	5.820	4
5	Warehousing difficulties	5.555	5
6	Not receiving new orders	4.883	6
7	Sales channel challenges	4.565	7
8	Cancellation of orders	3.689	8
9	Sourcing difficulties	3.021	9

The chi-square analysis reveals that problems related to logistics have the highest impact and are associated with the current red alert scenario in India. During the second wave of the pandemic, restrictions on inter-state movement considered for imposition by the government reflected the sentiments of the respondents. In addition to interstate logistics, the other factors predominantly relate to constraints in sourcing

and buying, handling exports and domestic demand and supply (Table 2). Analysis of responses presented in Table 3 was carried out based on the assumption that certain factors would have an impact on apparel manufacturing due to the impending threat of a persisting COVID-19 pandemic situation.

Table 3: Factors and their impact on Indian apparel manufacturing business during the second wave of COVID-19

COVID-19 Second Wave Impact vs Indian Apparel Industry		Temporary shutdown		Employee absences due to sickness or childcare		Buyers not paying their bills		Reduced logistics services		Reduced certification services		Infrastructure problems		Increased administrative bottlenecks		Reduced investment		Pressure from local/state bodies for reduced operations	
		N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Respondents' opinion	Not affected	1	0	0	1	1	0	1	0	1	0	1	0	1	0	1	0	1	0
	Slightly affected	2	2	2	2	3	1	0	4	4	0	4	0	3	1	4	0	4	0
	Moderately affected	3	9	8	4	5	7	9	3	12	0	11	1	7	5	8	4	10	2
	Strongly affected	3	33	20	16	24	12	20	16	30	6	30	6	19	17	26	10	20	16
Total		9	44	30	23	33	20	30	23	47	6	46	7	30	23	39	14	35	18

Factors with significant impact are identified using χ^2 and results are tabulated.

Table 4: χ^2 values and order of impact of the factors affecting Indian apparel manufacturing business during the second wave of COVID-19

S.No.	Factors	χ^2 Value	Impact (in decreasing order)
1	Temporary shutdown	10.439	1
2	Reduced logistics services	7.653	2
3	Pressure from local/state bodies for reduced operations	5.936	3
4	Buyers not paying their bills	3.346	4
5	Reduced certification services	3.195	5
6	Reduced investment	2.125	6
7	Employee absences due to sickness or childcare	1.886	7
8	Increased administrative bottlenecks	1.547	8
9	Infrastructure problems	1.385	9

The chi-square analysis in Table 4 reveals that primarily temporary lockdowns and reduced logistics services could impact the apparel manufacturing business in India. Hence, it becomes imperative to develop machine learning models which will not only assess the significance of the impact of factors listed in Table 4 but also describes the relationship between the predictor and the predicted variables, as well as the extent of impact by the predictors on the predicted variables which defines the course of remedial action. Responses from 53 key decision-makers representing garment manufacturing industries across India regarding the impact of the COVID-19 pandemic, were analyzed using logistic regression represented by equation 1 below:

$$\text{Logit}(p) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots\ldots\ldots\ldots\ldots + \beta_k X_k$$

where,

p is the probability of presence of the characteristic or interest,

β_0 is the intercept from the linear regression equation

$\beta_1 X_1$ is the regression coefficient multiplied by value of the predictor

k is the number of predictors

Using equation 1 consider,

p = Impact of the second wave of the COVID-19 pandemic on the Indian apparel manufacturing industry viz.

i. Difficulty accessing resources domestically
ii. Reduced domestic sales
iii. Difficulty in exports
iv. Difficulty in logistics of interstate movement
v. Difficulty in importing resources from abroad
vi. Lower sales for domestic consumers
vii. Increased domestic sales
viii. Improved exports

X_1 = Temporary shutdown

X_2 = Employee absences due to sickness or childcare

X_3 = Non-payment of bills by buyers

X_4 = Reduced logistics services

X_5 = Reduced certification services

X_6 = Infrastructure problems

X_7 = Increased administrative bottlenecks

X_8 = Reduced investment

X_9 = Pressure from local/state bodies for reduced operations

The logit transformation is defined as the logged odds:

p = probability of presence of characteristic

1-p = probability of absence of characteristic

Table 5: Generalized Linear Model (GLM) to predict variables with probability distribution

Response variable	**Predictor variable1**	**Predictor variable2**	**Equation for Impact Assessment**	**Model Fit**
Difficulty accessing resources domestically	Increased administrative bottlenecks	Reduced investment	p = exp(-0.7768 + 2.4386*x1-2.3388*x2)/ [1 + exp(-0.7768 + 2.4386*x1-2.3388*x2)]	Plot 1
Reduced domestic sales	Buyers not paying their bills	-	p = exp(-2.5127 + 2.8143*x1)/ [1 + exp(-2.5127+2.8143*x1)]	Plot 2
Difficulty exporting	Buyers not paying their bills	-	p = exp(-2.1215+2.5644*x1)/ [1 + exp(-2.1215+2.5644*x1)]	Plot 3
Difficulty in interstate logistics	Reduced logistics services	Increased administrative bottlenecks	p = exp(-1489e+00+2.072e+00*x1-2.13e+00*x2)/ [1 + exp(-1489e+00+2.072e+00*x1-2.13e+00*x2)]	Plot 4
Difficulty importing inputs from abroad	No impact			
Lower domestic sales to consumers	No impact			
Increased domestic sales	No impact			
Improved exporting	No impact			

Rather than choosing parameters that minimize the sum of squared errors as in ordinary regression, estimation in logistic regression chooses parameters that maximize the likelihood of observing sample values. Table 5 exhibits the significant response variables

and the predictor variables that continuously impact operations, development and sustenance of the apparel manufacturing industry in India during the pandemic.

The first logistic regression model was created to predict the difficulty in accessing inputs domestically (y) based on the responses received on increased administrative bottlenecks (x1) and reduced investment (x2) as given in equation 2 below:

$$p = \frac{\exp(-0.7768 + 2.4386 * x1 - 2.3388 * x2)}{[1 + \exp(-0.7768 + 2.4386 * x1 - 2.3388 * x2)]}$$

The logistic regression coefficients give the change in the log odds of the outcome for a one-unit increase in the predictor factor(s). Taking the intercept term which corresponds to the β_0, the exponential of β_0 gives the mean odds to accessing resources domestically in the reference category. So, exp (β_0) is 0.46, the chance of difficulty accessing domestic resources with increased administrative bottlenecks and reduced investment. A slight difference in the interpretation of coefficients appears while considering the following coefficients. Increased administrative bottlenecks exp (β_1) has a mean chance of 11.46 times the chance of reference category. Similarly, reduced investment exp (β_2) has a mean chance of 10.36 times the chance of reference category. Whereas, there is a chance that both administrative bottlenecks and reduced investment coexist for which exp (β_1+β_2) is 118.795 times the mean chance of reference category.

Table 6: Table of probability values to assess difficulty of accessing resources domestically

Factor	Mean Chance	Chance of the affecting Factor	Probability of the affecting factor
Reference Group [Difficulty in accessing inputs domestically]			0.32
X1 [Increased administrative bottlenecks]	11.46	4.35	0.92
X2 [Reduced investments]	10.37	3.94	0.91
X1 & X2 [Increased administrative bottlenecks & reduced investments]	45.21	118.80	0.99

Referring to Table 6, the mean probability of difficulty accessing domestic resources is 0.32. Knowing that the mean chance of administrative bottlenecks is 11.46 greater than the mean chance of the reference group, the chance of difficulty to this group can be estimated as 4.35, a probability of increased administrative bottlenecks equals to 0.92. Similarly, the mean chance of reduced investment is 10.37 times the reference

group, which means a chance is equal to 3.94 or probability equals to 0.91. Finally, administrative bottlenecks with reduced investment have a chance equal to 45.21 or probability of difficulty to accessing resources domestically equal to 0.99.

The difficulty in sourcing domestically illustrated in Figure 2, has the probability of 0.99 with increased administrative bottlenecks and reduced investments during the ongoing second wave of the pandemic.

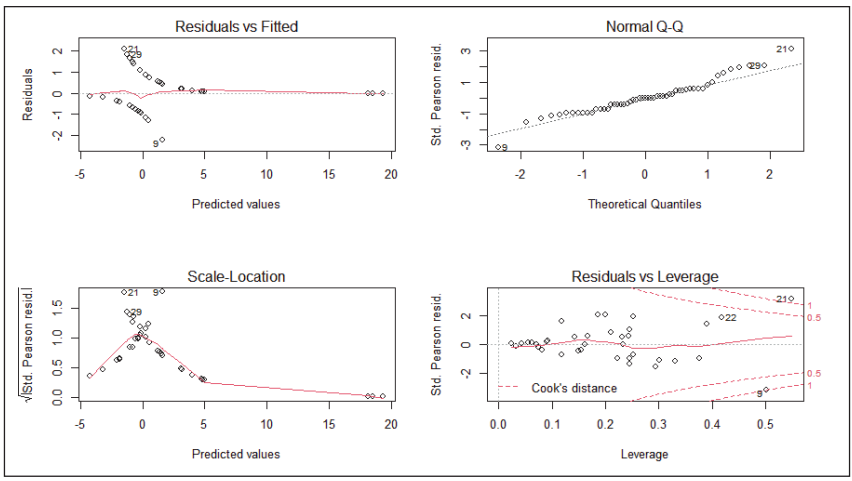

Figure 2: Deviance residual plots for difficulty in accessing resources domestically

Logistic regression model to assess reduced domestic sales due to buyers not paying bills to the manufacturers is given in equation 3 below:

$$\mathrm{p} = (exp(-2.5127 + 2.8143 * \mathrm{x1}))/([1 + exp(-2.5127 + 2.8143 * \mathrm{x1})])$$

The exponential of the intercept term exp (β_0) gives the mean odds to reducing domestic sales in the reference category as 0.08. The chance of reduced domestic sales with buyers not paying bills exp (β_1) has a mean chance of 16.68 times the chance of reference category.

Table 7: Probability values to asses difficulty in reduced domestic sales

Factor	**Mean Chance**	**Chance of the affecting Factor**	**Probability of the affecting factor**
Reference Group [reduced domestic sales]			0.07
X1 [buyers not paying bills]	16.68	1.17	0.53

The mean probability of reduction in domestic sales is 0.07. Knowing the mean chance of buyers not paying bills is 16.68 greater than the mean chance of the reference group, the chance of difficulty to this group was estimated to be 1.17 or a probability of reduced domestic sale due to buyers not paying bills to the manufacturers as 0.53 (Table 7).

Thus, the reduction in domestic sales during the second wave of the pandemic in India has the probability of 0.53 with buyers not paying their bills for goods already procured (Figure 3).

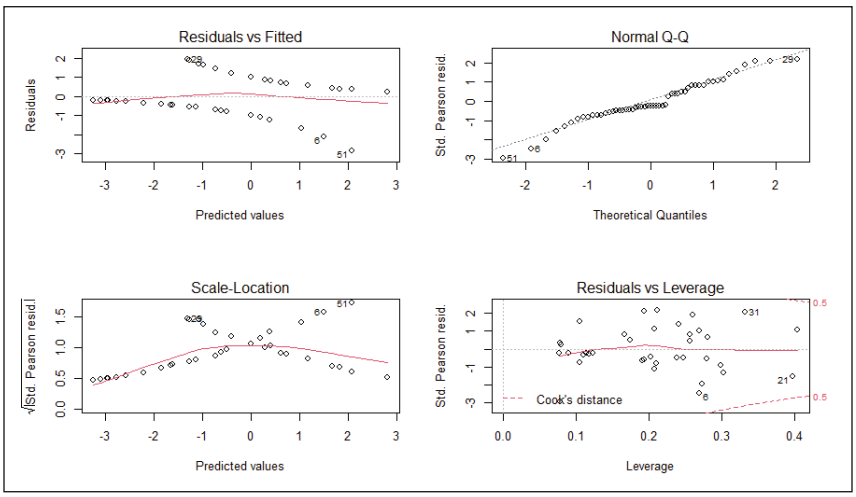

Figure 3: Deviance residual plots for reduced domestic sales

Logistic regression model to assess difficulty in garment exports due to clients not paying bills to the manufacturers is given in equation 4 below:

$$p = \frac{\exp(-2.1215 + 2.5644 * x1)}{[1 + \exp(-2.1215 + 2.5644 * x1)]}$$

The exponential of the intercept term exp (β_0) gives the mean odds to reduction in difficulty in garment exports as 0.12. The chance of reduced domestics exports due to buyers not paying bills exp (β_1) is 12.99 times the chance of reference category.

Table 8: Probability values to assess difficulty in garment exports

Factor	**Mean Chance**	**Chance of the affecting factor**	**Probability of the affecting factor**
Reference Group [difficulty in garment exports]			0.11
X1 [buyers not paying bills]	12.99	1.43	0.59

Table 8 indicates that the mean probability of reduction in domestic sales is 0.11. Knowing that the mean chance of buyers not paying bills is 12.99 greater than the mean chance of the reference group, the chance of difficulty for this group was estimated to be 1.43 or a probability of difficulty in garment exports due to clients not paying bills to the manufacturers equal to 0.59.

The difficulty in garment exports depicted in Figure 4, have the probability of 0.59 during the second wave of COVID-19 in India due to buyers not paying their bills for goods already procured.

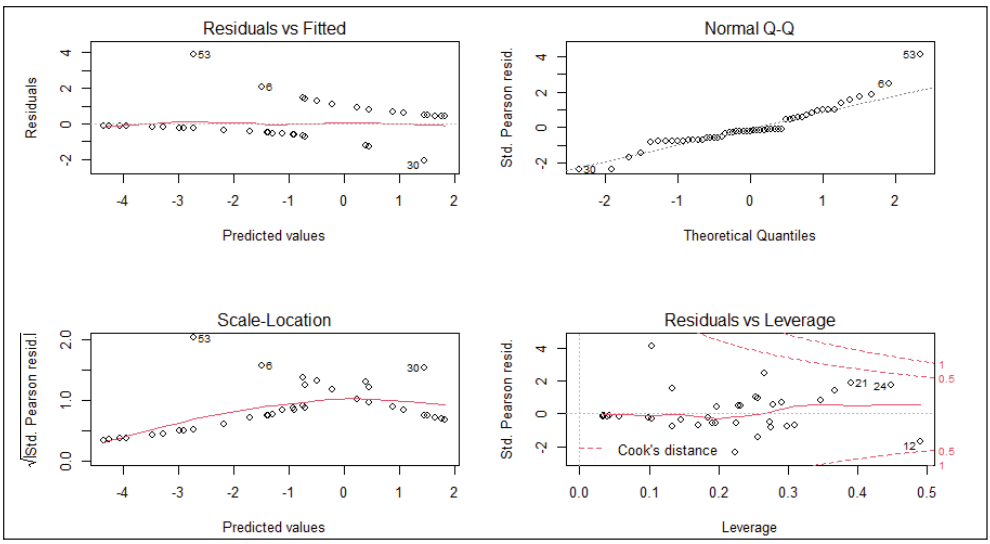

Figure 4: Deviance residual plots for difficulty in garment exports

Logistic regression model to assess difficulty in interstate logistics due to reduced logistics services and increased administrative bottlenecks is given in equation 5 below:

$$p = \frac{\exp(-1.489 + 2.072 * x1 - 2.131 * x2)}{[1 + \exp(-1.489 + 2.072 * x1 - 2.131 * x2)]}$$

The exponential of intercept term exp (β_0) gives the mean odds to accessing resources domestically in the reference category to be 0.26, which is the chance of difficulty accessing domestic resources with reduced logistics services and increased administrative bottlenecks. Reduced logistics services exp (β_1) have a mean chance which is 7.94 times the chance of reference category and increased administrative bottlenecks exp (β_2) have a mean chance which is 8.42 times the chance of reference category to increase the difficulty. Both reduced logistics services and administrative bottlenecks have a mean chance which is 66.87 times the chance of reference category.

Table 9: Probability values to assess difficulty in inter-state logistics

Factor	Mean Chance	Chance of the affecting Factor	Probability of the affecting factor
Reference Group [difficulty in inter-state logistics]			0.21
X1 [Reduced Logistics services]	7.94	1.67	0.63
X2 [Increased administrative bottlenecks]	8.42	1.77	0.64
X1 & X2 [Reduced logistics services & increased administrative bottlenecks]	66.87	14.04	0.94

The mean probability of difficulty in interstate logistics is 0.21. Knowing that the mean chance of reduced logistics services is 7.94 times greater than the mean chance of the reference group, the chance of difficulty to this group was estimated to be 1.67 or a probability of reduced logistics services as 0.63. The mean chance of increased administrative bottlenecks was estimated to be 1.77 or a probability of 0.64. Therefore, reduced logistics services with increased administrative bottlenecks have a chance of 14.04 or a probability of 0.94 for difficulty in interstate logistics (Table 9).

The difficulty in inter-state logistics during the second wave of COVID-19 in India has the probability of 0.94 with reduced logistics services and increased administrative bottlenecks (Figure 5).

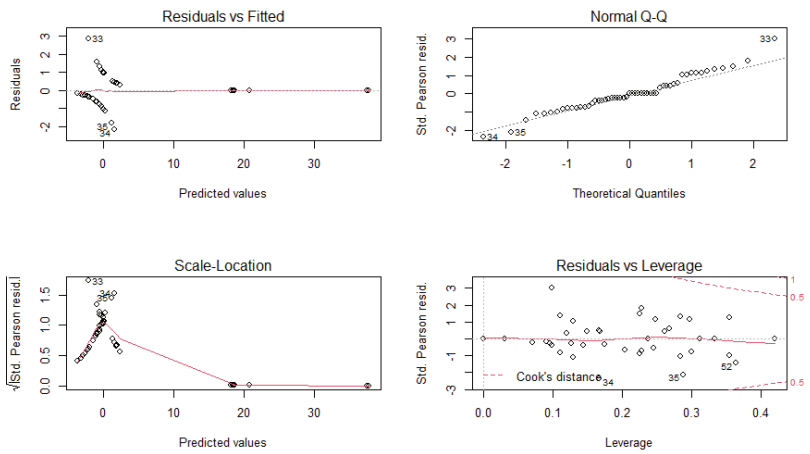

Figure 5: Deviance residual plots for difficulty in inter-state logistics

Findings

This research was designed and steered to specifically understand the long-term impact of the COVID-19 pandemic on the Indian apparel industry based on the factors identified from the perspectives of industry stalwarts. The data collected for these identified factors were analyzed using logistics regression to assess their impact in operation, development and sustenance of the Indian apparel manufacturing industry. A machine learning model was developed in R to catalyze the development and sustenance through dynamic impact assessment of factors with the following key findings:

- During the prevailing uncertainty due to COVID-19, problems related to logistics of both material and workforce continue to be challenging for apparel manufacturers.
- Difficulty in mobilizing these resources lead to delay in completion of orders and timely delivery, precipitated further by warehousing challenges.
- The looming threat of the ongoing pandemic in India will continue to adversely impact the receipt of new orders, and is likely to lead to cancellation of previous orders, depending on the 'red listing' of the country, as seen during the first wave of the pandemic.
- The logistics regression model predicts that the difficulty in sourcing domestically has probability of 0.99 with increased administrative bottlenecks and reduced investments during the pandemic.
- Reduction in domestic sales during the second wave of the pandemic in India has a probability of 0.53 with buyers not paying their bills for goods already procured.
- The difficulty in garment exports has the probability of 0.59 during the third wave of COVID-19 in India due to buyers not paying their bills for already procured goods.
- The difficulty in inter-state logistics during the second wave of COVID-19 in India has a probability of 0.94 with reduced logistics services and increased administrative bottlenecks.
- Other factors viz. difficulty importing inputs from abroad, lowered or increased domestic sales, and improved exports had no impact on the Indian apparel manufacturers during the pandemic.

Conclusion

Self-sustained initiatives during the global uncertainty due to the COVID-19 pandemic motivated industries to identify local resources to Fulfill manufacturing needs. However, industries face difficulties in sourcing necessary resources domestically due to increased administrative bottlenecks including the procedure and permission for inter-state material movement, policy changes and reduced investments. Policy moderations and schemes have to be ratified to address issues pertaining to administrative procedures for sourcing, buying and logistics, along with booster packages to increase investments augmenting these activities to encourage sustenance of the Indian apparel manufacturing industry. Drawing from the insights of the logistic regression models, the industry and government machinery can assess the imminent impact on the factors identified, enabling the development of an appropriate strategy to develop and sustain the Indian apparel manufacturing industry.

The research is an attempt to show the importance of real-time assessment on factors impacting apparel manufacturing business in India. To accomplish dynamic analysis and assessment, a machine learning model was identified for incessant problem solving. The insights from the logistic regression models urges the industry and the government machinery to assess the imminent impact of the identified factors for taking appropriate measures for the strategy development to ensure the Indian apparel manufacturing industry's sustenance. There may be alternatives to the proposed model that can improve the robustness and precision of the outcome, which broadens the scope of further study in the subject matter. Considering the extensive Indian apparel manufacturing ecosystem, similar studies are proposed to be conducted in the textile and retail sector to cover the entire gamut of the fashion supply chain in India.

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IPR Policies in the Fashion Industry and Consumer Behavior during COVID-19

Kunal Singha, Pintu Pandit and Sanjay Shrivastava

Abstract

Intellectual Property Rights (IPR) and design innovation in the fast fashion industry are increasingly influencing consumer behavior. IPR is a critical issue which, if not widely implemented, can severely impact the industry, humanity, and environment. Retailers have become more conscious about balancing the need for catering to consumer preferences for branded products while protecting business data confidentiality. The aftermath of disruption in the fashion business caused by COVID-19 in early 2020 has changed consumer behavior, dictated by economic considerations and aesthetic preferences manifested through increased adaptability to and use of online sites and technologies. This article examines the impact of the pandemic and worldwide lockdowns on consumer sentiment and preferences for specific trends, and fragility of the fast fashion business model. Primary data is collected from 31 Indian fashion firms and analyzed with Partial Least Squares (PLS) regression technique to determine the impact on the research hypothesis. Understanding the consumer mindset towards fashion products in terms of IPR related policies and opinions of the company are very important for a fast fashion brand. These point to the imperative of IPR that highly depends on consumer behavior which is measured by three key dimensions namely consumer economic shift, consumer preference shift and consumer lifestyle shift. The findings of this current study indicates that managers of fast fashion brands understand diverse production parameters such as varying sales orders, return rate, shelf-life order time, purchase-to-procure, right time for product launch, product acceptance rate and number of return customers, if they understand the impact of consumer preference based behavioral aspects along with the need for IPR. Conclusions are based on the implications of these findings that can enable the fast fashion industry to thrive in the post-pandemic period.

Keywords: Intellectual Property Rights, consumer behavior, consumer economic shift, consumer preference shift, consumer lifestyle shift, fast fashion industry, COVID-19 impact

Introduction

In 2020, the International Labor Organization (ILO) reported that the Asia-Pacific garment industry had collapsed during the COVID-19 pandemic due to diminishing consumer demand, government lockdown measures and disruptions to raw material imports (ILO, 2020). Of all the consumer goods and services, the travel and tourism industry followed by the fashion and luxury sectors have been the most negatively impacted by COVID-19 (Martinez-Pardo, et al., 2020). The debilitating effects of the pandemic impacted the fast fashion industry which was among the early casualties due to the delocalized supply chain of raw materials and outsourcing of manufacturing. Stringent lockdown norms leading to factory shut-downs impacted millions of workers and enterprises in most garment supply chains with an observed 'ripple effect' across several dimensions. This disruption caused a vicious cycle wherein manufacturers across the world no longer received new orders, and nor could they Fulfill their current commitments leading to cancellation of completed and near-complete orders that resulted in a sharp decline in retail sales. For example, within a month of widespread lockdowns across North America, Bangladesh as the second-largest exporter of clothing in the world with 6.4 percent of the global share, cancelled orders worth USD 3.17 billion by April 2020 (Majumdar, Shaw and Sinha, 2020). The market value of the Indian domestic textiles and the apparel industry estimated at USD 106 billion in 2019-20, fell to USD 75 billion in 2020-21 (Wazir Advisors, 2021; The Textile Magazine, 2021).

The swift pace of the garment business from design ideation, production, distribution, and sales typifies fast fashion (Li, 2012). The incessant movement of fast fashion necessitates the endless search for the next 'new' leading to an incessant stream of brainstorming on creativity and trends, sampling, and even appropriation and borrowed inspiration, which calls for discussions on intellectual property laws (Cox and Jenkins, 2005). Intellectual property (IP) as defined by World Intellectual Property Organization refers to 'creations of the mind, such as inventions; IP is protected in law by, for example, patents, copyright and trademarks, which enable people to earn recognition or financial benefit from what they invent or create' (WIPO, n.d.). By striking a balance between the interests of innovators and wider consumer interests, the IP system aims to foster an environment in which creativity and innovation can flourish. The National IPR Policy approved by the Government of India in 2016, is a vision document that encapsulates key issues related to Intellectual Property Rights (IPR) on a single platform. Taking all linkages into account, this policy aims to create and leverage synergies among all forms of IP, concerned statutes and agencies.

All organizations recognize the imperative of protecting and regulating new developments by guaranteeing the maker and company against the unauthorized appropriation of the innovative aspects of new products. The fast fashion industry is no exception as the protection of original designs, materials, manufacturing processes, standard operating procedures, supply chain, and profitability are paramount. As in the case of other intellectual and creative domains, the fashion industry develops new product ranges in each season using innovative techniques and specialized technologies. Each design represents an intangible asset of the brand which is as valuable as its physical assets. It therefore becomes necessary to safeguard the original design through IP protection. Among the range of IP tools, the protection of new or original designs each season is most relevant to the fashion industry. Often these designs are not usually registered because of short product life cycles, which may not justify the considerable time and financial cost incurred. A robust IPR-based protection policy safeguards the stakeholders including owners, suppliers and designers.

Before the onset of COVID-19, the fast fashion industry had shorter product lifecycles. During the first wave of the pandemic, nationwide lockdowns and economic slowdown led to acute financial crunch, high retrenchment, and excessive inventory build-up resulting in the shut-down of several firms. The challenge of retaining its market share required the fast fashion industry to consider and initiate a major paradigm shift in its business strategies. Dependency on the speed of business gave way to the need for understanding the trajectory of the consumers' mindset and purchasing behavior. Consumers being less prone to buying fast fashion at this critical time, caused fashion firms to review their usual decisions of investing in new technology, hiring new personnel, and continuing with fast cycles of new range developments. Catalyzed by increasing penetration of the internet enabled the fashion industry to reach out to consumers, leading to online retail witnessing a strong growth surge. This was attributed to changes in consumer preferences that guide consumer behavior wherein their emotions, attitudes and preferences affect their purchasing decisions. Consumer behavior is defined as the study of individuals, groups, organizations and all related activities associated with the purchase, use and disposal of goods and services (Clootrack, n.d.). Deeper understanding of the altered consumer behavior becomes critical as does the need for developing robust IPR protection policies.

The current size of the fashion business in USA alone is estimated at USD 400 billion (Raustiala and Sprigman, 2008; Li, 2012) and a USD 2.4 trillion industry that employs

approximately 60 million people globally (United Nations Alliance for Sustainable Fashion, 2020). It becomes important to study the impact of the decisions and actions of the fashion industry on the other factors in fashion. Due to COVID-19, the global fashion and textile industry incurred losses estimated at USD 500 billion attributed to the unsustainability of market demand, fabric wastage and inadequate recycling (ibid.). Fast fashion, a major component of the global fashion business was reportedly valued at 36 billion USD in 2019 (Sabanoglu, 2020). The size of the fast fashion industry is based on global connections between producers and consumers. The pandemic has altered the landscape of fashion consumers across the world in terms of their demographics, lifestyle and consumption patterns. Sustainability has become a critical issue that requires a vision that can evoke brand loyalty and trust among the consumers, and supported by a comprehensive IPR policy.

Literature Review

A literature review of the key aspects of IPR policies related to the fast fashion industry in the pre- and post pandemic period is undertaken for this purpose. It becomes important to analyze the impact of the decisions and actions of the fashion industry on the other actors in fashion.

Key aspects of IPR protection

Counter the ease of copying

The incremental growth rate of the fast fashion business and the financial implications of this continued growth are instrumental in the interest and involvement of companies from across continents in this business. Fast fashion has been the most sought-after business model as it is considered as an enabler of profit generation for large corporate organizations to small brands (Cox and Jenkins, 2005). Fashion firms cater to the mass market where low-cost merchandise is sold at cheap prices. A wider supplier base to process higher volume of production in minimum time holds the possibility of data leaks (Monseau, 2011). The success of fast fashion brands is often associated with design piracy, a phenomenon that has become a major issue in this era of automation, autonomy and advancement. Design piracy refers to an ever-increasing practice of enterprises that try to profit from the creations of others by producing copies of original designs under a different label (Yanisky-Ravid and Monroy, 2020). The intense competition of maintaining a hold on the market compels the fashion industry to start production based on designs copied from original sources which are often geographically distant. In the digital era, technology to instantly transfer digital

data as well as 3D printing has compounded the problems associated with copying (Tokatli, 2008). There are high benefits for the fashion industry from investing in more robust IPR protection through technology transfer to prevent rapid copying particularly by developing countries.

High technology and IPR

IPR can solve the problem of design piracy by means of technology with features of encryption and concealed coding of operations. Technology intervention can help locate and identify designers, manufacturers and suppliers through a unique identifier code. This is achievable through quick response codes, IP hashing and radio-frequency identification (RFID) chips attached to each product. Technology can help in monitoring the manufacturing process of each production real time. Consumer preferences can guide the trajectory of the fashion product by challenging and facilitating the stages of making, from fiber, fabric, production via distribution channels to retail outlets. Advanced technology capabilities provide IP protection extending to implications for the distribution of and access to IP. Technology safeguards have authentication patterns and security layers based on anonymous encrypted legal code which protect IPR by ensuring that original design prototypes cannot be legally sold to unauthorized parties**.** This enables IPR curb problems of third-party authentication, market cannibalization, and counterfeiting in the fashion industry (Yanisky-Ravid and Monroy, 2020).

Challenges of fast fashion and IPR protection

IPR can support the fashion industry through countermeasures to control attempts to copy and control content in the social media. It helps to control false claims by legitimate parallel imports and authorized vendors of secondhand goods. It also supports fashion brands to license their design catalogue as e-books from being downloaded by any unauthorized agency. Thus, IPR policy can help in tracking genuine items throughout their lifecycle and provide assurance to the clients that they are buying genuine fashion products and more so, from an authorized platform (United Nations Alliance for Sustainable Fashion, 2020; Li, Frederick and Gereffi, 2019; Sheff, 2018; Cohen, 2012; Tokatli, 2008).

Consumer behavior

Impact of COVID-19 on consumer preferences

As an extension of the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB) developed by Icek Ajzen in 1991, is based on the premise that individuals

make logical, reasoned decisions to engage in specific behavior by evaluating the information available to them. In this theory, Ajzen proposes that individuals control their socially relevant behavior wherein one driver of this behavior is their intention to engage it. TPB facilitates the recognition of indicators of consumer behavior guided by psychological, social, cultural, economic, and personal factors. It follows that applying the principles of TPB to the fashion industry helps marketers to understand consumer behavior and purchasing mindset and finally to reframe company policies including IPR policies. Therefore, any change in consumer behavior can be broadly categorized under consumer economic changes, consumer preference changes and consumer lifestyle changes. In this article, it is proposed that any change in the consumer mindset on paradigm shift on IPR or simply, excellence or new changing patterns/ processes in the post pandemic period, will be also influenced by the previous three factors as consumer economic changes, consumer preference changes and consumer lifestyle changes. The postulation and background of these three factors underscore their relevance for fashion in the post pandemic period. Based on these aspects, the proposed research/empirical testing model is formulated to derive results and draw conclusions.

Consumer economic shift

Consumer Economic Shift (CES) is the shift or change in preference of consumers during the purchase of consumer goods that may include a wide range of retail products. CES depends on the consumer's purchasing power, brand loyalty, discretion shopping and consumer economic recovery (Amed, et al., 2021). CES highly depends on the economic capability or wallet size of the consumer during the purchase. It may vary significantly under different economic conditions such as levels of consumer spending on optional purchases such as luxury fashion, high-end real estate, luxury vacations, automobiles and electronics. COVID-19 has resulted in many people being laid off, compulsion of accepting pay-cuts. The demand for fast fashion has reduced due to lower purchasing power of the consumer. According to the US Bureau of Labor Statistics, in April 2020 national unemployment was 14.8 percent, the highest in history since data collection started in 1948. At the end of 2020, the national unemployment rate fell to 6.7 percent in December, but remains almost twice as high as it was before the pandemic (Falk, et al., 2021). In India, unemployment rate in urban areas rose to 20.9 percent during the April-June quarter of 2020, as compared to the unemployment rate of 8.9 percent in the same quarter in the previous year (Kumar and Srivastava, 2021). This reinforces CES as a very vital factor to determine

the consumer behavior and formulating higher excellence in IPR policies. Based on this, the following hypothesis is proposed:

H1: Consumer economic shift have a positive impact on excellence in IPR after COVID-19.

Consumer preference shift

Consumer Preference Shift (CPS) is a model by which the shift or change in consumer preferences for the bundles of goods available in the market is measured and ranked in terms of the levels of satisfaction that the consumer obtains from their consumption. Consumer preferences are indicated in multiple convenience-based dimensions such as health, environmental and ethical purchases, and analysis of their relevant pros and cons in the consumer's mind. There is an increasing consumer awareness for environmental and social concerns in the fast fashion business model. The McKinsey & Company and Business of Fashion Status Report states that the pandemic has increased consumer awareness of social injustices in the supply chains (Amed, et al., 2021). In a survey of more than 3,000 people across eight countries by Boston Consulting Group, 70 percent of the respondents claimed to be more aware of human activities threatening the climate and environment which, in turn, is a threat for humans (Kachaner, et al., 2021). Increased environmental awareness is reflected in consumer purchasing decisions. According to a study by Accenture (2020), 61 percent consumers made purchasing choices that were greener, more sustainable or more ethical, while 89 percent stated that they would be likely to continue with such purchasing decisions after the pandemic. Consumer preference shift depends on their health consciousness, environmental consciousness and ethical purchases (Amed, et al., 2021). Hence, CPS is a crucial factor to decide the consumer behavior and formulating higher excellence in IPR policies. Based on this, the following hypothesis is proposed:

H2: Consumer preference shift have a positive impact on excellence in IPR after COVID-19.

Consumer lifestyle shift

Consumer Lifestyle Shift (CLS) is the shift or available choices related to the lifestyle of a person that involves their consumption pattern, behavior in the marketplace, practices, habits, conventional ways of doing things, allocation of income, and reasoned

actions. It reflects an individual`s attitudes, values, interests, and views towards society. Historically, global crises have been instrumental in accelerating social changes (Reeves, et al., 2021). Lockdown restrictions led to the acceleration in online shopping. Accenture recorded an increase of 169 percent in e-commerce purchases from new or low-traffic consumers since the pandemic began (Accenture, 2020). Another reason for the rise in e-commerce may have been due to changes in store shopping as for hygiene reasons, as customers were barred from trying clothing items before buying. This was the main attraction for physical purchases and restrictions on online shopping. According to the McKinsey Global Fashion Index, digital power is a key trait among the top 20 fashion companies with the highest economic performance and highest profits during the pandemic. Online fashion trading itself recorded a price increase of 76 percent from December 2019 to October 2020. Consumer lifestyle shift highly depends on the consumer's consumption patterns, safety decisions, e-commerce experiences, shopping frequency, and internet use (Amed, et al., 2021). It is evident that CLS is an essential factor to govern the consumer behavior and formulating higher excellence in IPR policies. Based on this, the following hypothesis is proposed:

H3: Consumer lifestyle shift have a positive impact on excellence in IPR after COVID-19.

Proposed Integrated Business Model of IPR and Consumer Preference

It is crucial to maintain the popularity of fashion among consumers and retailers, even during the pandemic. The proposed integrated model of IPR and consumer preference (Figure 1) needs to be implemented across all fast fashion retailers.

Data collection and research methods

In this exploratory study on IPR and consumer behavior, the identified respondents were top managerial personnel from 31 fashion and garment industries who were requested to fill an online questionnaire on Google Forms. The sample questionnaire on Consumer economic shift (CES), Consumer preference shift (CPS) and Consumer lifestyle shift (CLS) required responses on a five-point Likert scale. Non-probability based purposive sampling has been used to increase the valid response rate. The questionnaire includes questions on issues pertaining to IPR issues after the pandemic. The city wise/zone wise proportion of responses is shown in Table 1. The data has been analyzed by SPSS 20.0 software for explanatory factor analysis (EFA) and Smart PLS software 3.0 for confirmatory factor analysis (CFA) by structural equation modeling (SEM) technique for final hypothesis results (Table 2-6).

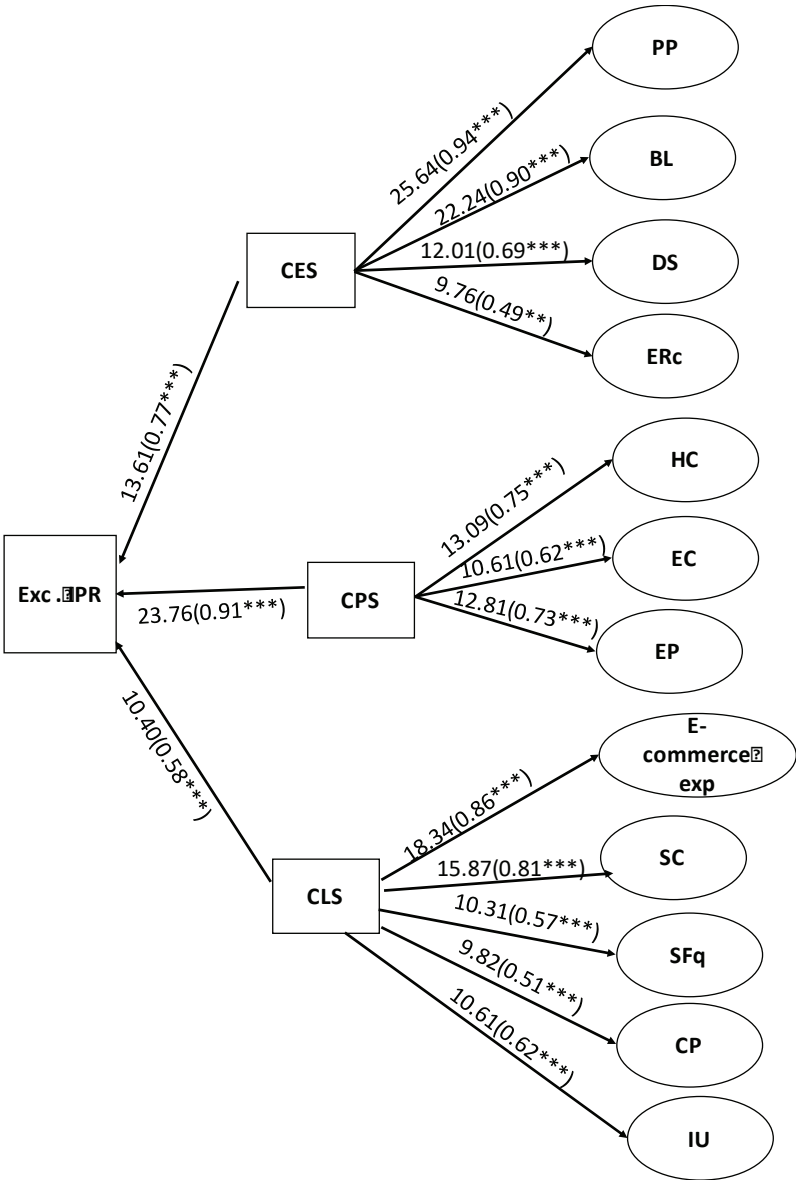

Figure 1: Conceptual research model on IPR applications in fashion and the partial least square (PLS) results

Dimension list - Exc. IPR: Excellence in IPR after COVID-19, CES: Consumer economic shift, PP: Purchasing power, BR: Brand loyalty, DS: Discretion shopping, ERc: Economic recovery, CPS: Consumer preference shift, HC: Heath consciousness, EC: Environmental consciousness, EP: Ethical purchase, CLS: Consumer lifestyle shift, E-commerce exp: E-commerce experience, SC: Safety choices, SFq: Shopping frequency, CP: Consumption pattern, IU: Internet usage

Table 1: Demographic profile data for the respondents (31 responses/firms)

Variables (IPR & CP)	**Total responses**	**First-wave frequency**	**second/third -wave frequency**	**Chi-square test**
				X2= 4.55
1	3	1	2	df=5
2	2	1	1	p=0.473
3	2	1	1	
4	10	6	4	
5	6	2	4	
6	8	1	7	
Sum:	31	12	19	
Firm size				
1-50	2	1	1	X2= 2.43
51-100	5	4	1	df=4
101-250	10	4	6	p=0.656
500-1000	6	3	3	
>1000	8	5	3	
Sum:	31			
Job title				
CEO/president	3	2	1	X2= 4.37
Vice president	4	3	1	df=4
Manager	13	4	9	p=0.358
Director	7	4	3	
Others	4	3	1	
	31			
Code		1	Mens garment makers	
(IPR & CP: IPR and consumer preferences)		2	Womens garment makers	
		3	Kids garment makers	
		4	Unisex garment makers	
		5	Lingerie makers	
		6	High-couture makers	

Table 2: Assessment of discriminant validity for IPR and consumer preference (CP) applications

	Inter-construct correlations			
Construct	**AVE**	**CES**	**CPS**	**CLS**
CES	0.679	0.824		
CPS	0.704	0.612	0.839	
CLS	0.747	0.686	0.661	0.864

(Inter-construct correlations: for ensuring the discriminant validity, i.e. formulated construct or dimension is totally different from each other, so there is no multicollinearity in the final regression PLS results)

Table 3: Confirmatory factor analysis (CFA) for IPR and CP applications

Items	**R^2 coefficient**	**AVE**	**Reliability**
CES	0.77(13.61)	0.65	0.79
CPS	0.91(23.76)	0.76	0.82
CLS	0.58(10.40)	0.81	0.87

(R^2 coefficient: Standard root mean square value for partial least square (PLS) results, Reliability: Composite reliability for the constructs or dimensions)

Table 4: Path coefficients (standardized) and their significance values for IPR and CP applications.

Hypothesis	**Path description**	**R^2(Loading)**	**t- statistics**	**Hypothesis status at 95% CL**
H1	CES->IPR	0.77	13.61	Supported
H2	CPS->IPR	0.91	23.76	Supported
H3	CLS->IPR	0.58	10.40	Supported

(R^2(Loading): Path value obtained in PLS, t-statistics: Student t-test value; where sample mean is known but population mean is unknown, Hypothesis status at 95% CL: t-statistics value at 95% confidence level)

Table 5: Model fit values for IPR and CP applications

Constructs	Fit index- SRMR	Q^2-value	HTMT value	FLC criteria	f^2-values (effect size)	Acceptability
CES	0.063	0.358	0.939	0.749	0.589	Yes
CPS	0.035	0.507	0.614	0.728	0.362	Yes
CLS	0.054	0.656	0.897	0.707	0.213	Yes

(Model close fit index- SRMR: Standard root mean square residual (accepted cut off value <0.08), HTMT value: Heterotrait-Monotrait ratio of correlations (accepted cut off value <0.9-1), FLC criteria: Fornell-Larcker criterion (accepted cut off value <0.9-1.0), f^2-values (effect size) (accepted cut off value <0.8, Acceptability: construct overall acceptability or reliability and validity)

Table 6: Results of hypotheses analysis on IPR and CP application - Conceptual model.

Hypothesis	t-value	Hypothesis status (Accepted/Rejected)
H1: Consumer economic shift have a positive impact on Excellence in IPR after COVID-19.	13.61	H1: Accepted
H2: Consumer preference shift have a positive impact on Excellence in IPR after COVID-19.	23.76	H2: Accepted
H3: Consumer lifestyle shift have a positive impact on Excellence in IPR after COVID-19.	10.40	H3: Accepted

Discussion

The overall findings have two-fold implications for this study.

Theoretical implications

The global crisis of COVID-19 has put all the market sectors into a tailspin. The secondhand market is expected to grow to twice the size of the fast fashion market in the next five years (Ellen MacArthur Foundation, 2020). Therefore, it becomes very important for a fashion brand to formulate robust intellectual property rights with corresponding framework, profitability and business influences on the overall return of investment. It is also crucial to understand the factors that may affect business excellence through robustness of IPR policies. As the market is currently facing constraints due to

financial and value chain crisis, it becomes crucial to understand the interconnections among the dimensions of CES, CPS and CLS, to overcome turbulence and to increase business revenue. It is envisaged that this research model can help both fast fashion and luxury fashion segments to understand their respective consumer mindsets and preferences regarding IPR policies in the pre- and post COVID period.

Managerial implications

This study can enable professionals and managers in the fast fashion industry to control surplus expenses on IPR policy formulation and maintenance. Formulating relevant IPR policies based on consumer preferences is likely to help such firms and brands understand the psychology underpinning and overarching as well as subtle changes in consumer motivations and consumer behavior. Thus, managers can postulate consumer's buying models based on the current IPR-based consumer behavior model rather than the conventional need-based consumer behavior model. This is likely to offer significant support in coping with market turbulence like varying sales orders, return rate, shelf-life order time, purchase-to-procure, right time for product launch, takt time measurement, upcycling and downcycling rate, increasing product acceptance rate, and numbers of return customers. It is imperative for fashion brands to capitalize on their business strategies at an early stage to protect the confidentiality of personal and business data. This is likely to help in the recovery of financial and marketing conditions in the post COVID period. Apparel companies are experiencing an unprecedented drop in revenue due to the supply and demand disruption precipitated by the pandemic. Corporate citizenship and more product lines with stable product lifecycle (PLC) can be ensured by a robust product ethos or storyline preservation that will deter plagiarism and copyright infringement. This will ensure that intellectual and financial investment in research and development by the company for higher business outcomes. Several fashion firms are struggling to stay afloat and survive the pandemic crisis. By firmly adhering to their IPR policies, companies can substantially reduce their production cost and ensure customer satisfaction. The current integrated IPR and consumer preference model offers a potential solution for most fashion retailers and producers.

Future Research Direction

This research model has not included other subtle aspects of consumer behavior aspects such as product variety, social groups and product risk as these are relevant to consumer behavior-based excellence in the IPR model. These new research directions

can help predict consumer mindset by including variables such as age, traits and opinions of individual customers as well as demographic segmentation, geographic segmentation and behavioral segmentation for further study.

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Decoding Indian Color Design: A Strategy for the Post COVID Future

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Abstract

India has a recorded history of textiles spanning five thousand years. In the past decades, color was treated as a marketing tool for high profits, which increased the unrealistic production of textile products as colors evoke feelings and play a strategic role in capturing consumer aesthetics to choose a textile fashion product. Literature review indicates the absence of a systematic approach to the use of colors based on the preference of the consumers in the domestic market. Being the unorganized setup, the domestic textile and fashion industry was seriously impacted due to the novel coronavirus pandemic that has created uncertainties on every front. This paper explores the textile design contemporary color practices during pre-COVID and peak and post-peak COVID times in India. The exploratory research was carried out in a phased manner, interviewing textile experts and capturing consumer color preferences. The Indian color indicators have been explored by understanding the relationship between color inspirations, palette development and consumer preference from the stakeholders of the textile and fashion industry. The result showed variety in Indian consumer color preferences representing the changes in society. The study also explored the relevance of the *Rasa* theory that was created Before the Common Era in the contemporary scenario to indicate Indian aesthetics. The theory of '*Rasa*' celebrates human psychology through emotions and '*rang'* the colors. The emerging changes were represented in nine themes of the theory and three major consumer color segmentation were generated highlighting the consumer contemporary approach. This paper further proposed a systematic approach for capturing Indian color aesthetics as a conceptual framework for initiating contemporary color research. The paper suggests color as a symbol of the circular economy by capturing Indian emotions to understand the color play and as a strategy to transform designers' approaches towards conscious development.

Keywords: Indian textile design practices, *rasa* theory, textile designers, color design, multicultural, color and emotions

Introduction

The impact of COVID-19 as the key zeitgeist in India has resulted in widespread uncertainty across society in organized as well as unorganized workplaces. This disruption has also reverberated across the Indian textiles and fashion industry, raising compelling questions about the current practices and the need to initiate changes that can boost its growth. The circular economy approach has been identified as a transformative COVID-19 strategy promoting increased utilization over increased consumption (Ellen MacArthur Foundation, 2017). Though the current situation is fraught with challenges, it also presents an opportunity for design businesses to understand the psyche of the customer to ascertain their altered aesthetic perspectives. The recent rise in research on color psychology explores various dimensions of the relationship between color and psychological functioning as a determinant of behavior during the COVID-19 pandemic. The work-from-home norm has seen people reconsider how colors affect their moods and behavior. Enclosed mostly within their environments, the lack of external stimulation has caused emotional despondence that is reflected in specific colors and can be positively converted through replacement by mood-boosting hues to stimulate creativity.

In this situation, viewing color under the broader rubric of design gains added significance. As the materiality of color is integral to the vocabulary of design, color design forms a crucial part of visual aesthetics and is very important in product design (Tokumaru, Muranaka and Imanishi, 2002). Best (2012) describes color design as a systemic approach towards the use of color across textile colorations. Professional designers and artists are cognizant of the rules that guide the design of effective color palettes from both aesthetic and attention-guiding points of view (Wang, et.al., 2008). Designers use color palettes in an orderly manner to achieve harmonious color by using color harmony principles (Dickinson, 2011). Choudhury (2014) describes the color order system as a systematic and rational method of arranging all possible colors or subsets using material samples. Around 400 color order systems have been compiled wherein the first-order system was devised by Aristotle around 350 BCE. The Association Internationale de la Couleur comprising eight national color associations of eight countries in their meeting in 1967, deliberated on the role of color in design (Caivano, 2006; Tonnquist, 1977).

The visual association of India with the explosion of colors stems from a cultural code embedded in its geographical diversity tempered by its distinct and heterogeneous cultural landscape and religious rituals. Color is often a culture-specific concept that finds expression in art and design. While the influence of Mughal and colonial styles

on Indian aesthetics in design is well-documented, the role of color in the narrative of British colonialism and Indian nationalism continues to be an academic blind spot (Eaton, 2013). Saffron (Hindi: *bhagava*) emerged as a hue of national importance in the late 1920s when Jawaharlal Nehru recognized it as an 'old color', while educationist and litterateur, Suniti Kumar Chatterji designated it as a symbol of Indian life, thus elevating it from its humble position as a *katcha*[1] hue (Jha, 2014). These claims necessitated assessment with a longue durée approach to unravel the complex multiplicities of color on national aesthetics (ibid.). Color is integral to Indian textiles. Jain (2011) documents Indian textiles from the 15th to the early 20th century, spanning an almost 500-year period. Singh and Chisti (2013) presented an exhaustive overview of the components that constitute the language of the traditional sari including details of the raw materials, color, motifs and techniques of heritage hand-printed and handwoven fabrics. The Asian Paints Color Next Trend Report (2021) includes a comprehensive forecast of colors, materials, textures and finishes in the area of space design.

Literature Review

Two aspects of color in art and culture that foreground any discussion on color design were studied — first, on the theories that distinguish between global and Indian approaches to the aesthetic of color, and second, specifically on the role of color in textile design.

Color theories: Navigating Indian and global aesthetics

The association of the Indian subcontinent with color is embedded in ancient literature. The *rasa* theory[2] illustrates the Indian concept of contemplative abstraction of aesthetics as an essential element of any visual or literary work or performing art especially theatre that is suggestive rather than descriptive. It deals with the typology of emotions, and their depiction, inference and transmission through works of art. Intuition for colors has been an integral part of Indian society. *Rasa* and *dharma* are two theories that underpin Indian aesthetics (Kannan, 2018). *Rasa* in Sanskrit, derives from '*ras*' literally meaning juice and therefore referring to the essence of aesthetic flavor of art, is considered fundamental (Chandran and Sreenath, 2021). Kannan (2018) elucidates *alaṅkāra-śāstra*[3] and the *Rasa* theory propounded by this *śāstra*, with greater ramifications and clarifications through centuries, has much to contribute towards many issues in modern psychology and poetics state that *alankarashastra* is a natural effloresce of the Indian ethos and the *rasa* theory therein is one of the most outstanding contributions of India to a general understanding of human emotions and psychology. Indian traditions have blended the *laukika* and *alaukika*, the mundane and transcendent (ibid.). Indians have absorbed and adopted myriad stylistic influences

and cultures. Misra and Chakraborty (2018) expressed nine '*rasa*' and their association with architectural visual design. Bharata's *Natyasastra* sums up the theory of image-making, all is futile, the recital of formulae, the counting of beads, austerities and devotion unless one has gained the knowledge of the color scheme (Mukerjee, 1965).

Johann Wolfgang von Goethe's book titled *ZurFarbenlehre* ('Theory of Colors') in 1810 was one of the earliest formal explorations of the psychological impact of different colors on mood and emotion. Subsequently, scholars have conducted experiments on the association of color with emotions, gender, food and culture. While there is increased interest in research on color with important developments in both theoretical and empirical outcomes, literature on color and psychological functioning are at a nascent stage of development (Elliot, 2015). Pal (2016) summarizes the association of color, psychology and its symbolic meaning as presented in Table 1.

Table 1: Association of color, psychology and symbolic meaning
Source: Pal, 2016

Color	Psychology	Symbolic meaning
Red	Hot, affectionate, angry, defiant, contrary, hostile, full of vitality, calm, tender.	Happiness, lust, intimacy, love, restlessness, agitation, royalty, rage, sin, blood
Blue	Cool, pleasant, leisurely, distant, infinite, secure, transcendent, calm, tender.	Dignity, sadness, tenderness, truth.
Yellow	Unpleasant, exciting, holistic, cheerful, joyful, jovial.	Superficial glamour, cowardice, sun, light, wisdom, masculinity, royalty (in China), age (in Greece), prostitution (in Italy), famine (in Egypt).
Orange	Unpleasant, exciting, disturbed, distressed, upset, defiant, contrary, hostile, stimulating.	Sun, truthfulness, harvest, thoughtfulness.
Purple	Depressed, sad, dignified, stately.	Wisdom, victory, pomp, wealth, humility, tragedy.
Green	Cool, pleasant, leisurely, in control.	Security, peace, jealousy, hate, aggressiveness, calm.
Black	Sad, intense, anxiety, fear, despondent, dejected, melancholy, unhappy.	Darkness, power, mastery, protection, decay, mystery, wisdom, death, atonement.
Brown	Sad, not tender, despondent, dejected, melancholy.	Melancholy, protection, autumn, decay, humility, atonement.
White	Joy, lightness, neutral, cold.	Solemnity, purity, femininity, humility, joy, light, innocence, fidelity, cowardice.

Color in textile design

Human need is the origin of the design, not only physical but also psychological, socio-cultural, ecological and spiritual terms (Balaram, 1998). The properties of hue, lightness, and chroma are integral constituents of color and the most challenging attribute of design (Eaton, 2013). Claiming that prior studies on preferences for the harmony of color combinations reflected uncertain results, Schloss and Palmer (2010) developed criteria for differentiating among three types of color pairs. Color perception is a psychological phenomenon whose pervasive presence in everyday surroundings has the embedded capacity to influence perspectives and evoke emotions. Color psychology explains how color affects human emotions and is used extensively to understand the consumer psyche for higher acceptability of a designed product (McKelvey and Munslow, 2008). In content marketing, the choice of color is important as an emotional cue that nudges the consumer to see, feel and act in specific ways.

The process of designing textiles involves the development of colors, textures and forms in planned repeats and layouts to maximize their effectiveness. Color is a subjective factor wherein its context and relationship with design have been explored by authors. Cassidy (2013) posited that factors such as trend, season, culture, age and gender indicate human desire to conform or express individuality. Color signifiers, indicators and insights lead to the development of color palettes (Kress and Leeuwen, 2002). In western countries, the process of color palette development is through forecasting which considers sales data of the previous season as well as current influences, socio-cultural context, economic conditions, and designer intuition (King, 2011). Local associations with specific colors often vary across cultures, regions, nations, and personal preferences (Hidefi, 2017).

However, there is a gap in the available data on the contemporary color preferences for textiles in India. The design process of textile development from inspiration to adaptation to derive a seasonal color palette employed by the Indian textile designers is not documented. An exploratory approach to this qualitative research was undertaken to understand the reasons and other undefined aspects of textile design practices in India with a specific focus on the ideation process of color palette development employed by textile designers during the pre- to post-peak periods of the pandemic. The ancient *rasa* theory forms a point of reference in tracing the ideation process from the identification of color inspiration sources to the color palette development by textile designers. Data is supplemented by the verification of consumer preferences to develop an Indian color indicator.

Research Methods

The research methods were determined on the basis of these objectives. An exploratory research methodology was adopted to gain insights regarding the perspectives of textile design practices in the textiles and fashion industry in India during the pre-, peak and post-peak COVID periods. In the first phase of the study, it was necessary to identify the respondents to get an insight into color adoption and its uses in textile design development for the Indian market. Twenty-three professionals and experts from the fashion and textile industry across India were identified with the singular intention of studying their color design practices. The sample included 11 textile designers with experience of 5-14 years, 2 fabric manufacturers, 3 textile product retailers, 2 fashion designers, 4 textile design educators and 1 textile trend expert. The lockdown in India started with the first wave of COVID-19 in 2020, the peak period from April to July 2021 followed by the post-peak pandemic period (Soni, 2021). Due to COVID protocols, face-to-face interviews were not feasible and therefore, telephone interviews were conducted. Ten questions were framed to get insights of the experts on their sources of color inspiration, consumer color preferences, the extent of use of international color forecast, the rationale for color selection and palette development, shade card development, regional aesthetics, theme development, periodicity and time required for range development, Indian color forecast, consumer segmentation and variations in color preferences. The interview schedule did not include questions on the application of colors to fashion textile products.

During the interviews, there was perceived reluctance among the respondents to answer certain questions related to their professional design and business practices. Their hesitation was allayed by initiating general enquiries on their health and work during the pandemic. Duration of the interviews was 40-50 minutes. Telephonic conversations were transcribed using 'Otter' software. The collated data was subjected to content analysis and the transcribed data was coded for categorization and development of themes. The primary objective of this method was to collect authentic insight into people's experiences (Schloss and Palmer, 2010). After decoding the collated data, the codes were verified by corroborating them with the color preferences of the consumers during the same period.

The study also required collection of color preferences from the consumers. As a faculty member in the undergraduate Textile Design program in NIFT Delhi, the author-researcher used a convenience sampling method to identify 35 students of semester VI as the consumers. Research activities were initiated in July 2021 during the second

wave of COVID. The purpose of the study was explained to the student respondents who were then required to identify color signifiers through image collection from selected regions for color palette development. Based on this process, the student-respondents developed 5-8 color palettes. A significant factor that influenced color selection was their knowledge and prior associations with color (Cassidy, 2013). Due to the pandemic restrictions, discussions were held remotely through Zoom and Google Meet sessions. However, visualization and digital communication of color on digital devices posed problems as colors do not always translate well from the physical to digital world, and differ due to monitor brightness and color model selection, when shared among the participants. To overcome these technical constraints, identified color palettes were digitally generated using a color recipe. The RGB color model was identified and the Munsell color R model was used for the digitization of colors (Ibraheem, et al., 2012)

In the third phase, codes generated from interviews with experts and consumers were analyzed to generate a perspective for contextualization, categorization and theme generation. As the outcome of the first and second phases indicated a shift towards emotions, it was decided to compare the themes under the *rasa* theory construct. The inspiration themes were categorized to observe the contemporary Indian color design. This process decoded the relationship between emotions and inspiration sources. The final themes that emerged were shared with textile designers who were part of the interview discussion in phase one, for their feedback and corroboration.

Results and Discussion

Insights obtained from the interviews conducted with the experts in phase one and the consumers in phase two were compiled for generating themes. Salient insights obtained through this study were categorized into color inspiration indicators, color palette, Indian color aesthetics, color order, development cycles and color-based consumer segmentation. Data obtained in phases 1 and 2 are presented together to bring out the corroboration of emerging themes. The color emotion relationship viz., the color indicator insights observed through experts' interactions and consumer preferences were summarized in a tabular format and presented as a pictorial representation. This table was named 'Color Cue' as it provided cues for color insights for the development of color palettes.

Color inspiration indicators

The textile industry participants informed that their intuition grew from their experiences, and is the prime source of color inspiration for textile designs. They

informed that for developing a seasonal color palette, they refer to resources on color such as books on traditional textiles with photographs and related visuals of the natural environment, trade magazines on textile design and technology, social media platforms notably Instagram and Behance, websites, cinema**,** Indian crafts, trending designer work, international forecasts, client briefs, social events and travel. For Indian product lines, the concentration is usually on the cultural ethos encapsulated in its textiles, luxury homes, rituals and customs, celebrations, historical events, traditional, color narratives and symbolism, popular and social events, heritage, architecture, tradition and ethnicity.

Textile designer Prince Kunal of Kriti & Kunal Design Studio said that designs are now increasingly bespoke, having planned according to the particular taste and requirement of the consumer with attention to every detail. The inspirations are coming from Indian deep-rooted stories and narratives. N. Roshan Singh, Chief Creative Officer, Sarita Handa conveyed the current state of uncertainty and unpredictability of consumer preferences and the periodicity of purchases. This makes it the right time to generate experimental color palettes that can emerge as trendsetters.

Most participants informed that after the disruptive times, their concentration is on spotting new inspirations to generate a 'point of interest'. The most potent source of inspiration is the digital platform where new color vocabularies are constantly explored. The experts stated that traditional boundaries are blurring and gradually transforming. There is a move away from traditional color sources such as traditional textile books. 23 percent of the textile designers informed that they prefer to question the norms and generate alternative moods to capture this change. However, 17 percent of the experts informed that though traditional sources of color inspiration continue to be predominant, they now experiment with color proportion and saturation levels to highlight the newness. Around 35 percent of the participants informed that colors are now neither sociologically determined nor culturally dependent; they have evolved from sources that have not been explored earlier. Most experts informed that they refer to the international forecast as it has scope for interpretation. 64 percent referred to it for saturation and value that characterize visibly new colors; 22 percent use it for developing colorways for global consumers and 14 percent use it in its entirety. Retailers informed that during the peak COVID period, they opted for cost reduction by not introducing new colors. This drastically affected the practices of textile designers. Textile design consultant Saloni Sharma informed that increase in purchases of home products with emotive color palettes generate a calm mood. This statement gains

relevance as consumers are spending more time at home and therefore, are increasingly engaged in home décor.

With regard to color preferences exercised by the consumer, inspirational visuals were not limited to nature and traditional textiles, but were collected from diverse cultural settings. 56 percent of the selected visuals were related to a spiritual approach for calming and enhancing moods, 24 percent preferred traditional color sources and 20 percent observed unexpected sources of inspiration. Most consumers chose unique regional sources as inspiration for personal choices highlighting their region sensibilities to celebrate their identity. Most of them identified inspiration from sources such as food, places of tourist interest, local lifestyle, dance, streetwear and developed 'meanings'. Consumers informed that during the peak COVID period, they observed a significant change in their viewpoint concerning sustainability and the environment. Some commented on the overflow of personal photographs with the family during home quarantine including images expressing a multitude of emotions from happiness to solitude and yearning**.** Based on the quality of visual research, there were variations in the color inspiration indicators. Consumers observed color inspiration from 29 states of India. Two given examples of consumer feedback indicate their thought process during the color palette development period.

Consumer 1 commented: I saw 29 hues of red, blue, green, yellow and orange which changed my views about color in India.

Consumer 2 commented: I realized the power of culture on fashion and how colors shape one's perspective with different orders of colors in the Indian landscape.

Discussion on inspiration sources led to the identification of common sources which included both traditional and new sources. Most designers opined that there was an increased commercial approach to textile design development with unlimited color mixes during the pre-COVID period. However, they felt that consumers are significantly more conscious about their purchases. To retain old clients and attract new consumers, there is a felt need to avoid repetition of previous color palettes and to emphasize originality and quality. Designers also informed that color sources also depend on consumer segmentation. Designers informed that diverse color inspiration sources were used for consumers in Tier-I cities while traditional color resources were used for consumers in Tier-II cities. Color palettes developed by the consumers also showed a visible shift towards experimentation for generating new ideas. Designers look for new inspiration sources which connect with the Indian consumers and also experiment

with colors to enthuse the consumers. Similar opinions were received from design educators who felt that inspiration sources referred to by the students have changed considerably and are increasingly reflective of a new approach to Indian colors. The visible shift from cultural to personal color preferences was reflective of the inclination towards an emotional approach to design.

Color palette

In reference to the color palette, 26 percent of the textile designers informed that Indian consumers with a global approach do not prefer identifiably Indian aesthetics. 36 percent of the retailers and manufacturers felt that increasing national consciousness is reflected in consumer preferences, which is a conscious move towards Indian aesthetics. The Indian retail sector divides India into fourzones (north, east-west and south) where the development of colorways plays an important role in incorporating regional aesthetics with global influences. Designers informed that they incorporate one black-and-white, one blue-dominant, one green-dominant and one black-and-red dominant story in the color palettes for wider acceptance. Some designers informed that sometimes traditional inspiration having a combination of pink and green colors are reshuffled or jumbled up with other inspiration having yellow and purple to generate new combinations which are not region-specific but more experimental towards new Indian palettes for the modern consumer. Such experiments were also visible in consumer preferences showing the mixing of regional colors, showing a visible move towards Indian color mixing, a generation of new national identity.

The textile designers explained that color palettes are determined on the basis of their previous experiences with consumers keeping in mind that all colors may not be preferred by all communities. While 12 percent of the designers preferred conventional colors as experimentation has inbuilt risks without confirmed selection, 17 percent preferred color selection based on international forecast periodicals for the new palette. All participants informed that the absence of data on color selection based on regional preferences makes the development of a color palette for India a challenging task.

Textile designers informed that during the peak COVID and post-peak COVID periods, they were asked by retailers to adapt earlier designs using limited colors to reduce production costs to commensurate with lower purchases during the pandemic. They also reported that in the pre-COVID period, professional color palette development was primarily based on discussions with the design marketing team while incorporating the insights and instructions of the buyer, as well as sales figures of the previous

season. During the peak COVID period, the introduction of new colors was significantly reduced and time-tested popular colors were continued due to uncertainty about the commercial feasibility and periodicity of product lines. Designers working for the domestic market informed about the challenges they faced in the absence of specific color directions during the pandemic. In this situation, the designers felt that infusion of originality could increase the consumers' acceptance.

New sources of inspiration were derived and new palettes were generated. Consumer preferences were reflected in new color palettes based on religion and culture leading to diverse attributes and preferences. A visually appealing mix of bright and soft hues was generated to reflect consumers' search for mindfulness. The consumers informed that 74 percent of the new colors were derived from unexplored sources. Experimental approaches to Indian colors were observed while 26 percent of the consumers continued with a regional mix. Three examples of consumer preferences for the color palette developed for West Bengal, Ladakh and Himachal Pradesh respectively, are given in Figure 1, 2 and 3.

Figure 1: Color palette from West Bengal

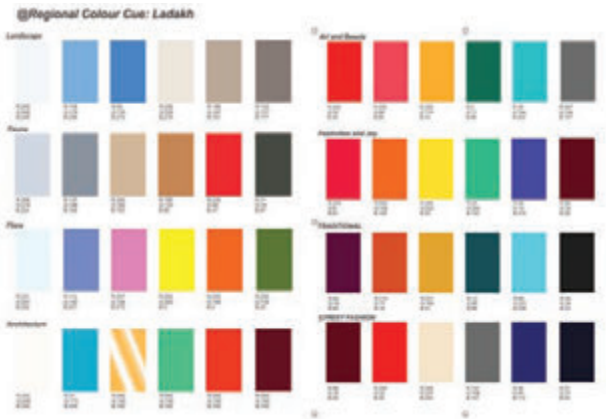

Figure 2: Color palette from Ladakh

Figure 3: Color palette from Himachal Pradesh

From the above, it was observed that the interview insights matched consumer preferences. The experimental approach to generate new color preferences arose from the emotions and physiological reactions during the pandemic. Concern for the environment, empathy with communities and admiration for the COVID heroes were celebrated by consumers which translated to color selections that were deeply personal and rooted in their own experiences of this time. Some consumers chose neutral colors to soothe their insecurities caused by isolation and economic slowdown. Others expressed hope and optimism regarding their health through the selection of bright colors. The color palette showed two distinct characteristics — one devoid of basic hues but with a predominant use of tints and shades, and the other with vibrant hues. The themes of Enhanced Luxury, Celebration, Traditional, Fashion Activism, Historic, Heroism, Formal, Indi-mix, Glocal and Religion explored by consumers showed scope for experimentation. Emotive color palettes were in two distinct categories—relaxed and energetic.

Indian color aesthetic

The color palette developed by consumers as Indian color aesthetics identified regional colors, as well as reshuffled and mixed regional colors. Designers also informed that an emerging consumer group is reflecting a conscious shift from regional color sensibilities

towards more cohesive and integrated color preferences reflecting societal changes common across Indian settings. Sanjay Garg, designer and founder of Raw Mango, expressed appreciation for the uniqueness of Indian color. His signature style is based on provocation recognized by the reproportioning of traditional colors with unexpected, modern color iterations. He emphasized his deep interest in conscious intervention to redefine the conventional Indian color palette.

Warmer tones are preferred in India as the strong sunlight in India mutes the pale hues of tertiary colors (Abraham, 2019)**.** However, in the absence of a color direction that is geared towards a distinctly Indian design sensibility, international color forecasts are used in Indian markets even though superimposition of foreign color palettes does not synchronize well with the Indian color scape. The use of Indian traditional and regional colors in more commercial settings during the pre-COVID period was highlighted by the designers. There is increasing interest in the conscious selection of visually enticing color palettes that are likely to appeal to the consumers' emotions.

Color order

Color order is defined as the order in which hues along with tints and shades are planned to generate a visually appealing palette (Choudhary, 2015). The designers informed that color orders vary in different regions of India due to cultural and religious diversity. The use of colors varies in each region celebrating the uniqueness of each region. The order also includes the proportion in which color is used. In both the northeastern and southern parts of India yellow color is preferred. However, the preference is proportionately higher in southern regions. Some regions are known for their bright color palette and others are known for their contrasting color palettes. With regard to color order usage, the designers informed that generalization of consumer lifestyle results in the development of palettes that are considered 'safe' (based on the sales figure) at the local levels. The selection of colors in specific regional-based color orders has been intuitive in their assignments.

Consumers also observed that differences in the color order resulted in a visible difference in the color palette. Consumer activity highlighted the difference in color order usage in each region in terms of hue, saturation and value. Under each indicator, consumers celebrated twenty-seven palettes representing different Indian regions. According to Cassidy (2020), a local group can indicate a better cultural color for the region than a single forecast for the entire nation. Two examples of traditional colors from West Bengal and Ladakh were compared to show the color order in hues and

tone. In Figure 4, the upper row shows the traditional color palette of West Bengal and the second row shows that of Ladakh. Figure 5 shows the festive color order of these two states.

Figure 4: Comparison of traditional color palettes for West Bengal and Ladakh

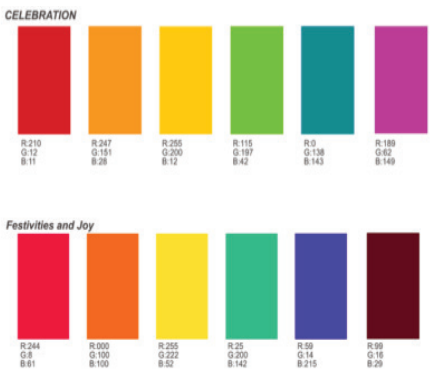

Figure 5: Comparison of festive color palette for West Bengal and Ladakh

Development cycles

The designers and retailers informed that the development cycles are based on national events, regional festivals, seasons and occasions. The experts pointed out that season-based development is an international planned activity where the pre-COVID market adopted the fast fashion model. Many online retailers informed that they develop monthly updates to match fast fashion models for increased profitability. Interviews with designers from Pantaloons and Amazon revealed that the merchandise is updated six times a year. Fashion designer Pratima Pandey informed about the singular focus of the brand with embroidery only for the summer season. Designers working for international brands in India informed their development cycles follow the Spring/ Summer and Fall/Winter seasons as in other countries. In the pre-COVID period, the development process for a collection to be launched in December would start almost

one year in advance. However, during the peak COVID and post-peak COVID periods, the buyers' turnaround time has reduced. Each company has now been working towards a distinctive development style to attract consumers. Due to the pandemic, investments in new developments are consciously planned.

Color-based consumer segmentation

Many researchers have explored consumer segmentation to understand their behavior for development of strategies which includes demographics, geographic and psychographic characteristics. Consumer segmentation divides a customer base into groups of individuals who are similar in specific ways (Hemalatha, Sivakumar and Jayakumar, 2009). With regard to the color-based consumer segmentation practices, a variety in the codes was visible while decoding the interview data. The codes indicated consumer preferences for both traditional colors and western colors. Traditional color preferences included 'pure traditional' and 'mixed traditional' aesthetics due to regionalities. A group of consumers preferring colors had two approaches, one using only western color palette, and the other mixing western color with Indian color. Experts informed that modern consumers have both regional and global color preferences. Young urban consumers expressed their preference for traditional colors and also for mixing regional colors. Designers informed that the younger generation experiments and celebrates Indian colors to express a newfound Indian aesthetics. All participants informed that the lockdown period provided overexposure to digital and smartphone content. OTT content platforms on celebrity fashion and their social media posts were viewed across multiple demographics. This indicates a visible blurring of region-specific preferences. Designers were of the opinion that at this point of time consumer preferences are based on their attitude and not limited to culture only in the post-peak COVID period. Mixed preferences were emphasized by both designers and consumers combining regional Indian and global sensibilities to project oneself as a global Indian for global competitiveness. Sudha Dhingra, Professor, Textile Design department at NIFT informed that the growing appreciation of the young generation for indigenous colors while experimenting with contemporary western choices is an encouraging trend that is likely to boost indigenous crafts and textiles.

This indicates a growing movement among Indian consumers towards color experimentation. There is a deeper understanding of harmony and complementarity of colors. Consumer preferences for softer hues and cooler tones were seen. Based

on the data collected from phase 1 and phase 2 of this exploratory study, consumer preferences have been placed in three categories:

– Traditional: Preference for Indian regional and traditional colors;

– Global: Preference for international colors and mixing them with Indian colors;

– Urban: Preference for mixing regional and traditional colors, as well as mixing western and Indian colors.

Color cue

The color cue tabulation (Table 2) links the insights collected through expert interviews and consumer preferences to develop specific color palettes relating these to the nine emotions of *rasa* theory. While relating each color indicator with a corresponding emotion, the continued relevance of *rasa* theory is observed. '*Rasa'* lists nine types with meanings and associated emotions; **'**Theme: Constructed Indicators' lists the predominant themes. The 'Color Indicator' theme gives qualitative insights into the diversity of modern consumers in India and the inspiration column reflect sources of inspiration. Once the association was developed, the color cue was shared with textile designers who were interviewed in phase 1 for corroboration. Based on designers' suggestions, two new columns, viz., the sub-theme column reflecting sub-themes included under the main themes and 'Consumer segmentation' which indicates consumer color-based group were included for ease of reference. It is further proposed that digital technologies could be adopted to capture color cues.

The discussion on multiple approaches to conceptualizing and developing an authentic color palette for professional textile design practices highlights the diversity of India's multiculturalism and consumer preferences. Consumer preference showed a significant shift from the traditional approach to adopting an emotional approach. Selection of color is based on surrounding self with security and a hopeful approach towards a new direction that is full of energy and excitement. Human psychology through nine emotions resulted in the categorization of color to map the diverse Indian consumer. The themes generated out of expert interaction and consumer preferences matched significantly with the ancient Indian *Rasa* theory of aesthetics showing its relevance even today. Consumer segmentation showed prominent categorization in three major categories - Urban, Traditional and Global, reflecting the requirement of changes at the fundamental level in textile design practices.

Table 2: Color cue

Rasa	**Meaning**	**Emotions**	***Bhāv***	**Theme: Color indicators**	**Sub theme**	**Inspiration**	**Consumer Segmentation**
Srngara	Erotic	Erotic love	*Rati*	Luxury	Heritage, Constructed luxury, Influences	Colors inspired from Indian luxury settings and International forecast colors	Traditional, Global & Urban
Hasya	Happiness	Mirth	*Hasya*	Celebration	Occasion, Events	Colors inspired from varied festivals and occasion	Traditional, Global & Urban
Karuna	Empathy	Compassion	*Soka*	Tradition	Regional, Ethnic, Folk	Tribute to culture based on respect for its history, craft traditions and sensitivity	Traditional
Raudra	Furious	Anger	*Krodha*	Fashion activism	Individuality, Voice	Colors inspired from activities fighting societal norms and environmental concerns	Urban & Global
Vira	Heroic	Energy	*Utsah*	Heroism Pride	Historical, National activities	Colors inspired from historic events and narratives of heroism	Traditional, Urban
Bhayanaka	Uncertain	Fear	*Bhaya*	Formal	Corporate working class, Disruptive times	Colors inspired from constructed discipline	Urban & Global
Bibhatsa	The odious	Astonishment	*Jugupsa*	Indimix	Emotive, Mood driven	Colors inspired from mixing different regional connect	Urban & Global
Adbhuta	The marvellous	Awesome	*Vismay*	Glocal	Western adopters, Playful, Experimental	Indian colors with international color spin	Urban & Global
Shanta	The calmness	Peace	*Shant*	Regional	Spirituality, Customs, Rituals	Colors inspired from religion and landscapes	Traditional, Global & Urban

Figure 6: Conceptual framework for Indian color design

The proposed framework for Indian color design is indicated in Figure 6**.** Under each Indian regional color, the cue indicates ways of identifying the inspiration sources. The color palette development within these indicators enables the identification of consumer emotions through a replicable process for each region. 'Fashion Activism' was among the most popular themes among the consumers, which was indicative of a deep concern for the environment and the need for a sustainable approach.

In this research, color is observed as a tool within the context of circular economy and within the textile waste conundrum. By improving the color usage to promote slow change could potentially ensure that fashion could be more sustainably consumed and valued by the consumer through their emotional attachment to its color for increased use of the product (Cassidy 2020). The proposed conceptual framework initiates the development of realistic consumer color preferences to have a better and improved conscious product association by way of re-assessing the color preferences of Indian consumers to avoid premature obsolescence of the items. Color being the most significant factors influencing consumers' purchasing behavior (Ou, et al., 2004) can ensure circularity by increasing product association rather than using it as a linear process and as a marketing tool that results in large amounts of textile waste being incinerated, landfilled, or exported to developing countries (Niinimaki, et al., 2020).

Conclusion

This exploratory study has attempted to shed light on the impact of COVID-19 on textile design practices with focus on India to generate an indigenous color design as an

analytical and creative human activity that is critical to the understanding of changing consumer preferences. The study identified repeated references to traditional color inspiration sources during pre-COVID period and a conscious move towards generating color palettes based on consumer preferences for authentic product associations. The interview interaction revealed changes in color inspiration sources reflected in consumer preferences such as diminished references to traditional, increase in new/unexplored sources, increased questioning of traditional norms, the rise of individual voices as a conscious move towards fashion activism, and representation of societal changes as an influencer for color selection. Uncertainty and unpredictability of consumer preferences and periodicity of purchases are mandating design practitioners to generate experimental color palettes that can emerge as trendsetters. The peak COVID period led to changes in consumer influences indicated towards the emotive approach. A visible change in human psychology was observed highlighting the blurring of traditional boundaries to the gradual transformation of colors; neither sociologically determined nor culturally dependent, but a personal approach. Visual collection-based color palette development showed increased leaning towards spirituality to calm and uplift moods that express a multitude of emotions. Consumer segmentation indicated the diversity and changing consumer preferences directed towards need assessment by initiating in-depth color research. The research findings are directed at re-looking consumer preferences, the genesis of which would be from the multi-dimensional upheavals of the pandemic rather than following traditional norms. At this time, designers would need to subscribe to experimental approaches to generate themes that are relevant and are likely to strike a chord with the users.

The proposed color cue structure aims to present color inspiration sources to take on an identity role between the Indian local and global market. An experimental approach to capture this as an opportunity to perfect the color process for realistic product planning is the need of the hour. Consumers are emerging from the pandemic crisis with a different mindset. A sensitive approach towards Indian consumer color taste, aesthetics, and emotional connection could positively change textile products for a longer duration with a long-term social and environmentally resilient future. His exploratory study has provided insights and changing approaches towards color practices in textile design during the post-peak COVID period and proposes to observe realistic color preferences of Indian consumers for sustainable growth.

Notes

1. *Katcha* in the context of fabric, refers to dye that has not adhered to the fabric properly and is prone to cracking, bleeding and fading.

2. The theory of *rasa* is attributed to sage-priest, Bharata (c. 1st century BCE and the 3rd century CE) and was further developed by the rhetorician and philosopher Abhinava gupta (*c.* 1000).

3. Alaṅkāra-śāstra explains the origins and outcomes of literature in India for over two centuries.

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Influence of Branded Entertainment on Viewers Buying Attitude in the Pre- and Post COVID-19 Period

Sushil Raturi

Abstract

The Indian retail sector is flooded with multiple brands across product and service categories. The brands have been developing their business models around 7Ps of marketing mix. But with almost all the brands adopting these strategies in some way or other, retailers realize that in order to attract, acquire and retain customers they need to review and remodel their business strategies. Studies on consumer buying behavior have shown that customers are looking for emotional connect and brand experience. To this end, branded entertainment forges a relatable, emotional connection with consumers, which can keep a brand top of mind in a more natural way. While extensive studies have been conducted on the subject prior to 2020 that point to the use of branded entertainment as a strategic tool and its influence on customers buying attitude, there is a gap in research on influence of branded entertainment on viewers buying attitude in pre- and post COVID-19 period in India. This article discusses the influence of branded entertainment on viewers buying attitude based on interviews of 1397 Indian respondents in 2021. Based on data analysis outcomes, it was concluded that in the post pandemic period, the role of branded entertainment was not only limited to informing viewers about the brand, but it also helped in developing an emotional attachment between the brand and the viewers. Despite developing an emotional connect in post pandemic period, the branded entertainment has not been effective in influencing viewers' intent to purchase into actual purchase.

Keywords: Branded entertainment, product placement, buying attitude, cognitive attitude, conative attitude, emotive attitude, purchase intention

Introduction

Branded entertainment is the integration of advertising into entertainment content in such a manner that brands are embedded and thus become an integral part of a storyline

of a film, television programs or other entertainment mediums. It is a form of marketing where companies produce, fund, or license the creation of entertainment media, seeking to entertain or educate audiences using branded content and messaging. This convergence of advertising and entertainment is termed as branded entertainment. The Association of National Advertisers (2011) defines it as a fully integrated means of linking a product within an entertainment source. This form requires co-creation and collaboration between entertainment, media and brands. The rise in popularity of branded entertainment in recent years, corresponds with decline of engagement for traditional advertising methods. Traditional advertising involves one-way, persuasive and obtrusive marketing communication such as TV commercials, advertisements in print media, radio advertisements, sales promotion, public relations, direct marketing, sponsoring, and web advertising including pop-ups. Competition between brands and their advertising messages that bombarded customers led to the need for unique promotional strategies by each brand (Koch and Anderson, 2009). Hudson, S. and Hudson, D. (2006) suggest that branded entertainment is a new term to describe a more contemporary, sophisticated use of product placement. Karrh (1995) describes product placement as the inclusion of branded products in cinema and television programs in return for payment in an audio and/or visual form. Branded entertainment is designed to entertain audiences using filmed entertainment products such as long-form cinematic films. This genre of marketing communication is considered as a 'hybrid form' of promotion that includes advertising (content and format controlled by the sponsor) and publicity (content and format controlled by the media) seen in cinema and television programs to influence audiences who do not explicitly identify with the sponsor (Balasubramanian, 1994). According to Patil and Bisoyi (2012), branded entertainment has been evidenced in Bollywood cinema as embedded advertising for financial remuneration that began in the late 1990s.

While there are some overlaps between branded entertainment and content marketing, the distinction emerges from their objectives. In content marketing, content takes precedence in terms of presentation as a marketing tool for a brand. The UK Branded Content Marketing Association (BCMA, 2011) defines branded entertainment as a company which pays a television channel or a program-maker to include its products or brands in their programs. Effective branded content should be authentic, have purpose and above all, it should be entertaining. A study by BCMA in 2008 to analyze the efficacy of branded content compared to traditional advertising concluded that in most cases consumers preferred a more innovative approach compared with traditional advertising

(Rakshit, 2018). To elucidate what branded content offers that a traditional channel does not, a working definition was articulated through the partnership of Ipsos with Oxford Brookes University and BCMA in 2017 as: 'Branded Content is content fully or partly funded by a brand which promotes the brand's values and provides something of value to audiences – often by entertaining, informing and/or educating'. Strazdina (2009) finds that when brand experience is communicated through an entertainment vehicle, the overall message is strengthened giving a competitive advantage to the brand. From a managerial perspective, branded content is 'any output/ partly funded or at least endorsed by the legal owner of the brand which promotes the owner's brand values, and makes audiences choose to engage with the brand based on a pull logic due to its entertainment information and/or education value' (ibid.). It was found that mostly websites featuring branded content were more successful than websites featuring typical advertisements, and were more effective at increasing the purchase intent of viewers, leading to the conclusion that in nearly every category measured, advertisement effectiveness scores on branded content sites were numerically higher than on the web in general, on portals or on advertisement networks. While content marketing focuses on a bigger mix of channels and strategies for the long term to appeal to a wider audience, product marketing banks on price and promotional variables to drive demand. In other words, product marketing is more sales-focused while content marketing is more brand-focused.

Branded content may not necessarily be a promotion for the brand, although it may still include product placement. Also known as embedded marketing, product brand placement, product integration, and in-program sponsoring, product placement is a marketing technique where references to specific brands or products being used or consumed in their natural settings are incorporated into the script with specific promotional intent of building brand awareness provides exposure to potential target consumers. It involves financial agreement between advertisers and creators of creative programs and is an effective promotional tool for brands wherein the name, product, package, signage, and other trademark merchandise are strategically positioned in exchange for cash, goods, or services (Gupta and Gould, 1997). While product placement is riskier than conventional advertising, it is becoming a common practice to place products and brands into mainstream media including films, broadcast and cable television programs, computer and video games, blogs, music videos/DVDs, magazines, books, comics, Broadway musicals and plays, radio, internet, and mobile phones (Stephen and Coote, 2005).

Review of Literature

Research on branded entertainment is only two decades old (Russell and Stern, 2006; DeLorme, et al., 1994). Though over 250 research articles on branded entertainment were published in 2005 alone, the impact of branded entertainment on generating business has not been empirically measured (Hudson, S. and Hudson, D., 2006). With the objective of studying the influence of branded entertainment on viewers' buying attitudes, a review of literature was undertaken.

An early example of product placement was seen in The Garage (1920), an American silent film which had several scenes featuring the logo of Red Crown gasoline. The placement of Sunlight soap —a household product introduced by the British company, Lever Brothers may have been the first documented example of paid product placement in films produced by Auguste and Louis Lumière in 1896 (Newell, et al., 2006). With the launch of television in the 1950s, brands realized the potential of this new platform, during which time, a total of 18 programs were sponsored by brands in their names (Hudson, S. and Hudson, D., 2006). The reach of brand placement was taken seriously when the sales of Reese's Pieces candy tripled within two weeks of the release of Steven Spielberg's ET: the Extra-Terrestrial' in 1982 (Tsai, et al., 2007). The maturation of product placement in movies from being merely placed to branded entertainment progress on a continuum, forging a stronger emotional connect with the consumer.

Branded entertainment and consumer attitude

According to Kozary and Baxter (2010) attitude includes 3 stages—cognitive stage of exposure to information leading to mental processing (thinking), awareness and knowledge about the communicated brand, affective stage of association and emotional response to the brand; and the conative stage of behavioral engagement with the advertised brand through discussion or purchase. Branded entertainment influences on attitude have shown that viewers exhibit a positive attitude to branded entertainment, which leads to increase in sales by enhancing beliefs and strengthening the emotional connect with the brand (Schmoll, et al., 2006; Gupta and Gould, 1997). Branded entertainment is created by brands in entertainment medium in such a manner that it brings positive action, happiness or prestige in consumers' minds and ultimately converts to purchases (Morton and Friedman, 2002).

Branded entertainment and brand awareness

Findings of the study on the benefits of branded entertainment summarized by Hudson, S. and Hudson, D. (2006) reveal that it helps in generating authenticity for producers as it adds realism to film or television and other content; enhances brand awareness, recall value and converts viewers into prospective purchasers; and thus provides a solution to advertising avoidance and media fragmentation. Koch and Andersen (2009) highlight real-lived experiences as brand equity in experiential branding as a strategic choice of event based on its interrelations with brand value and content. Tsai, et al. (2007) researched to find that branded entertainment leads to higher brand awareness which results in high recall, positive attitudes and stronger purchase intentions. Chan (2012) identifies the components of branded entertainment into the study of the nature of brand appearances in movies or television programs, empirical studies of branded entertainment effectiveness, development and trends in branded entertainment, marketers' views on branded entertainment, and ethical acceptability of branded entertainment. However, Williams, et al. (2011) have pointed out the downside of product placement as the lack of control, lack of surety of successful media programing, possibility of negative character association, difficulty in pricing product placement and product placement ethics.

Branded entertainment in India

Guliani (2017) refers to the AdAge report claiming that branded entertainment content in India has been annually growing at a very rapid pace of 130-150 percent, while the study by the Content Marketing Institute (CMI) finds that more than 70 percent of brands are creating more engaging content. The size of the digital advertising market in India is INR 76.9 billion and is growing at a rate of 28 percent. According to Allied Market Research (2020), the online entertainment market size globally was valued at USD 183.1 billion in 2019, and is estimated to reach USD 652.5 billion by 2027, registering a CAGR of 20.8 percent from 2021 to 2027. These data indicate the lucrative opportunity for marketers to create content conveyed through storytelling to engage the audience. The study by Whisper Media (2021) focusses on determining the effectiveness of branded entertainment on TV viewership across general entertainment channel (GEC) genres in India. The findings indicate that branded entertainment has led to an increase in spontaneous brand recall. In the Hindi speaking and Tamil GEC genres, the increase in viewership was more than 15 percent as compared to GEC viewership in those belts which were shown content with brands figuring as advertisement in the content. It further noticed that such content also pushes the intention to purchase or to continue using the product.

Addressing the Research Gap in Branded Entertainment in India during COVID-19

The year 2020 saw the world face an unprecedented challenge due to COVID-19 that slowed down or even halted production, affected supply chains and also impacted consumer buying behavior. During this period, impulse buying was expressed in the form of panic buying mostly as stockpiling of food items, medicines and hygiene products (Islam, et al., 2020; Dammeyer, 2020) as opposed to impulse buying as an unplanned purchase of a new product without any prior experience. Home-bound during the pandemic, both work from home and attending classes have been in online mode, while television and OTT platforms have been the entertainment sources. Viewers were exposed to movies, television series, web series and shows which featured advertisements, product placements and branded entertainment, which were the same forms of entertainment in pre- COVID-19 period.

To address the research gap in Indian retail, there was a felt need to conduct a research study in the field of branded entertainment to study the change in the role of branded entertainment due to COVID-19 with reference to customers' buying attitude. With this need for research, the objective of the study was to study the influence of branded entertainment on customers buying attitudes in the pre- and post COVID-19 period. In order to get attain the objective, the following three hypotheses were formulated for the study:

$H_0$1: There is no significant difference in the viewer's perception on branded entertainment influencing their cognitive attitude in pre- COVID-19 and post COVID-19 period.

$H_0$2: There is no significant difference in the viewer's perception on branded entertainment influencing their emotive attitude in pre- COVID-19 and post COVID-19 period.

$H_0$3: There is no significant difference in the viewer's perception on branded entertainment influencing their conative attitude in pre- COVID-19 and post COVID-19 period.

Methodology

The study was conceptualized in October 2020. Secondary data was gathered from review of related literature in books, research articles and online sources. As this

was exploratory research and also due to situational constraints of COVID-19, non-probability sampling method was determined to be the most suitable within which judgmental sampling and snowball sampling method was used. The sample size of 1556 respondents comprised viewers who understand, appreciate and evaluate branded entertainment in terms of the content. Their responses were checked for accuracy, consistency and completeness of information. A total of 159 responses were rejected, and finally 1397 responses were processed for analysis. The sampling frame comprised men and women in the age group of 18-50 years at the third and fourth level of Maslow hierarchy of needs with focus on social and self-esteem needs. Primary data was collected from respondents located in Delhi, Mumbai, Chennai, Bengaluru and Hyderabad (Table 1).

Table 1: Sample size and location of respondents for the survey

S.No.	City	Number of respondents
1	Delhi /NCR	450
2	Mumbai	399
3	Bengaluru	298
4	Chennai	125
5	Hyderabad	125
	Total	1397

Primary data was collected during March–May 2021 through a structured questionnaire using online personal interview of 339 respondents through Zoom and 1058 responses collected using Google survey forms. The researcher developed a structured questionnaire with close-ended dichotomous questions, multiple choice questions and 5-point Likert scale questions to measure opinions, perceptions, and behaviors of the respondents in the pre- COVID-19 and post COVID-19 period. Data for testing the hypothesis was collected using Likert scale questions in the questionnaire that measured respondents' perception on branded entertainment influencing their cognitive, emotive and conative attitudes before COVID-19 and post COVID-19 period. Hypothesis testing was done using a paired t-test. Within t-test, two tailed t-test was performed for hypothesis testing.

Questions on the respondent's profile included details of geographic location, psychographic, demographic and behavioral characteristics. Prior to conducting the survey, a pilot test was conducted on a convenience sample of 35 viewers whose profile matched those in the sampling frame of the research study, with the intention of testing

the questionnaire to examine the validity of each question, clarity in terms of language and terms used in questionnaire. Based on identified lacuna in the questionnaire, changes were made and a final questionnaire was prepared for the survey. Frequency table, mean values and t-test using SPSS 18.0 version were decided to be used for data analysis.

Analysis

Viewers' perceptions were studied to determine influence of branded entertainment on their cognitive attitude, emotive attitude and conative attitude. The opinion of viewers was sought using five-point Likert scale. Analysis of their responses on these five attributes is presented through frequency data in Table 2 - Table 4.

Table 2: Influence of branded entertainment on viewers' cognitive attitude in pre-COVID -19 and post COVID-19 period

	Pre- COVID-19 period		Post COVID-19 period	
	Frequency	**Percent**	**Frequency**	**Percent**
Strongly Disagree	277	20	152	11
Disagree	265	19	143	10
Neutral	222	16	185	13
Agree	332	24	413	30
Strongly Agree	301	21	504	36
Total	1397	100	1397	100

Table 2 indicates that in pre- COVID period, 45 percent of the viewers agreed or strongly agreed with the opinion that branded entertainment influenced their cognitive attitude, while in the post COVID period, 66 percent of the respondents were of the opinion that branded entertainment influenced their cognitive attitude.

Table 3: Influence of branded entertainment on viewers' emotive attitude in pre- COVID -19 and post COVID-19 period

	Pre- COVID-19 period		Post COVID-19 period	
	Frequency	**Percent**	**Frequency**	**Percent**
Strongly Disagree	455	32	346	25
Disagree	445	32	261	19
Neutral	177	13	110	8
Agree	165	12	394	28
Strongly Agree	155	11	286	20
Total	1397	100	1397	100

Table 3 shows that only 23 percent of the viewers agreed or strongly agreed that branded entertainment influenced their emotive attitude in pre- COVID era, but in post COVID era more than 45 percent felt that the branded entertainment influenced their emotive attitude.

Table 4: Influence of branded entertainment on viewers' conative attitude in pre-COVID-19 and post COVID-19 period

	Pre- COVID-19		Post COVID-19	
	Frequency	**Percent**	**Frequency**	**Percent**
Strongly Disagree	367	26	207	15
Disagree	365	26	310	22
Neutral	433	31	333	24
Agree	122	9	240	17
Strongly Agree	110	8	307	22
Total	1397	100	1397	100

Table 4 shows that only 17 percent of the respondents felt that their conative attitude was influenced by branded entertainment in the pre- COVID-19 period but in the post COVID-19 period the percentage of respondents grew to 39 percent.

The frequency tables clearly indicate that the branded entertainment has influenced viewers' cognitive, emotive and conative attitude in post COVID-19 period as compared to pre- COVID-19 period.

Table 5: Customer perception: Mean value in pre- COVID-19 and post COVID-19 period

Statements related to Influence of Branded Entertainment on Viewers Buying Attitude	**Pre- COVID-19 era**			**Post COVID-19 era**		
	N	**Mean**	**Std. Deviation**	**N**	**Mean**	**Std. Deviation**
Branded entertainment influences customer cognitive attitude	1397	3.15	1.54	1397	4.10	1.47
Branded entertainment influences customer emotive attitude	1397	1.61	1.61	1397	3.59	1.29
Branded entertainment influences customer conative attitude	1397	1.41	1.02	1397	2.17	1.19

The above result was also tested using mean values of the opinions. The scales used were 1 to 5 (where 1 is Strongly Disagree, 2 is Disagree, 3 is Neutral, 4 is Agree and 5 is Strongly Agree). A mean value above 3 indicates agreement with the opinion in the statement whereas mean value below 3 indicates disagreement with the opinion in the statement. Mean values in pre- COVID-19 and post COVID-19 era are indicated in Table 5.

As can be seen from the table above, in the pre- COVID-19 period, branded entertainment influencing customers' cognitive attitude has shown a mean value of slightly above 3, which indicates agreement of the respondents with the statement that branded entertainment influences customers' cognitive attitude. In the other two cases of branded entertainment influencing customer emotive attitude and branded entertainment influencing customer conative attitude, the mean value is below 3 which indicate disagreement of the respondents with the statements.

However, in the post COVID-19 period, the mean values for the statements, branded entertainment influences customer cognitive attitude and branded entertainment influences customer emotive attitude, are above 3 which indicates their agreement with these statements. However, in the case of the statement that branded entertainment influences customer conative attitude, the mean value is less than 3 which clearly indicates that the respondents are in disagreement with this statement.

The opinions were finally tested for significance, for which the following hypotheses were tested using paired t-test.

$H_0$1: There is no significant difference in the viewer's perception on branded entertainment influencing their cognitive attitude in pre- COVID-19 and post COVID-19 period.

$H_0$2: There is no significant difference in the viewer's perception on branded entertainment influencing their emotive attitude in pre- COVID-19 and post COVID-19 period.

$H_0$3: There is no significant difference in the viewer's perception on branded entertainment influencing their conative attitude in pre- COVID-19 and post COVID-19 period.

A paired t-test was conducted to test the above mentioned hypothesis, the results of which are given in Table 6, Table 7 and Table 8 below.

Table 6: Paired t-test for difference in the viewer's perception on branded entertainment influencing their cognitive attitude in pre- COVID-19 and post COVID-19 period

	Mean	**N**	**Standard Deviation**
Score Pre- COVID-19	3.15	1397	1.54
Score Post COVID-19	4.10	1397	1.47

Paired sample test			
Paired difference			
	T	**df**	**Sig (2 –tailed)**
Score on perception in pre- COVID-19 period - Score on perception in post COVID-19 period	1.235	1396	.027

Since the p value is less than .05, the null hypothesis is rejected and alternate hypothesis is accepted (Table 6). Hence, it can be inferred that there is a significant difference in the viewer's perception on branded entertainment influencing their cognitive attitude in pre- COVID-19 and post COVID-19 period.

Table 7: Paired t-test for difference in the viewer's perception on branded entertainment influencing their emotive attitude in pre- COVID-19 and post COVID-19 period

	Mean	**N**	**Standard Deviation**
Score Pre- COVID-19	1.61	1397	1.61
Score Post COVID-19	3.59	1397	1.29

Paired sample test			
Paired difference			
	T	**df**	**Sig (2–tailed)**
Score on perception in pre- COVID-19 period - Score on perception in post COVID-19 period	2.635	1396	.023

Referring to Table 7, since the p value is less than .05, the null hypothesis is rejected and alternate hypothesis is accepted. Thus, it can be inferred that there is a significant difference in the viewer's perception on branded entertainment influencing their emotive attitude in pre- COVID-19 and post COVID-19 period.

Table 8: Paired t-test for difference in the viewer's perception on branded entertainment influencing their conative attitude in pre- COVID-19 and post COVID-19 period

	Mean	**N**	**Standard Deviation**
Score Pre- COVID-19	1.412	1397	1.02
Score Post COVID-19	2.17	1397	1.19

Paired sample test			
Paired difference			
	T	**df**	**Sig (2 –tailed)**
Score on Perception in Pre- COVID-19 - Score on Perception in Post COVID-19 period	1.112	1396	.061

Since the p value is greater than .05, the null hypothesis is accepted (Table 8). It can be inferred that there is no significant difference in the viewer's perception on branded entertainment influencing their conative attitude in pre- COVID-19 and post COVID-19 period.

Results

On the basis of the paired t-test results in Table 6, Table 7 and Table 8 above, the following interpretations were made regarding the hypotheses.

– There is a significant difference in the viewer's perception on branded entertainment influencing their cognitive attitude in pre- COVID-19 and post COVID-19 period.

– There is a significant difference in the viewer's perception on branded entertainment influencing their emotive attitude in pre- COVID-19 and post COVID-19 period.

– There is no significant difference in the viewer's perception on branded entertainment influencing their conative attitude in pre- COVID-19 and post COVID-19 period.

Discussion, Conclusions and Suggestions

While there has been a growing body of research focusing on branded entertainment, there are limited studies on branded entertainment on viewers buying attitude in the pre- and post COVID-19 era. In this study, the influence of branded entertainment on viewers' buying attitude was examined in the pre- and post COVID-19 period. The lack

of research on the influence of branded entertainment on viewers' buying attitude in context of the Indian retail industry necessitated this study. Review and compilation of research data in this area, led to identification of the gap in literature based on which the research objectives, hypothesis and research methods were articulated and determined. Primary data was collected through interviews and structured questionnaire to capture their perception about branded entertainment influence on buying attitude in pre- and post COVID-19 period.

The findings of the current study show that the branded entertainment in post COVID-19 period was more effective in influencing viewers' cognitive and emotive attitude as compared to the pre- COVID-19 period. The reason was that due to COVID-19, the brand started aggressively making use of branded entertainment content for the dissemination of information to enable viewers to understand its DNA in terms of its aesthetics and functionality. Also, the content creators were effective in creating an emotional connect between the viewer and the brand. This is attributed to the fact that during this period, brands started focusing on branded entertainment content with messages on health, safety, care and support. At a time when insecurity and vulnerability caused by COVID-19 were pervasive, such messages forged an emotional connect between brand and viewers.

But the dissemination of information, knowledge, awareness and emotional connect was not strong enough to develop brand recognition and recall. Due to this, branded entertainment content could not significantly drive the viewers' conative attitude of purchase intentions, and actual purchase and branded entertainment failed to convert the customers' intent to purchase to actual purchase. This may be attributed to the widespread fear of COVID-19 during the period of this study which saw consumers purchase basic essentials rather than brand-specific items.

With gradual dissipation of the fear of COVID-19, as customers are resuming their pre- COVID-19 purchasing behavior, retail brands need to re-envision their branded entertainment strategies with greater emphasis on strengthening the emotive connect between the brand and its viewers that can lead to high recall value, thus activating the conative attitude that could drive their purchase intention and actual purchase. The message from the brand to the branded entertainment developer would need to create content with strong emotive connect that will dominate the mind space of viewers, increasing the possibilities of converting purchase intentions to actual purchases.

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Fashion Consumption and Disposal Patterns among College Students during COVID-19 in India

Nilanjana Bairagi and Suparno Goswami

Abstract

The dominant narrative on sustainability and the fashion industry focuses on the negative environmental and social impact which includes pollution, water scarcity, carbon emissions, human rights, and gender inequality. This points to the imperative of eco-friendly materials, green technologies, upcycling, recycling and ethical manufacturing. However, there is limited research on fashion consumption and disposal patterns among the consumers in India. In the last two years, the COVID-19 pandemic has impacted the fashion industry globally but studies on fashion consumption and disposal patterns during this period have been limited in the Indian context. This study aims to identify and analyze the fashion consumption and disposable patterns during the COVID-19 pandemic among undergraduate and postgraduate students across India as this cohort comprises a large segment of Gen Z. With this objective, survey-based research was carried out among students of different academic disciplines across India using non-probability purposive sampling. The results showed that the fashion consumption pattern of the students in their 20s have not been significantly impacted during the pandemic. The main change in consumerism patterns during the pandemic has been a shift in purchases from brick-and-mortar stores to online digital platforms. The main reasons for disposal of clothing are seam slippage, missing buttons, fitting problems, color fading, hole formation, pilling, change in trend, size issues and allergic contact dermatitis. The main disposal channels of fashion are donations to acquaintances and Indian NGOs, recycling at home and online resale of branded fashion. The study reveals that the use of upcycled fashion apart from upcycling in households or creative mending techniques is not a popular option among the college students in India.

Keywords: Fashion consumption, disposal patterns, sustainability, upcycled fashion, pre-owned fashion, disposal channels, mending

Introduction

Sustainability is a global issue that holds high relevance and invites deeper understanding of the impact of its environmental, social and economic transgressions, and mitigation through systemic engagement among stakeholders including fashion designers, manufacturers and retailer of the fashion industry. Traditional approaches have focused on eco-materials or ethical manufacturing principles to produce sustainable textile products. At this point of time, a broader outlook of sustainability is required, one that focuses not only on eco-materials and ethical manufacturing, but also on the consumers' relationships with products**.** Manzini (1994) states that apart from redesigning products and eco-friendly manufacturing processes, there is need for focus on consumption behavior as consumers are often unable to see the link between their consumption patterns and the environmental impact. Vezzoli (2007) discusses the need to cultivate emotional relationships between consumers and sustainable products in addition to technological development. Clothing accounts for almost 3 percent of the waste disposed by each household (Fletcher, 2008).This necessitates scholarly focus on patterns of clothing consumption and disposal.

The emergence of COVID-19 as a global pandemic in 2020 impacted the fashion industry in unprecedented ways as consumer behavior changed sharply and supply chains were disrupted, according to BOF and McKinsey & Company as reported in The State of Fashion in 2021. Use of online shopping platforms increased among all age groups which influenced global consumption patterns of fashion clothing. This study analyzes fashion consumption and disposal patterns among the college and university students across India during the pandemic. This consumer cohort is considered significant as 34.33 percent of the total population in India comprises youth, as reported in 2017 by Central Statistics Office (CSO) of the Ministry of Statistics and Program Implementation, Govt. of India. The national daily 'The Hindu' (2020) had predicted a steady increase in India's youth population to 464 million by 2021 becoming the world's youngest country with 64 percent of its population in the working age group.

Research Methodology

The primary objective of this paper is to analyze clothing consumption and disposal patterns from the onset of the COVID-19 pandemic among Indian undergraduate and postgraduate students. Based on the initial online focus group discussion with 10 college students, a questionnaire was designed and pre-tested during the pilot study

prior to its circulation among the respondents. As the research was conducted during the first wave of the pandemic outbreak during December 2020-April 2021, online mode of data collection was the only feasible option. Therefore, a Google form was created to collect data. Non-probability sampling methods like Convenience, Snowball and Purposive sampling were used through personal contacts in different institutions and universities**.** Respondents who had consented to participate in the survey were selected and the link to the Google form was shared with them. They were requested to further circulate the link among their personal friends and college acquaintances which facilitated snowball sampling. Several faculty members across India also helped in collecting data from their students. To reach an unbiased conclusion, data was drawn from different regions and across diverse disciplines. The survey comprised a total of 503 complete responses out of which 54 percent of the respondents were female and 46 percent were male. The questionnaire included four sections namely:

A. Clothing consumption pattern comprising 12 questions

B. Clothing disposal pattern comprising 2 questions.

C Information on use of clothing after its life span comprising 11 questions.

D. General information comprising 4 questions.

The results were statistically analyzed. The results are presented in the next section.

Research Findings

It was noted that 37.8 percent of the respondents were between the ages of 18-20 years, 32.6 percent were in the age group of 20-22 years, 20 percent were in the age group of 23-25 years, 5.4 percent were in the age group of 25-27 years, and the remaining 4.2 percent were above 27 years of age. Most respondents were in the age group of 20-25 years and were undergraduates in different academic disciplines ranging from science, arts, economics, commerce, design courses, engineering, technology, architecture, medicine, culinary arts and performing arts. Some respondents were pursuing undergraduate and postgraduate degree level programs for the award of B.Sc., B.A., B.Com, B.Des, B.E., B.Tech., M.Tech, MBBS, M.Pharm, M.A., M.Sc. M.Des, M.B.A, Ph.D degrees. Profiles of the respondents has been broadly classified in Table 1.

Table 1: Profile of respondents

Demographic Variables		**Percentage of respondents**
Gender	Male	46
	Female	54
Age	18- 20 years	37.8
	20-22 years	32.6
	23-25 years	20
	25-27 years	5.4
	27 and above	4.2
Region of residence in India	North India	26
	East and North East India	18
	South India	45
	West/ Central India	11
Academic degree being pursued	Bachelors	64
	Masters	33
	Ph.D	3

Clothing consumption pattern

The survey results indicated that 3 months prior to the onset of the pandemic, 65.2 percent of the respondents purchased 1-5 items of clothing, 16.5 percent purchased around 6-10 items, 3.8 percent purchased 11-15 items, 1 percent purchased 16-20 items, 0.6 percent purchased 21-25 items and 1.4 percent bought more than 26 items. 11.5 percent of the respondents did not buy any clothing items. On comparing this data with purchasing patterns during COVID-19 in India, it was noted that 54.7 percent of the respondents bought 1-5 items of clothing, 14.5 percent purchased 6-10 items, 5.4 percent purchased 11-15 items, 1.6 percent purchased 16-20 items, 0.4 percent purchased 21-25 items and 0.2 percent purchased more than 26 items. 23.3 percent of the respondents did not purchase any clothing items. The results are tabulated in Table 2.

Table 2: Clothing consumption patterns before and during COVID-19

Number of clothing items purchased during a period of 3 months	Percentage of respondents who purchased prior to COVID-19	Percentage of respondents who purchased during COVID-19
1-5	65.2	54.7
6-10	16.5	14.5
11-15	3.8	5.4
16-20	1	1.6
21-25	0.6	0.4
26 & above	1.4	0.2
Nil	11.5	23.3

Table 2 also presents the impact of COVID-19 on clothing consumption. It was observed that during the pandemic, among 8 percent of the target population there was a drop in the overall consumption of clothing items. The average number of clothing items purchased by consumers of 18-22 years of age was 5 prior to pandemic; during the pandemic it dropped to 4 clothing items. There was an increase of 2.5 percent in the purchase of 11-15 items. It is also observed that 1.4 percent of the respondents bought 26 or more clothing items prior to the pandemic whereas only 0.2 percent bought 26 or more items of clothing during the pandemic. On the other hand, the percentage of people who did not buy any clothing items during the pandemic increased from 11.5 percent to 23.3 percent. To test whether the difference in the percentage of consumers buying nearly the same number of clothing or nil number of clothing before and during the pandemic, was statistically significant or not, a two-tailed unequal variance t-test was conducted. The resultant p-value was approximately 0.9. This implied that the difference is statistically insignificant at 1%, 5% and 10% level of significance.

Regarding the modes of purchasing clothing prior to and during COVID-19, it was observed that 77 percent respondents purchased directly from the stores while 23 percent preferred online shopping prior to the onset of the pandemic. However, during this period, 57 percent respondents preferred online modes of purchase, 30 percent preferred visiting brick and mortar stores while 13 percent did not purchase any clothing

items. This indicated a shift towards online purchase of clothing among the youth during the pandemic. The study also showed that among 28 percent of the population, accessibility and discounts on available online platforms led to significant increase in the purchase of clothing items. For 51 percent of the population, it influenced their consumption behavior to a certain extent, but 21 percent of the respondents' consumption behavior has not been influenced by the online offers.

Industry practitioners and researchers are of the opinion that this pandemic will not only affect the industry soon, but may also have a long-term impact (Lu, 2020). It is reported by McIntosh (2020) that the lack of consumer demand or fear that the demand will fall significantly, has severely hampered regular business operations. However, this study does not indicate any significant change in the purchasing pattern in the number of clothing items among young students. Although many countries reopened physical retail stores that traditionally contributed 80 percent of the business in the fashion industry (McIntosh, 2020) consumers continue to be careful of the virus spreading through the air or contact particularly in crowded places. This also applies to India as 77 percent of the respondents who purchased directly from fashion stores prior to the pandemic outbreak dropped to 30 percent during the first wave of COVID-19.

Span of use of fashion clothing

Globally, consumers are making decisions regarding conscious clothing and slow fashion to reduce the ecological footprint of fashion (Khandual and Pradhan, 2018). This survey showed that 38.6 percent of the respondents used specific clothing items such as a t-shirt and jeans for 1-2 years, 32.8 percent used them for 3-4 years, and only around 2.8 percent used a single item of clothing for less than 6 months, even during the pandemic. Therefore, most respondents are conscious consumers who have been trying to extend the duration of use of the widely used clothing items such as a T-shirt and jeans.

Purchase intention

The survey investigated the main factors that contribute to purchase intentions. As expressed by 80 percent of the respondents, the main reason for people to buy clothing is based on need, followed by special occasions that drive additional purchases. Other factors guiding clothing purchases are not based on need but on emotional satisfaction, commencement of an academic semester, good online offers, and influence of advertisements (Figure 1).

Figure 1: Main reasons for fashion consumption by Indian college students

Consumer attitude towards sustainability in clothing consumption

To understand consumer attitude towards sustainable consumption, the respondents' interest in the purchase of upcycled or recycled clothing, was studied. It was found that 75.5 percent of the respondents did not purchase upcycled, recycled clothing or pre-owned branded clothing. 62.8 percent of the respondents were not aware of any Indian brand selling upcycled or pre-owned fashion clothing. However, it was found that 37.2 percent of the respondents were aware of such brands and 24.5 percent of the respondents did purchase pre-owned fashion clothing prior to the pandemic. Indian brands *Péro* by Aneeth Arora and KaSha by Karishma Sahani use upcycling techniques in their collections while Doodlage by Kriti Tula uses fabric scraps, recycled and organic yarn. Kiabza, Retag, Zapyle, Confidential Couture, Etashee, My Luxury Bargain, Loved Lehenga, Luxepolis, The Relove Closet and Vintage Desi sell a wide range of pre-owned branded fashion. However, during focus group discussions, the respondents revealed disinclination towards the purchase of pre-owned fashion clothing due to the anxiety of contracting infection.

Bodice by Ruchika Sachdeva promotes eco-fashion using sustainable raw materials. Raw Mango uses characteristic traditional handlooms that support the weaver community. Therefore, the types of fabric preferred by the respondents was also studied. The survey showed that 75.1 percent of the respondents prefer non-organic fabric, 21.5 percent of the respondents prefer natural or organic fabric and the

remaining 3.4 percent prefer recycled or upcycled fabric. This indicates that 25 percent of the Indian youth is inclined towards the use of sustainable raw materials in fashion. Niinimaki and Hassi (2011) claim that eco-fashion has become a key trend for young consumers. The study also indicated that fashion bloggers, ethical fashion consultancies, e-commerce websites, popular fashion magazines have influence over young Indian consumers towards sustainable fashion. Actor and activist Emma Watson as guest editor of Vogue Australia in the March 2018 issue, challenged people to make a one-degree shift, as even a small change can make a difference in promoting sustainability. The survey revealed that Indian youth is engaging with fashion in a more meaningful manner through prolonged use of clothing, using natural and organic fabrics, upcycled/recycled fashion clothing and also by reusing fashion clothing handed down within families.

Use of handed over or passed on fashion clothing within households

Recycling clothes in a household is an important part of sustainability that not only has a positive impact on the environment by extending the life of the clothing by reducing waste, but also gives emotional satisfaction to the user (Shim, et al., 2018). 79 percent of the respondents in this study claimed to be comfortable in using hand-me-down clothing from cousins or siblings, which indicated their willingness to recycle clothing within the family. The respondents agreed that recycling is common in Indian families as clothing is often handed down to younger members who experience an emotional attachment with the item. The study also showed that though the respondents are aware of recycling, they do not necessarily adopt it in practice.

Clothing disposal patterns and reasons

The study also attempted to ascertain the reasons for and channels for disposal of clothing. It was found that 83 percent of the respondents disposed their clothing due to wear and tear caused by seam slippage, missing buttons, fitting problems, color fading, hole formation, pilling, allergic contact dermatitis and fitting problems (Figure 2). 27 percent disposed clothing after several years of use. 12 percent disposed clothing that were no longer considered trendy. Even though the attraction of fast fashion was evident among 12 percent of the respondents, their main channel of disposal was donation to acquaintances for continued use of the clothing item.

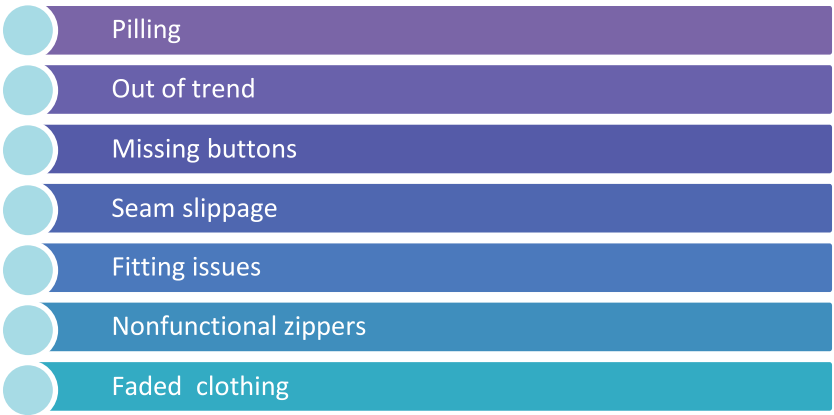

Figure 2: Main reasons for disposal of clothing items among Indian undergraduate and postgraduate students

According to Erin Lewis-Fitzerland, a leading clothes-mending practitioner associated with the Visible Mending project in Melbourne, most clothing problems such as missing buttons, seams, loose stitches are relatively minor and can be repaired with ease. Mending extends life of the clothing item. Creative mending offers sustainable solutions and can inspire others. Designer Jessica Marquez uses the Japanese technique of *Sashiko* involving running stitches and geometric patterns for creative mending. Designer Lilah Horwitz works for Eileen Fisher's Renew program which buys back the used garments from its customers, which are then resewn, mended, and resold based on the philosophy that the use of creativity and design for upcycling fashion items, is a responsibility. The present study did not indicate willingness of Indian college students to wear mended clothing. Indian hand embroidery such as *kantha* and patch work/applique are used to reinforce worn-out textiles. Gwilt (2014) mentions that with the increased availability of inexpensive, mass-produced, ready-to-wear clothing, the culture of repairing and altering clothes has largely disappeared in the last two or three generations. The same trend was observed among the youth in India. Therefore, there is scope to introduce the concept of visible mending among the young population. Designer Ujjwal Dubey, founder of Restore Love mends and restores outfits, predicting that the fashion media will devise creative alternatives to repair and restyle them. Vaishali S. takes back garments that need repair; Ekaya restores handcrafted pieces to revive heritage textiles. In spite of visible efforts of mending and restoration by fashion brands in India, mending is yet to be considered as a preferred alternative to disposal by the Indian youth. This finding is similar to the study done by Shim, et al. (2018) which indicated that students in their twenties are not interested in spending on upcycling.

Channels for disposal of clothing

For most of the respondents, the main channel of disposal has been of donation to acquaintances for continued use of the clothing item. 24 percent of the respondents donated their clothes to acquaintances and NGOs which further recycle/upcycle them. 77 percent respondents recycled some clothing items in unusable condition as mops or rags for domestic cleaning purposes. It was also observed that 56 percent of the respondents were not aware of any local NGOs in their locality that collect used clothes for upcycling/recycling. 40 percent of the respondents knew of a few NGOs, and 4 percent knew of several NGOs that upcycle/recycle clothing.

Intentions regarding clothing disposal

The questionnaire included questions on disposal intentions of the respondents. It was found that 80 percent of the respondents looked forward to donating their clothing. Around 10 percent did not give much thought while disposing used clothing, 10 percent are interested in selling pre-owned branded clothing that are in good condition through e-commerce websites on fashion re-sale. A number of brands and websites like Kiabza, Retag, Zapyle, Confidential Couture, Etashee, My Luxury Bargain, Loved Lehenga, Luxepolis, The Relove Closet and Vintage Desi sell a wide range of branded products at half their original prices. As a result, many of these brands have a large online following in India.

Conclusion

The main objective of this study was to analyze the fashion clothing consumption and disposal patterns during the COVID-19 pandemic among Indian undergraduate and postgraduate students as this segment constitutes a significant share of youth in the total population. Online mode of data collection was the only feasible option as the research was conducted during the onset of the first wave of the pandemic during December 2020-April 2021, and the data obtained was analyzed statistically.

It is concluded that clothing consumption patterns are similar before and during pandemic among the Indian undergraduate and postgraduate students. There is a shift in the modes of purchase from online to offline with growing consumer interest in sustainable Fibers and fabrics. Apart from upcycling within households or commercial mending techniques, the use of upcycled fashion is yet to gain popularity among this student cohort. There needs to be sustained effort to spread awareness among this demographic segment on the impact of fast fashion, encourage conscious consumption of clothing, importance of upcycling clothing items, and creating an organized disposal

channel to create a circular economy. In addition, the fashion industry needs to ideate and develop ways to facilitate a circular economy, and designers need to focus on design that is not season based but is more flexible and emotionally durable to support responsible consumption and disposal of clothing. This study points to the need for the Indian fashion industry to move forward to promote responsible consumption and disposal patterns among young consumer to increase sustainability.

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Study of Beauty and Makeup Trends for Indian Millennials amidst the COVID-19 Pandemic

Gulnaz Banu P, Diptashree Mondal and Prachi Gautam

Abstract

The COVID-19 pandemic has shifted the focus from outdoors to indoors with work-from-home norms and online services becoming the 'new normal'. This has also ushered in trends such as DIY home remedies, grooming services at home, conscious consumerism, 'skinmalism', and inclusive beauty. As the largest demographic segment, millennials are the flag bearers of these new trends. This study was conducted during the pandemic to spot emerging trends in the beauty and makeup segment and to understand the shift in buying preferences amongst 165 Indian millennials. The outcomes indicated an increased consciousness among this generational cohort who are demanding transparency in services and merchandise such as organic, cruelty-free, and non-toxic beauty and makeup products. The concept of inclusive beauty has also paved the way for gender-neutral beauty and personal care products. The rising trend of skinmalism is seeing millennials choose a minimalistic approach to skin care routines and appreciating skin positivity. The social media has also played a dominant role in setting trends like minimal makeup and no-makeup looks. There has been a surge in home remedies, DIY skincare and haircare routines. Increased concerns about safety and hygiene during the pandemic have replaced monthly salon visits with home services. There has also been a shift in shopping patterns from in-store to online shopping towards skincare to personal hygiene products, with a maximum increase in wellness products. With consumers transitioning from retail to e-commerce, the beauty and personal care sector has also significantly expanded in the last two years of the pandemic from physical stores to e-commerce. Questions regarding the likelihood of continuing minimalism as the new makeup trend, or shifts from salon visits to home-based salon services as a dominant zeitgeist even in the post-pandemic period, or the influence of Indian millennials on other generational cohorts to follow the trend of rising consciousness of inclusive beauty, are likely to determine future research directions.

Keywords: Indian millennial, pandemic trends, consumer preferences, cosmetics, skincare products

Introduction

Economic optimism encapsulated in the demographic dividend of aware, well-travelled, and more connected Indians led to the entry of international beauty players into the Indian cosmetic market. International brands have been offering global products and services aligned to match the preferences of the Indian cosmetic industry. While Laboratories Garnier, a subsidiary of French giant L'Oréal SA launched its shampoos in 1992, Revlon was the first international cosmetics brand to enter India in 1995. Estée Lauder, Avon, Burberry, Calvin Klein, Body Shop, Christian Dior, Max Factor, Max Mara, Maybelline are some of the other brands which have a strong presence in India. A report by the Ministry of Economy and Industry and Consulate General of Israel, Mumbai (n.d.) mentions international conglomerates such as Procter & Gamble, Johnson & Johnson (India), Reckitt Benckiser (India) as well as domestic conglomerates Godrej Consumer Products, Wipro Consumer Care & Lighting, Dabur India, Marico, Emami, and Patanjali Ayurved as prominent players in the Indian cosmetic market.

The national lockdown announced in March 2020 due to COVID-19 led to a widespread disruption for all businesses, even compelling some of them to shut down. The beauty industry comprising skincare, cosmetics, haircare, fragrances, and personal care was also adversely affected by the crisis with weak sales and widespread store closures. Though this was a severe setback for the beauty and makeup industry, it exhibited resilience in recording annual growth in the global beauty and personal care market at a compound rate of 4.75 percent from USD 483 billion in 2020 to USD 511 billion in 2021 and estimated to reach USD 716 billion by 2025 and USD 784.6 billion by 2027 (Roberts, 2021). The Asia Pacific region and North America recorded the highest consumption of 60 percent by 2021 (Globe Newswire, 2021). Rising disposable incomes leading to an increase in purchasing power, the Indian cosmetics and beauty products segment valued at USD 13.19 billion in FY20 is anticipated to grow at a CAGR of 16.39 percent to reach USD 28.98 billion by FY26 (Research & Markets, 2021). According to the IMARC report (2020), India's beauty and personal care sector estimated at USD 26.1 billion in 2020 is projected to grow at a CAGR of 9.6 percent by 2021-2026. Another report by Avendus states that India's online personal care and beauty market is expected to reach USD 4.4 billion by 2025 (Mishra, 2021). India's beauty and personal care have been the fastest growing sector in e-commerce with a recorded increase of

more than 30 percent in 2020-21. During the first lockdown, L'Oréal India recorded an 18 percent increase in online purchases of personal care or beauty products among first time consumers (ibid.). Online beauty platform, Purplle.com recorded a three-fold increase in sales during Diwali with 70 percent orders from tier 2 and tier 3 cities (Bansal, 2020). In March 2021, Myntra's revenues reported an increase of 170 percent in just six months (Ranipeta, 2021).

The lockdown had an unprecedented effect on domestic life necessitating enforced lifestyle changes within the family with the trauma of retrenchment and anxiety of contracting coronavirus on one hand and more time for self-care, on the other. Situations of work-from-home, online classes, social distancing, and compulsory masks translated into the lack of in-person interactions. This also transformed online purchasing preferences with significant increase in e-commerce over sales in physical stores. In particular, there were also significant changes in the sales of specific make-up items and perfumes. The cosmetics segment faced a steep decline as there were fewer reasons for consumer interest in wearing makeup while skincare as beauty's biggest category, reaped gains as consumers prioritized wellness and self-care. Amazon India reported that the lips category as the largest make-up segment has been the slowest to recover to pre- COVID-19 levels, whereas eye make-up including kajal, eyeliner, and mascara have seen the highest annual increase (Chandna, 2020). A similar upsurge in the sales of eye make-up and nail art as contrasted with the lips segment was reported by beauty e-commerce giant Nykaa (ibid.).

The Indian millennial

According to the Pew Research Center (2019) the erstwhile Gen Y widely referred to as millennials, is the world's largest adult cohort and the most aspirational generation, that is concerned about a wide range of issues ranging from #Metoo[1], #BLM[2], environmental degradation, climate change, fair trade to organic products and demand social change and accountability. The Indian millennial population comprising 34 percent (440 million) of the total population is the largest segment of the workforce with significant disposable income. The median age in India is 28.4 years, which makes it one of the youngest major nations in the world (Sharma, 2021). Having grown up with the internet, they have a strong inclination towards digital technology. They are highly influenced by social media platforms that are 'the heartbeat of marketing to millennials' (Ehlers, 2017). The spectrum of Indian brands has high association with this consumer segment for its considerable influence over the market. The study by

Hassan, et al. (2021) highlights the role of the social media in influencing young female millennials' choices of cosmetic brands.

Purchasing patterns of beauty and wellness products among millennials

Shift in buying preferences

The initial stockpiling behavior seen at the onset of the pandemic dissipated gradually as supply chains responded to the increased demand. Altered consumerism patterns were seen in terms of reduced spending on clothes and social entertainment, and increased expenditure on food, wellness, and health by millennials and Gen Z (Desai, 2021). As millennials value physical and emotional well-being, their health-consciousness has resulted in a rapid shift toward healthy organic options (ibid.). The Deloitte Global 2021 millennial and Gen Z survey report indicates rising concerns about health and the environment among millennials. Around 28 percent of millennials are concerned about their health and disease prevention and 23 percent have shown concerns about climate change and protecting the environment. Their concern for holistic well-being and strengthening immunity finds expression through yoga and exercise supplemented by healthy eating. Their health-consciousness and value for physical and emotional well-being results in a shift toward healthy choices of self-care practices from personal hygiene to skincare. As a result of the enforced indoor stay, there has been a surge in home remedies, natural products, and do-it-yourself (DIY) practices. This is manifested through natural, safe, accessible, and inexpensive DIY beauty treatments including nail care, cosmetics, hair color products, and body and bath care products (Kalyani, 2021). There is also a clear preference for clinical skincare products. Traditional beliefs and practices of clean and non-toxic homemade beauty remedies espoused by ayurvedic beauty brands have been skincare frontrunners. The Indian millennial is willing to invest in clinical skincare brands that are ingredient-focused and perceived to be more effective.

Shift in the mode of purchase

An increase of 30 percent in online penetration as compared to pre- COVID-19 levels has led to a distinct shift among Indian millennials towards e-commerce over brick-and-mortar stores. They use the internet extensively to research, compare prices of similar products and read professional reviews prior to making purchasing decisions both in-store and online across categories (McKinsey & Co., 2020). An estimated four-fold increase in online shoppers is expected to expand the personal care and beauty market to USD 4.4 billion by 2025 (Mishra, 2021). The future of the omnichannel

experience combining both online and offline modes, with various digital tools for a comprehensive experience in this segment is predicted to be ascendant.

Need for transparency in product information

For Indian millennials, basic skincare routines require extensive regimes of cosmetics (Bluemarlin, 2021). Driven by a need for transparency, they look for authentic information and customized solutions from reliable sources. They find it necessary to know about the scientific formulation and concentration of active ingredients of products. With increased online purchases of cosmetics and body care products, it has become important for consumers and particularly millennials, to know about the constituent ingredients. The need to be informed extends to safe formulas that show rapid and visible results (Sachar, 2020). Making considered decisions on selecting beauty and body care products led to a rise in conscious consumerism expressed through their inclination towards natural skin care products. This has seen a significant upsurge in the demand for clean beauty products with safe, non-toxic ingredients. This has led to an increase in the range of natural, herbal, and ayurvedic beauty and body care brands in India.

Higher skin-positivity

The rise of skinmalism[3], an approach to beauty that entails paring down skincare and makeup routines in favor of a more minimalist approach, is in the spotlight with influencers focusing on skin-positivity with trends like the 'no-makeup' look that counters the heavy-coverage makeup seen on Instagram (Bhattacharya, 2021). This is re-iterated by the Pinterest insights that highlight the inclination to embrace slow beauty that allows the natural skin texture to shine through yoga, exercises, and skincare routines that are simple and sustainable (Habig, 2021).

Increase in-home salon services

As the nature of the profession involves close contact with clients, the mandate of adhering to strict safety guidelines of social distancing and hygiene safety saw beauty salons, nail parlors, and spas incur losses. The Indian beauty salon sector is estimated to be over INR 10000 crore (USD 13108 million) whereas the salon and spa sector accounts for 31 percent of the entire beauty and wellness industry (Husain, 2020). The surge in e-commerce and the online beauty business during the pandemic has led to the rise of beauty and grooming services offered at the client's homes.

Inclusivity[4] in the beauty industry

Growing demand for inclusivity and representation in the global beauty business is seeing the beauty industry iterating inclusive beauty irrespective of gender, age, religion, color, and skin type of the individual. Inclusivity includes beauty product formulations and packaging such as makeup tools designed for individuals with motor disabilities. The assumption that makeup is the preserve of women (Miller and Cox, 1982 cited in Hassan, et al., 2021) has given way to the evidence that male consumers have begun to show increased interest in caring for their appearance for the purpose of social expression. This is evinced through their increased interest in male cosmetic products including makeup, though they do not want to be perceived as feminine (Souiden and Diagne, 2009 cited in Hassan, et al., 2021). In India, there is a gradual rise in gender-neutral[5] makeup to personal care products for men as male makeup is well on its way to becoming more mainstream (AFP-Relaxnews, 2021).

Beauty is allowing people to take ownership of their personal care, much as they do with their proactive approach to health and wellness through exercise, eating, and supplementing. Digitization is the future as savvy beauty firms reacted quickly, changing their sales focus to digital channels to recoup lost revenue and retain customer loyalty, leveraging online purchase data and artificial intelligence to drive product development towards increased personalization (Decker, 2021).

COVID-19 has not only changed the way the millennials shop but also what they purchase. The shift in purchasing patterns across consumer segments has been visible in beauty and makeup category also. The buying behavior of this demographic segment in India influences aggregate demand. This study was initiated with three-pronged objective to:

– Analyze trends that are emerging in the beauty and makeup segment for the millennials;

– Examine the shift in purchasing behavior among Indian millennials in the beauty and makeup segment amidst the pandemic;

– Determine the contributing factors for changes in purchasing behavior.

Suitable research methods were determined to gather data for this purpose.

Methodology

Exploratory and descriptive research designs were used. Exploratory research enabled the understanding of emerging trends in the beauty and makeup segment. Descriptive research was used to examine the shifts in buying behavior and the factors contributing to the changes. Secondary data was collected from websites of beauty and makeup brands to understand the emerging trends in this segment. Changes in the product mix in terms of length, width, depth, and consistency were observed.

Convenience sampling technique was used to identify respondents for the study, based on their willingness to participate in the research. Primary data was collected using data collection tools which included questionnaires and online interviews. Snowball sampling method was used to build the sample for both survey and interviews. 122 respondents were surveyed through online Google forms and 43 were interviewed via virtual meetings. Results were presented through frequency tables, percentage and bar charts to display the distribution of any single categorical variable.

Data Analysis and Findings

Out of 122 respondents, 62.3 percent were female, 32.8 percent were male, and 4.9 percent identified themselves as Other. 66.4 percent of respondents claimed to follow a weekly routine in haircare, 52.5 percent and 79.5 percent follow a daily routine in skincare and personal hygiene respectively, 50.8 percent occasionally apply makeup and 46.7 percent follow daily fitness routines (Figure 1). In terms of regularity of schedule, 40.8 percent of the respondents claimed to follow a daily routine in all the mentioned categories, 31.6 percent follow a weekly routine, 6.1 percent follow a monthly routine, 16.8 percent follow a routine only occasionally, while 4.7 percent do not follow any routine.

Haircare is the most regular routine followed by the respondents on a weekly basis, while skincare, personal hygiene routines are followed daily. As most of them work from home, application of make-as up is not considered an essential routine and is therefore used occasionally.

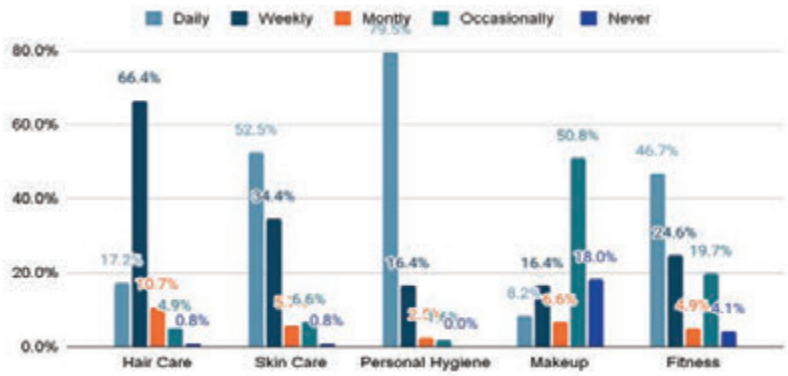

Figure 1: Self-care routines in various categories

Changes in body care routines during the pandemic saw an increase of 33.6 percent in haircare, 46.7 percent in skincare, 46.7 percent in personal hygiene, and 41.8 percent in fitness, while makeup has decreased drastically (Figure 2). The cumulative percentage in all product categories decreased by 28 percent.

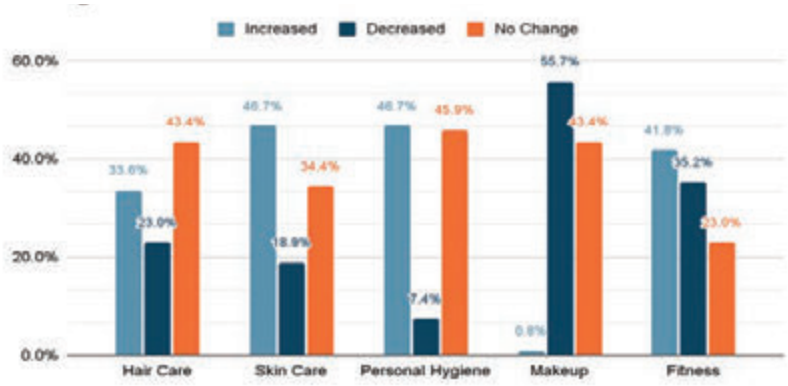

Figure 2: Changes in body care routines during COVID-19

In response to questions on their preferred mode of shopping prior to the pandemic, the respondents informed that they preferred purchasing haircare, personal care, and makeup from stores rather than any other channel whereas skincare was bought more from e-commerce platforms (Figure 3). In-store purchases were the preferred mode before the pandemic with 48.1 percent of the respondents choosing in-store as their

preferred mode in all categories, 36.47 percent choosing e-commerce websites and only 6.15 percent choosing other retail chains.

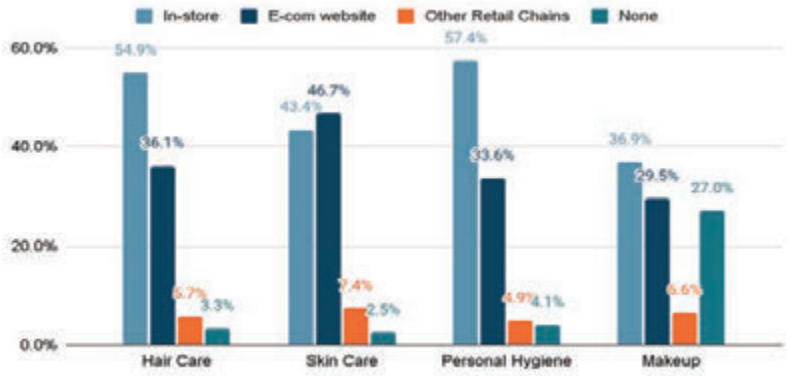

Figure 3: Preferred mode of shopping in the pre-COVID period

During the pandemic, e-commerce platforms were preferred as claimed by 72.5 percent of the respondents. Beauty and skincare items bought by the respondents during the pandemic through e-commerce websites were 78.7 percent for haircare, 83.6 percent for skincare, 76.2 percent for personal hygiene, and 51.6 percent for makeup (Figure 4).

Figure 4: Preferred mode of shopping during COVID-19

Among different categories, the maximum change is in personal hygiene products followed by haircare and skincare, with least incremental change in makeup product category (Figure 5).

Figure 5: Change in different categories before and during COVID-19

The findings indicate that 63.9 percent of the respondents chose to purchase organic products closely followed by 63.1 percent choosing options of toxin-free products, while 31.1 percent and 23.8 percent chose cruelty-free and ethically sourced products respectively. Only 9.8 percent of respondents chose vegan products. 33.6 percent of the respondents considered sustainable packaging options (Figure 6).

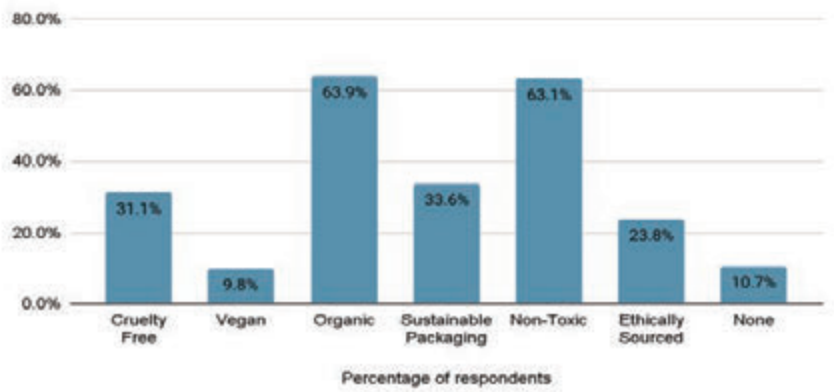

Figure 6: Considerations of respondents before purchase of beauty and wellness products

When it comes to following home remedies, 64.6 percent of the respondents claimed to certainly follow home remedies. 16 percent of respondents are not interested in following home remedies, while 19.4 percent respondents would be likely to follow home remedies (Figure 7).

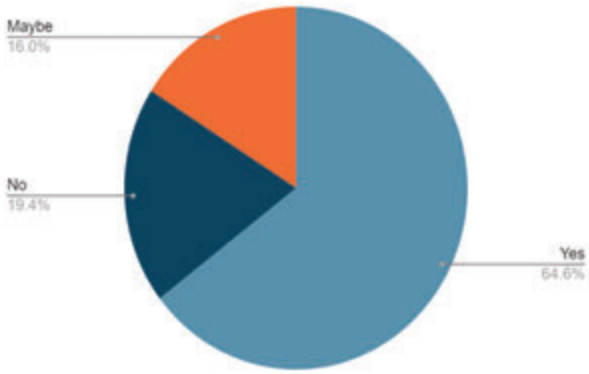

Figure 7: Respondents' preference for home remedies in beauty and makeup segment

There is an increase in the use of home remedies during the pandemic by the respondents for the haircare and skincare category by 58.5 percent and 65.1 percent respectively. 71.7 percent of respondents have not shown any interest in following home remedies for makeup. Respondents did not observe any significant changes in the personal hygiene category (Figure 8).

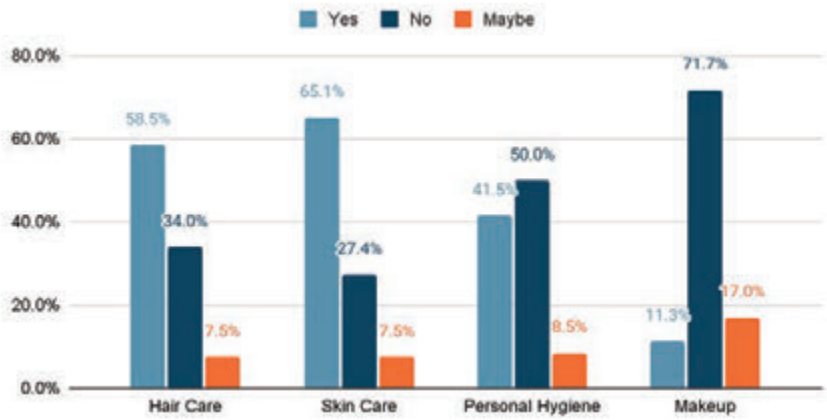

Figure 8: Increased interest in home remedies in different categories

It is predicted that 77.4 percent of the respondents will continue with home remedies even after the pandemic, 6.6 percent of respondents will not continue, while 16 percent of the respondents are likely to follow home remedies (Figure 9).

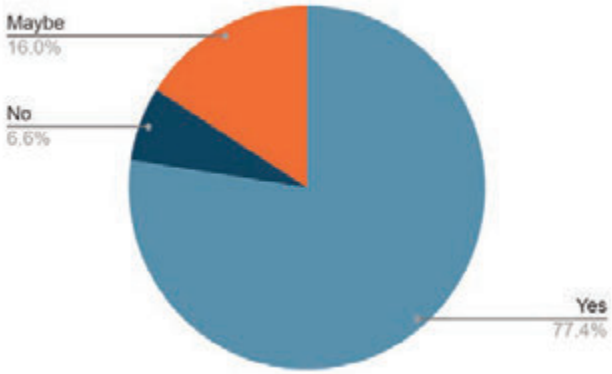

Figure 9: Possibility of continuance with home remedies in the post pandemic period

Inferences from interview data

Respondents have indicated a rise in consciousness, preference for organic products, and transparency in products and services. Price was an important consideration before buying a product. While 53.4 percent of respondents preferred customized skin and haircare products, 72 percent considered online product reviews by customers or influencers prior to purchase. All the respondents preferred either inclusivity or body positivity[6] or gender fluidity[7]in beauty and makeup products. 69 percent of the respondents replaced salon visits with home services. 60 percent of the female respondents claimed to have developed increased preference towards minimalistic makeup.

It was found that the pandemic had a significant effect on buying preferences and the mode of purchase as well as on consumer preferences. Indian millennials not only demand transparency and consciousness but also inclusivity. 44 percent believes in diversity in skin color and products, 40 percent strongly believes in body positivity and 17 percent believes in gender-neutral products and makeup.

It was found that the COVID-19 pandemic had a significant effect on Indian millennials while choosing personal care and beauty products or practices. 49 percent having rise in consciousness for a brand/product to be transparent while for 21 percent the rise in consciousness is a concept that has developed as a whole but not exactly catering to the transparency in particular. 37 percent of the respondents are yet to explore the rising consciousness trend for transparency. 42 percent have shown the preference for organic, natural, herbal, and ayurvedic products while 68 percent uses organic, natural products because of traditional habits and beliefs. Social media also plays an

important role on respondents to adopt minimalism and minimalist makeup which is a current rising trend. The lockdown across India created the perception of salon visits being risky, and therefore replacing them with home services.

Discussion

The objectives of this survey were to observe beauty and makeup trends among millennials in India during the COVID-19 pandemic. Inferences and trend analysis of data gathered from the survey and interviews indicated similarities in preferences between the global and Indian millennials. The salient outcomes are presented below.

Conscious consumerism

There is a rise in consciousness in the beauty and makeup segment with females being more conscious than their male counterparts, and that has eventually generated new trends. The survey concluded that organic and toxin-free products are most preferred by the conscious population. The rise in consciousness has also increased the demand for transparency in products and services. It was found that eco-conscious Indian millennials are also preferring sustainable biodegradable packaging such as paper packages, glass containers and corrugated bubble wraps.

Skinmalism

Preferred by millennials, skinmalism refers to the minimal use of cosmetics that allows the skin to breathe and restore its natural glow. This study also found that social media plays an influential role in setting trends that draw attention to the natural skin.

Grooming services at home

The outbreak of COVID-19 has affected the way people live, travel, shop, and interact with others. The constant fear of getting infected by the virus has increased consciousness of hygiene. As a result, the stay-at-home lifestyle grew with increased demand for online shopping, home grocery delivery, salon service at home, and the popularity of streaming platforms. Though physical proximity-based operations led to the closure of salons and spas, salon service continued to be a necessity for many. Though home-based salon services were available even before the pandemic, during the new normal it became a necessity. This study also showed that home-based salon services by local service providers became more popular than national service providers like Urban Company or Housejoy. Prior to COVID-19, many respondents were unsure about services at home, but the subsequent lockdown across the country emphasized

its convenience, leading to gradually increasing comfort with salon services at home without compromising on the required safety measures.

Rise in DIY experiments

Consumers' do-it-yourself approach to beauty and self-care is one of the most widespread trends observed. Consumers have become increasingly self-sufficient with their beauty regimen after spending extended periods at home. Consumers utilized this lockdown to improve their skin and hair health, creating new at-home personal care products. This study also found that Indian millennials have increased DIY techniques especially in skincare and haircare. The most popular DIY skincare among the interviewees was the use of traditional kitchen-based ingredients notably *besan* (gram flour) mixed with curd and tomato pulp while egg-white and onion juice were most preferred ingredients for haircare.

Inclusivity

The beauty and makeup industry has been a female-dominated industry but only in the recent past, this industry has started offering product lines exclusively of male and other genders. For instance, makeup, selfcare routines and grooming kits for men. This study showed that Indian millennial women prefer to buy more from those brands which have product ranges for all skin tones. Body positivity plays an important role for millennials' as it boosts confidence and helps to overcome insecurities. Commercials of brands like Joy and Nykaa on acid attack survivors have inspired millennials and boosted their confidence and hope. Interviews with women revealed their relatability with skincare commercials by Dove for being the 'most relatable' and appreciation for 'every form of beauty'.

Rise in e-tailing

COVID-19 has changed the cosmetic industry, causing a significant shift in retail and customer behavior in the beauty care sector. The ongoing COVID-19 outbreak has prompted a shift in the beauty retail industry resulting in a surge in e-commerce. This study showed a cumulative increase of 49.2 percent in online purchases of beauty care products in the categories of haircare, skincare, personal hygiene, and makeup. Amidst the pandemic, e-commerce platforms were preferred by 72.5 percent of the respondents. The number of respondents' whose preferred mode of shopping during the pandemic was from e-commerce websites is 78.7 percent for haircare, 83.6 percent

for skincare, 76.2 percent for personal hygiene, and 51.6 percent for makeup. The reason for this transition by employed millennials is that it is a much simpler process of buying online rather than offline because of the wide range of options of all brands made available on one platform and easy access to the payment modes.

The pandemic has critically affected everyone's lives. The way people live, work, or travel has changed, as a result of which‑habits have also changed. Millennials, the largest working population in India, have been working from home which has changed many trends including beauty and makeup. Social media is one of the key flag bearers of the makeup trend among millennials. It was observed that social media played a significant role in influencing trends like minimalist makeup. The rise in consciousness towards beauty and makeup has been one of the significant changes among Indian millennials. 49 percent observed the demand for transparency and rise in consciousness. There is also a positive relationship between the rise in consciousness and demand for organic products. Millennials expressed a preference for brands that have sustainable packaging, promote inclusivity, especially about skin tone, and spread awareness of body positivity and other important causes. About 40 percent of the respondents opted for brands that promote a wide range of skin tones and 44 percent opted for brands promoting body positivity. Monthly salon visits have been replaced by home-based salon service and local service providers have been the recent favorites. Pandemic has influenced the trend of home-based salon service over traditional salon services. COVID-19 and norms of social distancing have prompted consumers to reconsider their priorities and demands, necessitating companies' recognition and response to these adjustments. Consumers are increasingly eager for DIY products with 77.4 percent of the respondents showing willingness to continue with home remedies even after the pandemic period, thus creating opportunities for brands to innovate and develop in this area. Brands should look to provide their customers with equipment needed to recreate the salon experience at home, from DIY kits to online tutorials and at-home beauty boxes. Brands can use this unique opportunity to interact with their customers in creative and memorable ways by offering products that promote self-care and wellness. The beauty and personal care industry which was formerly confined to brick-and-mortar establishments has developed rapidly in recent years and are now expanding to e-commerce. According to the findings of this survey, almost 49.2 percent of the respondents have switched from the retail domain to e-commerce amidst the pandemic.

Conclusion

This study explored the changes in preferences for beauty and makeup trends among the millennials in India, who have been working from home during the pandemic. Critical changes in the way they live, work, and travel have resulted in various changes including their preferences towards beauty and makeup. The social media has been a key influencer of beauty and makeup trends among the millennials, leading to demand for organic products and transparency in the ingredients. Millennials prefer brands that follow sustainable packaging, promote beauty inclusivity especially regarding the skin tone as it is a very visual marker, and spread awareness about body positivity. The pandemic has influenced the growing trend of home-based salon services replacing monthly salon visits, and thereby turning local service providers into recent favorites. Norms of social distancing have prompted consumers to reconsider their priorities and demands, necessitating companies to recognize and respond accordingly. Consumers' increasingly eagerness for DIY products and willingness to continue with home remedies even in the post-pandemic period, have created opportunities for brands to innovate and expand in this area by providing their customers with tools needed to recreate the salon experience at home, from online tutorials to DIY kits and at-home beauty boxes. With consumers transitioning from retail to e-commerce, the beauty and personal care sector has also significantly expanded in the last two years beyond physical stores to e-commerce.

Notes

1. Metoo is an international movement against sexual abuse and sexual harassment against women, which became a popular hashtag on social media in 2017.

2. BLM is a social movement that highlights racism, discrimination and other inequalities against black people. It gained international attention and became a widely used hashtag on social media in 2020 after the murder of George Floyd.

3. Skinmalism conjoins 'skincare' and 'minimalism' and therefore, refers to a routine that uses fewer skincare and beauty products.

4. Inclusivity refers to not excluding people on the basis of race, gender, sexuality and ideas and treating them equally.

5. Gender-neutral refers to the idea that policies, language, and other social institutions should avoid differential, distinguishing roles according to an individual's sex or gender.

6. Body positivity focuses on accepting all body types regardless of size, shape, gender, skin tone, and other physical abilities.

7. Gender fluidity refers to change over time in a person's gender expression or gender identity, or both. That change might be in expression, but not identity, or in identity, but not expression. Or both expression and identity might change together.

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Amplifying Sustainability in the Indian Fashion E-commerce Marketplace

Komal Arora and Jasmine S. Dixit

Abstract

Eco-friendly lifestyle is gaining prominence due to which the fashion industry landscape is changing dramatically with sustainable fashion emerging as the zeitgeist of the present era. This study presents an overview of the scope of sustainable fashion and lifestyle products in the e-commerce marketplace post COVID-19 pandemic. Further, research on consumer demographics and buying behavior has been undertaken and applied as the basis to suggest areas of improvement in the customer's shopping experience with respect to sustainable fashion and lifestyle products in the Indian marketplace. The sample comprised 221 Indian e-commerce consumers, who actively purchase sustainable products from various online platforms. Findings from the survey positively reinforce the crucial role of sustainability in influencing the fashion and lifestyle e-commerce space. It also highlights the need for the e-commerce marketplace players to embrace this specialized yet essential category of sustainable fashion and lifestyle products, so as to accelerate their growth and engender enhanced customer experience in the post pandemic period. Outcomes of the study highlight the importance of enhancing the sustainable proposition of the brands through various means, including but not limited to providing distinct visibility on platforms, personalizing the customer experience, strengthening the trust, credibility, and authenticity through detailed sustainability claims, blogs and QR codes. This study aims to provide direction to the e-commerce marketplace players in their efforts to capture a larger consumer base and to reinforce the trust of their consumers in environmental preservation. While it provides an overview of the changing disposition of the consumer towards eco-friendly fashion, there is a possibility of a bias due to the ongoing pandemic which may or may not hold in normal circumstances or in the post pandemic era.

Keywords: Sustainable fashion, conscious fashion consumer, e-commerce, online marketplace, fashion and lifestyle, consumer behavior

Introduction

Faced by wide criticism of its negative planetary impact, the fashion industry which "includes a variety of stakeholders along the value chain and refers to the production of clothing, leather and footwear made from textiles and related goods, and extending from the production of raw materials and the design and manufacturing of garments, textile and leather accessories and footwear, to their distribution, consumption and disposal" (UN Alliance for Sustainable Fashion, n.d.) has been redefining its sustainability credentials. Building on the Sustainable Apparel Coalition's Higg Index which provides a framework for brands to measure their own supply chain impact, fashion's sustainability metrics includes data on carbon emissions, use of chemicals, and water consumption. Through mindful production systems and innovative business models, the industry has been owning its responsibility in contributing to the gravity of the situation and taking steps to reshape the business landscape through sustainable products.

The outbreak of COVID-19 in 2019 led to governments issuing advisories and intermittent norms on safety regulations and social distancing contingent on the mutations of the coronavirus led to imposition of restrictions on physical movement, and shortage of goods requiring consumers to improvise with available resources. During the pandemic, consumer sentiment was reflected in their spending intent across categories, many having modified their spending patterns to essentials, while cutting back on discretionary categories including low-cost fast fashion sold by giant brands which have accelerated the damage to the environment. The shift in buying patterns saw consumers eschew excess consumption and opt for local offerings. Other important consideration for consumer motivation in choosing brands translating to their purchasing decisions is a wider concern for sustainability encompassing the environment, lives and livelihoods. Consumer motivation drives brands to be conscious in their offerings.

COVID-19 precipitated disruption of financial markets as it upended supply chains across global economies. Widespread impact of the coronavirus decelerated the expected growth projection of the fashion industry, making it necessary to find alternative pathways to attain growth. Among the most cited drivers of consumer decisions on their brand choices are availability, price sensitivity, value as well as convenience of shopping. To forge long-term relationships with consumers, assessment of consumer preferences, interests, and pain points to identify critical intervention points and avenues are essential for businesses. This necessitated technology and digital media platforms to play a greater role in reaching out to consumers to create a buzz and ensure their continuing loyalty. As the pandemic reshapes the world, more consumers

have begun shopping online in greater numbers and frequency. According to new data from IBM's 2020 U.S. Retail Index, the pandemic has accelerated the shift away from physical stores to digital shopping by roughly five years (Pastore, 2020). Accelerated rate of digital adoption has been a dominant trend. The 2021 Global Payments Report by World pay FIS, a financial technology product and services provider, tracked trends across 41 countries and found that digital commerce accelerated during the pandemic. Widespread use of e-commerce touch points has led to the digitalization of purchasing modes as e-tailers leverage omnichannel avenues to amplify purchasing experiences and to cater to diverse shopping preferences. This includes strategies of business expansion of the fashion and lifestyle segment reflecting awareness and commitment to the inclusion of sustainability thinking in virtual marketplaces. Given that consideration of sustainability is a factor that affects consumer decisions, e-commerce players are increasingly using omnichannels of marketing.

Literature Review

This is a nascent but expanding field of study being developed through tacit knowledge and academic research, construed by an understanding of the urgency for change. Creating new markers for a vast industry that epitomizes the ability to profit from an incomplete accounting model requires leadership skills and practices of transformational design that offer the potential for fashion to change not only itself but also to influence more broadly how mankind can live well without jeopardizing the future. The need for realignment of business and social objectives, need for sustainable business models, fair working conditions, organic and environmentally friendly materials traceability, and certifications (Johnston, 2012), responsible end-of-life disposal systems to avoid increasing landfills (Niinimaeki , 2014) are imperative. Though COVID-19 did not create the current crisis in fashion, it has been instrumental in driving values around sustainability into the limelight, generating discussions on issues of overconsumption, materialism, and irresponsible business practices (Amed, et al., 2020). The COVID-19 pandemic and the resulting societal and economic shutdowns required to contain it presented the apparel, footwear, and textile industries with unprecedented challenges. But while this crisis strains their commitment to sustainability, it simultaneously demands that companies accelerate their progress on sustainable initiatives in order to be competitive in the market that will emerge after the pandemic. While sustainability is in danger in some areas of the industry, companies that embrace it will be among the leaders of a resurgent fashion industry on the other side of the pandemic (Martinez-Pardo, et al., 2020). Trend forecasts

suggest that the global health crisis will lead to a rise in the overall consumer demand for items that are closely associated with values, well-being, trust and the collective good – specifically in categories such as fashion and beauty, viewed as being 'close to the body'. Transparency will be of high relevance for all stakeholders; consumers are likely to spend less money and more consciously, and sustainable and ethical action within supply chains and fair working conditions will be imperative. This situation may accelerate the shift to greener, more sustainable supply chains, which will not only be decisive for businesses, but also impact the future of the fashion industry as a whole (Ricchetti and Palma, 2020). A survey conducted in April 2020 across more than 2,000 UK and German consumers showed that in practice, consumers have already begun changing their behaviors making significant changes to their lifestyles to lessen their environmental impact and achieve sustainability goals (Granskog, et al., 2020). Though many production centers are concentrated in developing countries like India, Bangladesh and Pakistan, studies on these geographical regions are scanty. Research on environmental management practices for textile industry in emerging economies like India remains highly unexplored. Moreover, previous studies on the textile sector in India have focused largely on its technological as well as economic aspects, with hardly any study capturing the managerial perspective towards sustainability issues and practices.

Rising awareness of sustainability in India

Traditional production systems for textiles and clothing in India, have been environment-benign processes of making and disposal. The same industry now has a high impact on the environment, second only to agriculture in terms of water consumption, causing water body pollution due to the discharge of untreated effluents, air pollution prior to processing of Fibers and during spinning and weaving generating dust, cotton lint etc. (Sharma and Narula, 2020)

Home to one-sixth of the world's population and widely estimated‑to become the most populous country in the world by 2030, India is likely to play a pivotal role in ascertaining the relative success or failure of global goals for sustainable development. A rapidly growing economy along with a large domestic market has made India one of the most important players in global supply chains (Phelan, 2020). Previously, because of environmental or social impact and now in response to post-COVID behavior, sustainability is moving into the mainstream for customers as they evaluate its effect on their purchasing patterns. A study by Capgemini Research Institute (2020) which involved 750 large businesses and 7500 consumers across nine countries including

India indicates changing mind-sets of consumers towards sustainability. This is re-enforced by the State of Fashion 2020 report (BOF and McKinsey, 2020) which states that sustainability is gaining importance in India with the local market predicted to reach nearly USD 59.3 billion in terms of revenues in 2022, thus making it the sixth-largest globally after the UK and Germany. The recent increase in demand for eco-friendly and conscious clothing in the country points to sustainability as an important driver in consumers' purchasing decisions. Even though the industry is at a nascent stage, the market for eco-friendly clothes in India is growing at a steady pace. Manufacturers are embracing better practices to make clothes that leave less impact on the environment. A recent survey of YouGov (Bhatia, 2019) conducted for consumers in India reported that a majority of buyers consider a sustainable production process as a priority while shopping for fashion products, although material, design, price, and fit, have a more controlling influence. New recent data reveals that more than 83 percent of people consider sustainability when buying fashion products (Taskin, 2019).

Online shopping and e-commerce markets in India during COVID-19

The fashion and lifestyle market has two distinct distribution channels - offline such as shopping malls and physical stores, and online channels such as e-commerce marketplace and exclusive brand websites (Daedal Research, 2020). The Indian textile and apparel industry contributes 13 percent to the country's total export earnings and 2.3 percent of the country's GDP. This industry reached a value of USD133 billion in 2020 (IMARC Press Release, n.d.) growing at the expected CAGR of ~12 to reach an estimated INR 16,637 billion (USD 220 billion) by 2025-26 (Wazir Advisors, 2020). The growth projection for exports is still expected to reach INR 5242 billion (USD 70 billion) by the year 2024 (Televisory, 2020). Despite the economic downturn, the e-commerce industry in India witnessed exponential growth, recording a 17 percent growth in order volumes as of June 2020, which was much higher in comparison to the pre-lockdown period (ibid.) Consumers are now looking for ease of shopping that is more convenient, affordable and accessible with multiple options, better offers and easy return policies. The growth in online sales has enabled the textile industry to reach consumers across the nation. Industries have been working towards rebounding from the effects of COVID-19 while a significant change has been observed in consumer behavior. Rising hesitation among the customers to visit physical stores and lockdown regulations across India have tilted the domestic consumer market towards online shopping (Sharma, 2020). The pandemic has accelerated a shift to online shopping, an increased need for omnichannel, and major changes in consumer shopping habits (Wertz, n.d.). Seamless offline/online transactions and multi-channel integration are the way forward for the accelerated future growth in the post pandemic period (Bhalla, 2020). There has been

an increase in the frequency of the first-time e-commerce users (FTUs) / first-time online shoppers in India who were previously inhibited by the notion and modalities of online shopping but are now switching to such new platforms.

Government initiatives, and most significantly the post pandemic altered consumer behavior, the e-commerce has revolutionized the way business is conducted in India and is expected to reach USD 27 trillion by the end of this decade (Sharma, 2020). Initiatives by the Government of India such as Make in India (2014), India Inclusive Innovation Fund (2014), Digital India (2015), Skill India (2015), and Start-up India (2016) have accelerated e-commerce growth in the country. Consultancy firm, Redseer reports that e-commerce giants, Amazon and Walmart owned Flipkart have sold estimated goods worth INR 29,000 crore (USD 4.1 billion) between 15-21 October 2020, a massive increase from the previous amount of USD 2.7 billion in 2019 (Press Trust of India, 2020). The massive growth in online retail in the country, enabling consumer access to global and local brands are attributed to the increasing penetration of the internet, smartphone boom and the launch of 4G network as the key drivers of consumer technology and the companies that profit from it.

The pandemic has necessitated new ways of thinking and doing by modifying existing practices. The role of online players in adopting leadership roles to promote the consumption of sustainable products and to enhance the current offerings of online sustainable fashion and lifestyle stores, gains relevance. In the aftermath of COVID-19, consumer motivation and behavior are likely to impact sustainable fashion in India. The need to ascertain if these findings can be used to suggest new areas of improvement for sustainable e-marketplace stores in India, leads to the research methodology.

Research Methodology

Based on the findings of the literature review, some research questions guided this research:

- What are the demographics and buying behavior of sustainable fashion consumers in India?
- What is the consumer demand for sustainable fashion and lifestyle products in India?
- Can these findings be used to suggest new areas of improvement for sustainable e-marketplace stores in India?

To address these research questions, examination of the relationships among variables namely frequency of purchase, willingness to buy, readiness to spend on sustainable

goods, price, packaging, and quality, was necessary. A research design frame was drawn up to study consumer demographics, motivations and purchasing behavior. A sampling frame was developed and administered to a sample size of 221 respondents identified through a non-probability, judgemental sampling approach, where ~95 percent were from Delhi NCR identified on the basis of their awareness of the fundamental aspects of sustainability and continuous consumption of fashion (clothing and lifestyle) products on e-commerce portals such as Nykaa fashion, Myntra For Earth, Zalora, IKKIVI and Amazon that conformed to one or more aspects of sustainability.

To ascertain the scope of sustainability on an e-commerce platform, a questionnaire was developed and administered online to a sample of 315 respondents, out of which 221 fully completed responses were received back. A survey of was undertaken to understand customer responses to sustainability in Indian e-commerce marketplaces. Pie charts, bar charts and histograms are used to organize and condense the data into easily interpreted visuals.

Results of Data Analysis

Data on the demographic profiles of the respondents was analyzed on the basis of their age and gender. The final sample consisted of 221 respondents whose responses were analyzed, as below:

Age

Of the total responses obtained, the largest respondent group of green consumers of 45.2 percent were in the age group of 18-25, followed by 27.6 percent in 26-35 years and 16.3 percent in the age group of 36-45 years (Figure 1).

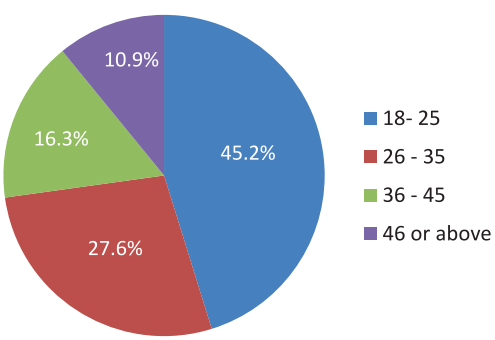

Figure 1: Age and sustainability awareness of respondents

All the respondents were forward-thinkers, proactive in identifying sustainable brands that are built on the stated criteria of sustainability. In general, previous studies reveal an inverse relationship between age and environmental behaviors, attitude, and knowledge signifying a greater tendency and environmental sensitivity among the relatively younger population (viz. those in the age group of 18-24 years and 24-35 years) to effectively search for the environmentally friendly products. This re-iterates the research of Jain and Kaur, (2006) that though green consumerism is on the rise, not all the consumers are equally green. To be able to more effectively market green products and ideas, marketers need to segment their market and use differentiated marketing approach for each target segment. The younger population from 18-35 years are the front runners in sustainability awareness. Further, increased frequency of the other age groups also indicates their inclination towards environmental and personal wellness.

Gender

The sample comprising 54.8 percent of female respondents, 44.8 percent of male respondents and 0.4 percent of others is a perfect simulation of the entire target audience (Figure 2).

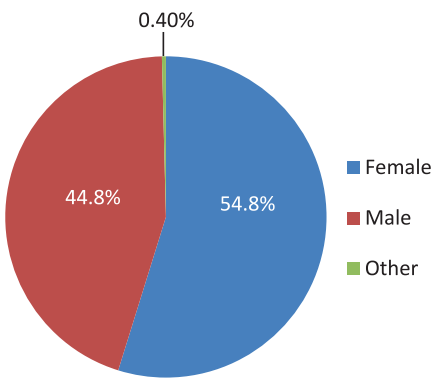

Figure 2: Distribution of sample by gender

Gender roles exhibited by men and women that govern the attitudes, skills, and social development have an impact on the displayed behavior. Women consider the result of their actions more carefully as compared to men (Tong, 2012). In general, women are found to perform better than men in terms of their involvement in environmental activism, increased willingness to seek eco-friendly products, and conservation behavior.

Frequency of consideration and purchase decisions based on product sustainability

The survey also aimed to derive an up-to-date assessment of sustainable fashion consumption of the consumers. Two questions aimed to ascertain the frequency of consumer respondents who consider sustainability or environmental friendliness of a product while making purchases (Figure 3 and 4).

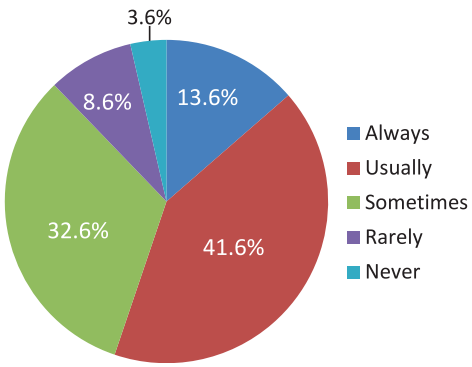

Figure 3: Frequency of consideration of product sustainability

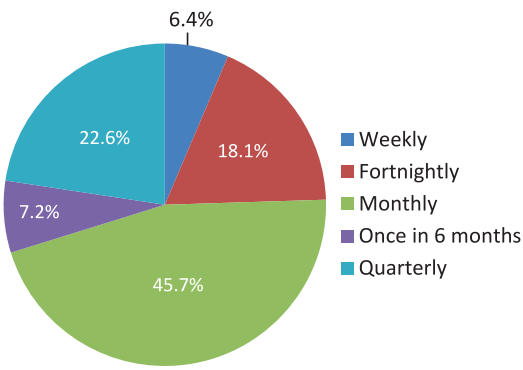

Figure 4: Frequency of purchase decisions based on product sustainability

Data analysis showed that 41.6 percent of the respondents 'usually' consider the frequency of consideration of product sustainability while making purchases, followed by 32.6 percent who consider this factor 'sometimes' while purchasing, 13.6 percent who 'always' consider this, followed by 8.6 percent who admitted to 'rarely' consider it. To find out the buying pattern by the same group of respondents, 45.7 percent claimed to purchase sustainable products every month, followed by 22.6 percent who shop quarterly, 18.1 percent buy it fortnightly and 7.2 percent make purchases once in every 6 months.

Preferred shopping format

The fashion market continuously develops and is mirrored similarly in the outlets from where consumers prefer to purchase their clothing. In the survey, consumers reported their use of different formats of shopping for sustainable fashion items (Figure 5).

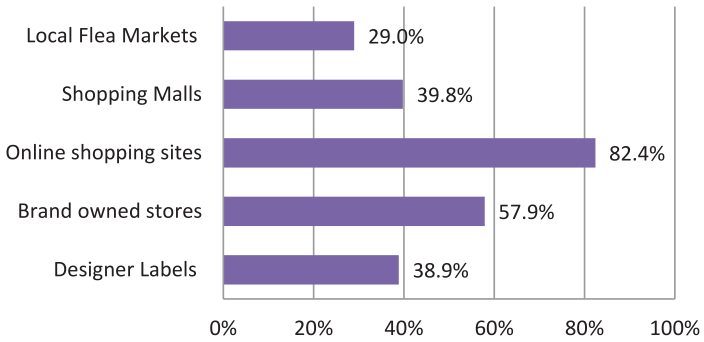

Figure 5: Preferred shopping format of respondents

The survey indicated that for an overwhelming 82.4 percent, online shopping was the most preferred format. From the perspective of scope and demand, this finding indicates how offering customers an opportunity to use online platforms for shopping for a range of sustainable products from a selection of brands could work well within the market.

Choice of a preferred sustainable product category

The survey attempted to ascertain consumer preference across different sustainable product categories of consumables ranging from beauty and personal care, home and living, and clothing for men, women and children.

Figure 6: Preferred sustainable product category

The data indicated that the largest segment comprising 62.9 percent of the respondents was interested in making purchases in the beauty and personal care category, 58 percent in the home and living category, and 56 percent in womenswear category (Figure 6). In the post pandemic period, there is rising demand for clean and natural beauty, as well as sustainable home and living. The findings also indicate that the least preferred category for sustainable purchases is menswear. This can be attributed a higher presence of women shoppers (54.8 percent) as compared to men (44.8 percent) on sustainability portals.

Importance of different criteria for purchasing sustainable products

Questions were framed to find out the importance of specific criteria while shopping for sustainable products. These included the attributes of being handcrafted, low environmental impact, cruelty-free, ethically produced, and recycled.

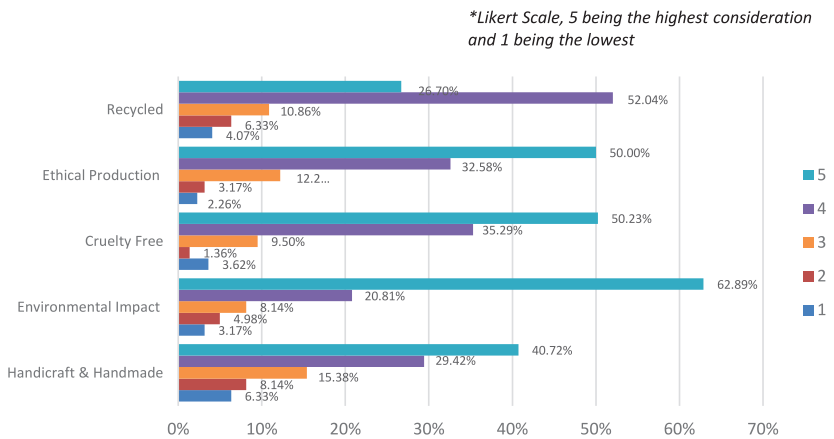

Figure 7: Important criteria for shopping for sustainable products

The data indicated that while shopping for sustainable products, the respondents placed high importance on environmental impact of products that are eco-friendly and naturally dyed, with 62.89 percent of the consumers considering it a very important criterion, followed by 50.23 percent considering cruelty-free and ethical production (in terms of being made in a safe regulated environment through organic farming) as a very important criterion. 70.14 percent of the respondents consider handicraft and handmade as an important criterion (Figure 7). These findings ascertain the popularity of different factors based on consumer attraction and ratings on a Likert scale.

Checkpoints for recognizing sustainability in a product

The survey also attempted to understand the checkpoints of product labeling, packaging, product description, certification that buyers recognize to differentiate between sustainable and other products.

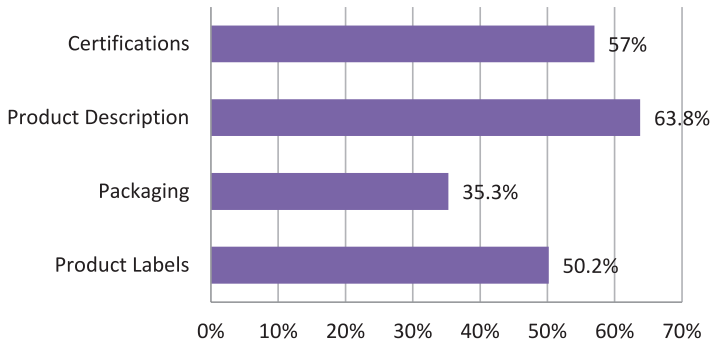

Figure 8: Sustainability checkpoints in products

It was noted that the majority of customers constituting 63.8 percent considered product description as an important factor followed by 57 percent who consider product certifications as an important checkpoint to differentiate products (Figure 8). This indicated the imperative, as a business, to inform the consumer about product sustainability through detailed product descriptions and certifications information to aid consumer decision making.

Assessment of respondents' consumer behavior towards their shopping experiences for sustainable products

The respondents were asked to indicate their agreement with the statements indicating consumer behavior regarding sustainable products (Figure 9).

With the growing awareness for social responsibility and its role on the brand image, it is being increasingly recognized that customers are demanding more sustainable practices. Around 78.28 percent agreed that they purchase eco-friendly products only after considering the environmental impact and initiatives of brands. In terms of purchasing behavior, the majority of customers comprising 85.07 percent of the respondents, opined that sustainability comes with a price. This indicated a clear gap regarding the need to educate consumers about the availability of more budget-friendly options.

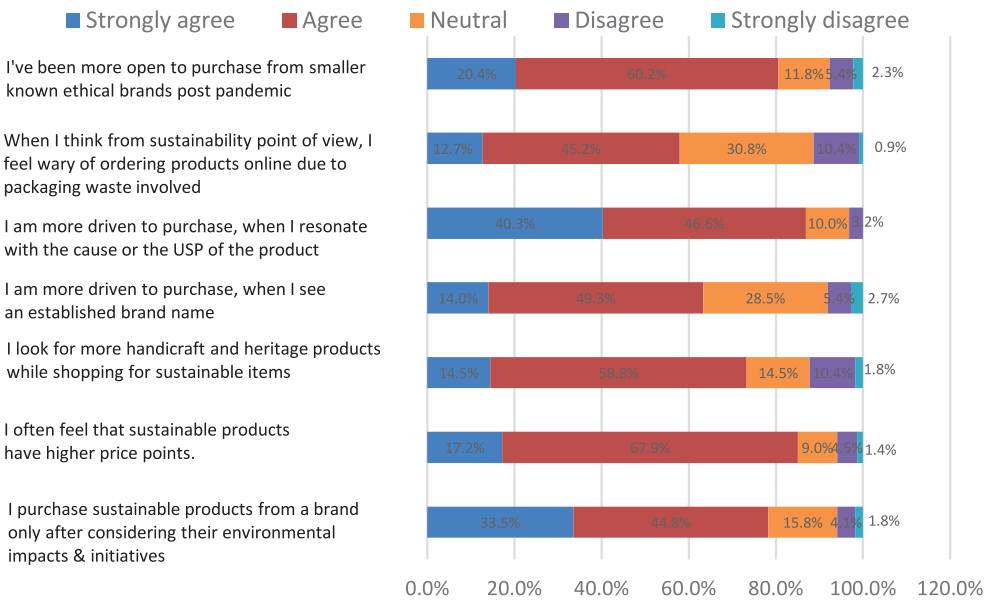

Figure 9: Agreement on different shopping experience

With the 'Make in India' and 'Vocal for Local' initiatives launched during the pandemic, consumers have been evincing interest in heritage handloom and handcrafted styles with 68.32 percent agreeing to specifically look for such sustainable products while shopping. 80.54 percent of the customers seemed more likely to experiment with smaller or less-known ethical brands to infuse newness in traditional narratives amid uncertain times.

While 63.35 percent of the respondents agreed to being more driven towards the purchase of sustainable products from an established brand name, 86.88 percent felt that they are more likely to purchase sustainable products when they resonate with the USP of the products as per the options offered to the respondents in the questionnaire. Hence, indicating the increasing shift of consumers towards more meaningful purchases.

Importance of different factors while purchasing sustainable products

The respondents indicated their perceived importance of different factors while purchasing sustainable products (Figure 10).

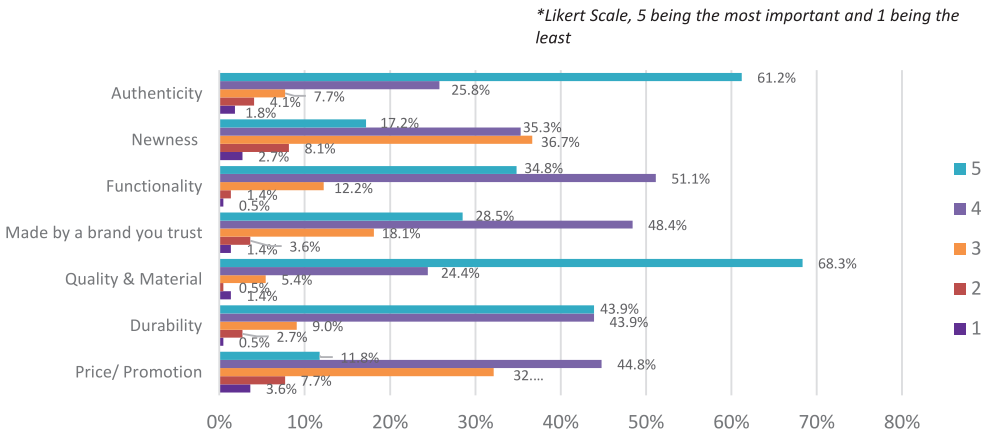

Figure 10: Importance of different factors in the purchase of sustainable products

Quality and material were rated as the most important factor indicating environmental friendliness of products by 68.33 percent of the respondents. Consumers are increasingly looking for durability in products and authenticity concerning eco-labels and certification in the products with 87 percent of consumers rating it to be an important factor. When choosing a sustainable product, an increasing number of consumers feel that factors of price and newness of design trends are relatively less important attributes.

Willingness to purchase sustainable products from online marketplace

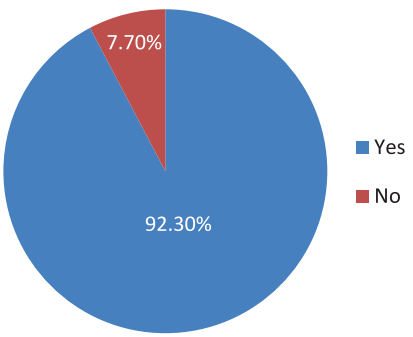

Figure 11: Willingness to purchase

The survey findings indicate that the majority of the respondents, 92.3 percent are willing to purchase sustainable products from an online marketplace platform thus clearly indicating the need and scope of such platforms (Figure 11).

Fail points or pain points in the success of the online marketplace platform

One of the primary purposes of the survey was to understand the consumer pain

points and apprehensions while purchasing sustainable products.

Data analysis (Figure 12) showed that 66.5 percent of the customers are of the opinion that lack of awareness while 61.5 percent feel that lack of authenticity of sustainable brands are important reasons for the non-performance of online sustainable marketplaces. It also emerged that 54.8 percent express trust as an important factor and lack of the same may negatively impact the effective functioning of the online platform. This indicates that trust, credibility and authenticity need to be constantly reinforced to inculcate awareness among the customers.

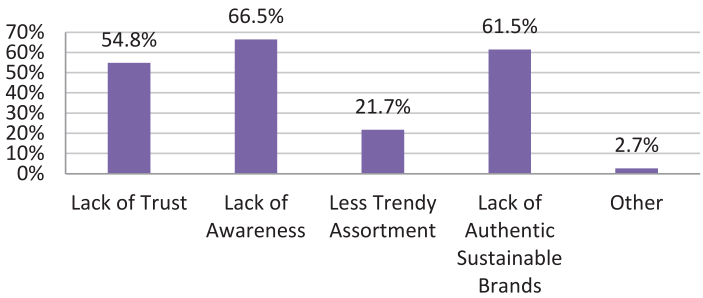

Figure 12: Frequency of fail points in the success of online marketplace platforms

Disposal mode

With only 9 percent of consumers throwing away their unwanted clothing items, it is inferred that increasing focus on sustainability is turning them towards textile recycling through various organizations, donations to charity and domestic help (Figure 13). This indicates a rise in consumer sentiment for circular economy which offers alternative ways to extend the useful product life cycle of used products.

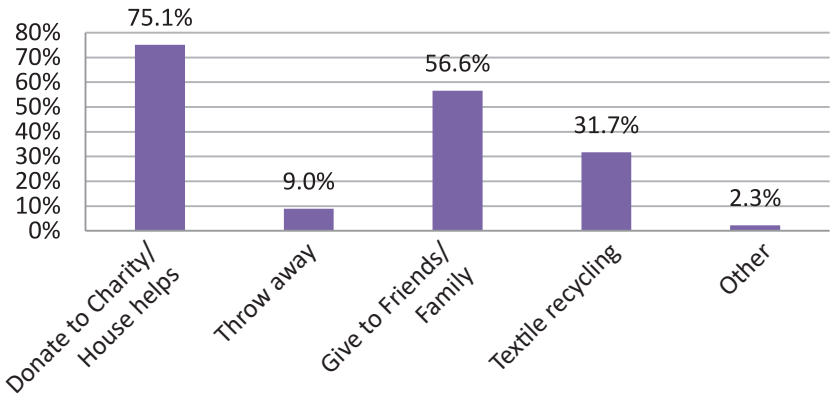

Figure 13: Disposal mode of unwanted clothing

Findings and Discussion

It is evident from the findings of the survey that engagement with sustainability and environment has deepened especially during and in the post pandemic period with consumers actively seeking industry players to take on a more responsible stance while taking the social and environmental impacts of their businesses into account. This presents an opportunity for fashion brands to reiterate their commitment to sustainability as an integral component of short-term and long-term strategic planning. Based on the survey, some suggestions are proposed to enable brands effectively deliver the message of sustainability.

- According to the Clean Beauty Market Forecast 2027 Report (Brandessence Market Research, 2022), increased consciousness of skin types is propelling the growth of the global market size for clean or sustainable beauty products at a significant CAGR of 12.07 percent from 2020 to 2027. In terms of revenue, the global clean beauty market estimated at USD 5439.6 million in 2020, is further expected to reach USD 11558.5 million in 2027. Once a niche trend and now a mainstream trend, the beauty segment earlier comprising 62.9 percent of consumers interested in the beauty and personal category, has propelled the organic beauty and well-being domestic market to an all-time high with Millennial and Gen Z leading the way to conscious consumerism. Hence increasing the visibility of the sustainable beauty category in the online store through homepage banners and social interventions can help brands to capitalize on this strong trend.

- Sustainability and authenticity are twin brand values that can power business growth. With 86.43 percent of respondents rating authenticity as an important criterion while purchasing sustainable products, it is imperative to assure customers regarding sustainability claims of the product. 50.2 percent of respondents are convinced of the reliability of product labels in claiming a product as sustainable. Hence, incorporating a distinct eco-friendly label or blurb on the products can help consumers easily identify the sustainable product and aid in justifying the sustainability claims of the product and help brands in providing an authentic consumer experience.

- Displaying adequate information about the USP, material details, and sustainability aspects of a product would establish a relationship of trust between the manufacturer and consumer through powerful narratives and storytelling. 63.8

percent consumers identified a product as sustainable based on its description as its environmental and ethical credentials. The inclusion of rich content using GIFs, infographics and PDP banners can propel brands towards content-led propositions while engaging the customers.

- With choices of several style options in apparel, the first step towards expansion is increasing visibility of the store. 61.5 percent of the respondents felt that there is a lack of authentic sustainable brands in the market and therefore, providing the consumer with adequate choices of sustainable fashion would be the most important criteria for making a purchase. Ease of purchase, price, and perceived value becomes increasingly important. E-commerce marketplace players can expand their brand selection by on boarding more sustainable brands in the Indian market.

- Traceability and authenticity of sustainable products are of prime importance for the customers. 54.8 percent of respondents believe that brand trust is critical, failing which could result in non-performance of the e-commerce platform. This points to the importance for re-enforcing trust, credibility and authenticity through transparent information regarding certification, data points, and sustainability claims on the platform.

- 85 percent of the respondents feel that purchasing behavior is influenced by the perception that sustainability comes at a price. This highlights the need to inform consumers about the availability of budget-friendly sustainable options in India. Hence a promotional banner for highlighting the price-friendliness of the sustainable products can lead to higher sales conversions.

- A strong tilt towards traditional handlooms and handicraft products was evident from the findings of 73.3 percent respondents who consider it 'very important' and 40.72 percent consider it 'important' while shopping for sustainable products. This is a major opportunity for Indian manufacturers to expand their range of sustainable collections to capitalize on the rising consumer sentiment in the post COVID period.

- According to the Circular Fashion Summit by lablaco (2020), the potential value of circular economy could be as much as USD 5.3 trillion and gaining momentum. With only 9 percent of consumers throwing away their unwanted clothing items, consumers are now increasingly turning to new means to dispose

of their unwanted clothing items. Brands can participate by offering services such as textile recycling, sale of second-hand goods, offering upcycling services, and partnering with brands in exchange for customer discounts and loyalty points, to move towards a circular economy model, harness the zeitgeist to reduce waste and maximize the sustainability demands of the customer.

- Consumers' brand loyalty and purchasing decisions are highly contingent on availability of detailed sustainability initiatives of the brands. It is recognized that customers are demanding more sustainable practices, with around 78.28 percent agreeing to purchase eco-friendly products only after considering the environmental impact and initiatives of brands. Hence, providing transparency details of production methods through blogs, QR codes, and content-led propositions can engage the customers and communities better, thus helping brands to educate the Indian customers.

- Personalization is very important to engage shoppers, encourage repeat purchases, drive sales and increase conversions. Brands can deliver personalized in-store experiences by showing content, sections and banners, product recommendations, and special offers based on the browsing behavior and purchase history of the customer. Developing a customized atmosphere for every customer, basing their interests and behavioral aspects can help brands in delivering a unique user experience and driving sales.

Conclusion

The aftermath of the COVID-19 crisis is seeing a wave of change in consumerism patterns and consumer behavior. The pandemic is accelerating trends that were in motion prior to the crisis as shopping shifts to digital, and consumer motivations and behavior are spurring sustainability concerns. Businesses that communicate their ethical, environmental-conscious values to the consumers, are likely to lead sustainability conversations in manufacturing, marketing and promotion of fashion. This article provides an overview of fashion and lifestyle e-commerce platforms that are incorporating sustainability as part of their short-term and long-term strategic planning and reorganize for the next normal after the COVID-19 pandemic through recommendations like personalization, online banners, and visibility plans, pricing, and promotional strategies. It points to the possibility of future adoption of this specialized yet essential category of sustainable fashion and lifestyle products for the

accelerated future growth and enhanced customer experience in the post pandemic period.

The limitation of this study is the sample size of 221 respondents mostly concentrated in Delhi NCR. Future studies can aim at studying a larger sample with balanced representation across India. It was undertaken during the pandemic when the consumer sentiment for sustainability was at an all-time high and hence there might be behavioral and consumption bias which may or may not hold in normal circumstances or in the post pandemic era.

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Rethinking Resilience: COVID-19 and Creativity among Mysore Rosewood Inlay Artisans

Shipra Roy and Nilanjana Bairagi

Abstract

COVID-19 has disrupted the way of life in traditional clusters for the craftspeople and artisans, forcing them to reconsider and reinvent the ways in which they conduct their business and to continue in their traditional profession with resilience. The 150-year old practice of Mysore Rosewood inlay handcrafted products bears the imprint of the mind and hand of the craft practitioners. As there are limited studies on craft practices and creativity of artisans during the pandemic, an ethnographic study was carried out during the two-year period from July 2019 to June 2021 in the clusters of Mysore, Karnataka where the craft of Mysore Rosewood inlay is practiced. Creativity workshops were organized in the workspaces of these artisans. The Test of Creative Thinking – Drawing Production (TCT-DP) developed by Urban and Jellen (1989) was adapted and applied to study the nature and aspects of quality of creativity among these craft practitioners during the pandemic and resilience factors which have enabled them to adapt to the situational constraints. Data from visual research and creativity studies was analyzed and correlated with resilience of the artisans in carrying out craft activities with tenacity during the pandemic. The findings indicate that higher resilience co-relates to types (divergent/convergent) and levels of increased creativity in bringing changes through design, use of raw materials, and pro-active searches for orders through online platforms.

Keywords: Mysore rosewood inlay, creativity study and evaluation, design, skill, artisans

Introduction

> *"The craft heritage continues to evolve into modern times and the objects too are finding new and contemporary expression while the old and the traditional is still valued for the refinement they represent."*
>
> (Ranjan and Ranjan, 2005, p.21)

The eponymous craft of Mysore Rosewood Inlay originated in Mysore (now Mysuru) city in Karnataka is an erstwhile princely state ruled by the Wodeyar dynasty from 1399 to 1947 under whose patronage it became the cultural capital of South India (Swamy and Shankar, 2012). Despite rapid urbanization, crafts continue to be an integral part of this state that takes pride in its heritage and culture. This inlay craft grew from the availability of Indian Rosewood (*Dalbergia latifolia Roxb.*) that grows well in conducive soil types which include red sandy soils, red loam soil or clay containing lime, and deep black soil. The technique involves insertion of materials such as ivory shells, mother-of-pearl, horn, sandalwood and recently, even plastic into shallow grooves on rosewood to form ornamented images that are flush with the base (Figure 1).

Figure 1: A portrait made with Mysore Rosewood Inlay technique

Source: Shipra Roy

This craft bears a strong imprint of its geographical origin, demonstrated through the choice of subject matter drawn from the local way of life, flora and fauna and other cultural symbols used for the designs. The subtle interplay of tints and tones of the color palette gives a painterly quality to this wood craft. A craft is identified by its intrinsic engagement with material and imprint of individual hand skills on the created artefact (Schön, 2017). Its value often derives from the historicity, artistic intervention of the maker drawing directly from cultural heritage using characteristic techniques and designs. The historicity and specificity of geographical origin with distinctive characteristics attributed to its origin, resulted in the intricate Mysore Rosewood Inlay craft receiving a Geographical Indication (GI) tag in 2005.

However, the disruption caused by the COVID-19 pandemic that led to widespread lockdowns, impacted lives, livelihoods and lifestyles that were earlier considered normal (Metzl and Morrell, 2008). Restrictions in public places made direct selling of craft products as souvenirs to the tourists, unviable at the time. Locked out of their livelihoods, the craft community and the sellers of craft products needed to leverage their resilience and creativity to deal with the situational adversity. Unanimously hailed for their creativity defined as 'the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form' (Kerr, 2021) that underpins creative productivity mastery of a particular sphere of activity or knowledge that requires a high level of ability. Resilience, a trait defined as the process of developing the ability to bend and rebound to overcome adversity (Hernández, et al., 2015) was imperative for the craftspeople and artisans during this uncertain time so that their creativity reflected in improvisation and adaptative capacities, could drive the continued pursuit of craft-based livelihoods. The crafts community is 'inner-directed' (ibid.) with an inherent leaning towards reflection as they follow their intuition towards creative expressions. Against a cultural backdrop dominated by traditional knowledge and skills, creativity takes Center stage as it has the potential to emerge as an overarching influence for future expressions of artistry and ingenuity. In India, policy-based innovative strategies for national development are seeing increased emphasis on creativity.

While there is extensive scholarly literature on creativity, there are limited studies on the relationship between creativity and resilience in the artisan community, particularly during the pandemic. The objective of this study is to focus on the dimensions and expressions of creativity among the practitioners of Mysore Rosewood Inlay craft during the COVID-19 pandemic. To this end it seeks to address two questions. How can creativity traits of the artisans be studied? and, what is the relationship between creativity of artisans and their resilience? The answers of these questions lead to the selection of the most often used creativity assessment instruments. It also aims to investigate the interrelationship between creativity and resilience, which enables the Mysore Rosewood Inlay artisans to adapt to the changing scenario.

Research Methods

The research methods draw from ethnography as the conceptual framework with its study grounding in anthropology to study creativity and aspects of creativity and resilience among the artisanal communities in select clusters in Karnataka, South India (Figure 2). Multi-model research approach using methods of field study, visual research

of craft artefacts, participant observation, semi-structured interviews of artisans among the craft practitioners of the Mysore Rosewood Inlay was conducted in the three clusters namely Bannimantap, Mandi Mohalla and Karakushala Nagara. The selection of clusters was based on comparatively higher density of the artisan population. The study was conducted from July 2019 to June 2021. Addresses of the artisans were obtained from the data base maintained by the Development Commissioner (Handicrafts) office in Mysore. The addresses were analyzed to also identify the number of artisans practicing in one geographical locale.

Along with the ethnographic study, a creativity externalization workshop was conducted with the artisans to study their creativity traits such as openness to experience, ability to work with elements and concepts. Creativity is associated with openness and the ability to bring something new in existence and deal with ambiguity. Resilience is the capacity to spring back with positive adaptation. Inherent characteristics of resilience allows one to be flexible and deal with ambiguous situations. The openness and ability to deal with ambiguous circumstance and be able to adapt within the context is the positive link between creativity and resilience (Metzl and Morrell, 2008).

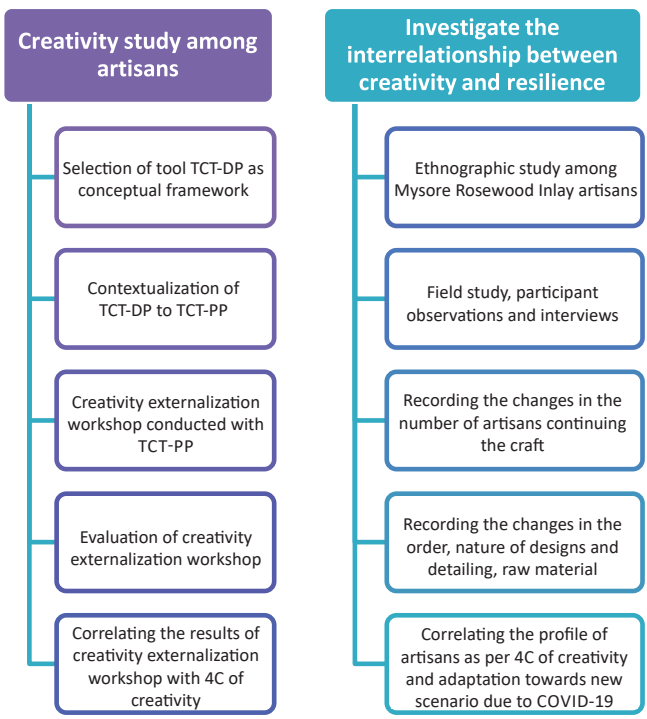

Figure 2: Research methods used for the study

Source: Shipra Roy

Selection of tests of creative thinking and creativity assessment methods

The Torrance Test of Creative Thinking (TTCT) developed by E. Paul Torrance in 1974 continues to be the most widely used creativity and validated divergent-thinking test for identification and evaluation of creative potential in educational settings. It tests creativity on verbal and figural stimuli. Based on psychologist J.P. Guilford's creativity test (Guilford, 1950), TTCT has been administered and refined over a period of time. The Test of Creative Thinking – Drawing Production (TCT-DP) framework developed by Klaus K. Urban and Hans G. Jellen (1986) has extended beyond traditional divergent thinking tests towards a more holistic and gestalt-oriented concept of creativity. Studies on cultural relevance of creativity based on TCT-DP with relevant parameters of assessment have been applied to other situations by researchers (Dollinger, Urban and James, 2004; Urban, 2005; Karkowski, 2008) points to a holistic approach of the TCT-DP creativity assessment test which includes aspects of risk-taking, breaking of boundaries and unconventionality. It recognizes that a single high score on a single component of creativity study does not necessarily signify a high level of creativity. In this case TCT-DP has been selected as the key research instrument to study creativity among the artisans.

Artisans of Mysore Rosewood Inlay craft engage with wooden patterns, but many of them are not familiar with the skill of drawing or sketching. Therefore, the researchers adapted the Test of Creative Thinking-Drawing Production (TCT-DP) to the Test of Creative Thinking-Pattern Production (TCT-PP), keeping in view the pattern production capability of the Mysore Rosewood Inlay artisans.

Creativity externalization workshop

Creativity research has moved from an almost exclusive emphasis on the creative person towards a more balanced inquiry of the nature of creative products and the conditions that facilitate their creation.

The TCT-DP test was first contextualized for the artisans based on their proficiency resulting in the component of drawing production (DP) being translated into pattern production (PP).

Creativity studies were also planned to ensure that language literacy of the artisans would not be a criterion for their inclusion in the workshop. The Four C model developed by Kaufman and Beghetto (2009) was used for evaluation of creativity

of the participants. Imagined as a life span concept, four developmental levels of creativity were considered. Big-C level of creativity is associated with eminent persons for their historically important contribution, Pro-C level of creativity focuses on work by professional but non-eminent practitioners whose work though valuable, may not be of outstanding significance, Little-C level of creativity is associated with the creative ability exhibited in everyday life, and Mini-C level of creativity is associated with personal, internal, expressive, and developmental aspects of creativity.

Profile of participants

Both male and female artisans registered with Development Commissioner (Handicrafts) office participated in the study with various levels of experience and achievement in craft, belonging to the age group of 27 years to 72 years. The artisans were informed about the purpose and the process of the creativity study. Their consent was sought before commencement of the study. The artisans were given wage loss compensation for participating in the study.

To determine the sample size for creativity study, confidence level of 95% was considered with confidence interval of 20 out of a population of 200 and statistical sample size was 22. The statistical sample size calculator available at survey system website was used. Invitations were sent to the artisans of the 22 workshops to be a part of creativity study, 18 participated.

The creativity workshop was conducted in June 2021 with 18 artisans from different workspaces in Mysore.

Development of instrument for creativity externalization workshop

The creativity externalization workshop using Test of Creative Thinking-Pattern Production (TCT-PP) was planned in the workspace of artisans in Mysore to ensure familiarity with the social and cultural environment. In continuation with the same principle, figurative elements for the pattern were developed by the researcher in wood with common geometric shapes: square, circle, rhombus, and line, which had similarity in meaning and affective response among artisans (Chen, et al., 2002; Shillo, et al., 2019). The attention was also paid to keep the pattern scalable to include multiple participants in the future without any change in the meaning of the pattern. The development of the shapes and their translation in wood is given in Figure 3.

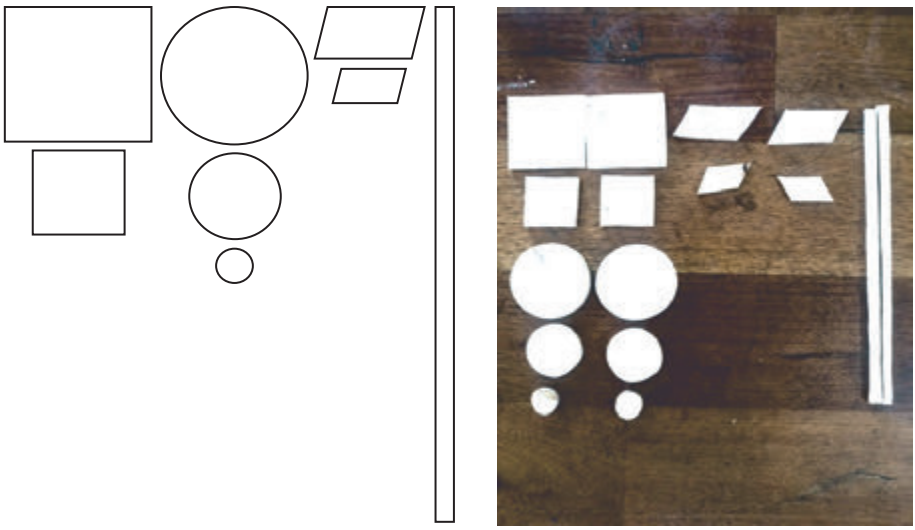

Figure 3: Developing patterns for TCT-PP study on paper (left) and on wood (right)

Source: Shipra Roy

Table 1: Developing Test of Creative Thinking-Pattern Production from Test of Creative Thinking-Drawing Production for Mysore Rosewood Inlay Artisans

S.No.	Creativity parameter as given in TCT-DP	As used for TCT-PP	Remarks
1	Continuations (Cn)	(Cn)	Cn and Cm was put under one criterion for artisans of Mysore Rosewood Inlay
2	Completion (Cm)		
3	New Elements (Ne)	(Ne)	Final pattern is seen for newness
4	Connections made with a line (Cl)	(Cl)	Contextualized to pattern creation
5	Connections made to produce a theme (Cth)	(Cth)	Contextualized to pattern creation
6	Boundary breaking that is fragment dependent (Bfd)	(Bfd)	No change
7	Boundary breaking that is fragment independent (Bfi)	(Bfi)	Contextualized to pattern creation
8	Perspective (Pe)	(Pe)	No change
9	Humor and affectivity (Hu)	(Hu)	Contextualized to pattern creation
10	Unconventionality, a (Uc, a)	(Uc)	Keeping four different criteria was not relevant to the Mysore Rosewood Inlay artisans and therefore only one Uc criteria was used
11	Unconventionality, b (Uc, b)		
12	Unconventionality, c (Uc, c)		
13	Unconventionality, d (Uc, d)		
14	Speed (Sp)	(Sp)	Sp was not used, pre-specified time to complete the task was given

The 14 evaluation parameters for TCT-DP developed by Urban and Jellen (1989) were also contextualized for TCT-PP with Mysore Rosewood Inlay artisans, and finally 9 parameters were used, as specified in Table 1.

Creativity externalization process in the workshop

The creativity externalization workshop started with a briefing by the researchers. The instructions were given in Kannada (language spoken in Karnataka state of India) and Hindi (official language in India), which was written beforehand by the researchers. All the participant artisans in the workshop were provided with two A4 sheets measuring 8 inches x 11 inches with two square blocks drawn on them. The dimension of one block was 8 inches x 8 inches and other block drawn outside the box was 1inch x 1inch dimension, as shown in Figure 4.

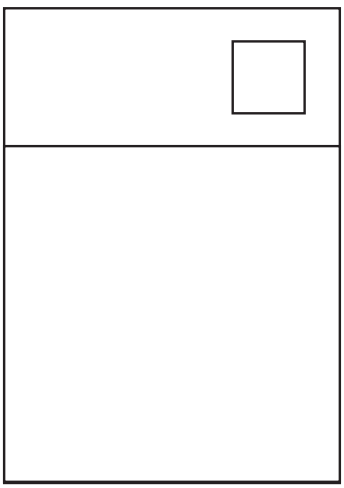

Figure 4: Square blocks drawn on paper given to the artisans for creativity externalization workshop

Source: Shipra Roy

Two different pattern development exercises were given: the first pattern, in which the artisans had complete freedom to develop the pattern on the given paper called as ‘free thought’ category. The second pattern called ‘designed pattern’ category gave the choice to the participants for making whatever they wished to but they had to give a title explaining the developed pattern.

The Mysore Rosewood Inlay craft is traditional in nature and artisans work on known themes. These two categories of patterns, ‘free thought’, and ‘designed pattern’ were

devised to understand the creativity of artisans with two different points of view respectively. The 'free thought' category gave them complete freedom to create what they wanted to and the 'designed pattern' category allowed them to create upon a pre-formed idea.

The artisans were given two sets of wooden pieces developed for the workshop as shown in Figure 3, one set for 'free thought' category and another set for 'designed pattern' category. The artisans were given total of 6 minutes (3 minutes for pattern development 'free thought' category and 3 minutes for 'designed pattern' category) for the activity. First the artisans were instructed to complete the pattern for 'free thought' category. After this, the instructions and the material for making the 'designed pattern' category was given. The workshop was held individually with every artisan to remove the peer influence and pressure. The artisans who completed the workshop were secluded from the artisans, who were waiting to participate. This was done to keep the knowledge and information about the workshop at the same level with every artisan. Once the workshop was completed, the art work was secured for future reference and evaluation.

Evaluation of the creativity externalization workshop

Evaluators for the creativity workshop were drawn from varied fields of design with experience in crafts (see Table 2). As outlined by Glăveanu (2012) care was taken to choose experts who were adequately familiar with the processes and techniques used to produce the craft. The following points were kept in view when choosing the evaluators:

- Direct involvement in the training of personnel in creativity
- Experiential or direct interaction with creation in their daily life and work
- Expertise in at least one domain of material experience from theoretical as well as hands-on perspective
- Those who have familiarity with the artefacts produced in the studied craft and have some degree of knowledge of Mysore Rosewood Inlay.

A total of 5 evaluators were drawn from various fields of creativity and design to assess the outcomes of the workshop. The artwork produced by the artisans were given scores by the evaluators.

Table 2: Profile of evaluators for TCT-PP

Evaluator No.	Educational background and Expertise	Years of experience	Years of experience with craft
1	Master's in fine arts	17+	12+
2	Master's in fine arts	20+	17+
3	PhD in design; Mechanical engineer and technical product design expert	20+	18+
4	Pursuing PhD in design; Knitwear design expert	17+	17+
5	PhD in design; Textile design expert	16+	15+

Outcome of the workshop

Two sets of artwork were designed by the artisans; one with 'free thought' category and the other with 'designed pattern' category as given in Figure 5. Two sets of shapes (Figure 3) were given to the artisans. It was clarified that each set of shapes was to be used only for one artwork.

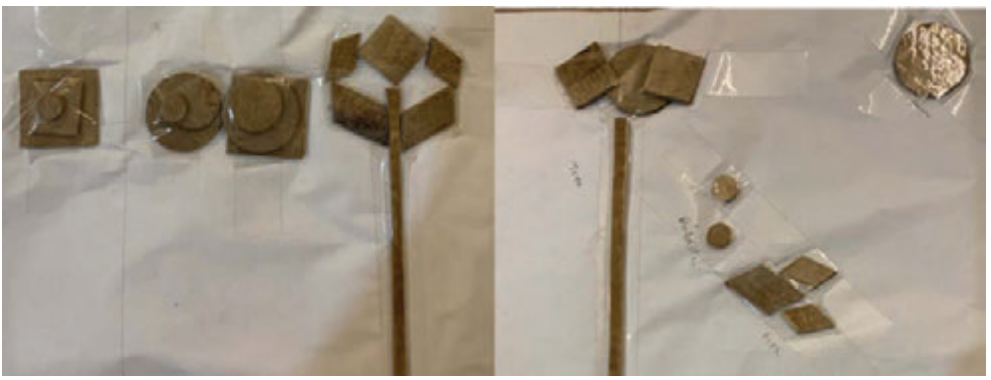

Figure 5: Patterns developed by artisans under the 'free thought' category (left) and the 'designed pattern' category (right)

Source: Shipra Roy

Study on the Interrelationship between Creativity and Resilience

The capacity for resilience is positively correlated with creativity. Resilience enables one to handle problems and is fueled by experiences and learning, which develops

gradually over a period (Richtnér and Löfsten, 2014). Flexibility, adaptability, and agility are intrinsic concepts for resilience, but these traits need to get into action to be able to build resilient capacity. Adaptability is also one of the key concepts in creativity explained by Amabile (2013) in her consensual assessment technique. The concept of developing creativity is an incremental process and takes time to develop with reflection between actions, where reflection takes information from one set of actions and informs the next set of actions to make the next action better than the previous one. Resilience is also a concept that is centered around actions, which means that resilience is seen when the concept of flexibility, adaptability, and agility are seen in performance, at an individual level, social level, and collective level.

Findings

The ethnographic study revealed that there are two categories of production bases among the Mysore Rosewood Inlay artisans—the first in which the workshop is managed by an individual artisan handling the entire aspect of the manufacturing process of the artifact; and second, where a group of more than 3 artisans with compatible skills work together on making an artefact. Usually, Mysore Rosewood Inlay artisans sell their ware in exhibitions held outside Mysore or outside Karnataka. They also work on assignments received from Karnataka State Handicrafts Development Corporation (KSHDC), a Government of Karnataka undertaking where their products are sold through the Cauvery emporium outlets. Tourists also buy Mysore Rosewood Inlay products as souvenirs. The artisans usually make robust sales during the annual Dussehra festival in Mysore which witnesses a large inflow of both domestic and international tourists. However, the national lockdown in India disrupted the regular sources of revenue generation for artisans who usually supply to the Cauvery emporia on pre-ordered consignments, sell in the local market or to tourists visiting Mysore all year and especially during the annual Dussehra festival.

The research findings are divided into three categories: process of making Mysore Rosewood Inlay craft products, findings from the creativity workshop, and impact of COVID-19 on artisans.

Process of making Mysore Rosewood Inlay craft products

During the ethnographic research, it was observed that the making of craft products involves multiple skill sets in Mysore Rosewood Inlay and the artisans involve themselves in collaborative working. Figure 6 gives an overview of the processes involved in making of a Mysore Rosewood Inlay craft object.

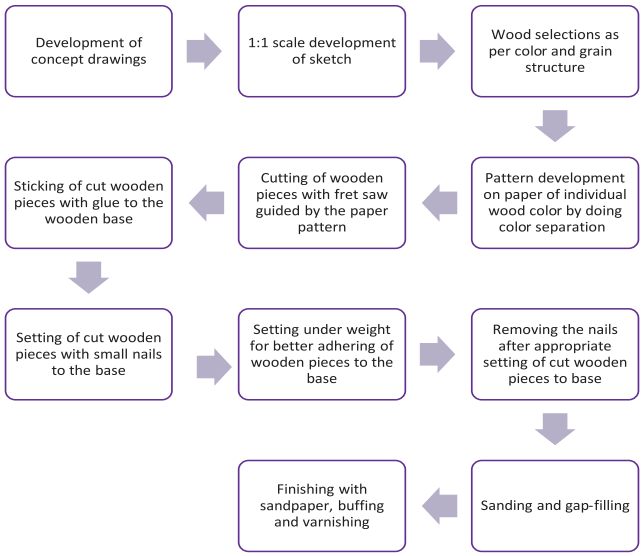

Figure 6: Process of making of Mysore Rosewood Inlay craft object

Source: Shipra Roy

The pattern developed on paper is stuck on the appropriate wood color and then cut by the artisan with a fret saw (Figure 7a). After all the pieces are cut, they are set on a wooden base (Figure 7b). The pieces are clamped down flat to ensure they are set on the base with precision. Hand-held machines and tools are used in the process of finishing. The final product which in this case, is a platter (Figure 8) is a contemporary expression of a handcrafted object that is not only for decorative purposes but caters to a functional need.

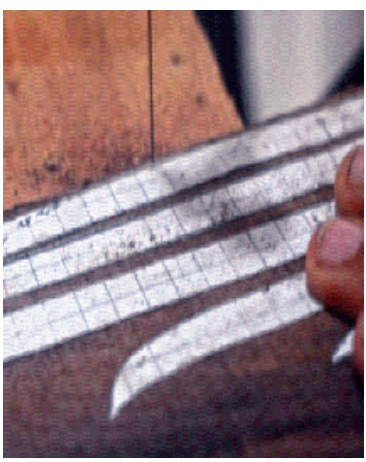

Figure 7a: Process of making Mysore Rosewood Inlay craft;

Source: Shipra Roy

Figure 7b: Fixing the pattern in progress on a wooden base

Figure 8: The platter as final product developed using the Mysore Rosewood Inlay craft
Source: Shipra Roy

Creativity among artisans

The scores obtained by the artisans on the artwork developed by them during the creativity externalization workshop led to determining the creativity of each artisan under the categories of 'free thought' and 'designed pattern' along with ranking of individual artisans.

Combining the categories of 'free thought' and 'designed pattern', most artisans were seen to possess strength in Continuations (Cn) and weakness in Boundary breaking that is fragment dependent (Bfd). The artisans work with traditional craft, which hinges on expertise pivoted on skills in manipulation of materials. Most of the artisans were very particular about not breaching the boundary of the big box drawn on the paper. The aspect of following the boundary in both material as well as designs of traditional crafts is reflected in the low score in the category of boundary breaking that is fragment dependent (Bfd).

The average percentage received by the artisans in the 'designed pattern' category is 84 percent whereas the average grade percentage received by artisans for the 'free thought' category is 79 percent. Art works under the 'free thought' category are not bound by any assumptions and it was observed that artisans found it more difficult to create the patterns. The concept of creating patterns for 'designed pattern' category follows the understanding of creating known ideas. The creation of known ideas is the expertise of the artisans since they work with pre-determined patterns, and it was observed that the artisans found it easier to create pattern for 'designed pattern' category.

Analysis of creativity in content-building and risk-taking category

The objective was to understand the relationship between the artisans' attitude towards content-building and risk-taking according to the grade categorization in Table 3. The nine creativity parameters used for the TCT-PP workshop outlined in Table 1, are further divided into two broad categories as indicated by Dollinger, Urban and James (2004) namely the content-building category and the risk-taking category. This categorization has been applied to the score received under the 'free thought' category and 'designed pattern' category.

Most artisans received a higher grade for content-building parameters compared to risk-taking parameters, which is explained due to the traditional nature of Mysore Rosewood Inlay craft.

Table 3: Score categorization under the content-building and risk-taking contextualized from Urban and Jellen (Dollinger, Urban and James, 2004)

Creativity parameter for content-building	Continuations (Cn)
	Connections made with a line (Cl)
	Connection made to produce a theme (Cth)
	Boundary breaking that is fragment independent (Bfi)
Creativity parameter for risk-taking	Newness (Ne)
	Boundary breaking that is fragment dependent (Bfd)
	Unconventionality (Uc)
	Humor (Hu)
	Perspective (Pe)

Correlation of scores derived from TCT-DP with Four C model of creativity

Kaufman and Baghetto (2009) proposed the Four C model of creativity which includes Mini-C, Little-C, Pro-C, and Big-C. The previous proposed model of creativity included only Little-C and Big-C. The movement of a person from Mini-C to Big-C can be seen as a continuum.

Table 4 shows the Four C of creativity (ibid.) which is contextualized to the Mysore Rosewood Inlay cluster correlated with issues in the context of Mysore Rosewood Inlay craft. Based on the ethnographic field study, the distribution of artisans across Mini-C to Big-C is presented in Table 4.

Table 4: Four C Model of Creativity (Kaufman and Beghetto, 2009) contextualized for Mysore Rosewood Inlay artisans

	Mini-C	**Little-C**	**Pro-C**	**Big-C**
Assessment method	Self-assessments	Artisan trainer/ peer ratings	Peer opinions/ recognition at the local level	Recognition at state/ national levels through prizes or honors
Domain-specific	General interest towards craft as a new practitioner	Interest towards particular skill set/s	Recognized expertise in particular skill set/s	Specific craft pieces created as exemplary pieces of craft; in-depth understanding and proven display of individualized skill set/s
Motivation	Intrinsic	Intrinsic	Intrinsic and extrinsic	Intrinsic and extrinsic
Distribution of artisans	5 (27%)	3 (17%)	8 (45%)	2 (11%)
Traits of artisans	Practicing the craft for more than 1 year; not proficient in any skill and need help and close guidance to work in the craft; general interest in craft	Practicing the craft for more than 5 years; are not proficient in any particular skill set, but can work with specific instructions; can work with one or two techniques; particular about learning in craft techniques	Practicing the craft for more than 15 years; possess and honed at least one skill set; recognized among peer groups for their contribution to the craft; strive to earn awards and recognitions	Practicing the craft for more than 25 years; possess and honed all the skill sets; trained many trainees; recognition brought to craft through awards (National/ State); open to new learnings and progressive in outlook

Creativity and resilience of Mysore Rosewood Inlay artisans

The root word of resilience is 'resile' which means to bounce back or spring back (Smith, et al., 2008). The lockdown due to COVID-19 diminished the opportunity for work to be carried out by the artisans. This ethnographic study during the period of lockdown revealed that due to the loss in income, many artisans stopped their artisanal practices and shifted to alternative sources of income. But at the same time, a few artisans chose to adapt to the changed situation by redefining the product through creative adaptation as explained by Cohen and Ambrose (1999). The trait of resilience among the artisans is studied through the designs and details of the product, changes in raw materials, and the product development process. These factors are elaborated below.

Detailing and designs

The lockdown and travel restrictions reduced the tourist population looking for souvenirs, which were mostly the relatively inexpensive craft items available in the local market. Buyers became more discerning in their choices and bought products for their designs and exclusivity.

Table 5: Comparison of design elements before and during the pandemic

Pre-pandemic period	During the pandemic period
 **Figure 9:** Designs of lotus pattern done before COVID-19 *Source:* Shipra Roy	 **Figure 10:** Optimal use of inlay pattern on top of a table *Source:* Tanveen Ratti, designer
The inlay on the wood surface has more density, occupying more than 50% of the surface area.	There is minimal use of inlay work. The wood background uses most of the surface area.
The base color emphasizes the contrast between the background and details in the foreground.	The expanse of the background draws attention to the qualities of natural wood. The design elements and composition of the inlay motif creates aesthetic contrast.
More design elements and use of 7 types of natural wood in different hues increase the product opulence.	Less number of elements and 3 types of natural wood in different hues highlight the background through a minimalist approach to design composition.
More design elements draw greater focus on the overall appearance. This imposes less demand on the quality of the finish.	Minimal use of design elements place high demand on the finishing of individual elements. The focus is on the finesse of individual design elements.

During the pandemic period, it was observed that design themes of the products were depictions of naturalistic motifs, as compared to the pre-pandemic period, which focused more on stylized motifs. Design development is done in a manner that the

naturalness of the motif themes is maintained and kept close to its occurrence in natural existence (the way it appears in nature), bringing a life like characteristic to the developed art pieces, as shown in Figure 9 and Figure 10. The new products are seen to be simpler in nature signified by the limited number of wood colors, which demand creativity and adaptability by the artisans (Table 5).

Raw material

During the pandemic period, for the newly commissioned craft work in Mysore Rosewood Inlay illustrates high level of selectivity and judicious selection of materials for the designs. Earlier artificially colored white wood or white plastic were also used in parts for price control. But the products being made now, demand high attention to detail and are exclusive in nature. Therefore, only natural wood veneers are used for inlay work. Few artisans have been able to adapt to the changes in designs and raw materials.

Types of products

During the pandemic, the artisans are exclusively engaged in developing wood inlay panels which are supplied to the buyer, who commission the pieces. The artefacts are not kept ready in the workspaces to be readily bought, as was the practice in the pre-pandemic period, due to the lack of retail buyers. The products are adjudged and valued for their exclusivity and not for the quantity of wood usage. This requires the artisans to be highly creative, skilled and flexible towards embracing change. The artisans were also observed to be responsive towards the design suggestions from the buyer's side. The products developed as collaboration between the artisans and the buyer is shown in Figure 11.

Figure 11: Images of products developed in Mysore Rosewood Inlay craft after COVID-19

Source: Tanveen Ratti, designer

In the pre-pandemic period, most orders for customization were received by the artisans in their workspace. Buyers and tourists would visit the workshop and select the designs from catalogues available with the artisans. Alterations, if any, were suggested and agreed upon based on which the artisans would commence work on the final product. After the onset of the pandemic, all discussions are followed up on email, WhatsApp, or video calls. Designs are finalized in digital mode. For buyers who place high-value orders, a sample prototype may be made on a reduced scale. However, such additional efforts were not made before the onset of COVID-19. Pandemic restrictions required the artisans to improvise on designs and the product development processes. Artisans with high risk-taking behavior as identified with the TCT-PP model, could adapt to the change in workflow. These artisans also were part of the Pro-C and Big-C categories as per the study conducted and outlined in Table 4.

It is observed that during the pandemic period, the artisans who received similar scores in the content-building and risk-taking categories as given in Table 3, continued with their craft practice. Their risk-taking ability enabled them to adapt to the changed scenario without undue loss of time through creative adaptation in design and details of products, raw materials, and product development process explained in Table 5. Artisans with more traditional thought processes got high scores in content-building parameters but due to the lack of risk-taking ability, they were unable to improvise on craft processes in the light of changing markets and moved to other avenues of employment.

Conclusion

The purpose of this study was to assess the creativity level of the Mysore Rosewood Inlay artisans and its relationship with their resilience. The study was conducted against the backdrop of COVID-19 in India and its effect on artisanal practices. It was established that there is a positive correlation between creativity of the artisans and their resilience. Artisans who are creative in nature with higher risk-taking ability could adapt to the changed scenarios translating into the continuation of work during COVID-19. Artisans in the Big-C and Pro-C categories have risen to the challenge and have been able to adapt to working with new designs and detailing of products. The ability to be flexible and adaptable, which are the key constituents of resilience allowing one to bounce back, have enabled the more creative artisans to seek solutions within their craft practices.

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Role of Online Technology for COVID Resilience among Handicraft Artisans

R. Reshmi Munshi

Abstract

The handicraft sector is the second highest source of employment and sustenance after agriculture for craftspeople and artisans who comprise the third largest economically weaker section in India. The onset of COVID-19 in 2020 disrupted the entire system with an estimated two million in the handicrafts sector who lost their jobs, leaving them vulnerable. Government initiatives and organizational interventions by autonomous bodies and NGOs endeavored to rejuvenate the sector by building resilience to support and facilitate the craft practitioners. Constraints of offline meetings and physical store transactions have been in contrast to the undisputed influence of the internet as the most viable mode of connecting the makers and buyers. With reference to turnwood lacware craft of toy making in the Channapatna cluster of Karnataka, this article discusses the upsurge in internet use during COVID indicating increasing resilience among the craftspeople and artisans as they recognized the potential of facilitating e-commerce through digital transactions in online markets by reaching out to maximum consumers and support groups through the social media, as well as web and mobile platforms. Research methods include participant observation and interviews of craftspeople and experts from three organizations, namely EPCH—a non-profit organization that supports artisans for overseas trade, Artisans Pride—an NGO that trains and supports the craftspeople, and Channapatna Crafts Park—a registered society that includes representatives from the state government, trade promotion organizations and manufacturer-exporters to preserve, support and increase artisanal skills for higher employability. In spite of training artisan groups in the use of select apps for online financial transactions to increase the volume of their business, experts were of the opinion that after the completion of training, artisans do not practice the applications of their learning. It is concluded that the understanding and expectations of quick solutions and immediate financial gain may not necessarily be feasible, and that resilience to persist with the application of training inputs for business expansion, is imperative.

Keywords: Channapatna toys, craft organizations, online technology, digital marketing, resilience

Introduction

India has more than seven hundred crafts that are identified with specific regions or tribes and reflect the culture and traditions of those communities (Ranjan and Ranjan, 2009). By definition, a craft is considered either as being decorative in nature or of everyday use, and therefore, most handicraft products are placed in the category of non-essential items (Pati, 2020). In the final report of International Symposium on Crafts and the International Market: Trade and Customs Codification, handicraft is defined as 'Products that are produced by artisans, either completely by hand or with the help of hand tools or even mechanical means, as long as the direct manual contribution of the artisan remains a most substantial component of the finished product. The special nature of the artisanal products derives from their distinctive features, which can be utilitarian, aesthetics, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant' (UNESCO, UNCTAD and WTO, 1997). Handicrafts provide employment and sustenance to craftspeople who comprise the third largest segment among the economically weak in India (Pati, 2020). Though fragmented, the Indian handicraft industry has seven million regional artisans and over 67 thousand exporters and export houses dealing in art and craftsmanship in the domestic and global markets (IBEF, 2021). Export Promotion Council Handicrafts (EPCH) reports that handicraft exports from India increased by almost 2 percent annually to USD 3.39 billion in 2020 (ibid.). However, this is a small percentage of the global market for handicrafts which is predicted to grow to USD 514.92 billion during 2021-2025, progressing at a CAGR of 13 percent during the same period (Technavio, 2021). The under performance of the Indian handicraft industry has been attributed to various causes such as lack of technical and market knowledge, and not fulfilling the requirements of the mainstream market (Nagori and Saxena, 2012). Disadvantages stemming from the inability to leverage internet reach, lack of knowledge about quality standards, inefficient planning, inadequate packaging, and lack of after sales services weaken the sector (Banik, 2017). Despite several initiatives and schemes by the Ministry of Micro, Small and Medium Enterprises (MSME) and the Ministry of Textiles, Government of India, the pre-existing challenges of the handicrafts sector were aggravated by the spreading pandemic. The nationwide lockdown in early 2020 to curb its spread, impacted the MSMEs in terms of unavailability of raw materials, reduction in productivity, lack of financial support and liquidity crunch resulting in the closure

of many small and medium enterprises (Tripathy and Bisoyi, 2021). An estimated two million in the handicrafts sector lost their jobs during the pandemic (Satsangi, 2020).

Resilience, defined as the 'ability to recover from or adjust easily to adversity or change' (Merriam-Webster dictionary) was evinced by the Indian crafts practitioners who coped with the national hazard of COVID-19 by adopting new ways to continue in their traditional profession with more effective marketing through online technology. The upsurge in internet use during the pandemic indicated the increasing resilience among the craftspeople and artisans as they recognized the potential of facilitating e-commerce through digital transactions in online markets by reaching out to maximum consumers and support groups through the social media, as well as web and mobile platforms (Sekuloska and Erceg, 2019). Artisans have the adaptability to new skills which, combined with strong family and community ties, motivates them to have a resilient attitude towards challenges (Muyiwa, 2020). Adaptation to the culture of 'new normal' was a widespread response during the nationwide lockdown in India from March 2020. It ushered in a new way of life prompted by diktats for social distancing and COVID protocols that necessitated significant adjustments in daily activities. A United Nations Policy Brief claims that the digital transformation already taking place prior to the COVID-19 crisis and the exponential increase in e-commerce has created new jobs and income earning opportunities which have the potential to spur house hold income, lift people out of poverty, and increase resilience of rural communities (Deganis, Haghian and Tagashira, 2021). Online technology comprising social media for personal and business connections, online transactions like UPI and Wallets, e-commerce platforms for the purchase of products, and digital marketing for selling products through websites and mobile applications (Ghosal and Prasad, 2019), offered solutions maintaining the mandated protocols. While urban India was more amenable to adopting online technology due to the availability of related information and infrastructure, rural India lacked adequate access to it (Biswas, 2021). Craft clusters need digital tools for product development with marketing and online sales for rural India to target a long-term recovery plan and make the cluster resilient to such unpredicted situations (Khatib, 2021). As handicrafts are practiced primarily in rural India, the question arises whether online technology is widely accepted and can increase the resilience of craftspeople during the situational constraints of the pandemic. This study was undertaken to understand the role and relevance of online technology for craft practitioners in the rural handicraft sectors in supporting their businesses.

Role of Facilitators

A review of organizational interventions and government stimulus packages for the craftspeople and artisans, as well as the role of the internet during the pandemic-induced constraints was undertaken.

Private and government interventions

In 2020, several individuals and organizations contributed their efforts towards improving the condition of craftspeople and artisans. The Government of India increased export incentive rates through the Merchandise Export from India Scheme (MEIS) from 5-7 percent to help exporters recover their investment costs (IBEF, 2021). Financial stimuli provided by the government and the Reserve Bank of India offered ways to address this situational disadvantage by introducing long term funding schemes by banks to lend money at reduced rates, issuing loan moratoriums for six months and providing other financial support measures for relief to the sector. For the *karigar*[1] and the weaver, a substantial part of whose business being dependent on offline *haat*[2], faced supply chain disruption causing a disconnect between the makers and customers. Three months after the nationwide lockdown, e-commerce giant Amazon India waived off its fees for the artisans, weavers and women entrepreneurs for 10 weeks. This was part of the company's stand for handmade initiative to help over one million entrepreneurs including 0.8 million craftspeople, artisans and weavers from the Amazon Karigar program and more than 0.28 million women entrepreneurs from the Amazon Saheli program. Partnership with other online businesses increased the efficacy of these initiatives enabling customer demand for the locally crafted, handmade products from Karigar and Saheli sellers as well as a curated selection of products for women, by women (Amazon, 2020). Creative Dignity, an online volunteer movement of various stakeholders including over 500 diverse creative producers, small enterprises, practitioners, and civil society organizations across India built an ecosystem by mobilizing funds for rehabilitation of the craftspeople and artisans, and rejuvenation of the crafts sector. This was achieved by listing diverse and dispersed sector of the practitioners and their product categories on its website thereby enabling a direct connect between individual consumers and organizations. The Creative Dignity website also includes manuals for artisans and novice entrepreneurs to learn online business methods including photography of finished products, making online payments, developing catalogues and promotional materials, and promotion and sales on social media. Tilfi is a digital-first brand that identified a new market segment of luxury e-commerce leveraging the beauty and cultural heritage of traditional craftsmanship

of Banaras handloom sarees, Indian apparel and fabrics through a design narrative that resonates with Indian and global markets (Chawla, 2021). Supported by fund-raising platform Give India, to generate financial support for sustained livelihoods of artisans during COVID-19, Tilfi also pledged 15 percent of its sales proceeds to help craftspeople and artisans in the remote villages of Uttar Pradesh. Habba.org is an online marketplace for artisans based on the philosophy of self-reliance encapsulated in the objective of Atmanirbhar Bharat using technology to generate consumer demand for goods worth INR 1000 million**.** This platform has attracted consumers through its promise of honest and transparent pricing, authenticity certification, rural employment opportunities and enhanced customer experience through films and sample boxes for touch and feel (Biswas, 2021).

Other handicraft e-commerce platforms such as GoCoop, iTokri, Amazon Karigar, AuthIndia, The Craft House along with Okhai, FabIndia, Karagiri, and Kankatala supported online sales. GoCoop created training opportunities in photography which was a requirement for being listed in their online exhibition titled 'Go Swadeshi'. The attempt was to identify new markets in the United States, United Kingdom, Australia, United Arab Emirates and Singapore, under the campaign 'Vocal for Local' and 'Atmanirbhar Bharat' (Kaushal, 2021). Brahmaputra Fables in Assam, an integrated platform for artisans and weavers trained local people to make Gamosa masks using locally available materials to be given as gifts during the Bihu festival instead of the traditional scarves, under the 'Gift a Mask' campaign (Mathew, 2020).

Role of the internet

Speaking at a virtual session titled 'Recrafting and Tailoring Artisanal Practices for a New Digital Economy' in 2020, fashion designer Ritu Kumar, with the founder and president of Dastakari Haat Samiti, Jaya Jaitly discussed the situational crisis in the crafts sector and possible solutions. The need to position and market handmade products in a premium category is essential so that consumers would be willing to pay higher prices for their value (Kaushik, 2020). NGOs and Trust organizations are emphatic that this sector needs support in terms of working capital, health insurance, social security, Goods and Service Tax (GST) relief, lower interest rates, corporate or bulk orders, and better logistics to combat the pandemic. However, meeting the objective of increasing sales is possible only by reaching out to a wider range of consumers through online marketing, designing and cataloguing (Pati, 2020; Kumar and Rajeev, 2019). A case study of handicrafts MSME in Mauritius revealed that Facebook was the most widely

used social networking website for artisans to connect with social and business circles, and reach out to potential consumers (Gobin,et al, 2017).

During the pandemic, suggestions for increasing resilience in the face of unexpected challenges in the handicrafts sector included financial support, consumer accessibility, feasibility studies of new markets, design development and networking. However, the primary need was to use the internet efficiently. India is the second largest online market after China with an estimated 749 million internet users in India in 2020 expected to increase to 932.22 million in 2022 and reach 1.5 billion users by 2040 (Basuroy, 2021). The study also states that despite strong internet penetration in urban as well as rural India, internet literacy and technological know-how is poor. The handicraft sector needs to be supported by inputs in website management, e-commerce, listing processes and digital marketing. The number of users of social networking sites increased during the ongoing pandemic. The Union Information Technology Minister, Ravi Shankar Prasad informed that WhatsApp is the most used app in India (Chakravarti, 2021). Familiarity of artisans with social media platforms do not necessarily indicate their awareness of its potential for facilitating digital marketing (Agarwal, 2019). While online business transactions are increasing, the question remains whether the handicraft sector can leverage the considerable reach of online sites to gain visibility and increase sales.

This review shows that the constraints of offline meetings and physical store transactions are in contrast with the undisputed influence of the internet as the most viable mode of connecting makers and buyers. This raises questions on the extent of use of internet awareness among handicraft practitioners in the smaller clusters in India and the impact of digitization and online technologies during the lockdown and other locational constraints of the ongoing COVID-19 pandemic. To identify how online technologies can be used to address the needs of craft practitioners to increase their business and relevant training requirements, a study of the turn wood lacware cluster in Channapatna, Karnataka was undertaken. Channapatna is a small township with an estimated two thousand craftspeople whose livelihoods stem from making handcrafted toys, home decor and corporate gifts. This cluster was identified for three reasons: several years of doctoral research in this cluster, proximity of the cluster location enabling travel and interaction with the craft practitioners during the pandemic, and the availability of adequate infrastructure related to the internet to ascertain its optimal use by craftspeople and artisans.

Research Methods

The methods used in this study stemmed from the objective of identifying the level and impact of online technology used in the Channapatna cluster during COVID-19. This included non-participant observation and interviews of professionals in select organizations and Channapatna lacware craft practitioners. The objective was to generate data on the current infrastructure availability and provide insights to their attitude towards internet use. Subsequently, 35 artisans identified through convenience sampling were interviewed to record their opinions and attitudes towards online technology. Experts were selected from three professional organizations that have been, for decades, engaged in developing and supporting this cluster through design inputs, skill training, provision of infrastructure, marketing facility, and exhibition platforms. These organizations were Export Promotion Council for Handicrafts (EPCH)—a non-profit organization that supports artisans for overseas trade, Artisans Pride—an NGO based in Channapatna that trains the craftspeople and supports them through exports of turn wood lacware toys, and Channapatna Crafts Park—an organization set up by government and non-government organizations to support artisans to avail of infrastructure required in the making of this handicraft. The experts were interviewed on the strategies adopted and the use of online technology by their respective organizations.

Channapatna Cluster

Located between the metropolitan towns of Mysore and Bengaluru, Channapatna is a small township located in the district of Ramnagara, Karnataka spread over 13 square kilometers with a population of 72,000 people. An estimated 3000 traditional artisans in Channapatna are engaged in the production of lacware toys, a handicraft with two hundred years of history. Channapatna is referred to as *Gombegala Ooru* in *Kannada*[3] (*trans*. Toy Town) for its eponymous products comprising toys, home and office décor and jewellery of lacware. Channapatna handicrafts are made of timber from the local Aale or Hale tree (*Wrightia tinctoria*) which is also known for its medicinal properties. Lac is the resinous secretion of a species of lac insects, of which the most cultivated one is *Kerria lacca.* In the lacware process, the lac is melted, mixed with colors and converted to sticks to coat the wood using the turn-wood technique on basic speed lathes. Later dried palmyra leaves are used to polish the lac on wood to give a characteristic smooth and shiny finish. As the materials and processes are eco-friendly, they are suited primarily for making children's toys. Channapatna toys have a Geographic Indication tag issued by the Geographical Indication Registry under the

Department of Industry Promotion and Internal Trade, Ministry of Commerce and Industry, Government of India.

Several stakeholders are involved in the value chain:

– Craftspeople and artisans who are the product makers in skilled, semi-skilled and unskilled categories with skills in turning, lac coloring, assembly, cleaning and packaging;

– Mind workers who make decisions on the final product output which includes designers, organizations and business channels;

– Vendors of raw materials include lac vendor, machine vendor, blacksmith/ toolmaker, transporter, and the forest department for wood;

– Bridgers who facilitate activities including the government, self-help groups, and non-government organizations;

– Retailers and wholesalers of the product.

However, interactions amongst the stakeholders being largely informal, makes it difficult to gather previous data for comparative analysis.

According to the Food and Agricultural Organization (United Nations) document repository (FAO, 2013), there are over 1500-2500 male and female craftspeople and artisans with varying skill levels categorized as skilled, semi-skilled and unskilled engaged in this craft sector. There are three types of units in Channapatna:

– Household units: Family members including men, women and children make products in their homes using either electricity-operated or hand-held lathes. Alternatively, some hire power-lathes from the Karnataka Handicrafts Development Corporation (KHDC). Most are self-employed and sell their goods at outlets such as retail shops or export units of the KHDC.

– Small scale enterprises: These enterprises are set up in the homes of craftspeople with a minimum of 4 to 10 lathes. Hired laborers work on piece rate basis. These enterprises sell their products directly to exporters, working through agents or the KHDC.

– Medium scale enterprises: These are generally established or owned by exporters in Channapatna. The minimum turnover is INR 0.3 million and employs artisans

on wage or piece rate basis. Specifications describing the desired products are given by the exporter with a strict focus on quality (ibid.).

The turn-wood lacware sector in Channapatna works in an interlinked system. Work orders are usually generated by medium scale enterprises from exporters, long term domestic clients, or from their online platforms. Local stores also place job orders with small-scale units. Government/autonomous organizations also inform them about relevant exhibitions and retail outlets. Both medium and small enterprises may occasionally subcontract the manufacturing work to household units to be assembled and finished on the premises of the latter. Though household units are capable of making their products, they face difficulty in effectively marketing them.

Organized Industry and Handicrafts Sector in Channapatna

Channapatna's GI tag in turnwood lacware and global recognition not with standing, the craft faces competition from cheaper Chinese products and plastic alternatives. Woodturning and lac coloring require considerable practice, infrastructure and investment which causes insecurity and demotivation for the continuation of craftspeople in this profession especially when sales are low. To keep their micro-enterprises afloat, craftspeople also work on flat woodwork instead of woodturning. The most important consideration is to extend the reach of the handicraft to a wider market and generate higher income for its practitioners and related organizations (Munshi, 2019). During the nationwide lockdown, the Channapatna toymakers found themselves out of work as they could not reach out to the domestic markets in the area, and nor had contact outside their townships for selling their handicrafts. Under these strained conditions, some organizations stepped up their efforts to provide respite. To understand the current situation, primary data was generated through interviews conducted with professionals from three major organizations namely Export Promotion Council of Handicrafts (EPCH), Artisan Pride and Channapatna Crafts Park.

Export Promotion Council of Handicrafts

Established in 1986-87, EPCH is a regulatory body and a non–profit organization under the Companies Act to promote and support artisans and retailers of handicrafts. EPCH took the onus of creating opportunities through available Government schemes, State Government support and various similar programs (EPCH, 2021). EPCH and Development Commissioner – Handicrafts (DC-H) had worked on a project involving design, technical upgradation, promotion and marketing under the scheme of Integrated Design and

Technology Upgradation. In an interview with the author, Ms. P.L. Sreedevi, Regional Officer and Project Coordinator at EPCH informed that EPCH had undertaken a study of global markets in the USA, Canada, UK and Europe notably France, Germany and Italy, as well as domestic markets in the domains of real estate, tourism and e-commerce. A project spanning four months to support artisans create modern toy collections, included 40 participant Channapatna artisans who learnt about conducting market surveys, incorporating color and design trends to guide product development, product categorization and pricing. These new products were displayed at the Channapatna railway station sponsored by the Ministry of Railways to reach a wider consumer base. In this case, videos and documentaries documenting the process were uploaded online to create awareness about the craft and the makers. Though the workshop/project was completed satisfactorily, it was observed that due to constraints of the pandemic, the outcomes of this initiative lacked the intended impact. EPCH plans to organize a series of such events with professional designers empaneled with DC(H) with increased product variety that would also be available online. Apart from fairs and seminars, an online exhibition is planned for international customers.

Artisan's Pride

Artisan's Pride, formerly known as Maya Organic, is an organization with an online marketing wing—Fairkraft Creations. During an interview with the author, the Head of Design, Mr. K. Murali, and Production Manager, Ms. Shaheda informed about the engagement of the organization with the lacware crafts practitioners in Channapatna for twenty-five years. The objective of its organizational interventions is to organize the artisans into self-help groups for sustenance of livelihoods. This requires focused skill training in accordance with the clients' requirements most of which are export orders from UK and USA, with limited orders for the domestic market through Amazon. Long-term associations with international clients ensured continued business orders that provide work to the artisans.

As export orders are required to be completed before Christmas, additional efforts are made to meet the demand. However, due to the nationwide lockdown, courier agencies and retail outlets were impacted and previous consignments remained unsold. In spite of all efforts to meet the requirements of long-time customers, cessation of international trade resulted in the inability of Artisan's Pride to adhere to its deadlines for shipping of the handicrafts. Its experience of selling products online to domestic markets before the onset of the pandemic continued to do well, but offline sales and

revenue generated primarily from exports ceased completely. Findings of a study by UNCTAD (2020) showed that digital models fostered resilience in the handicraft sectors where making masks, PPE and gloves ensured the survival of the makers. On a similar note, Artisan's Pride helped local artisans who faced loss of livelihoods by training them in mask-making so that they could generate income from their homes. As a conscientious organization committed to the cause of helping craftspeople even during the lockdown when machinery and raw materials could not be accessed, Artisan's Pride enabled them to work from home. Eighty women were supplied with fabrics for making masks, supported by local industries or purchased with existing funds. Almost one hundred thousand home-made masks were sold through WhatsApp, Instagram and Facebook. The organization also received donations to support the artisans' families. Give India and Azim Premji Foundation facilitated the distribution of dry ration kits worth INR 2500 to each of the six hundred craftspeople. Prime Minister Narendra Modi announced the 'Vocal for Local' initiative and gave impetus to crowd-source innovative toys and games for Toycathon during the second lockdown in August 2020 to support the toy industry. While Artisan's Pride has a retail store in Bengaluru, in recognition of the influence of branding through storytelling and facilitating the association of products with their aesthetic and ecologically benign qualities, it leveraged the reach of its online presence, which triggered business enquiries and business orders through its homepage, Instagram and Facebook handles. Interestingly, there was no difference in the prices in offline and online mode of sales. However, there are some challenges in an online system:

- Those who purchase crafts online are mostly repeat consumers familiar with the product and quality.
- There are higher chances of return when products are purchased in online mode.
- Though customers prefer the 'Cash on Delivery' system, sellers face difficulty as the possibility of return is higher due to transit damages, or storage of the product in warehouses for a long time for which the cost is borne by the latter.
- Selling through e-commerce platforms poses challenges for the seller who is required to have a sizeable inventory in their warehouse.

However, Artisan's Pride is of the opinion that the online mode can generate resilience among the craftspeople.

- Online networking facilitates more views of an individual's work; this increases brand value and creates higher sales opportunities.

- A comprehensive and detailed plan with logistic details can guide the artisans towards higher sales and thereby, profitability.
- Reaching out through messenger marketing using WhatsApp and Facebook is a more personalized approach without high financial implications.
- While a company/MSME may not need to focus on creating followers on social media, an individual artisan can reach out to a wider audience through the social media that can lead to business orders.

Channapatna Crafts Park

Spread across 14 acres, the Channapatna Crafts Park (CCP) is the first one of its kind in India. It is a registered society with representation from the Department of Industries & Commerce, Government of Karnataka, Karnataka State Small Industries Development Corporation Limited, Visveswaraya Trade Promotion Center, Karnataka State, and six manufacturer-exporters to facilitate the artisans and their business partners. This park was established to preserve, support and increase artisanal skills for higher employability. Several organizations share a common facility Center with state-of-the-art woodworking machines. The CCP undertakes export orders and employs trained craftspeople and artisans, and hence, most online work is undertaken by its administrative staff. In an interview with this author, Ms. Sreekala Kadidal, Director CCP informed that though there were enquiries regarding the Toycathon press note, these did not translate to tangible work orders. The Government of Karnataka has been the primary supporter of handicrafts during the pandemic. With the market gradually regaining momentum, the CCP has taken this opportunity to develop training modules for online marketing by the artisans. However, the envisaged benefits have not reached Channapatna and therefore, this cluster has had to resort to stitching masks or has turned to alternate professions. Proactively leveraging online technology to generate business for the artisans, some organizations, SHGs and NGOs in Channapatna have been considering increased use of the internet for future opportunities.

Data generated through interviews indicated that craft organizations use online platforms for increased business for themselves and the artisans. EPCH created videos and documentaries to spread awareness but the training was done in the physical presence of artisans. Artisan's Pride has organized the artisans into SHGs. While the organizations agreed that the Channapatna cluster needed to prioritize the adoption of online technology, no training had been conducted on online methods of marketing, nor had new infrastructure been created.

These three organizations are of the opinion that online interactions would be favorable for the artisans and craftspeople. However, as no online training has been conducted, it is not possible to draw any inferences.

Use of Online Technologies by Artisans

To study the impact of internet and online technology on the livelihoods of craftspeople and artisans in Channapatna, target respondents were identified on the basis of convenience sampling. The sample population comprising 7 females and 23 males in the age group of 25-45 years were the earning members of their families. They were able to read, write and sign in their mother tongue, Kannada.

It was noted that out of every seven women, three of them did not possess a smartphone. On the other hand, the men possessed smartphones ranging in price from INR 4000-20,000. Two male artisans who owned high-end phones and personal vehicles, were also adept with accessing the internet on their smartphones. Most of them were aware of the word 'data' rather than 'internet'. Although they did not clearly understand what 1 GB data meant, they could equate it to with one movie a day, half an hour of local teleserial, news, browsing YouTube and other related activities.

They used their phone primarily to take photographs of their families and friends. The artisans said that sometimes they clicked products that they had made but possessed only basic photography skills or did not have good cameras or enough phone memory to store images. They were not aware of saving images in any other digital space, and therefore, there were times when they were unable to take photographs until their phones had been cleared of previous data.

All respondents stated that they used their phones primarily for calls, 70 percent used it for social media, over 80 percent used it to watch videos on YouTube, and all the artisans with smartphones, used WhatsApp to send images and texts. About 25 percent used Amazon or online services to buy products but were unsure of the process of selling their products online. For the artisans, online purchases and e-commerce were synonymous with 'Amazon'.

All respondents agreed that a phone is the only gadget they possess to take advantage of the internet but only 2 percent had internet access at home. They also agreed that their children or younger siblings were avid users of the internet and continuous consumers of Facebook, WhatsApp and YouTube. However, they were not sure of the depth of awareness of the platforms among the younger generation. Most of them

used WhatsApp but were not aware of all the features or its business application. The younger generation was familiar with Facebook but was unaware of Facebook Store. About 50 percent had Facebook accounts and only 25 percent knew how to make language changes in the application. Only 2 percent were aware of Instagram and Twitter but did not use either of them.

The experts and artisans pointed out that a significant aspect emerging from pandemic restrictions was the use of Digital Wallets and UPI with Paytm and Phone Pe as the most widely used apps. Some also used Google, Amazon and Airtel wallets. However, in UPI, Google Pay and BHIM by the Government of India were popular. The artisans felt that they no longer had to queue up at ATMs and their bank visits were limited to KYC updates. They expressed eagerness to learn more about technologies and apps related to online financial transactions for increasing the volume of their business. However, experts were of the opinion that even after the completion of training, the artisans do not practice application of their learning. Furthermore, they need to be Counseled that expectations of quick solutions and immediate financial gain may not necessarily be feasible, and that resilience and persistence with application for training inputs for business expansion, is imperative.

Conclusion

The case study of the practitioners of turn-wood lacware of Channapatna discusses the initiatives of private organizations and autonomous bodies, and the national commitment of the Government of India to support the craftspeople and artisans by strengthening their resilience during COVID-19. The practitioners' resilience was reflected in their positive adaptation to this craft despite exposure to adverse experiences, lockdown constraints and ensuing economic slowdown through online technologies. Though they were able to access data on their smartphones and handle social media at a basic level, they had not explored its potential sufficiently for their professional growth. The artisans need to be apprised of the immense potential of online technologies for readiness to face future challenges and to be directed to the appropriate channels of digitally available information. The reach of the internet can facilitate understanding of global consumer preferences based on which products can be developed. Craft organizations and other external bodies can help build training modules based on the elementary knowledge of digital marketing, that can aid the artisans to use the applications more effectively for their professional growth. This would need training in basic applications of WhatsApp Business and Facebook Store, along with basic photography techniques on smartphones such as creating backdrops,

saving images and uploading photographs of their products that can enable them to expand the product reach beyond local markets to a larger online customer base. This will enable direct communication with vendors and Government agencies, and thereby reduce their dependence on middlemen. The adeptness of the younger generation of craftspeople in handling smartphones and social media platforms leads to the inference that it may be easier to train them in online marketing and networking strategies which may gradually build craft community resilience in the Channapatna cluster. Results of the training and time required to gauge its impact offer scope for further study.

Notes

1. Hindi for a craftsperson, artisan

2. Hindi for local open-air market

3. Language spoken by most people in Karnataka

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DIY Dress Form: A Facilitator of Online Fashion Education

Ruhee Das Chowdhury and Malini Divakala

Abstract

The nationwide lockdown in March 2020 at the onset of the COVID-19 pandemic caused adjournment of classes *sine die*, as students hastened home often compelled to leave their tools and material belongings behind. The wide-scale disruption in the academic system necessitated academic Heads of Departments to consider the challenges posed by this situation prior to envisioning new modes of curriculum transaction in online mode. While academic delivery of theory subjects was relatively easy, the effective transaction of practical subjects such as draping, pattern making and garment construction, were challenging. The Fashion Design curriculum in National Institute of Fashion Technology (NIFT) includes over 200 lab and studio practice hours in each semester. Design ideation and hands-on exploration followed by assessment of patterns and test fits are integral to the program. During the lockdown, addressing the overarching concern of teaching-learning about three-dimensional draping and contouring, necessitated radical brainstorming by the subject specialists. The feasibility of solutions hinged on addressing the limitations of home confinement and thereby, constraints of materials and equipment faced both by the educators and fashion design students. Under normal circumstances, the available infrastructure facilitates each student by allocating a professional dress form for regular studio practice and exploration. With a firm understructure covered with foam and encased with fabric, a dress form may be shaped like a torso of an adult male, female or of children. It facilitates pinning and testing the fit of *toiles* which makes it an indispensable tool for fashion design students. This case study focuses on out-of-the-box thinking involving explorations, experimentation and finally, a practical solution to making a dress form that fulfils three essential criteria of being budget friendly, home-made in accordance with tenets of sustainability, and achievable by novices.

Keywords: Fashion education, pedagogy, DIY dress form, sustainability, pandemic, draping

Introduction

Fashion design education involves rigorous practical training on various aspects of apparel design and development, along with theoretical understanding of fabric and clothing. Design ideation and conversion of a design concept to an actual garment requires practice-based skill development. Suitable infrastructure is integral to the fashion design program to support and facilitate learning opportunities for the student. This includes dress forms in the studios and labs, as well as practice-based skill development in subjects such as draping, flat pattern making and test fitting of muslin toiles.

Professional practices of draping and test fitting are common in fashion institutes and the fashion industry. Fashion designers use dress forms extensively in professional practice. Dress forms are available in standard clothing sizes and are used as 'bodies' to develop patterns. Adjustable dress forms enable garments to be fitted to specific body proportions. The type and design of the garment determines the choice of hip-length torso forms, lingerie forms, and bifurcated forms by fashion designers. Industrially manufactured dress forms are shaped with accurately proportioned physical characteristics that represent standardized body sizes. The firm yet lightweight fibreglass core has two parts- the front and the back, in separate casts shaped with proportionate measurements in standard sizes used in the apparel industry. A professional dress form is usually shaped like a three-dimensional torso of an adult male, female, and children of different ages. It is covered with a thin foam layer usually of about 1/8 to 1/4 inches which gives it a cushioned tactility and helps to securely hold the fabric in place while pinning. The dress form is encased in a thick cotton cover with highly visible seams that are positioned for sizing and fitting a garment. Additional zones such as the waist level are indicated externally with a tape. Some dress forms have arms. Shoulders are separated and attached to a spring which allows collapsibility for ease of putting on and removal of test fits. Openings at the neck, armhole/armscye and base are sealed with metal plates. Torso dress forms have wheels for easy mobility, lever for adjustable height, and cage-like bottom to facilitate hem finishes. Bifurcated dress forms colloquially referred to as leg forms, have specialized functionality. Sizes of dress forms are usually printed for easy identification. The dress form facilitates draping, pinning and test-fitting *toiles* through a series of adjustments and alterations, which may subsequently be converted to a garment prototype. This makes it an indispensable tool for fashion students.

Literature Review

Dress form manufacturing companies manufacture both commercial half and full-scale dress forms. A literature review was undertaken to trace the historical antecedents of draping and test fitting of dresses.

Mannequin as precursor to the dress form

As an essential patterning tool today, the dress form derives from the made-to-order wicker mannequin in the 18th century, followed by the wire frame mannequin in the early 19th century, used for display in store front windows. In the mid-19th century, it was used by dressmakers for fitting clothes. The fashion mannequin lent itself to the representation of specific bodies. In design studios wealthy patrons would pay to have a custom dummy made to their specific measurements. In theatre and cinema, the dress form was an embodied 'actor' combining creativity and commodification (David, 2018) with the purpose of displaying designs for a specific individual. It is the true ancestor of the first commercial 'dummies' used specifically to design and display actual, full-scale male fashions in the 19th century (ibid.). The dress form is now widely used in the fashion industry as a fit model that represents a range of bodies.

Historical perspective of dolls and scaled down dress forms

In the seventeenth century the fashion doll known as Pandora, dressed in miniature versions of current fashion, travelled across Western countries. Viewing these dresses led to their replication on full size leading to wide dissemination of elite fashion across national borders. In 1945-46, the touring Theatre de la Mode aimed to promote French haute couture in other fashion capitals during a time of rationing and austerity. Couturier Madeleine Vionnet began her design process on a half-scale mannequin, working with the fabric characteristics along the natural contours of the body, to create the revolutionary bias-cut dress in the 1920s. This process of designing through draping on half scale dress forms has been one of the early modes of transacting fashion education (Phoenix, 2018).

Indigenous Dress Form Development Techniques

Industrially manufactured half or full-scale dress forms are widely available. But a custom dress form is an expensive proposition. Some documented techniques of developing indigenous body forms have been studied to understand the materials and processes of making (Table 1).

Table 1: Merits and demerits of existing methods and requirement of tools for making dress forms

S.No.	Type of dress forms based on method of making	Material requirements	Other requirements	Envisaged reasons for non-feasibility of item/ process for students during lockdown	Reasons
1	Duct Tape Dress form	i. 10-12 rolls of duct tape, scissors, cling wrap/plastic sheet, poly fill/ stuffing material ii. One snug fitted knit T shirt iii. Live model for cloning the body		i. A willing female person may not be available as a model ii. Duct tape may be available, but not in the quantities that the process may require.	i. Non-availability of a volunteer to model for making the duct dress form due to lockdown and social distancing ii. Fragility of the duct tape prone to tear may not facilitate repeated pinning actions iii. Closure of markets and unavailability of online deliveries
2	Moulded papier-mâchédress form	i. Plaster of Paris ii. Duct tape iii. One snug T shirt		I. End-product was hard and unsuitable for pinning	I. Not appropriate for teaching and learning draping ii. Non-availability of suitable materials iii. Advanced skill levels required
3	Dress form from commercial patterns	Printed patterns, shell fabric. polyfill, sewing thread, plastic pipe, measuring tape	Printing facility, sewing machine. Pattern availability Beginner-level patternmaking skills	i. Patterns ordered online ii. Polyfill used as filling material	i. Ordering ready patterns / printing paper patterns was not feasible due to non-availability of printing facilities ii. Patterns were full size and required sewing with sewing machine not available will all students. iii. Poly fill dress form was too soft; therefore, suitable for test fits but unsuitable for draping which requires a hard structure
4	Full scale industrial dress form	NIL	Affordability		i. Not practical ii. Not budget friendly

Duct-tape mannequin

Taping the body is a widely used method for making a customized dress form at home. A teacher and sewing-show organizer, Joyce Perhac uses ordinary duct tape as both the body-casting material and the final form. The method involves duct-taping a fitted dress worn by a live model, in multiple layers to create a snug structure following the contours of the body. The taped structure is carefully cut from the Center back and is removed from the body like a cast. This cast is later filled with foam or other stuffing material and re-taped at the Center back. The armhole, neckline and lower base openings of the dress form are then sealed by taping the cardboard (Coffin, 2008a).

Moulded papier-mâché dress form

A surgical-plaster cast or mould can be made using poured-foam form. This mould makes an accurate copy of the individual's body contours moulding to and preserving concavities. *A*rtist and art teacher, *Gail Gosser* has devised a way of making a plaster mould replacing foam with papier-*mâché* by mixing paper pulp insulation with wallpaper paste. Once dry, a body shape is cut from the plaster of Paris mould along the sides. Though plaster of Paris takes time to dry, it yields accurate results (Coffin, 2008b). However, under the prevailing conditions it was difficult to procure the required materials. It was also an expensive method.

Dress form with commercial patterns

Commercial patterns of torso block for women in specific sizes were explored.

Making this dress form did not require basic pattern making skills. This approach requires custom torso pattern based on specific body measurements to be purchased from a website selling patterns. These patterns are traced on the fabric and then cut and sewn together to make a shell and stuffed with bags of polyfill.

Research Problem

With the spread of the COVID-19 pandemic, a nationwide lockdown was announced in March 2020 initially for a fortnight, and subsequently extended several times. The ensuing uncertainty impacted the students who were stranded in their residence without basic tools, equipment and supplies required for their respective academic programs. The situational constraint caused high anxiety among the academia regarding course completion. While it was evident that online course transaction was the only way forward, this posed an unprecedented problem particularly in practice-based

subjects. Dress forms available in the studios and labs, were unavailable to the students at home. The authors were involved in teaching the subject 'Draping' in the fashion design department. The seeming impossibility of the situation regarding the pedagogy of practical subjects like draping, led the authors to articulate questions about the challenges. How can Draping be taught online? How can the subject faculty access dress forms for demonstrations? How can the students access dress forms to practice what they are taught? How can academic standards be upheld without compromising on quality and on schedule? To find a solution that is both creative and practical, documented solutions for making a dress form at home were researched and documented.

Methods

The authors drew up a list of material resources that were assuredly available with all students. Skill levels of the fourth semester students in terms understanding of paper pattern making and sewing were estimated as 'basic'. Therefore, they were not expected to make their own patterns. Initial attempts were made to develop paper patterns. Using basic stationery, half scale basic patterns were developed and taped together to construct a paper structure which, though relatively fragile, could stand upright on a table. Though the paper dress form could be temporarily used for test fits, its lightweight body and the lack of cushioning did not facilitate draping.

Further attempts to develop a mini dress form involved the use of muslin fabric using half scale patterns. The fabric shell was filled with cotton wool extracted from a pillow that gave it the look and feel of a stuffed object. However, the shapeliness of the upper torso especially the bust area appeared to be flat and did not resemble a woman's upper torso. As the process of draping requires pinning and smoothening the fabric on the dress form, it was found that the form was not strong enough to retain the desired shape when pressure was applied while pinning. Another improvisation for stuffing the shell of the dress form to increase its structural weight was to use a pet bottle filled with water as a central core structure with cotton wool padded around it. Though this technique gave relatively more stability to the structure, the draping process involved insertion of pins into the shell of the dress form which had an inherent risk of water leak if the pet bottle was perforated. Another attempt was to fill the bottles with sand instead of water as it was safe and gave weight and structure to the dress form. Carefully winding the cotton layers on top gave it the desired shape and facilitated pinning. It seemed like a good solution. The feasibility of sourcing sand/

mud by students living in high-rise buildings or apartments without plants required further exploration. Exploration of disposable knitted garments to fill the shell of the dress form showed that while the material gave a solid foundation, it distorted the shape of the torso.

Subsequently, patterns for a quarter-scale dress form were drafted and arranged on an A4 size paper layout. It was assumed that students who were unable to step out of their homes may not have access to printing facilities but would have laptops. It was envisioned that a laptop screen could be used as an improvised light box to trace actual size patterns on paper. Pre-worn trousers or denim jeans available at home, were identified for use as an outer shell of the dress form. The patterns were hand sewn using backstitch, a skill they had learnt in the previous semesters. It was assumed that making a quarter scale form would not require long hours of sewing. Discarded socks and knitted garments were cut into thin strips and used as stuffing as they were pliable and took the shape of the shell. This also allowed penetration of pins. Stoppers at the neck, armhole and bottom of the dress form were made in cardboard and covered with fabric. An optional pipe was inserted vertically in the dress form and the other end was supported by two cardboard boxes to make a stand. These techniques yielded effective results and were therefore, chosen as viable solutions for making improvised dress forms for wider application.

Implementation

Students were given a list of material requirement. This included pre-worn trousers in denim/canvas/any thick material, or alternately, 2 layers of thin material. Discarded knit garments like socks, vests, leggings, t-shirts and undergarments were also included. Tools included needle and thread for hand sewing. Cardboard pieces were sourced from old delivery boxes.

Process Flowchart

Step 1: Trace the ready A4 size patterns.

Step 2: Cut the patterns with seam allowance using thick fabric from old garments available at home.

Step 3: Sew the pattern pieces using a sewing machine if available. Alternately, use back stitch to make a shell. Assistance from the family in sewing was permitted.

Step 4: Cut small scraps of old discarded knitted garments after removing buttons and other closures as well as embroidered parts. Use this scrap as compact stuffing for the dress form. Fluffiness/ looseness must be avoided.

Step 5: Using the half-scale patterns developed (Figure 1) and circulated earlier, cut stoppers at the neckline, armhole and base of the dress form in cardboard and covered with fabric (A-Front bodice, B- Back bodice, C- Front bust cup understructure, D- Front skirt, E- Back Skirt, F- Arm hole, neckline and bottom stopper)

Step 6: After completion of stuffing of the dress form, attach stoppers at all apertures through stitch or glue.

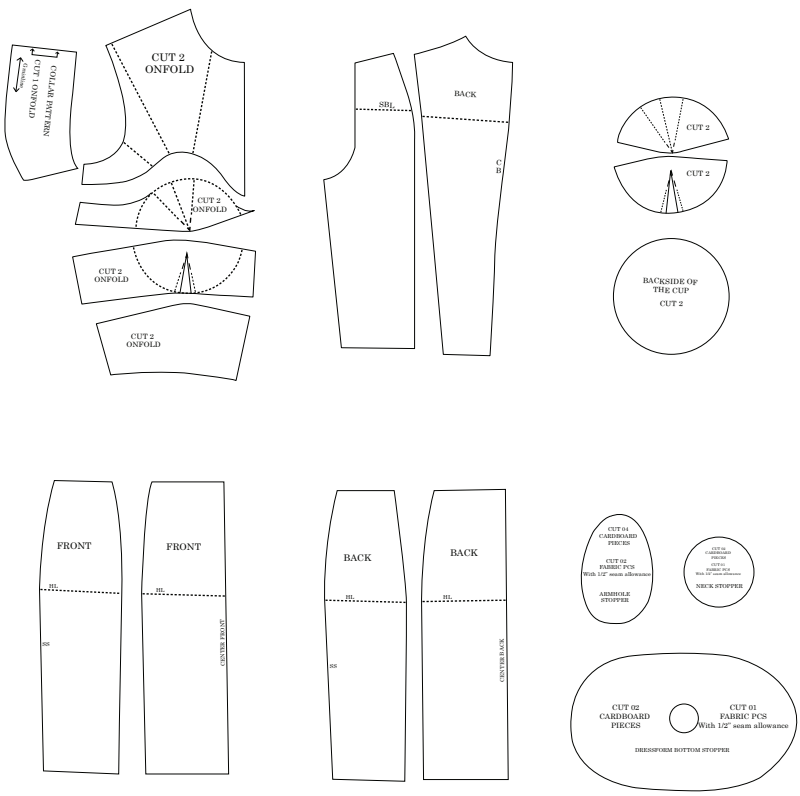

Figure 1: Pattern components of half scale dress form

Source: Ruhee Das Chowdhury

Figure 2: Quarter scale dress form

Source: Ruhee Das Chowdhury

Figure 3: Screenshot of the video documentation process
https://www.youtube.com/watch?v=HkuIHsxtWg0

Source: Ruhee Das Chowdhury

Figure 4: Half scale dress form

Source: Ayushi Suman

Discussion

After ascertaining the success of the quarter scale dress form (Figure 2), the authors disseminated the process through online demonstrations to 40 faculty members across NIFT campuses, who in turn, further disseminated it to the fashion design students. It was seen that the learners were successful in replicating the dress form within a week (Table 2). For additional reference and wider viewing, the process of making the half scale dress form was documented in a video and uploaded on a social media platform with the link *https://www.youtube.com/watch?v=HkuIHsxtWg0* (Figure 3). With increased awareness of the possibilities of DIY forms, there were continued explorations and improvisation of the quarter scale dress form that would be suitable for further developing advanced levels of contoured garments and corsets. A contoured and cupped half scale dress form was developed which further facilitated online learning during the lockdown (Figure 4). It is emphasized that the method of developing a makeshift dress form was not in competition with other documented methods researched for this case study. The documented methods available online, though informative, could not be implemented due to pandemic constraints, thereby requiring new methods to be devised.

Table 2: Parameters for assessment of the DIY dress form

Parameters	Exploration	Analysis
Material availability	No new materials need to be purchased. Discarded clothes and old cardboard boxes are repurposed	Successful
Affordability	Affordable as the process requires no monetary purchase.	Successful
Skill level	Basic B/W patterns were emailed to the students. Basic skills required tracing, basic hand sewing including back stitch and slip hem, and cardboard cutting skills.	Successful
Execution	Skills of dress form making were imparted to several batches of students across different NIFT centers. Execution was supervised for quality control.	Successful

Conclusion

The pedagogy of draping drew from the successful improvisation of the miniature one-quarter and half scale dress forms, implemented for three successive semesters. The process of developing these dress forms was based on the need for improvisation to override the constraints imposed by the pandemic. The DIY solution was considered successful for its ability to imitate lab-like equipment from within the safety of their

homes. The epithet of success applied to the development of the miniature DIY dress form stemmed from its ease of making and wide applicability by the Fashion Design students as an alternative to professional dress forms. No topics were eliminated, nor was there significant revision in the curriculum of Draping as a subject, as the students applied their learning in the safety of their homes. In addition, the assessment and evaluation of student assignments did not pose problems. The entire DIY dress form making process did not require purchase of new materials. Leading by example, the authors consider the initiative as a lesson in sustainability through reuse and repurposing available resources at home.

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Digital Museums and Hybrid Models of Craft Studies during COVID-19

Sreenanda Palit

Abstract

Museums are spaces that cater to the basic need to archive the impalpable, substantial, and social legacy. With technological intervention, museum practices have expanded their roles from spaces housing static evidence of cultural history to a dynamic living record of human stories. While the pandemic compelled museums to stop in-person visits, online archives have been instrumental in re-enforcing their presence by encouraging online searches by online visitors, research scholars and students. The article's objective is to explore the suitability of these digital spaces for craft studies, particularly in restricted access settings during COVID-19. A case study of the modalities of craft research and documentation studied by NIFT Kolkata students in the Nanoor *Kantha* craft cluster of Birbhum district, West Bengal, through a hybrid teaching-learning model facilitates the understanding of the practitioner community of this embroidery during the pandemic.

Digital documentation of *Kantha* in online sites and archives of digital museums in India and abroad is explored as a valuable resource in the larger objective of this study. Facilitation of primary data collection in a hybrid mode required on-site interventions by the faculty mentor using interviews of artisans, observation notably, and translation of Bengali to English and Hindi for the understanding of the students who viewed the live interaction online from their homes. A questionnaire was also administered to the students to assess their perception of the effectiveness of digital museums. It emerges that a combination of customized hybrid models of crafts research supplemented by documented resources in online museums facilitates the content and extent of learning in craft studies even during pandemic restrictions. Conclusions are drawn on the modalities of reinvigorating museum archives in India for a wider audience.

Keywords: Digital museum, craft archives, online research, hybrid model, *Nakshi Kantha*

Introduction

Almost 95,000 museums were affected by the pandemic in 2020 with nearly 90 percent shut down and many being let out for other purposes (UNESCO Digital Library, 2021). The International Council of Museums (ICOM) has expressed concern that several museums may not open in the future (ibid.). The traditional definition of a museum 'as a building in which interesting and valuable things (such as paintings and sculptures or scientific or historical objects) are collected and shown to the public' (The Britannica Dictionary, n.d.) has given way to a more comprehensive definition by the Museums Association, the UK which states that museums' enable people to explore collections for inspiration, learning, and enjoyment. They are institutions that collect, safeguard, and make accessible artefacts and specimens, which they hold in trust for society. 'This definition includes art galleries with collections of works of art as well as museums with historical collections of objects. Museums are not merely spaces where artefacts are collected and displayed but repositories of human experiences. Socio-cultural environments unfold through curated exhibits that are not inert but carry embedded comment aries on foreign influences and in digenous identity, revealing historical information about cultural values, beliefs, and traditions. Museums are not only repositories of tangible cultural heritage to be preserved, studied and shared with the public, but they also have a significant role in supporting intangible cultural heritage embodied in traditions of the local craft communities (Pontsioen, 2020). Handmade artifacts reveal historical information about values and traditions by recounting ethnocultural narratives of nationalities and regionalities, viewed and interpreted through the lens of self-identification of museum visitors with the community and nation.

The increase in the volume of visitors who explore collections for inspiration, learning and enjoyment may not be sustainable as such spaces are meant to preserve and safeguard artefacts and collections for future generations (Straughan, 2019). The museum's role in cultural and creative sectors and its support of and positive impact on several sectors, including education in response to incremental demand for cultural content streaming, cannot be overstated. Museum spaces can be opened up to organize events and workshops to facilitate the demonstration of craft processes by artisans for visitors, which can contribute to the sustainability of the crafts sector (Golding and Modest, 2013). The Shangri La Museum of Islamic Art Culture & Design, Honululu, has approximately 4,500 objects and cultural resources in ceramics, wood, glass, and textiles from several countries including Africa, Central Asia, South East

Asia and India. The webinar organized by the Department of Near and Middle Eastern Civilizations, the University of Toronto on 'The Museum's Role in Amplifying and Sustaining Craft and Making'(2021) initiated conversations on the contribution of museums to the development and promotion of the craft heritage sector through exhibitions, publications, and commissions. This substantiates the expansion in the role of museums to include human stories along with its traditional role of archiving the tangible heritage of communities. The Gurusaday Dutt Museum in Kolkata housed a valuable collection of 3,300 folk art and craft exhibits for everyday use, including *an* impressive collection of *Kantha* in various forms*,* some being heirlooms dating back to undivided Bengal. This museum organized workshops to motivate the *Kantha* artisans to return to their traditional embroidery practices. However, the artisans discontinued the embroidery as the expected finesse of the intricate motifs was too time-consuming and, therefore, commercially unviable. The museum closed in 2018 due to logistics and administrative reasons.

Museums value artefacts as evidence preserved with utmost care and progressively researched, accumulating anecdotal and visual worth. As institutions of learning, museums are not limited by physical spaces to define them. If museums are to continue to play a supportive role by documenting and preserving indigenous practices of communities, they need to expand viewer accessibility by introducing either virtual or online galleries. Though occasionally used interchangeably, the difference between virtual and online museums needs explanation. According to ICOM, virtual museums can act independently or as the digital footprint of a physical museum while maintaining the authoritative status. Virtual museums are also committed to public access to knowledge embedded in the collections, systematic organization of their display, and their long-term preservation. Anindya Sen opines that "…virtual museums have immense potential to be a game-changer by making the collections accessible and relevant across all age groups and geographies while opening up new revenue streams as well" (Sen, 2021). A digital museum is an exhibition platform that utilizes computer and information technology, on which cultural relics and historical collections can be preserved and displayed in digital format as one of the primary outcomes of digital curation (IGI Global, n.d.).

Digitizing existing collections is a necessary record-keeping activity followed by the circulation of these images for value-addition as it becomes a critical acknowledgement of the artefact's significance. A digital museum is associated with storage, retrieval, and interaction through digital technology. As an image supplier and authentic source

of digitized artefacts, it acts as an electronic playground, allowing museum data and representation to become a resource for new knowledge, especially sought by a pro-active audience. In a digital format, artefacts are displayed online in exclusive virtual galleries, accessible digitally through their websites which cannot be viewed in person by museum visitors. These non-tangible exhibits provide a background for online academic research to understand craft practices in their traditional formats, which are rarely evident in the field survey of craft clusters.

Adaptive Pedagogies in Craft Studies

The institutional commitment of NIFT to craft interventions across India is incorporated in the Craft Research and Documentation (CRD) curricula of all undergraduate programs. The significance of crafts education as cultural heritage education requires understanding and imbibing the identity and ground realities of the craft sector. Enabling students to gain exposure to the facts of this sector at the grassroots level requires the identification of strengths and weaknesses in the craft ecosystem and indigenous processes that define the handmade.

In 2021-22 in keeping with the curricular requirements, twenty-five students of the undergraduate Fashion Communication program of NIFT Kolkata were briefed on the objectives of CRD and the imperative of achieving the mandated learning outcomes with a focus on the traditional craft of *Kantha.* It originated as a women-centric needlecraft practiced by women in their homes, mainly in the rural areas of undivided Bengal and its adjoining states. Recycled from old sarees, usually white cotton with colorful woven borders, these quilts (colloquially *lep*) were typically white with the raw edges bound by colored borders. 5-7 layers of fabric were held together with minuscule running stitches colloquially called *gurirun*, which created the characteristic ripple effect. Initially, a recycled craft born out of need, the *Kantha* gradually evolved into artistic expressions of the makers as the *zamindar* (landlord), and the affluent class commissioned these quilts as gifts. This led to the birth of the famous *Nakshi Kantha.* Deriving its name from *naksha* (designed pattern), these quilts were intricately embroidered using various forms of the running stitch. The designs represented unscaled motifs in various colorful threads drawn out from the recycled borders. The visual grammar of *Nakshi Kantha* was essentially in a storytelling format inspired by everyday life, including flora-fauna, local religions, and customs. This needlecraft was practiced by both Hindus and Muslims in undivided Bengal.

The political divide of the state and influence of religious dictates saw the *Kantha* develop distinctive characteristic styles on both sides of Bengal. As clarified by the Directorate of MSME in West Bengal, *Kantha* is now practiced predominantly by Muslim women in the districts of Birbhum, Burdwan, Malda, Murshidabad, Purba Medinipur, North 24 Parganas and Kolkata (earlier Calcutta). Commercialization brought product diversification with modification of traditional *Nakshi Kantha* embroidery for contemporary applications. The new motifs are refined and repetitive, differentiating them from the traditional spontaneous and rudimentary forms. Though they continue to be referred to as *Kantha* in a generic manner it may be questioned if the *Kantha* is a quilt or the embroidery form inspired by its decorative version, the Nakshi *Kantha*. In form and function, the modern *Kantha* stitch is a commercial form of the original *Nakshi Kantha*. Interestingly, *Kantha* products made using *Kantha* stitch are often erroneously used interchangeably in several forums, including government websites and documents. Most museums, however, display authentic *Nakshi Kantha* in its traditional quilt form.

The study of a craft, (in this case, *Kantha)* requires field visits by the students to pre-identified clusters. Restrictions imposed to reduce the spread of the highly contagious coronavirus compelled academia to reconsider conventional pedagogies. This included process-based subjects with field studies favoring a shift to online modes of curriculum transaction. Learning in the 21st century is transforming from traditional pedagogies to hybrid formats that aim to expand the avenues of learning that previously focused almost exclusively on face-to-face activities. There is an increased reliance on online resources that can maximize to personalize learning needs. It enables learners to widen their search for additional learning resources for insights transposed to diverse subjects. The need to maintain an uncompromised commitment to education led to the need to investigate whether online interactions and online content in virtual spaces can facilitate subjects that require experiential interactions.

Research Methods

Virtual observation and interview methods were used during this exploratory study, where primary data was collected through personal interviews and questionnaires. A questionnaire was developed and administered online to two batches of fifty students of the Fashion Communication Department of NIFT Kolkata, to examine the role of digital museums in craft research. The key components of the questionnaire were digital research and a hybrid mode of research. The questionnaire was divided into two

types of questions comprising ten closed-ended questions with multiple options and five open-ended questions requiring the student respondents to type their answers. Feedback was sought on the efficiency of remote research on *Kantha* quilts of West Bengal through personal online interviews conducted through various platforms. Key findings are discussed briefly. To ascertain the outcomes of this pedagogy from the perspective of practitioners, 10 *Kantha* artisans from the Nanoor cluster involved in the field study were interviewed on the phone to gain insight in to their experiences.

Hybrid Model of Craft Research

While mandated safety protocols restrained the students' travel to the identified craft clusters for CRD**,** the interaction between them and the artisan practitioners was essential. Field studies were facilitated by a faculty mentor-supervisor who travelled to the pre-identified cluster in Nanoor, a village in the Bolpur sub division of Birbhum district in West Bengal. Purposively moving within the cluster, the mentor's phone focusing on the artisan women engaged in *Kantha* embroidery became the eyes on the ground for the students who were located in the safety of their homes across the country. The mentor's observations were heard and viewed by the students. Internet availability in rural Bengal was a critical factor of this activity. The faculty mentor interviewed artisans in the master artisan's home. At the same time, the other *Kantha* makers gathered in pre-identified areas according to the given schedule to maintain social distancing. NIFT distributed masks and hand sanitizers for their safety during such gatherings. The faculty mentor was an intermediary who solved the language barrier by asking questions in Bengali—the artisans' mother tongue and translating their answers to English—the medium of instruction in NIFT, and to Hindi—India's national language, for multi-lingual documentation of essential terms. Additional questions by the students in English and Hindi were translated to Bengali by the faculty mentor. These interviews were transmitted through video calls on Zoom or Google Meet. In addition, the role of the mentor as facilitator extended to carrying digital tools that facilitated the collection and dissemination of data. Problems of technical glitches and low resolution of photography and videography were also addressed by the mentor, especially if the person had expertise in photography and video documentation.

The artisans also faced constraints, mostly stemming from technical issues. While seventeen-year-old Raisha Rahman could actively facilitate connections between fellow artisans and students through video calls on her smartphone, sixty-six-year-old Majera Begum shied away from technology. She was agreeable to a personal interview with the faculty mentor. Problems with the networks in a rural environment and technical

glitches added to the dilemma. Master artisan Tajkira Bibi who was the nodal facilitator faced difficulties in connecting the artisans with students on phone at the scheduled time slots.

At the end of each day, students discussed their observations and learning experiences. Student feedback on the (dis)advantages of conducting research on craft studies through online observation and interviews gave valuable insight into the hybrid model of field studies. Some students found that telephonic conversations with the artisans were moderately effective; others opined that language barriers hampered online communication with the artisans as the artisans could express their thoughts only in Bengali, and some essence was lost in translation. A student felt that witnessing the craft process was necessary and that just listening to it was not enough as it lacked emotional connection and experience. Another student expressed concern that the constraints of not being able to observe the artisans in their natural spaces of practice reduced its impact. The discussion further enfolded concerns of obtaining high-definition photographs of the environment, product development process, and products, as most artisans had basic phones with low-resolution cameras. One student expressed that "When researching a topic, one needs to connect with the specific person(s) and the product, which means one needs to get as close as possible… this was missing from the remote study". Though the students appreciated the effort made by NIFT and the faculty mentor in CRD, they felt that the hybrid model had shortcomings. For example, the photographs taken by the faculty mentors reflected their enriching experience and understanding of the cluster and product based on the field visit. However, as a student explained, it was "a way to view *Kantha* making through the eyes of an expert, but took away valuable field experience. It alienated us from the knowledge of learning, how to document a craft environment, its people and products".

Archived Data in Online Museums

Students were asked to identify the gaps in existing secondary data and brainstorm alternate sources of information on *Kantha*. These gaps led the students to digital resources for secondary research. Situational constraints were discussed and students' concerns about secondary and primary research methods were addressed. Apart from reading books and documented studies by NIFT, they were advised to refer to the virtual galleries of online museums on crafts and textiles. The mandated learning outcomes of CRD depended on research to be undertaken from remote locations where the students were situated. Herein lay the difficulty of craft research without physically visiting the

locale of the craftspeople, experiencing their lifestyle, or imbibing the visual-tactile qualities of the materials and processes of production. With increasing emphasis on multicultural education and adaptive pedagogies, educators encouraged the students to undertake secondary research on the craft sector by supplementing reliable textual sources with community resources in the form of cultural artefacts exhibited in virtual museum collections of Indian handicrafts and textiles, and authentic craft blogs for higher comprehension and appreciation of craft practices.

Museums hold a special place in the culture of a society operating as educational institutions—archiving, displaying, explaining and sometimes teaching visitors the facts and histories surrounding certain artefacts and concepts (Ismaeel and Al-Abdullatif, 2016). With the confinement of people during the pandemic, there has been an expansion in the role of museums. Museum collections of real objects need to be presented both on their premises and online, especially as digital and social media becomes more influential in people's everyday lives (Giannini & Bowen, 2022). Technological intervention has enabled museums to open their doors to people circumscribed in their homes (Art World, n.d.). Virtual museums and cultural platforms, therefore, become ubiquitous for "making knowledge accessible for free-choice learning, when and where the audiences might choose" (RICHES Think Paper 06, 2016, p.3). As cultural repositories, several museums and private collections in India and abroad housing clothing and textiles of Indian origin facilitated digital access to researchers, students and the general audience. The Ministry of Culture, Government of India, has initiated virtual tours of seventeen museums[1] across the country. Even though interactive virtual galleries and online archives for craft research are at a relatively nascent stage in India, they offer a potential route to facilitate research on indigenous practices of handcrafted textiles and other products. Some of the most searched museums with archived digital collections of Indian textiles and blog posts on their websites were considered valuable points of reference by the students for CRD.

– Google Arts and Culture: This is an online platform comprising of high-definition photography and video content of artworks and cultural artefacts collected from the partnered global organizations. It also archives a digital gallery of handicrafts and textiles of India under the theme 'Crafted in India' that includes the crafting processes, raw materials, tools, and makers. Google has collaborated with Incredible India and Dastkari Haat Samiti in archiving more than two hundred visual stories. Its interactive features facilitate learning through features like Virtual Gallery Tour, Artwork View, Create an Artwork Collection, Explore and Discover, Education and Art Selfie.

- Museum of Material Memory: Co-founded in 2017 by Aanchal and Navdha Malhotra, this digital repository of material culture traces the family history and social ethnography through heirlooms, collectables and objects of antiquity. Each post articulates the material memory embedded in personal collectables. In this way, it builds on generational narratives to advance the knowledge of India's cultural traditions, customs, language, society, geography and history.

- India Brand Equity Foundation (IBEF): Established by the Department of Commerce, Ministry of Commerce and Industry, Government of India, it is a knowledge-sharing platform for global investors, international policy-makers and media, comprising authentic and updated information on the Indian economy, states and sectors, including and crafts and location of various craft clusters.

- Archives of DC (Handicrafts): This is a government website for accessing data related to artisans, self-help groups, cluster details, and various statistics related to handicrafts and handlooms. It elaborates on the vision and mission of various government schemes to help develop this sector. It has the calendar of events, artisan database, list of awardees, details on various crafts of India and e-newsletters for disseminating information collected by the government.

- The Heritage Lab: This digital media platform connects viewers to cultural heritage through stories, public engagement programs, campaigns, and free-access content. For more accessibility, inclusivity and entertainment, graphic representations particularly focus on engaging the young audiences through participative activities such as creating art memes or even submitting a story. Varied sections titled Museums, Stories, Culture, Modern Art, Campaigns and Events make it easy for the users to navigate and find specific information related to craft research.

- The Textile Atlas: This is an open-access platform for advanced information on traditional handcrafted processes and artefacts through local and global perspectives initiated by Sharon Tsang-de Lyster of 'Narrative Made' in 2017. It also features voices of craftspeople that stimulate imaginative associations inside the field of interest. It adopts a comprehensive strategy by combining field insights in private and public areas, overcoming barriers among local craftspeople, scholarly communities, and commercial organizations.

In addition, the websites of some international museums have digital archives and Blogs that provide a wide range of information, including an exclusive section on Indian

textiles and crafts. The Victoria and Albert Museum website has several well-researched blogs on textiles in its collections. In 2015, 62 articles were posted on The Fabric of India—a 'major exhibition to explore the rich and fascinating world of handmade textiles from India' and exemplify 'the processes, history, and politics associated with these incredible objects' (V&A blog). Archived visuals supported by textual information on Indian textiles and crafts available in British Museum and Philadelphia Museum of Art have also been secondary research sources for the students.

Nakshi Kantha Exhibits in Museums

A virtual tour of *Nakshi Kantha* exhibits at Philadelphia Museum of Art, and British Museum was undertaken. The Philadelphia Museum of Art hosts two collections of the *Nakshi Kantha,* traditional hand-embroidered quilts of Bengal exported by the East India Company c.1926. These quilted and embroidered quilts are visual documentaries that embody the socio-cultural chronicles of the women who embroidered them for domestic use, as a blessing for newborns or gifted as dowry during weddings. Primarily collected during the years between 1922 and 1950 from Calcutta, this collection of quilts titled 'Threads of Cotton, Threads of Brass: Arts of Eastern India and Bangladesh from the Kramrisch Collection-July 7, 1998 - 13 June 1999' are from the collection of the eminent scholar and former Philadelphia Museum of Art curator Stella Kramrisch (1896–1993) many as her bequest to the museum. Another collection comprises forty-three *Nakshi Kantha* quilts made during the 19th till mid- 20th century from the '*Kantha*: The Embroidered Quilts of Bengal from the Jill and Sheldon Bonovitz and the Stella Kramrisch Collections-December 12, 2009 - 25 July 2010'.

Figure 1: *Kantha* from the Jill and Sheldon Bonovitz and the Stella Kramrisch Collections, Philadelphia Museum of Art

Source: Screenshot from https://www.philamuseum.org/collection/object/88596

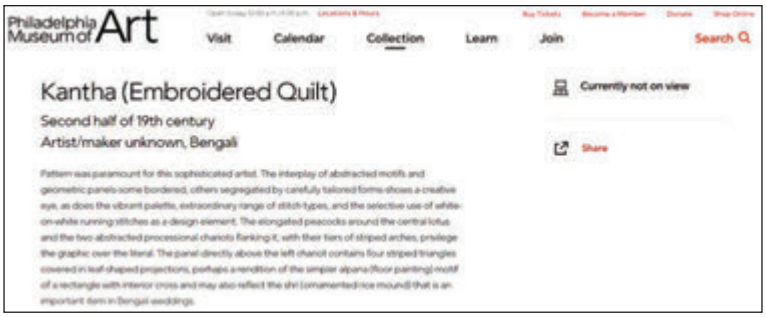

Figure 2: Description of the *Kantha* shown in Figure 1

Source: Screenshot taken from https://www.philamuseum.org/collection/object/88596

Figure 3: Object details of the *Kantha* shown in Figure 1

Source: Screenshot taken from https://www.philamuseum.org/collection/object/88596

Archival information on each quilt is available online (see Figures 1, 2 and 3). The description includes a brief description but no information about the process. The semiotics of the motifs are unclear as there is no information about the artisan or the purpose of making the *Kantha*. Mention of the embroidery technique for making the quilt (Figure 3) would pose a challenge in identification by a novice.

The digital repository of the British Museum includes several *Kantha* items sourced from Bengal accessible through its website. The description explains semiotics and technical details of the curated object. The virtual model allows visitors to zoom into sections of the quilt. The curator's comments nudge the viewers towards further probing the information sources. The examples of *Kantha* in online museums point to the importance of curatorial data about the artefact as it engenders a holistic understanding of the hand crafted textile and its maker community.

Student Feedback on Virtual Galleries of Digital Museums

Feedback of the students regarding the effectiveness of virtual museums was collected vide an online questionnaire. While close-ended questions helped to generate quantitative data, the open-ended questions contributed to the qualitative data.

Wider accessibility

There was consensus among the students that online museums are the best source for collecting secondary data on craft cultures in a visual mode. Developing awareness about Indian handicrafts is necessary for design education. This sector is the second-highest sector to employ craftspeople in an organized business, and students are the future entrepreneurs. Each craft being geography-specific, is not easily accessible to those located in distant places. Internet offers the only avenue to global accessibility during the pandemic.

Gap between virtual museums and experiential learning

While 66 percent of students felt that the effectiveness of virtual exhibits in online museums is less than physically visiting museums as visual tactility is missing, 52 percent claimed that virtual museum exhibits do not facilitate comprehension of the actual socio- cultural environment in which the craft activities take place. About 46 percent felt that virtual galleries do not provide adequate descriptions of the materials and techniques of a handmade artefact, and 38 percent were unable to understand the motif ideation process.

Lack of human narrative

Around 74 percent found a lack of emotions and the human story in the digital archives. As oral traditions of cultures demonstrate, audiences understand and process information more effectively when it is supported by a clear narrative. The students suggested that the display of artefacts be supplemented by the addition of artisan stories that would shed light on the socio-cultural narratives of the predominantly female *Kantha* embroiderers.

Lack of explanatory details

There was consensus among the students that the available online data on *Kantha* exhibited in the craft archives of several Indian museums was not as detailed as in global museums. Artefacts and pictorial representations of visuals of *Kantha* need to

be supplemented with precise and adequate text, failing which it creates a lacuna in terms of discretionary interpretation by the viewer.

Need for interactive virtual tours

Responses of 82 percent of students indicated their felt need for virtual tours of the archives with 3D and a 360-degree view of the exhibits. 62 percent favored interactive libraries to increase viewer interest and facilitate research.

Need for videos to supplement static visuals

It was observed that 78 percent of students felt that adding a video on the authentic processes of *Kantha* would supplement their knowledge with virtual learning of the skill-based processes of embroidery.

Ease of access and future use

It was found that 20 percent of respondents felt that accessing data from virtual museums was easy, another 20 percent found this process inconvenient. In comparison, 60 percent opined that they would continue to leverage the advantages of digital archives for research. Therefore, it was concluded that digital museums must present curated collections in a more systematic and informative manner to strengthen remote research.

In summation, craft archives in digital museums exposed the students to both national and global perspectives of *Kantha,* including the historical context to contemporary significance. The hybrid model is an alternative for students who cannot travel to the craft clusters and may have derived secondary data only from textual sources. The human factor of craft studies in its natural environment would have remained unseen. The combination of secondary research through digital museums and primary research in hybrid mode offers a more comprehensive research method but one that may require improvisation for future implementation in case of a renewed strain of the pandemic.

Conclusion

This study has discussed how design institutes endeavor to achieve the course objectives of CRD by collating and documenting data collected from online sources, which predominantly included digital museums, as well as in-person interactions with the artisans under the supervision of faculty mentors. Educators are rethinking the

fundamental purpose of education and pedagogic models that are more suited to the ever-present possibilities of insecurity, risk and relentless change (Peters, et al., 2020).

The world wide web has been a redeemer; nevertheless, its limitations surface when users depend on online sources primarily for craft studies. Mixed responses to the hybrid model of CRD stemmed from student awareness of the situational constraints caused by COVID-19, the main disadvantage being that documenting craft processes and products were not conducive to being carried out from remote places.

Learning processes through online platforms can be strengthened by greater inclusivity, thriving on the triple-axis of participation, interaction and access. Pandemic constraints have led to a shift in the transformative role of museums away from static displays to virtual and interactive modes that enable the viewing of archived collections in digital museums irrespective of the viewer's location. Indian museums need to reimagine their roles in engaging scholars, just as the need for a renewed vision of education needs to leverage the features of digital museums. As contrasted with digital and virtual museums in developed countries, most Indian museums are yet to develop digital archives. They have not adopted the technological advances in AR-VR to enable remote access to their galleries resulting in low viewership. Incorporating the need for facilitating multiple perspectives that can develop from the virtual viewing of archived collections, museum websites may consider 360-degree virtual tours with participatory activities like virtual craft workshops and webinars. To maximize the advantages of virtual museums, institutes may need to review their research pedagogies. Cloud technologies and data visualization methods for uploading collection scan override the scarcity of space that prohibits physical display. Collaborative associations between the government and academia can enable the digitization of traditional crafts and textiles, enabling online researchers. However, it is essential to state that while the physical experience of viewing an artefact in a museum or an exhibition cannot be replicated by virtual viewing, it does provide an alternative experience during the constraints of the pandemic as digital museums gain relevance.

As learning processes and available resources vary from one academic environment to another, a generalized pedagogy to tide over such disruptions may not be the answer. To find customized solutions, design institutions need to incorporate their hybrid models with focused deliverables involving digital research and online interactions in the syllabus of craft studies to stimulate learners. Students need encouragement to make the most of accessible digital platforms. Decoding online information and

presenting the findings in an organized manner may be included in subjects like design research. A significant learning outcome was that digital resources for craft research could support but not substitute field study experiences. Adoption of hybrid models, immersed in purpose and meaning can deliver enhanced involvement in participatory research.

Note

1. Website of Ministry of Culture, Govt. of India. *Virtual Museums*, https://www. indiaculture.nic.in/virtual-museums

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Digital Museums and Repositories of Textile and Dress Heritage: A Study on Challenges and Opportunities

Ruby Kashyap Sood and Sudha Dhingra

Abstract

The COVID-19 pandemic has caused an unprecedented global shift in the way people live, adapt and communicate. The ongoing situational uncertainty of its impact, influence, direction and duration notwithstanding, rapid adaptability to technology indicates its increasingly pervasive significance in necessitating new paradigms and opportunities for continued learning, connecting and progressing in the near future. This mandates consideration of the challenges related to education that are being enacted with the likelihood of continued change in the post pandemic future. Domains of art, design, textiles and fashion that entail more visual content than the textual are likely to expand through digital portals where authentic and technologically enhanced virtual experiences could transform the expanse and mode of learning. Virtual trade shows, fashion shows and exhibitions that replaced physical shows during the pandemic, have been successful in increasing viewership. Museums too are taking the initiative to go online and provide an informative and interesting experience for the viewers. Digital repositories of varied knowledge domains are being designed to attract users from around the world. It is critical to understand the format in which digital technologies will play a significant role. Therefore, the two most pertinent questions are: Will digital museums and repositories replace physical spaces in the future? What are the significant parameters that can make the repositories of textiles, dress and crafts reliable and perhaps widely available for researchers, educators, designers and enthusiasts to gain knowledge? This research article attempts to highlight the opportunities and challenges of setting up a digital repository of textiles, dress and crafts. Besides content and technology, there are other factors that can enhance the virtual viewing experience and therefore, need to be taken into consideration while creating a digital knowledge portal. With the objective of deriving a wider perspective, views of experienced content creators and museum curators who have contributed to the repositories of textile crafts, art and culture, were taken. The changing roles of

museums and digital portals that enable enriching experiential learning of crafts and textile heritage, is also discussed.

Keywords: Digitization, repository, museum, textile heritage, preservation

Introduction

The COVID-19 pandemic has caused an unprecedented global shift in unforeseen ways. Extended lockdowns and norms of social distancing have urged people to adapt to the situation to work from home, socialize and engage with the larger world through innovative strategies. The digital gadget became the only means to connect with the outside world. Stanchev (2010) predicted that the computer and the environment would become artificial subjects and would communicate in an actual manner as real humans. In 2021, this has become the reality. In this scenario, digitalization of resources is the need of the hour making digital libraries, museums and repositories imperative.

Online viewing of cultural objects and arts has gained popularity during these challenging times of unpredicted lockdowns and stringent quarantine rules. According to Roth (2020), "Virtual museum exploration, a safe alternative to physical attendance, has therefore taken on new significance in light of the first post-internet pandemic". The transition from physical to virtual display of museum collections became evident during the pandemic, with increased preference for virtual visits over physical visits. Nagender Reddy, Director, Salar Jung Museum, Hyderabad as cited in Bhavani and Gowri (2020) conveys that from June to August 2020, the museum received an average of 500 online visitors per day as compared to single-digit views prior to the lockdown. A report by UNESCO (2020) points to the new measures initiated by museums to connect with their viewers on a digital platform through virtual visits and social media. According to International Council of Museums, COVID-19 has motivated many institutions and museums to dematerialize their collections. The Smithsonian Institution made 2.8 million images of its collections available on an open access online platform. In 2021, museums in Paris released 100,000 digital reproductions of artwork on their portal. Panetta (2021) affirms that the pandemic has hastened digitization of the world's cultural treasures. This phenomenon is reinforced by the most visited museum worldwide, Louvre Museum, Paris that has uploaded its entire collection online. People can access 482,000 pieces online including stored items that are not on view for in-person museum visitors.

Digitization of cultural heritage for conservation, protection and promotion was initiated by UNESCO in 2003. According to the UNESCO Charter for Preservation of Digital Heritage, digital heritage comprises human knowledge and expression: cultural, academic, scientific, administrative, technical, legal, medical and other categories of information that can be created digitally or converted into a digital form, and is valuable and significant enough to be preserved and protected for current and future generations. "The digital heritage is inherently unlimited by time, geography, culture or format. It is culture-specific, but potentially accessible to every person in the world. Minorities may speak to majorities, the individual to a global audience" (UNESCO, 2003, p.3).

Globally, there are several museums that are custodians of vast collections of historical and contemporary textiles and fashion. Textile museums are a treasure trove of information, but their primary objective is preservation and conservation of textiles, considering their fragile nature and degradation over a period of time. Museums also face challenges in terms of limited storage space and restricted scope to exhibit for public viewing. Morral and Guarini (2016) state that as fashion history gains momentum and is acknowledged for its cultural significance, more people would like to access more objects, more often. Kumar and Sathya (2015) are of the view that digitization of textiles enables users to search collections quickly and comprehensively from any place at any time. Thus the importance of digitization of textiles and dress is significant. Valetutti (2015) conveys that the wide scope of preservation of cultural heritage, both tangible and non-tangible assets via digital repositories is possible due to advancement in technology. Over the years, museums, cultural organizations and academic institutions are initiating mega projects to digitize heritage objects in an endeavor to preserve them and also to make them accessible to large numbers of viewers located in any part of the world.

There are leading museums of art and design that showcase digital collections online, though limited items. One of the biggest digital repositories of cultural objects is Europeana, funded by the European Commission and launched in 2008. The objective was to provide online access to cultural heritage material in multi-media formats and digital preservation across Europe. The Europeana portal brings together thousands of European museums, archives and libraries at one place. Online platform, Google Arts & Culture brings together content from more than 2000 reputed cultural institutions and archives that have collaborated with Google Cultural Institute. Initiated in 2011, the Google project enables users to virtually visit museum galleries and collections and also view artworks and artifacts in greater detail.

In light of the ongoing pandemic, the creation, usage and preservation of digital heritage by museums and cultural institutions would be the key to connect with their viewers. “The digital engagement and data practices followed by museums have changed and the digital methods for organizing and accessing collections by the museum staff and the general public have become more important” (Noehrer, et al., 2021, p.1). Increase in the multitude of online users has made it challenging for museums to maintain their digital platforms and remain connected with their audience in the post COVID environment.

Digitization refers to the conversion of material in varied formats such as actual objects, printed material, photographs etc. into a digital format with the help of electronic devices in order to process, store and transmit information on a digital platform. The process of digitization of cultural heritage entails several steps. Information related to cultural heritage available in multiple forms such as artwork, artifacts, images, sounds, videos, textual records etc. makes digitization a complex process. Following digitization, Navarrete (2020) states that digital collections require preservation and migration of all the data on an updated content management system. Constantopoulos and Dallas (2007, p.3) elucidate “Digital curation encompasses a number of processes geared to achieving (a) trustworthiness of digital resources, (b) organization, archiving and long-term preservation, and (c) added-value services and new uses for the resources”. Sotirova, et al. (2012) explain that access to digital collections is not just limited to ‘seeing’ an object by the user, but the efficacy of tools to discover resources by different users for different purposes. Thus, one of the key aspects is metadata, which is the structure of data crucial for effective digital management of materials available in varied formats. Patel, et al. (2004) state that objects need to be aptly described, classified and indexed using standard metadata elements and controlled vocabularies in order to facilitate search, recovery and sharing of information resources. The term ‘metadata’ refers to the description of information about a data that assists in quick discovery, usage and management of digital resources, globally. According to Barbuti (2020), the 4 R*s*: Re-usable, Relevant, Reliable and Resilient are necessary to sustain and foster the usage and preservation of digital resources over a period.

Methodology

This research aims to study the challenges and opportunities to create a digital repository of textiles, crafts and dress. A semi-structured interview schedule was developed for deeper enquiry into different aspects of developing content, presentation and

updation for an effective transaction. Experts including contributors to prominent digital repositories; founders of digital museums, online textile centric encyclopedias and museum curators engaged with digitization of textile heritage were contacted for inputs. Open ended questions were framed to get in-depth information from the respondents. Six respondents were selected, each representing different formats of online repositories. Purposive sampling technique was adopted to constitute a relevant sample of respondents with substantial experience in the domain of digitization of textile and craft heritage. The respondents were:

1. Ms. Jaya Jaitly: Author of books on textiles and crafts, policy advisor and founder chairperson of Dastkari Haat Samiti[1].
2. Ms. Ritu Sethi: Prolific writer, speaker and founder of Crafts Revival Trust[2] and Global-InCH[3].
3. Ms. Mallika Verma Kashyap: Founder of Border&Fall[4].
4. Ms. Preeti Bahadur, *PhD*: Art historian and academician
5. Mr. Sumiran Pandya: Founder of Gaatha[5].
6. Ms. Smita Singh: Textile conservation consultant

Due to the pandemic related restrictions, interviews were conducted by emailing the questions and following up via telephonic communication. Of the four questions, two were framed differently in order to extract specific information, and two were common for all the six respondents based on their work profile.

Results and Discussion

The study was conducted to understand the challenges and opportunities faced by memory institutions like museums, archives, cultural heritage institutions and libraries to develop digital textile and craft repositories. Important parameters for the development of such a digital platform and pertinent concerns and future prospects were also examined. Responses received from the selected experts were interpreted and in-depth qualitative content analysis was carried out.

Digital versus physical

Textiles, crafts, costumes, and in fact all the artifacts displayed in the museum galleries offer a sensorial experience for the viewers. Museums around the world are going digital to reach out to a bigger audience. The pandemic has perhaps, hastened this process due to travel restrictions and limited access. The experts' views were taken on

the post-pandemic scenario, whether virtual visits are a fad or a growing trend that would evolve in the future. Jaya Jaitly has been working with design and marketing of textiles and crafts for the last 50 years and has authored several books. Her organization, Dastkari Haat Samiti was approached by Google to contribute 100 craft stories for their Art and Culture portal. In her opinion, the digital museum would be a parallel attraction through which museums can build more curiosity about the actual exhibits and generate more footfalls. The outreach of museums increases significantly if they have a digital presence. She recollected a Google meeting where creative technologists presented unique interactive experiences that allow viewers to bring art into their homes virtually, or change its positioning, or even play games with art objects. Ms. Jaitly opines, "While the pandemic restricts us, the museums have a wonderful opportunity to present themselves by using digital technology in exciting new ways".

Ritu Sethi, founder of Crafts Revival Trust and Global-InCH is of the opinion that the world will never be the same post pandemic. Virtual museums and digital repositories are the way forward as travel restrictions can be countered by access to information that offers a virtual experience and enables unlimited learning.

Preeti Bahadur, who has contributed to Sahapedia[6] on a project to aggregate material on tangible and intangible heritage of Chhattisgarh, does not consider virtual museums as a fad. She believes, "The digital media provides accessibility which is almost irreplaceable. It is not the experience *per se* that gives it value and staying power, even though it enables and supports curatorial exercises almost at par with physical museums, given its multimedia potential. For a sensorial experience, viewers would still prefer on-site experiences".

Sumiran Pandya, one of the founders of Gaatha, affirms that the pandemic has pushed museums to go digital, an initiative that was long overdue. Gaatha was conceived in 2009 in an endeavor to showcase Indian textiles and crafts through storytelling and to connect artisans directly with the global audience. Mr. Pandya observes that it is interesting that museums where photography was prohibited or charged an extra ticket for the camera, have now gone digital and host an online open access repository of their collections. He further added that the behavior of visitors to 'google' available data will continue in the post-pandemic period. However, the richness of the digital repository will attract art and culture enthusiasts to physical museums, once the travel restrictions are lifted. "Digital can never replace the physical experience", asserts Mr. Pandya.

Ms. Malika Verma Kashyap, founder of Border&Fall, a strategic and creative agency, carried out a digital project 'The Sari Series'[7] for Good Earth, a premium Indian textile and craft brand. She feels that the pandemic has precipitated the trend for digital museums. She opines, "I do think digital immersive experiences will continue and ultimately, a 'phygital' version will exist as physical experiences will be valued, perhaps even more in the short-term post COVID".

Ms. Smita Singh, a textile conservation consultant is associated with the Maharana of Mewar Charitable Foundation, The City Palace Museum, Udaipur since 2014. She informs that the Gokul Niwas Gallery, a curtain raiser gallery at the City Palace, Udaipur displays limited number of objects whereas the documentation and digital image data of the entire collection has been uploaded on TMS, a specialized museum software of gallery systems, that will be available online soon. She envisions that the digital collections will assist in reaching out to a much bigger audience and will be helpful to researchers to prioritize their visit and take prior permissions to study the collection in the museum storage as well. The textile conservator explains, "Textiles and clothing are not like other mediums of artifacts like paintings, sculptures etc. which one can enjoy digitally as well. The texture, luminosity, three-dimensional structure and most importantly, feel and drape of the fabric and its hues under different lights cannot be experienced in a virtual exhibition. Virtual exhibitions are good for research which is based on visual observations; for technical examination, researchers prefer to examine physical objects. For this reason, the museum visits become necessary. Nevertheless, the visitors can use the digital media to prioritize their aims and objectives of the museum visit".

Impact and reach

The biggest advantage of a digital repository is its accessibility and wider reach across the world. An effort was made to examine the reach and overall impact of the existing textile and craft repositories. Ms. Jaya Jaitly ascertains the long-term benefits of including craft stories on Google Art and Culture platform. Several users including research scholars, academicians and museums across the globe have connected with her for permission to use images and content. Ms. Jaitly states, "Artisans are thrilled to download the free app and showcase their participation among their community and customers from India and abroad. This has meant major promotion and prestige for them. The Ministry of Tourism has also created a successful campaign 'Dekho Apna Desh', a series of webinars to promote travel to various places in India and the local

crafts practiced in the region. The content on digital portals seems to have encouraged marketing of craft products apart from tourism. One can never assess the financial benefits but its wide viewership is very satisfying".

Dr. Bahadur believes that the digitization of the cultural heritage of Chhattisgarh state on Sahapedia has had a significant impact. The website increased the visibility of the artisans and an opportunity to circulate web links for greater reach, thus boosting their sales. Mr. Sumiran Pandya opines that a digital repository of crafts and artisans helps to generate more awareness about indigenous knowledge systems of the communities and their talent. It can be easily accessed by researchers and enthusiasts alike, unlike the limitations of a physical book. He adds, "Through the Gaatha portal, communities of students, professors, researchers and enthusiasts have reached out to the artisans and supported their endeavors of safeguarding their crafts and livelihoods". Though Gaatha was originally created for research and documentation of Indian craft clusters and heritage that is experiencing rapid erosion, the team realized the need to restore pride and commercial opportunity in the craft ecosystem through digital media.

Critical parameters

The most important objective of a digital repository is the dissemination of a large amount of information to multiple users for different purposes. For a digital knowledge portal for textiles and crafts, both textual and visual content will be significant with easy navigation to access and facilitate relevant information and user experience. Ms. Ritu Sethi explains that content creation should be in accordance to the purpose of the repository and its relevance to the end user. She also emphasizes the importance of standardized vocabulary due to multiplicity of languages, metadata and tags for easy discovery of information. Interactive and engaging user experience adds value and can be achieved with the help of technology and human intelligence.

Ms. Jaya Jaitly is of the view that textual content may be kept minimal to keep the average viewer interested. Recalling her contribution to the Google Art and Culture, she maintains that good quality visuals and snippets of documentary videos embedded in the text increase user engagement. On the digital platform, the mode of navigation should enable the viewer to browse any element at random, rather than following a linear path. The success of Google platform lies in its creative and contemporary ways of showcasing art and craft through shopping ideas, color boards, engaging music etc., thus providing an interactive user experience. Dr. Bahadur explains the significance of metadata geared towards search engine optimization. In a craft repository, tags are

important to enable linking of content according to technique, raw material, process, motifs etc. Visual content with zoom-in facility for all the images have become essential to understand intricacies of the craft. According to Ms. Kashyap, visual content is most important in the digital world. The information should be relevant, clearly communicated and easily discovered in order to engage with a larger audience. Mr. Sumiran Pandya elucidates the importance of all aspects: content, navigation, access and user experience, in order to garner loyal viewership.

Challenges

One of the most critical inputs for a digital repository is content creation. Development of content for a textile and craft repository is a mammoth task. According to Ms. Jaitly, the process followed for contributing to Google Art and Culture, entailed the selection of crafts and their locations, devising a story line, identification of a team of photographers, researchers and content writers, coordination with artisans and field visits to gather data. The Dastkari Haat Samiti team shot more than 11,000 photographs, prepared metadata for 200 selected pictures for each story including captions and introductory write-ups for four 'exhibits' for each story. The four exhibits were community, culture and location; process of making the craft; range of products; and uses and marketing of the product. Editing of the content, selection of photographs and color corrections were time consuming. The main challenge was to develop a methodology for a smooth synchronization between the Google technical team and the content team. Dastkari Haat Samiti eventually developed more than 50 craft stories for the Google Art and Culture platform.

Dr. Bahadur is of the view that the biggest challenge for content creators of repositories is to understand the audience/users. The users of digital content are a much wider category than with print media, and therefore less easy to identify and target. The content providers, writers and resource persons need to be apprised of the ways in which the content can be used. This will impact, alter and shape the ways in which information is to be shared on the digital platform. Accordingly, decisions have to be taken on making information available for downloadable use. Conflicts between rights of the user and knowledge/resource provider require multiple rather than singular solutions.

Mr. Sumiran Pandya is of the opinion that in view of the logistics and financial constraints, documentation of a craft is challenging. Travelling to remote villages with poor road connectivity, constraints of suitable accommodation and field-based data collection

are time consuming and expensive. With the onset of COVID-19, travel restrictions, time frame and costs of craft documentation in a new state, has increased manifold.

Ms. Smita Singh states that museums adhere to the ICOM Code of Ethics[8] for digital documentation of artifacts. The basic parameters used for documentation of the Mewar textiles and costume collections included assigning accession number to each object for easy access; taking measurements in terms of size and weight; articulating descriptive note for easy identification, and using English and local language vocabulary for consistent documentation. Interdisciplinary information is also added to related artifacts such as art history, conservation status, markings and inscriptions for comprehensive documentation followed by the digitization of data. Ms. Singh also emphasizes on issues pertaining to technical glitches and updating information on a digital portal. She also iterates documentation as an ongoing process and therefore, there should be ample space and features in the software to add or replace information in the future. Considering the fast-paced changes in digital technology, regular backup of data is extremely important and critical in order to prevent the loss of valuable documents.

Conclusion

Digital portals have advantages over a traditional museum setup. Generally, museums display fewer artifacts in order to minimize the exposure to light, variations in temperature and humidity. The other constraints are limited space and finances. Through the digital portals, museums can preserve, protect the heritage objects and yet reach out to wider audience.

Insights and reflections on the various aspects of digitization of Indian textiles and dress heritage offer a glimpse of challenges, opportunities and impact of repositories and museums. It is significant to note that the three fundamental tasks to create, use and maintain digital heritage are digitization, access and preservation. It is critical that for any digitization project, intellectual property rights, authorship and ownership of copyright need to be clearly defined. Advancements in information technology have propelled digitization of resources and materials, however creation of digital repositories is an arduous task.

Access to digital heritage is of prime importance. Easy retrieval of information by various users for different purposes is key to the success of a digital repository. Easy access to information and quick search through filters are important for wider reach

to the global viewers. Thus, content creation, metadata and sitemap of the web portal are critical for developing a digital repository. A good digital resource follows specific metadata schemas and standards in order to find, use, preserve and re-use data.

Digital preservation is of great significance as it ensures accessibility of digital materials in the future. Issues such as loss of digital material due to physical degradation and outdated technologies can be addressed if a robust digital preservation system is established. Considering that data expands constantly, there is a need for flexibility and scope to add on information on the digital platform in the coming times.

Setting up a textile and dress digital repository is an expensive proposition. Content creation necessitates writing, editing, validation of facts, and metadata creation. In case of a digital textile repository, good quality photographs with zoom-in and 360^0 view features, audio-visual material along with interactive attributes for an enhanced user experience are critical. Field visits to record living craft traditions add to the cost. Building integrated technology services and a digital platform involve financial outlay leading to substantial increase in overall exorbitant budgets.

It is thus recommended that the government as well as private organizations through CSR initiatives should come forward and support academic institutions and museums to develop digital platforms that endeavor to impart knowledge and promote Indian heritage worldwide.

Digital museums and repositories showcasing Indian textiles and crafts have an important role in promoting and preserving cultural heritage. They are providing a great learning experience and building interest and appreciation for Indian textile traditions amongst the younger generation. The online database of artisans available on digital repositories have given more visibility to the 'maker'. Such online platforms are leading to support and outreach by researchers, crafts enthusiasts and designers, in their endeavor to safeguard the languishing craft practices and sustain artisan livelihoods.

It is evident that digital museums and repositories of textiles and dress are the way forward. The pandemic has propelled museums, academic institutions and cultural organizations to make concerted efforts in digitizing their rich heritage for easy access across the globe. However, it is also viewed that textile as a material cannot be experienced only through a virtual mode. Thus, the future is expected to be 'phygital', where both digital and physical spaces co-exist. The digital platform will serve as a means to quick discovery of objects by a very large audience, and would inspire viewers to plan physical visits for better understanding and appreciation.

Notes

1. Dastkari Haat Samiti is a not-for-profit organization in India, working closely with craftspeople and handloom weavers, to design, exhibit and market products through craft bazaars. Dastkari Haat Samiti represents more than 30,000 direct and indirect beneficiaries from artisan families.

2. Crafts Revival Trust is a registered non-profit organization that is mandated on the principal that access to knowledge and its dissemination forms the vital core of safeguarding intangible cultural heritage. It's an encyclopedia of traditional arts, crafts and textiles of India and seven South East Asian Countries, offering a comprehensive database of 70,000 artisans, weavers and artists.

3. Global-InCH is an online international journal of intangible cultural heritage in the form of essays, views, analysis, commentary pieces, case-studies and photo-essays on traditional arts, crafts, textiles and practitioners across South Asia.

4. Border&Fall, founded in 2013 is a multi-disciplinary agency specializing in business development across branding, digital, retail and creative direction. The agency takes initiatives that focus on impact within craft and culture via digital.

5. Gaatha is an online repository created for researching and documenting the rapid erosion of Indian craft clusters and heritage. Gradually the portal included ways to bring social and commercial benefits to the artisan by connecting them with global audience and the resources which help craft sell not as objects but stories and ideologies.

6. Sahapedia is an open encyclopedic resource on the art, culture and history of India. Sahapedia offers digital content in multimedia format - articles and books, photo essays and videos, interviews and oral histories, maps and timelines, authored by scholars and curated by experts.

7. The Sari Series, an Anthology of Drape is a non-profit project by Border&Fall that documents the various regional sari drapes of India through short films. It includes over 80 how-to drape films and 3 independent art films.

8. ICOM Code of Ethics by the International Council of Museums sets the minimum professional standards and encourages the recognition of values shared by the international museum community.

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Crafts Education and Rhizomatic Learning during COVID-19

Banhi Jha

Abstract

The COVID-19 pandemic has caused unprecedented disruption to every aspect of life including educational practices. This has necessitated a systemic transition from traditional face-to-face modes of pedagogy to online teaching. With the module Craft Research and Documentation as a backdrop, this article discusses a pedagogical improvisation employed to study the lived experiences and traditional handcrafting practices involved in creating signature Bagru and Dabu textiles by the *Chhipa* community in Bagru, Rajasthan. This required the educators to envision ways of facilitating opportunities for the students to vicariously experience the realities in artisanal clusters. Aimed at understanding the nature of learning in alternative pedagogical approaches, this article draws primarily from the work of French postmodern theorists Gilles Deleuze and Félix Guattari (1987) on rhizomatic learning to examine the extent to which online teaching and learning can substitute for face-to-face teaching-learning modes. Initially propounded as a post-structural approach to education, the theory of rhizomatic learning has more recently been identified as a methodology for internet-enabled education. In this article, a case study of adaptive pedagogies is presented to evaluate the nature of learning emerging from the interplay of actors in these online artisanal spaces. Observation of the diverse responses emerging from students' subjective learning experiences revealed demonstrated ability among students to harness learning networks and make creative connections across seemingly diverse issues within the craft ecosystem. These issues included recognition of the artisan community as a repository of indigenous knowledge and skills; ecological sustainability and gender; cultural appropriation and copyright; and innovative marketing strategies in the crafts sector. Learners' responses revealed that while online interaction due to COVID constraints may not be equivalent to in-person engagement during on-site visits, an expansion of the pedagogical approach can facilitate envisioning alternative educational structures and processes with unique comparative advantages for rhizomatic knowledge creation.

Keywords: Craft education, artisan, online classes, pedagogy, rhizomatic learning

Introduction

With the COVID-19 pandemic causing unprecedented devastation across the globe, countries have centered their efforts on confronting this disruption. The nationwide lockdown in India in 2020 resulted in the closure of all working and learning spaces. The pervasive uncertainty necessitated a quick response to the crisis from educational institutes to re-schedule, improvise and implement adaptive pedagogies. The transition from traditional face-to-face modes of classroom teaching to alternative ways of curriculum transaction saw the emergence of online teaching as the most viable alternative. With content at the core, online learning effectively enables interaction among the instructors and students (Moore, 1989). There is no one-size-fits-all model for online design education, since it not only depends on technology itself, but also on the way it is used (Rocha, Ferreira and Jefferson, 2018). However, the need to re-imagine a new trajectory in fashion education also extends to subjects where on-site visits for survey and ethnographic studies are necessary to achieve the stated course objectives. The challenges of online teaching have been exacerbated where learning outcomes have been required to be culled from experiences beyond the classroom.

The diversity of the handicrafts and handloom sectors is emblematic of India's living traditions. According to official estimates, India is home to 7 million artisans. However, data from unofficial sources indicates that the national artisan strength is as high as 200 million (IBEF, 2021). Yet, people rarely know of those who contribute to the growth of a sector outside tokenized representation or engagement in contemporary conversations. It is important that their voices and perspectives be heard. Design and fashion institutes take on the responsibility of re-centering these perspectives and enabling students to explore other sources of traditional knowledge beyond the classroom, as well as their significance for academia and industry. To this end, the Craft Cluster Initiative—a mandatory subject developed and implemented by National Institute of Fashion Technology (NIFT) which encapsulates in its vision the 'concern for social and human values' and integrates India's craft tradition with the curriculum of all programs to impart 'holistic learning and real-life case studies to students and faculty' (Craft cluster policy[1] of NIFT). This is done by dovetailing fashion education with the regional craft sectors facilitated by each NIFT campus[2]. In undergraduate programs, Craft Research and Documentation (CRD) is a modular subject offered at the end of the second year involving on-site visits to craft clusters. This facilitates experiential insight and sensitization to an environment characterized by regional diversities in terms of culture, aesthetics, natural materials and skilled human resources. Data

assemblages comprise field notes, photographs, audio and visual recordings. This is a prerequisite to the subject Craft based Product Development involving design and prototype development based on applied learning.

However, the pandemic-induced disruption and ensuing lockdown from early 2020 required improvisation in the regular pedagogic approach. It was necessary to take into consideration the learning patterns of Gen Z born in an internet-connected world characterized by multiple learning channels with fast-paced multimedia technology. These learners need to experience their lessons in ways that can enhance cognition through virtual channels of teaching that affect design education (Broadbent and Cross, 2003) and enhances visual forms of learning that emerge from translating sensory experiences to decisions and actions in a task-dependent manner (Kourtzi, 2010). In this case, adaptive transaction of CRD was facilitated in online mode.

The endeavor to unpack the links between location and materiality of craft practices with the purpose of knowledge creation raises two questions. What is the nature of learning when online learning replaces face-to-face teaching and learning modes? Does online viewing of communities of practice provide the same or equivalent insight as experiential learning in shaping the learning outcomes of craft studies? With focus on CRD, it explores answers to these questions through observation of students' responses and learning outcomes resulting from engaging with craft practitioners to study the lived experiences and practices of the latter in online mode.

Methodology

As traditional classroom teaching was not an available option due to the pandemic, online sessions were conducted for three weeks for 44 students of the Fashion Design department who joined the sessions from their homes situated across several states in India and abroad. The batch was divided into 6 groups each comprising 7-8 students focussing on two textile crafts practiced in select clusters of Rajasthan and Gujarat. A Flipped Class strategy was used to increase their engagement by asking them to familiarize themselves with the distinctive visual idiom of the specific crafts. Secondary learning resources such as research papers and articles, and YouTube links were shared prior to the online sessions.

Simultaneously, collaborative networks with other stakeholders were established. The office of Development Commissioner – Handicrafts, Government of India extended support through the services of a nominated field officer to coordinate and facilitate

interaction with the craft practitioners**.** The online sessions were moderated by the educators located in Delhi through online platforms like Google Classroom, Google Meet and Zoom. The initial two weeks included, *inter alia*, presentations by experts of Weavers Service Center, industry practitioners and faculty members of NIFT, New Delhi. Artisan entrepreneurs gave experiential talks and also guided the students on online tours of the cluster locale sharing narratives of their practices, achievements and market forays. Thus, the cluster became the classroom where the students could view the interactions between the field expert and artisans through the cell phone camera of the facilitator and ask questions in video conference mode. This was followed by self-study, focus group discussions with department mentors, documentation and presentations by each group.

A case study of hand block-printed Bagru and the mud-resist Dabu textiles practiced in Bagru[3] – a town in Rajasthan, is presented as a point of reference to discuss the pedagogy and learning outcomes observed among a group of 7 students. An attempted re-creation of experiential conditions is essential to facilitate the construction of dynamic knowledge among learners. Through participant observation of the students' questions and ensuing discussions, the endeavor was to understand the nature and focus areas of their learning. This approach draws from the theory of French postmodern theorists Gilles Deleuze and Félix Guattari (1987) on rhizomatic learning in their seminal book 'A Thousand Plateaus'. Departing from the traditional representation of knowledge creation as a branching tree, rhizomatic knowledge construction relies on the metaphor of the rhizome, a plant where the stems and roots spread without a beginning or end. This form of knowledge construction takes exploratory routes to seek multiple, inter-related connections among ideas. Initially propounded as a post-structural approach to education, learning in the 21st century is also called Learning 3.0, pointing to learning in a Web 3.0 environment (Rubens, Kaplan and Okamoto, 2014). In this approach, while the educator is responsible for facilitating curricular engagement, the observation of students' responses, whether in-person or online, is critical. It bears mention, however, that this approach is inherently subjective insofar as the inferences and interpretations drawn are contingent upon the educator's positionality and worldview. In this case, the metaphor of the rhizome provides a conceptual tool to evaluate students' learning and trace the nexus of subjects and factors addressed over the course of the CRD module. Just as the spontaneous connection of each rhizomatic node to several others creates a multi-dimensional assemblage in a self-driven process, the connections between students' responses and the subject matter can be traced by analyzing their language,

expressions, enunciation and pauses, which can all be considered meaningful and indicative of their state of mind.

Observed Communities of Practice

Introductory sessions began with the history and location of the printers comprising 'communities of practice' (Wenger, 1998) in Bagru. The eponymous resist-dyed and block printed fabrics are produced by an estimated 200 families of the *Chhipa* community. The artisans explained the etymology of 'chhipa' deriving from *chhaap* (to print). Oral history traces Bagru printing back to almost five centuries when the *Chhipa* initially settled along the Sānjariya river banks where they discovered the ideal clay which is an essential ingredient of the typical mud-resist Dabu printing technique. Today, Bagru is home to communities specializing in different skill professions — *kharaodi* (blockmaker), *dhobi* (launderer), *rangrez* (dyer) and *chhipa* (printer) who create the signature textiles through interconnected and interdependent systems of work.

Recipient of the National Award in 2011, Suraj Narain Titanwala is a fourth-generation block printer who learnt the craft from his father, Govind Narain. His illustrious career began with visits to the *hatthwada* (local market) with his father to sell block-printed textiles. His skills were noticed by the Japanese textile designer Hiroko Iwatate who extended an invitation in 1982 to conduct printing demonstrations at the Folk Textile Museum in Tokyo. This experience, reinforced by the establishment of the Anokhi textile museum at Amber in 2003 was the genesis of his ambition to build a textile gallery. In 2012 along with his son Deepak Kumar Chippa, he commercialization and constructed the Titanwala Museum in the basement of their family home as an indigenous cultural showcase to preserve the textile heritage of the family and the *Chhipa* community of Bagru. It houses a curated collection encapsulating unique characteristics of the local block printing tradition. During the online CRD session, panning movements of his cellphone revealed valued family heirlooms comprising ancestral vessels, tools, printing blocks and fabric samples displaying sequential dyeing processes and photographs showing vignettes of their professional achievements. Inaugurated in 2019 by the former Union Minister of Textiles, Smt. Smriti Irani, the museum is a reference point for design students and textile enthusiasts.

The ambience of the museum extends to the workshop within the premises. During the online interaction, Deepak Kumar would thoughtfully pause and use his phone camera to show the ongoing Dabu printing process. Etymologically derived from *dabana* (to press down), it involves a sequence of mordanting, stamping and dyeing processes.

Prior to the pandemic during on-site visits the students could try their hand at dyeing and printing processes. As this was not possible online, step-by-step demonstrations of the intricacies of the hand printing process in conjunction with explanations by the artisans provided the closest possible re-creation of experiential learning.

The artisans emphasized that in spite of commercial constraints that have brought changes in the production system, they make consistent efforts to maintain the traditional legacy of materials and processes associated with the heritage of Bagru and Dabu prints. The Titanwala family claims to be the only one to continue with the languishing craft of *Pharadh*[8] printing and among the few remaining practitioners of the *Chilaney ki booti*[9] printing techniques. Yet there are concerns of increased consumer reticence to spend on authentic techniques and materials. This has resulted in the increased use of synthetic dyes even though the printing processes continue to be traditional. The fallout of diminishing demand is that younger artisans have been retreating from their ancestral occupation. India loses on average 10 percent of its artisans every year because their livelihoods are no longer sustainable (South Asia Institute, 2017). Gauging the magnitude and far-reaching implications of this problem, and committed to the preservation of community traditions through continued practices, Titanwala offers novices from the Chhipa and other communities with opportunities to use his workshop bi-annually, as a training center for about two months. Progress of the training schedule in groups of ten participants is closely monitored in order to identify potentially talented people, who are then paid a daily stipend of fifty rupees to incentivise them to continue in this profession. This endeavor has seen young practitioners gradually re-enter the profession which, in turn, rejuvenates community resilience (Deepak Kumar Chhipa, personal communication, August 2021). The progressive attitude of the Titanwala family is also evidenced in their encouragement of women in the community by offering equal opportunities to enrol in the training center. Classes are scheduled according to the convenience of the women after completion of their *dincharya*[10] activities. Titanwala has also requested the state government for recognition and certification of the training program to further encourage community participation.

Learning Outcomes of Online Sessions

Social anthropologist Jean Lave states that “learning is changing participation as part of changing social practice, when participants engage with each other in a social-historical world. Knowledge is constructed and modified in use.” (Lave, 1996, p.156).

The responses of the printers reinforced this view, as well as that of educational theorist and practitioner, Etienne Wenger that learning takes place through "modified forms of participation that are structured to open the practice to non-members" and that peripherality provides the means of participating in actual practice (Wenger, 1998, p.100). During the pandemic, the conventional educational model with a linear mode of expert-centered pedagogy has moved towards social constructivism, a theory of knowledge propounded by Lev Vygotsky, according to which human development is socially situated and knowledge is constructed through interaction with others. This connects to the theory of rhizomatic learning wherein learning can be mapped, but not traced […] and is drawn through experimentation with the real (Deleuze and Guattari, 1987, p.12). The theory draws on the metaphor of a rhizomatic plant, which is a mass of internal connections linking one point to any other point, a characteristic that promotes active growth in any and all directions, with each point also closely connected to the environment. Each of its "semi-independent nodes […] is capable of growing and spreading on its own, bounded only by the limits of its habitat" (Wheeler quoted by Cormier, 2008).

Students' learning can be understood through this metaphor. Because operational and pedagogical approaches during the CRD sessions were kept relatively informal, this allowed for spontaneous, exploratory approaches by the students to imbibe new information and construct dynamic learning outcomes on an individual basis. The trajectory of their comments revealed a shift from more cursory aesthetic evaluations to thoughts encompassing a wider, deeper and more complex perspective of the crafts sector. These inputs from the students during their CRD experience, as well as the rhizomatic learning outcomes they derived from it, are elaborated and discussed below.

Artisan as repository of community knowledge

Secondary research undertaken by the students revealed that the Dabu printing tradition is also practiced by the Chhipa who had migrated from Sawai Madhopur in Alwar, Rajasthan and settled in Akola, Chittorgarh district near Udaipur, Rajasthan. This data was supplemented by the artisans' recollections and information on additional settlements[11]as important sources of primary data. As a doyen of the community and repository of local wisdom, knowledge and skills of Bagru and Dabu block printing, Suraj Narain Titanwala is committed to keeping ancestral traditions alive, even in the face of threats of mill-made fabrics that emerged in the 1970s. The deep respect that Deepak Kumar has for his father was evident in most of his sentences that began with

the words that translate to “My father says that […]”. A student commented that this seems to be in consonance with the ancient *Guru-shishya Parampara*[12]. Till date, a father or an elder in the crafts community evokes similar reverence as a *guru*/teacher as a fountainhead of knowledge.

Hindi is the official language[13] of India in Devanagari script as articulated in Article 343 of the Indian constitution. NIFT students come from different Indian states each with its predominant language of use and usually study in English medium schools, an outcome of British colonization. There is increasing use of English by Gen Z as the language of the internet but not of the indigenous languages of India. However, communication with artisans who speak in Hindi interspersed with vernacular words when referring to local materials and processes, necessitated students to write these words phonetically and translate these to English. They also browsed online sources extensively to find botanical names of trees and local ingredients. These bilingual words and phrases were recorded in their learning diaries as a co-requisite to formal documentation. This process facilitated the bridging of two distinct lived worlds.

In addition to the Iwatate Textile Museum in Tokyo, the students found online references to Titanwala’s work exhibited in the Anokhi Museum in Jaipur. Admiration for the initiative of father-son duo in setting up the Titanwala Museum was expressed in the comment of student A:

> It must have been really challenging to build this museum using their own funds without any official support. So much zeal to preserve the history of the family and the community… Seeing it in person would be like a textile encyclopaedia coming alive!

Museums present authentic objects to provide ‘a context through visual and material experiences’ (Melchior, 2014, p.14). Fabrics communicate, and therefore have both relevance and an appeal that translates into the capacity to generate higher footfall of visitors across broader demographics. The student’s comment pointed to an appreciation and acknowledgement among students of the significance of indigenous curation in preserving and nurturing local textile traditions in artisanal museums located far from urban milieus, and the tenacity of community elders as knowledge repositories upholding ancestral textile production systems.

Crafts community, sustainability, water crisis and gender

There were discussions on the acute problem of water scarcity in Rajasthan due to erratic rainfall patterns induced by climate change which has resulted in decreasing

water resources that aquifers are unable to replenish naturally, hence creating an over dependence on groundwater. Sparse rainfall increases the reliance of smaller textile units on wells and the need to drill borewells that give *khārā pani* (brine) that can be used only for dyeing, printing and washing requirements. In the organized Textile Parks of the Jaipur Bloc, the established fabric exporters have water harvesting facilities but also have large machines where repeated washing cycles consume high amounts of water. While the disposal modes of chemical effluents from larger industrial textile units pollute the soil and pose serious environmental concerns, craftspersons and artisans have a deep sense of ecological literacy regarding natural materials, processes of making and disposal. As with traditional communities, the *chhipa* engaged in Bagru printing as well as the supply chain of both material and human resources, operate within a small radius of the local environment. This is in sync with the concept of 'localism' that involves the local adaptation of knowledge, products, cultures and practices (Fletcher and Grose, 2012). As concerns around sustainability are gaining traction in conversations on commercially manufactured textiles and fashion, traditional handloom and handicrafts sectors are facing increasing difficulties in practicing their trade according to its inherent tenets. There are periods when the work ceases due to lack of water. The challenge is to search for ways in which the local artisans and craftspersons can be supported when their livelihoods are impacted by adverse climatic conditions.

In discussions following the CRD interaction, students recalled the water recycling system installed on the Titanwala workshop premises where wastewater produced during the printing processes is channelled into a tank where it is filtered and then flows to the tube well which supplies water used for irrigating the land. Just as rhizomes are connected not only internally but also with the environment, the ensuing discussion revealed an emerging understanding among students of the craft ecosystem as embedded in an overarching nexus of factors including resource scarcity, gender, culture and social norms. The discussion veered to the strongly demarcated gendered roles and practices in many parts of India, with focus on the roles of women and young girls in rural households who are responsible for collecting and transporting water, often walking long distances in sweltering heat. This daily chore restricts education of the girl child as she is either engaged in collecting water or taking care of the home and her siblings when her mother is away collecting water. Student B commented on the roles of women:

> Generally, it's so difficult for women to balance their household responsibilities including collecting water, taking care of the family and children, assisting

> their husbands with farming, spinning and dyeing…yet they are largely in the background.

Iterating the similar positionality of women in rural and urban India, student C added:

> Even in cities, women bear the responsibility of collecting water for their daily needs. Queueing up for municipal water supply before the break of dawn, they are sleep-deprived which affects their productivity.

However, student D reminded others of exceptions such as the encouragement of women by the Titanwala family through learning opportunities about printing skills, relating this to efforts of self-determination within the community. This association was aligned to the concept of understanding 'community beingness' (Walkerdine, 2016) as relationality, producing meanings and affects held in common.

Cultural appropriation of crafts

During demonstrations of the printing process, Deepak Kumar pointed to a particular textile print being developed for a foreign buyer. He emphasized that though some additional yardage is printed for the client in case the need arises, these are never sold locally as "this would be a breach of professional ethics" (translated from Hindi by the author). Deliberations veered to issues of cultural appropriation, plagiarism and copyright in the crafts sector. This was with reference to a legal notice served in 2020 for the use of the word 'Bagru' on textile products made by Ramkishore Derewala, an artisan of the *Chhipa* community and recipient of the national Padma Shri award for distinguished service. The notice was served by a businessman who had registered 'Bagru' as his trademark in 2008 under the Trademarks Act 1999 (Craft Village, 2020). The artisans of Bagru have now countered the claim, stating that Bagru prints had received the Geographical Indication (GI) certificate in 2009. As Bagru is a cultural tag with connotations of tradition and heritage, students were asked for their opinion on the matter. Brainstorming sessions and systematic online searches yielded references to the Geographical Indications of Goods (Registration and Protection) Act, 1999 that prohibits the registration of GI as a Trade Mark. A provision in Chapter V on 'Prohibition of Registration of Geographical Indication as Trade Mark'[14] of this Act states that the registration of a trade mark can be refused or invalidated if it contains or consists of GI identifying certain notified goods. The discussion extended from this specific case to the general need to protect traditional knowledge and the skill techniques of local communities comprising their cultural repertoire and authentic forms of expression. The argument for 'regulations concerning craft and textiles as protected national

property' and that 'rising interest in copyright and craft needs to be seen not only in light of growing visibility and marketability [….] but also in terms of the positioning of intellectual property as an increasingly important economic strategy' is a global issue (Robertson, 2010). Moreover, with technology and the high speed of production in the powerloom industry, the replication of traditional designs has become easier as digitized prints overwhelm the market. This obfuscates the identification of genuine handcrafted textiles.

During the ensuing focus group discussions, students' rhizome-like comments on diverse aspects seemed akin to a lateral network of connections branching out organically to form new assemblages. Online sessions allowed them to Google related information simultaneously during the focus group discussions. Student D articulated the irony of the situation:

> Though Bagru and Dabu prints are examples of very distinctive patterns of India, they face challenges of sustenance because of their very popularity, largely due to plagiarism.

Based on a quick online search, student E excitedly referred to the case of plagiarism alleged by People Tree[15]— a small-scale fair trade fashion brand that had earlier developed the 'Yogi print' hand block-printed in Rajasthan, against international brand Christian Dior in 2018, and their subsequent out-of-court settlement with a non-disclosure agreement. The student added:

> Thanks to social media that plays such an important role in calling out cases of plagiarism, small scale design brands now have avenues of redressal against injustice. It is essential for artisans and design students to know more about IPR and copyright laws.

Evident in this example was an unexpected but undeniable advantage that online learning holds over face-to-face teaching and learning. While the digital medium deprived students of some of the visual-tactile experience of engaging with the craftspersons, immediate access to the internet allowed them to engage with the curriculum in ways that in-person learning could not facilitate as easily. It encouraged and enabled richer questions based on online searches driven entirely by individual curiosity and takeaways from the content of the online interactions.

Marketing strategies in the crafts sector

The second largest source of livelihood after agriculture, the combined handloom and handicraft sector is a vehicle of Indian heritage, culture and identity representing the

wealth of knowledge and skills honed over centuries. Brainstorming possible ways of increasing the income of artisans and craftspersons ensued with analysis of the reasons underpinning the ailing crafts sector. As assimilation of crafts and fashion is one of the objectives of CRD, cases of successful interaction between fashion designers and retail brands with the artisan community were discussed. While brands such as Fabindia, Anokhi, Soma, Aavaran and Antaran have successfully leveraged crafts for their businesses, the handcrafting sector continues to face crises as markets for machine-made products gain a competitive edge over those for handcrafted items.

Focus group discussions included possible ways of rejuvenating this sector and sustaining the livelihoods of its practicing artisan communities for their socio-economic betterment. Case study analyzes of successful enterprises and networks of organizations with a common vision and purpose, were undertaken. Students were unanimous that solutions require balance between adherence to the original craft heritage on the one hand and appeal to a modern consumer on the other. Rhizomatic learning was reflected in the diversity of solutions and innovative marketing suggestions that emerged in students' thinking processes. Some felt that narratives of the crafts sector could be extended by leveraging the considerable reach and influence of social media to repurpose traditional content and broaden news coverage to engage wider audiences. Another suggestion was to leverage the phenomenon of celebrity culture so that textile crafts can be 'glamorized' by the association of a genuifluencer[16] or Bollywood star. Student F wondered:

> Can storytelling be considered as a marketing tool to create an emotional connection with consumers…to inform them about the individual and community of craft producers and regions of production?

Student D suggested a different route where a marketing strategy could be developed to make the crafts sector an attractive business proposition for investments. This aligns with the opinions of Somesh Singh[17], co-founder of Craft Village who iterated the need to replace the altruistic, not-for-profit approach usually used in the context of crafts in favor of positioning high quality handmade crafts in a niche segment that can command higher prices, and thereby facilitate higher profitability for the artisans and craftspersons.

It was also observed that student G had been silently listening to the discussions, nodding his head slowly with an air of introspection and thoughtfulness. The learner expressed a state of insight by the statement:

> This (CRD) has been nothing like what I have ever experienced. It is completely out of the ordinary...

The sentence petering into silence contained depth and inexpressible emotion. The silence was not just an empty pause but seemed indicative of a state of mind that was still processing the expanse of the online CRD experience and attempting to communicate something beyond verbal expression.

Indeed, students' learnings from the sessions were as much affective as they were substantive. After completion of the module, they expressed an appreciation for the human networks that facilitated online accessibility and personally contacted the artisans to express gratitude for their time and generosity in sharing their experiences. Many mentioned looking forward to the subject 'Craft-Based Product Development' offered after two semesters, which includes developing a collection based on the studied textile or craft product.

Substantively, students' learnings from the sessions were diverse not only in traversing a range of areas but also in exploring varied viewpoints within each one. Their insights, questions and opinions on the subject of one particular handicraft spanned culture, tradition, indigenous knowledge, sustainability, gender, intellectual property, marketing, capital and media. For many of these areas, multiple perspectives were considered by students, for example with social media and celebrity influence being two distinct avenues to bolster public engagement with the crafts sector.

Students' individual comments, group discussions, learning diaries and final documents indicated their deepening interest in the ethos of the traditional handcrafted textile sector, albeit from the periphery of physical involvement. Their observations revealed an increasing nuance and sensitivity in their understanding of the web of factors influencing the lives and livelihoods of the craftspersons. For instance, their initial comments on Dabu and Bagru prints at the start of the online sessions were based on a rudimentary appreciation of the craft evident in statements such as "these are nice prints" and "the craftspeople are so skilled". Continued online interactions and subsequent focus group discussions segued into a multiplicity of issues, with a more complex and informed perspective of the crafts sector and its cultural position in India and beyond. As discussed above, their comments following the interaction reflected a respectful understanding of the tenacity of craft communities to continue with their work even during these difficult times, and the challenges of livelihood sustenance.

Conclusion

Addressing the impact of COVID-19 on education has necessitated the reconsideration of several academic conventions and entrenched curriculum paths. For educators, understanding the learning patterns of Gen Z necessitates re-envisioning new routes to teaching by incorporating alternative pedagogies that have not been extensively used earlier**.** The objectives of this article were to understand and illustrate the nature of learning when face-to-face teaching-learning modes are substituted by online learning, and to ascertain whether this substitution provides the same or equivalent insight as experiential learning in craft studies. For this purpose, it was necessary to facilitate a context in which knowledge could be constructed by students in a dynamic manner**.** Observations of students' responses during and after online interactions with the artisans encompassing the intensities and embodied practices of everyday life within the cluster milieu indicated that in spite of being relatively circumscribed by pandemic-imposed constraints, they were able to harness learning networks to capture and interpret the sensorial qualities of the audio-visual data generated in an online mode, thereby demonstrating the ability to make organic connections across seemingly diverse issues within the cluster ecosystem. This multitudinous engagement with the world of the craftspersons aligns with the view of educationist Peter C. Murell Jr. that academic goals are achieved when learning is understood as the acquisition of a set of preferred cultural practices leading to the 'socialization of these cultural practices in educational settings' (Murrell, 2007, p.34).

In keeping with Deleuze and Guattari's theory of the rhizome which morphs, redirects itself and moves in multiple directions at once, comments by the students during focus group discussions indicated an ability to form connections between seemingly unrelated topics that broadly included the artisan as an embodied repository of community knowledge; cultural appropriation and copyright issues; the water crisis and gender issues; and innovative marketing strategies to rejuvenate the sector. Just as a rhizome resists any defined structure in forming a lateral network of nodes, students were able to draw on online stimuli to construct knowledge and form connections across distinct areas in a boundless exploration of ideas. Thus, while online interactions may not be equivalent to in-person engagement during on-site visits, they are a close re-creation of experiential learning and can foster the derivation and expression of subjective insights indicative of self-directed rhizomatic learning**.**

Equally, it was also evident that the digital mode brought concomitant benefits that rendered it superior to face-to-face teaching and learning in particular ways. The loss

of tactile and physical experience was compensated for by an additional avenue for parallel research during the interaction which enriched their engagement with the subject matter and facilitated curiosity-driven engagement in a way that a purely physical environment couldn't. Thus, while the craftspersons served as one node of the rhizome from which students derived learning, the digital medium itself became a dynamic source of rhizomatic learning that could be drawn upon according to the subjective insights and engagement of individual students with the craftspersons' inputs. Herein lies the opportunity for education systems, and the concluding provocation for all the educators grappling to uphold them in the era of COVID-19. The digital mode of teaching and learning—even if resulting from circumstantial constraints, holds far more potential when understood as a valuable, albeit atypical, learning opportunity offering students a unique and diverse range of insights into the subject matter, rather than in terms of its constraints and deprivations.

In fact, rather than evaluating online education as an analogous or impoverished alternative to in-person learning, the former might instead be viewed as one of several possible alternatives, each with its embedded advantages and potential to foster non-linear learning. To draw differently on the metaphor of the rhizome, just as one source of input (the craftsperson) spurred varied and evolving learning outcomes for the students in this article, educators might draw on a single circumstantial limitation (COVID-19) as a call to envision the shift to digital means as one of several possible pedagogical transformations to enrich, strengthen and reimagine conventional educational processes. Thus, an externally-necessitated move to a new mode of learning could open the doorway to a multiplicity of pedagogic pathways, encouraging educators to imagine myriad ways in which students might engage with a given curriculum. This suggestion transcends a concern with the replicability of learning models or outcomes, focusing instead on the rhizomatic growth of learning modes, the specific comparative advantages of each, and the distinct forms of agency they afford to stakeholders in the learning process. In conclusion, with a definitive end to the global disruption nowhere in sight, structures of systemic education need to re-envision and reframe pedagogies and evaluation parameters to facilitate reflective and rhizomatic thinking processes. Moreover, doing so in an exploratory spirit seeking to expand the pedagogical imagination could serve to fortify and reinvigorate an education system in recovery from being plunged into a state of foundational flux.

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Notes

1. Craft Cluster, https://nift.ac.in/cluster-projects
2. NIFT has 17 campuses — New Delhi, Chennai, Gandhinagar, Kolkata, Hyderabad, Mumbai, Bengaluru, Bhopal, Bhubaneswar, Jodhpur, Kangra, Kannur, Patna, Raebareli and Shillong, Srinagar and Panchkula.
3. According to Census of India 2011, the total population of Bagru is 31,229 out of which 16,259 are male and 14,970 are female. The average sex ratio is 921 as compared to 928 which is the average of Rajasthan state**.**
4. *Sheesham* (*Dalbergia sissoo*), *saagwan* (*Tectona grandis*), *gurjan* (*Dipterocarpus turkinatus*), and *rohida* (*Tecomella undulata*)
5. Materials used in printing include powdered *harda*/Myrobalan (*Terminalia chebula*) as mordant, powdered *begar* (red) paste with *gond* (Acacia arabica gum), *lal mitti* (reddish soil) and *phitkari* (alum).
6. The fabric base is pre-treated with a viscous paste made of *kali mitti* (dark clay soil), *beedan* (moth-eaten wheat powder) and *gond*.
7. Natural and organic dyes include blue from the indigo plant (*Indigofera tinctoria*), grey from powdered ferrous sulphate and myrobalan (*Terminalia chebula*), *syahi* (black) from a mixture of iron, jaggery and powdered seed of *imli* (*Tamarindus indica*), and yellow from a mixture of pomegranate (*Punica granatum*) and turmeric (*Curcuma longa*) powder.
8. Printing technique involving the intricate use of 25 patterns of wood printing blocks.
9. Printing technique with delicate prints outlined in black on red *gadhh* fabric base, once made exclusively for a new bride.
10. Daily routine
11. There are *Chhipa* communities in Barmer, Jahota village in Ambar *tehsil* of Jaipur district, Kaladera village in Chomu *tehsil* and Jairampura village near Chomu. Some *chippa* are also located in Kachchh, Bhuj district of Gujarat.
12. A Vedic tradition wherein learning transmitted from the teacher to the disciple in a residential gurukul.
13. The Geographical Indications of Goods (Registration and Protection) Act, 1999 - No. 48 of 1999

14. The 2011 Census of India indicates that most people speak one of the 22 scheduled languages including Hindi while there are 9,500 languages or dialects spoken as mother tongues.

15. People Tree reaches settlement with Christian Dior over use of yogi artwork. Available from https://economictimes.indiatimes.com/magazines/panache/people-tree-reaches-settlement-with-christian-dior-over-use-of-yogi-artwork/articleshow/64357013.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst. [Accessed 12 Aug 2021].

16. Social media stars who use their platforms beyond product placement to disseminate information with authenticity and transparency.

17. Panellist in the webinar 'India@75: Leveraging India's Textile Heritage for Leadership', 14 August 2021.

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Chiranjeevi has been giving personality and soft skills development workshops at various institutions and organizations. To promote a healthy life and sustainability for four years, from 2012 to 2016 he commuted 16 kms a day by bicycle to the office. He attends live educational career counseling on television channels.

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Noopur Anand started her professional career with NIFT in 1996 and she has served as Chairperson of the Department of Fashion Technology (DFT), Head - Research, Unit In-charge - Academic Management System etc. Her research interests are in the areas of garment fit and sizing, pattern engineering and product development with special focus on 'smart garments'. She has published research papers, presented papers in conferences and undertaken training for government agencies and industry

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