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EDITORIAL

Dear Reader

It is with great enthusiasm that we present the latest issue of *The Researcher*, a multidisciplinary journal of UoJ. This volume continues our tradition of publishing impactful and innovative research work in the fields of Science & Technology, Social Sciences, Business Studies, and Arts & Humanities.

The *Researcher*, as a multidisciplinary journal, comprises four sections: Science & Technology, Social Sciences, Business Studies, and Arts & Humanities.

Section I, Science & Technology, comprises two papers. The first paper deals with investigations of elastic anisotropy in common alloys. The second paper examines the burden of UTI among pregnant women, especially infections caused by *E. coli* in Odisha, which can lead to acute pyelonephritis and adverse consequences for both the mother and the foetus.


Section II, Social Sciences, includes four papers. The first paper highlights the administrative and military acumen of women during the colonial period in the Western Himalayan Region. The second paper attempts to establish India's strategic autonomy vis-à-vis mounting US hegemony. The third paper examines the post-acquisition performance of Sun Pharmaceutical Industries Limited, highlighting challenges in liquidity and a decline in profitability due to a major pharmaceutical merger. The final paper presents a critical analysis of the increasing consumption of tobacco products, particularly among youth, in many regions of India.

Section III, Business Studies, presents three papers. The first paper argues that virtual currencies can contribute meaningfully to accountable, inclusive, and resource-efficient service marketing aligned with long-term sustainability goals. The second paper explores the factors influencing the adoption of trading apps among retail investors in the Jammu region of India. The final paper demonstrates the significant impact on behavioural intention regarding the use of online shopping platforms.

Lastly, the Arts & Humanities section features four papers. The first paper explores how Shakespeare adapted the traditional royal court masque for the public theatre by shifting its power from the centre to the margins. The second paper is a review essay examining the politics of representation of time and its varied connotations in literary and cinematic texts. Another research paper delves into the socio-cultural fabric of the Puroik tribe of Arunachal Pradesh, India, examining how their traditional lifestyle embodies principles of counter-modernity and sustainable ecosystem interaction.

We are deeply grateful to our talented authors for their outstanding contributions. Their dedication to scholarly rigor and creativity drives the success of this journal. We also extend our sincere thanks to our dedicated team of reviewers and associate editors. Their tireless efforts and expert feedback are instrumental in upholding our commitment to a fair and robust peer-review process.

We trust that the articles in this issue will spark new discussions and collaborations. We remain committed to serving as a premier platform for the dissemination of high-quality research and look forward to your continued engagement.


Chief Editor:
Prof. Shashi Prabha
Department of Geography,
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SCIENCE AND TECHNOLOGY

Burden of UTI among pregnant women, especially E. coli in Odisha

Sikha Mohanty*, Subhojeet Biswas**, Sushree Sweta Suvarna Pattanaik***,

Pooja Devi ****, Manoranjan Ranjit ***** & Chinmoyee Maharana*****

ABSTRACT

The most frequent clinical finding during pregnancy is urinary tract infection (UTI) that can cause acute pyelonephritis and poor consequences for both the mother and the foetus if it is asymptomatic bacteriuria (ASB), undiagnosed, and untreated. The current investigation shows the economic burden of UTI, antibiotic resistance pattern, and the prevalence of *Escherichia coli* (*E. coli*) in pregnant women who visit two prenatal clinics at tertiary care hospitals in Odisha, India. 34 pregnant women participated in a two-month cross-sectional study that ran from July 4, 2022, to September 3, 2022. The isolates from every ASB problem were found using molecular biology, chemistry, and microbiological investigations. Study show screening pregnant women for ASB and symptomatic bacteriuria (SB) during all trimesters and its treatment can prevent unfavourable outcomes for both the mother and the foetus, especially when there are established risk factors such as advanced age, multiparity, and a history of UTI.

Key Words: Asymptomatic bacteriuria, *Klebsiella* spp, Pregnancy, Urinary tract infection, Quality of Life (QoL), disability-adjusted life-years (DALYs)

Introduction

The most prevalent causes of urinary tract infections (UTIs) are *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Enterococcus faecalis*, and *Staphylococcus saprophyticus*. UTIs are a serious public health concern that impacts 150 million individuals annually globally (Flores-Mireles et al. 2015[7]). UTIs are the second most common pregnancy problem after anaemia, and many times they are not properly managed, harming the health of the unborn child or the expectant woman (1,2). There are two types of pregnancy UTIs: symptomatic and asymptomatic (3, 4). A) The most frequent cause of UTIs during pregnancy is lower urinary tract involvement, which results in silent bacteriuria. B) The upper urinary tract is involved, which is characterised by acute pyelonephritis and can result in symptomatic bacteriuria (SB) (5).

According to conducted research, 17.9% of pregnant women had a symptomatic urinary tract infection, while 13% had an asymptomatic type. Both the mother and the newborn may experience some clinical symptoms if the asymptomatic illness is left untreated (4,6). The risk of UTI in pregnant women can be raised by factors such as advanced age, the number of pregnancies, the frequency of

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weekly sexual activity, diabetes, recessive sickle cell anaemia, immunodeficiency, urinary tract abnormalities, and prior history of UTI (7,8). Furthermore, pregnancy-related anatomical and physiological alterations modify the course of bacteriuria and increase the risk of UTI complications, including pyelonephritis (9).

The illness causes higher stasis of urine in the bladder, reflux of the urine to the urethra, and a physiological rise in plasma volume in pregnant women, which ultimately lowers the urinary concentration. This is because of an increase in urine volume and urethral dilation. Another frequent cause is glycosuria, which affects 70% of expectant mothers and raises progesterone and oestrogen levels in the urine while also impairing the patient's resistance to invasive microorganisms, which significantly affects Quality of Life (QoL) and disability-adjusted life-years (DALYs).

Pregnancy-related UTIs might arise as a result of all these causes (5, 10). *E. coli*-resistant species are the most prevalent microbiological cause of this illness and require special attention (11, 12). The goal of the current study was to ascertain the prevalence of UTI in the eastern Indian state of Odisha because there is currently no literature on the subject.

Given the importance of UTIs in pregnant women, which can lead to several issues, they must be identified and treated to preserve the health of the mother and the foetus. Thus, while emphasising the necessity of increasing UTI awareness, this study sought to estimate the prevalence of UTI and the associated economic burden among pregnant women attending the antenatal clinic in a tertiary care hospital. Services for their prevention during pregnancy by maintaining hygienic conditions, as well as minimising maternal and foetal morbidity and death, were the focus of this study.

Methodology:

This is an observational study conducted in the Microbiology and Molecular Biology Department, ICMR, Bhubaneswar, on 34 pregnant females with no symptoms of UTI attending the outpatient and inpatient departments of obstetrics and gynecology in Sum Hospital and Prachee Hospital over two months from July 4th to September 3rd, 2022.

Patient Enrolment and Sampling:

The study group included pregnant women between the ages of 22 and 42 with gestational periods, regardless of parity or socioeconomic level, who were willing to participate in the study with informed consent. Patients with underlying chronic renal illness and vaginal discharge or bleeding were excluded from the research group.

A questionnaire was used to collect socio-demographic data to evaluate the economic burden of UTI infection. The patients were distributed depending on their age, gravida, and work profile. These patients were told to "clean catch" urine samples in midstream and put them in a container with a tight-fitting lid and a sterile mouthpiece. Processing of the samples was immediately done following collection without any delay.

Sample analysis by Microbiological and Biochemical techniques:

The specimens were routinely cultured using the standard loop technique on MacConkey agar medium plates with a calibrated wire loop and incubated for 24 hours at 37 °C. According to Cheesbrough (13, 14), the following routine tests were used to identify and characterize organisms: Gram staining, motility test, catalase test, indole test, urease test, and Triple Sugar Iron (TSI) test.

After subsequent culture on LBA media to obtain the pure colonies from the samples that failed to grow on MCA and MSA media, molecular-biochemical assays were carried out to determine the type of bacterium.

DNA isolation and PCR:

The positive samples were used to extract genomic DNA. As indicated in Table 1, the isolates underwent molecular testing utilising PCR techniques and primers specifically made for virulent *E. coli* strains. The genus was verified via gel electrophoresis. Antibiotic sensitivity testing was conducted using the Clinical Laboratory Standard Institute's (CLSI) recommended Kirby-Bauer disc diffusion method on the Muller-Hinton agar plate. The purpose of the questionnaire was to gather information by measuring the societal and personal effects of UTIs, which often overlap. For instance, the diagnostic burden has a substantial detrimental financial impact and affects quality of life when multiple urine cultures or imaging tests are required (21).

There may be both short-term and long-term expenses. For example, the economy and a patient's mental health may be impacted by work absenteeism. Additionally, hospital bills, nonmedical travel expenses, antibiotic prescriptions, doctor's visits (for ambulatory patients), and sick days. The costs include treating related comorbidities and taking time off due to the ailment.

Designatio	Sequence (53`)	Target Gene	Amplicon Size (bp)	Referenc
AL65	TTAATAGCACCCGGTACAAGCAGG	<i>est</i>	147	(22)
AL125	CCTGACTCTTCAAAGAGAAAATTA			
LT _L	TCTCTATGTGCATACGGAGC	<i>elt</i>	322	(23)
LT _R	CCATACTGATTGCCGCAAT			
SK1	CCCGAATTCGGCACAAGCATAAAGC	<i>eae</i>	881	(24)
SK2	CCCGGATCCGTCTCGCCAGTATTC			
Aata f	GCCAGAGCTCAGGAGGAATTCATGAAT ATATACGAATTT	<i>aataA</i>	630	(25)
Aata r	ATCTCTAGACCAGCTAACCATGCCTT			
VT1 (SLT1B)	ACA CTG GAT GAT CTC AGT GG	<i>VT 1</i>	614	(26)
VT1 (SLT1B)	CTG AAT CCC CCT CCA TTA TG			
VT2 (SLT2B)	CCA TGA CAA CGG ACA GCA GTT	<i>VT2</i>	779	(26)
VT2 (SLT2B)	CCT GTC AAC TGA CTT TG			

Results:

Thirty-four pregnant women who visited the antenatal OPDs at the Prachee Institute for Mother and Child Care, Cuttack, and Sum Hospital, Bhubaneswar, were included in the current study. It was found that each of them had an asymptomatic culture positive for bacterial growth bacteriuria. The age group of 21–31 years old accounted for the largest percentage of cases in the study, 21 (61.76%), followed by the age group of 32–42 years old, 13 (38.24%) (Table 2). Primigravidae made up the majority of our patients (64.7%), followed by second-gravidas (35.3%) (Table 3). The prevalence of UTI was found to be 100% in this experiment.

Three (8.82%) samples were found to have non-toxigenic *E. coli*, while about two (5.88%) samples had substantial bacteriuria brought on by toxic *E. coli* (Fig 1). Gram-negative bacteria, such as *Escherichia coli* sp. (14.7%), *Klebsiella* sp. (23.52%), *Shigella* sp. (8.82%), *Proteus* sp. (2.94%), *Enterobacter* sp. (20.58%), and *Staphylococcus* sp. (20.58%), made up the majority of the isolates

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(79.38%) (Table 5). [10] E. coli accounts for 50% of the economic burden of UTI in pregnant women, with Bacillus sp. (16.7%), Shigella sp. (16.7%), Proteus sp. (16.7%), and Gram-positive Staphylococcus bacteria (16.7%) following closely behind (Table 7). The antibiotic resistance profile of the toxic Gram-negative E. coli bacterium is displayed in Table 8. All studied drugs, with the exception of ampicillin, ofloxacin, neomycin, and amikacin, were shown to be completely ineffective against E. coli.

Table 2: Distribution of cases according to age.

Age (yrs)	Number cases	%	No. of AS	%
21-31 yrs	21	61.76	21	61.76
32-42 yrs	13	38.24	13	38.24
Total	34	100	34	100

Table 3: Distribution of cases according to gravida

Gravida	Number cases	% (n=34)	No. of AS	%
1	22	64.7	22	64.7
2	12	35.3	12	35.3
>= 3	0	0	0	0
Total	34	100	34	100

Table 4: Distribution of cases according to work profile

Type of work profile	No. of ASB	ASB (%)
Working	02	5.89
Non-Working	32	94.11
Total	34	100

Table 5: Distribution of bacterial isolates among culture-positive samples.

Types of bacterial isolate	Number of isolates (n = 34)	%
<i>Klebsiella spp.</i>	8	23.52
<i>Escherichia coli</i>	5	14.70
<i>Staphylococcus aureus</i>	7	20.58
<i>Shigella</i>	3	8.82
<i>Enterobacter</i>	7	20.58
<i>Proteus</i>	1	2.94
<i>Gram negative Bacilli</i>	3	8.82
<i>Non-specific</i>	0	0
Total	34	

Table 6: Distribution of cases according to income group and Economic Burden

Type of Income Group	No. of ASB	ASB (%)	Type of Economic Burden	%
LIG	14	41.18 %	Low	60 %
			Medium	40 %
			High	0 %
MIG	19	55.88 %	Low	30.43 %
			Medium	43.47 %
			High	26.08 %
HIG	01	2.94 %	Low	100 %
			Medium	0 %
			High	0%

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Table 7: Distribution of cases according to Bacterial isolates and high Economic Burden

Type of Bacterial Isolates	No. of High Economic Burden	%
<i>Escherichia coli</i>	3	50 %
<i>Shigella</i>	01	16.7 %
<i>Gram negative Bacilli</i>	01	16.7%
<i>Staphylococcus aureus</i>	01	16.7%

Table 8: Antimicrobial sensitivity pattern of isolated organisms

S L N O	List of Antibiotics	Pathogenic Organisms	
		PG 02	PG 06
1	Tetracycline	-	-
2	Ampicillin	+	+
3	Gentamycin	-	-
4	Furazolidone	-	-
5	Doxycycline hydrochloride	-	-
6	Oxfloxacin	+	+
7	Neomycin	+	+
8	Azithromycin	-	-
9	Ciprofloxacin	-	-
10	Norfloxacin	-	-
11	Amikacin	+	+
12	Chloramphenicol	-	-
13	Streptomycin	-	-

* "+" = Resistant, "-" = Sensitive

Discussion:

Women are susceptible to UTIs, especially during pregnancy. One of the main causes of premature births with low birth weight, postpartum UTIs, and higher foetal mortality rates is asymptomatic bacteriuria (ASB) in pregnant women [11]. Early identification and care of infection reduce the possibility of issues that could be lethal to the mother and the unborn child. [12, 15] The prevalence of UTIs in this study was 100%. The results surpass the 13–33% global prevalence by a significant margin. Nevertheless, it was about the same as the majority found in Okonko et al.

(2010)'s study from South-Western Nigeria, which examined the prevalence of UTIs in pregnant women and found that it was 47.5% common and also with Oladeinde et al. (2011), who conducted research on UTIs in a Nigerian rural community and found that 39.69% of people in Edo State had UTIs. Additionally, the results of this investigation align with those of Parida et al. (2018). They conducted a survey on the prevalence of UTIs in pregnant women at a tertiary care hospital in Odisha and found that 49.4% of the pregnant women in the study had UTIs. According to our observational study, the age groups with the highest rates of UTIs are primigravida and those aged 21 to 31. Our results refute the literature's assertion that maternal age raises the risk of UTI by 1% to 2%. These findings concurred with those of Ranjan et al., who found that primigravida women are more likely than second gravidas to get UTIs [13]. Ninety percent of all isolates from urine samples from pregnant women are *Escherichia coli*, according to a large body of research articles and literature (16). The findings of the current investigation, however, contradict this, as the most prevalent bacterial

Among the isolates are *Shigella* sp. (8.82%), *Proteus* sp. (2.94%), *Escherichia coli* sp. (14.7%), *Klebsiella* sp. (23.52%), *Enterobacter* sp. (20.58%), and Gram-positive isolate *Staphylococcus* (20.58%). (Table 5). According to this study, the medium- and lower-income groups have a greater economic burden [14] than the high-income groups. This could be explained by the fact that they use public restrooms more frequently than people in other income groups and that they are less conscious of their personal hygiene (Table 6) (17).

The economic burden of *E. coli*-related UTIs in pregnant women has not received much attention in the literature. Nonetheless, the current study indicates that pregnant women's economic burden of UTI, namely from *E. coli* (50%), is more than that of other isolates of bacteria (Table 7). The current investigation indicates that *E. coli* is completely susceptible to all antibiotics, with the exception of amikacin, ampicillin, ofloxacin, and neomycin. Based on susceptibility factors, therapy regimens lasting 7–10 days were suggested to lower the risk of re-infection. The only methods used for UTI testing in the majority of the world are dipstick analysis and direct wet microscopy of urine. However, especially in asymptomatic individuals, these tests have low non-conclusive values for identifying bacteriuria (18).

In conclusion, the underdiagnosis of UTIs has been exacerbated by the over-reliance on these techniques and the lack of culture and susceptibility testing, which may be contributing to the rising rates of treatment failure. A lower sample size, variations in the environmental background and social behaviours of the communities, and the economic position, awareness, and knowledge of cleanliness standards of the study group could all be responsible for this discrepancy and inconsistency in the results. Additionally, parity and gestational age had a significant influence on the occurrence of urinary tract infections. Reports of them have already been made (19–20).

Conclusion:

Regardless of age and occupation, UTIs were highly prevalent. In light of the results of this investigation, we advise that urine culture testing be incorporated into routine prenatal examinations for expectant mothers to facilitate the early identification and management of ASB, as it aids in halting the development of a symptomatic UTI, which may cause issues for both the mother and the foetus. In addition, the pattern of antibiotic resistance in ASB can help choose a treatment plan for pregnant women with ASB prior to the culture sensitivity test. To reduce the risk of infection, health education regarding environmental and personal hygiene during pregnancy must be promoted.

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Conflict of Interest

Regarding the research, writing, and publishing of this paper, the author or authors have disclosed no potential conflicts of interest.

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An Investigation of Elastic Anisotropy of CoNbMnSn Alloy

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ABSTRACT

The article elaborates on the elastic anisotropy of the quaternary Heusler alloy CoNbMnSn. ELATE software is employed for the analysis of elastic tensors. The maximum and minimum values of elastic quantities, such as linear compressibility (β_l), Poisson's ratio (ν), Young's modulus (Y) and shear modulus (G) of CoNbMnSn alloy, are obtained. Elastic anisotropy indexes, such as log-Euclidean anisotropy A^L , universal elastic anisotropy A^U , have been computed. The ratio of maximum to minimum value of Young's modulus (Y_{max}/Y_{min}) is 1.11, which is almost equal to G_{max}/G_{min} . The directional Poisson's ratio varies by about 33% from its minimum value. Spatial variations of directional Young's modulus, Poisson's ratio, shear modulus and linear compressibility of the CoNbMnSn crystals are investigated.

Key Words: CoNbMnSn, Elastic, Anisotropy, Shear modulus, Young's modulus, Poisson's ratio

1. Introduction

The field of spintronics endures to revolutionize the flourishing discipline of information technology [1]. Mammoth attention has been paid to half-Heusler compounds as prospective candidates for thermoelectric applications [1–7]. Half-metallic ferromagnets are regarded useful materials for spintronics device applications [8]. A lot of available combinations with 1:1:1:1 stoichiometry are possible for quaternary Heusler alloys [9]. First-principles investigations of quaternary Heusler alloys were conducted [10–15]. Multifunctional properties concerned with magnetostructural transitions in quaternary Heusler alloys were studied [16]. Materials that possess full spin polarization in close vicinity to Fermi energy are considered a captivating prospect for spin-polarized devices [17–18]. Quaternary Heusler alloy CoNbMnSn exhibits a perfect half-metallic kind of character and CoNbMnSn alloys are stable [19]. The states of CoNbMnSn are fully spin-polarized in close vicinity to Fermi level [19]. As per the DFT study of CoNbMnSn alloy, it is considered a compatible substance for thermoelectric and spin-dependent applications [19].

Elastic anisotropy affects several sorts of physical processes [20]. It has been exhibited that elastic anisotropy also impacts nanoscale precursor textures [21]. Elastic anisotropy has importance in its wide applicability. Investigating elastic anisotropy provides guiding points for device design with specific stiffness in particular direction for the purpose of achieving the durability and optimized performance of devices. This investigation reveals the directional-dependent characteristics of Poisson's ratio, Young's modulus, shear modulus and linear compressibility for CoNbMnSn alloy. As far as I know, neither computational nor experimental investigations on elastic anisotropy of the CoNbMnSn crystals have been conducted in such a comprehensive manner. In this investigation, elastic anisotropy of CoNbMnSn is explored in detailed mode for the first time. The present investigation will impart a basis for prospective experimental research. In section 2, computational

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methods are introduced. In section 3, results and discussion on elastic anisotropy are illustrated. Finally, conclusions are consolidated in section 4.

2. Computational details

For the study of the elastic tensors of CoNbMnSn alloy, ELATE software [22–23] is employed. Elastic stiffness constants C_{ij} are used as inputs in ELATE software to get outcomes. On the basis of the Voigt-Reuss-Hill theory [24–26], ELATE software provides the Voigt, Reuss and Hill elastic moduli of shear modulus (G_R , G_V & G_H) and bulk modulus (K_R , K_V & K_H). The maximum and minimum values of elastic quantities, such as linear compressibility (β_l), Poisson's ratio (ν), Young's modulus (Y) & shear modulus (G) of CoNbMnSn alloy, are obtained using ELATE software. Details about the directions along which the maxima and minima of these elastic quantities occur can be inferred using this software. This software is highly influenced by *ELAM* software [27] and *MechElastic code* [28]. ELATE software provides two-dimensional & three-dimensional views of polar plots of Young's modulus and linear compressibility. For plotting the directional-dependent variations of Poisson's ratio and shear modulus of CoNbMnSn crystals in this study, ELATE uses the convention as narrated by Marmier *et al.* [27]. The present investigation uses the elastic stiffness constants of CoNbMnSn alloy as computed by Seih *et al.* [19]. They [19] employed WIEN2k software [29] for the computation of elastic stiffness constants of CoNbMnSn alloy within (DFT) density functional theory [30–32].

3. Results and discussion

The elastic properties of substances play an indispensable job in estimating the mechanical strength and also durability of devices. Elastic anisotropy of crystal is correlated with the directional variations of elastic quantities. Elastic anisotropy is a vital factor in determining the directional-dependent bending limit and fracture limit of crystals.

Bulk modulus and shear modulus as per Voigt-Reuss theory are to be calculated for computing specific elastic anisotropic parameters. The Reuss bulk modulus (K_R) can be stated in terms of S_{ij} (elastic compliance constants) as [24–26]

$$K_R = [S_{11} + S_{22} + S_{33} + 2S_{12} + 2S_{23} + 2S_{13}]^{-1} \quad (1)$$

The Voigt bulk modulus (K_V) can be stated in terms of C_{ij} as [24–26]

$$K_V = \frac{1}{9}[C_{11} + C_{22} + C_{33} + 2C_{12} + 2C_{23} + 2C_{13}] \quad (2)$$

The Voigt shear modulus (G_V) can be stated in terms of C_{ij} as [24–26]

$$G_V = \frac{1}{15}[C_{11} + C_{22} + C_{33} - C_{12} - C_{23} - C_{13}] + \frac{1}{5}[C_{44} + C_{55} + C_{66}] \quad (3)$$

The Reuss shear modulus (G_R) can be stated in terms of S_{ij} as [24–26]

$$G_R = 15[4(S_{11} + S_{22} + S_{33}) - 4(S_{12} + S_{23} + S_{13}) + 3(S_{44} + S_{55} + S_{66})]^{-1} \quad (4)$$

Three independent elastic stiffness constants, namely C_{11} , C_{12} and C_{44} are correlated with cubic crystals [33]. For CoNbMnSn crystals, these are $C_{11} = 251.62$ GPa, $C_{12} = 103.41$ GPa and $C_{44} = 83.36$ GPa [19]. The calculated elastic moduli K_R , K_V , G_V and G_R are 152.81 GPa, 152.81 GPa, 79.66 GPa and 79.39 GPa, respectively. These moduli values are estimated employing ELATE software, utilizing C_{ij} [19] of CoNbMnSn.

Elastic anisotropy of crystals may be elaborated with appropriate mathematical expressions characterizing the directional variations of specific elastic quantities. For the cubic crystal class system, Young's modulus (Y) along the unit vector l_i can be stated in the following way [33]:

$$Y = \left[S_{11} - 2 \left(S_{11} - \frac{1}{2} S_{44} - S_{12} \right) \left(l_1^2 l_2^2 + l_1^2 l_3^2 + l_2^2 l_3^2 \right) \right]^{-1} \quad (5)$$

Here l_1 , l_2 and l_3 are the direction cosines.

The directional linear compressibility (β_l) for the cubic crystal class system can be stated in the following way [33]

$$\beta_l = S_{11} + 2S_{12} \quad (6)$$

The elastic anisotropy of crystals may be represented by the elastic anisotropy parameter (A_G) in the following way [34–35]

$$A_G = \frac{G_V - G_R}{G_V + G_R} \quad (7)$$

The calculated value of A_G is 0.0017 for CoNbMnSn.

Ranganathan *et al.* [36] conceptualized the expression of A^U (universal elastic anisotropy index), that may be exhibited as:

$$A^U = \frac{B_V}{B_R} + 5 \frac{G_V}{G_R} - 6 \quad (8)$$

The calculated value of A^U is 0.017 for CoNbMnSn. The parameter A^U can be exercised for all crystalline symmetry [36]. For elastic isotropic materials, the parameter A^U has its minimal value equal to zero [36].

Elastic anisotropy of crystals can be expressed as log-Euclidean anisotropy measured as [20]:

$$A^L = \sqrt{\left[\ln \left(\frac{K_V}{K_R} \right) \right]^2 + 5 \left[\ln \left(\frac{G_V}{G_R} \right) \right]^2} \quad (9)$$

This elastic anisotropy index is formulated on a distance measure in the log-Euclidean space for fourth-rank elastic tensors [20]. The calculated value of A^L is 0.0076 for CoNbMnSn crystals. For the limiting case of perfectly elastic isotropic materials, the value of index A^L is zero [20].

Table 1 elaborates the minimum and maximum values of specified elastic quantities. For Poisson's ratio, the minimum and maximum values are 0.237 and 0.314, respectively. These calculated values of Poisson's ratio of CoNbMnSn alloy fall within the theoretically specified limits [37] for materials. There are variations of about 20 GPa and 9 GPa for directional Young's modulus (Y) and shear modulus (G), respectively. These moderate variations themselves show that elastic anisotropy of CoNbMnSn is not too much.

Table 1. The estimated largest and smallest values of Young's modulus Y (in GPa units), shear modulus G (in GPa units), linear compressibility β_l [in (TPa)⁻¹ units] and Poisson's ratio ν (unitless) of CoNbMnSn alloy

G_{\min}	G_{\max}	Y_{\min}	Y_{\max}	ν_{\min}	ν_{\max}	$\beta_{l\min} = \beta_{l\max} = \beta_l$
74.10	83.36	191.38	211.60	0.237	0.314	2.181

Table 2. Calculated values of Young's modulus Y of CoNbMnSn alloy

	$Y_{[100]}$	$Y_{[010]}$	$Y_{[001]}$	$Y_{[110]}$
(GPa units)	191.38	191.38	191.38	206.16

As per table 2, directional Young's modulus along the [110] direction is greater than that along the [100] direction. It is also expected that Young's modulus is the same along crystallographic x -, y - and z -axes, as the CoNbMnSn crystals have cubic class symmetry. For the directional Young's modulus Y of CoNbMnSn crystals:

$$Y_{[100]} = Y_{[010]} = Y_{[001]} < Y_{[110]} \quad (10)$$

Table 3. Elastic anisotropy parameters^a: the ratio of the largest to the smallest values of Young's modulus Y , shear modulus G , linear compressibility β_l , and Poisson's ratio ν for CoNbMnSn

Elastic anisotropy parameters			
$\frac{Y_{\max}}{Y_{\min}}$	$\frac{G_{\max}}{G_{\min}}$	$\frac{\beta_{l\max}}{\beta_{l\min}}$	$\frac{\nu_{\max}}{\nu_{\min}}$
1.11	1.12	1.00	1.33

^aUsing the values of elastic quantities as mentioned in table 1.

Table 3 shows that there is a 33% variation of Poisson's ratio of CoNbMnSn crystal with respect to its minimum value. From table 3, it is clear that ratios $\frac{Y_{\max}}{Y_{\min}}$ and $\frac{G_{\max}}{G_{\min}}$ are almost equal. The maximum value of shear modulus differs from its minimum value by about 12% (with reference to 74.10 GPa).

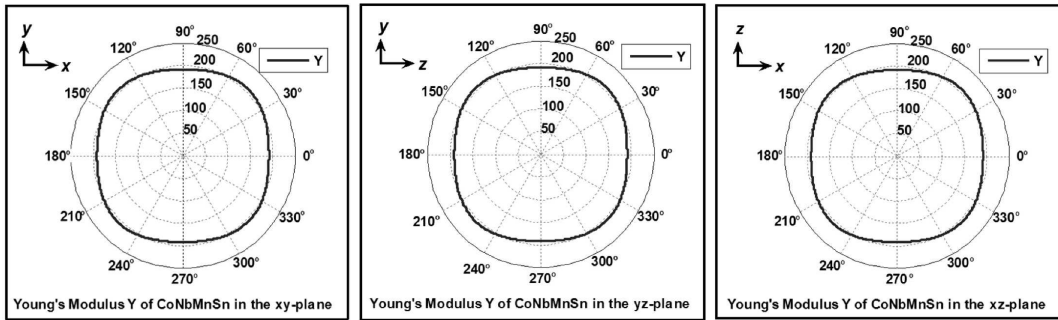


Figure 1. Polar plots (2D view) in the xy -, yz - and xz - planes for Young's modulus Y (in GPa units) of CoNbMnSn.

Visualizations (two-dimensional polar plots) of variation of Young's modulus (Y) of CoNbMnSn are illustrated in figure 1. Young's modulus Y has a value of 191.38 GPa along the x -, y - and z -axes. In xy -plane, maximum values of Y occur at angles of 45° and 135° , as evident from figure 1. The maximum value of Y is 206.16 GPa in the xy -, yz - and xz -planes.

In xy -plane, as the angle rotates from 0° (i.e., the x -axis), the value of directional Y increases continuously till it reaches 45° (i.e., the $[110]$ direction). Afterward, Y decreases continuously till the angle becomes 90° (i.e., the y -axis). Further rotation of angle from 90° results in a continuous increase in the value of Young's modulus till the angle becomes 135° . Afterward, Y again decreases till the angle takes a value of 180° . In the xy -plane, symmetry exists for variation of Young's modulus. Similar variations of Y of CoNbMnSn in other crystallographic yz - and xz -planes are observed in figure 1.

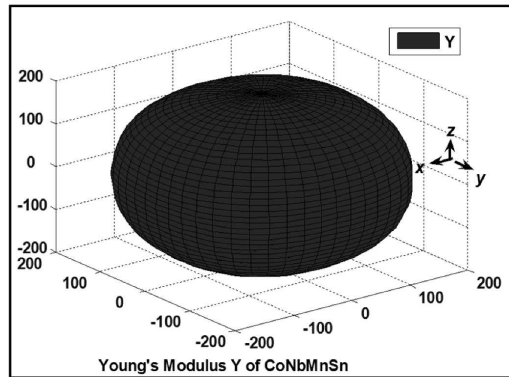


Figure 2. Polar plot (3D view) for Young's modulus Y (in GPa units) of CoNbMnSn.

Young's modulus of CoNbMnSn is shown as a 3D parametric surface in figure 2. The 2D projections on the planes provide plots that represent spatial variations in the plane. The direction $[111]$ has a maximum value of 211.60 GPa of directional Young's modulus. In the polar plot (3D view) for Young's modulus Y in figure 2, other symmetry directions can be illustrated along which maximum values of directional Young's modulus take place.

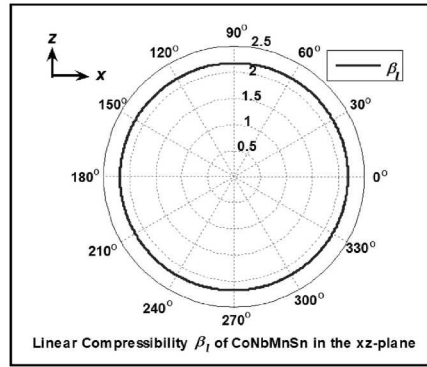


Figure 3. Polar plot (2D view) in the xz -plane for linear compressibility β_l [in $(\text{TPa})^{-1}$ units] of CoNbMnSn.

The spatial variation of β_l of CoNbMnSn in the xz -plane is depicted in figure 3. Linear compressibility β_l has a constant value of $2.181 (\text{TPa})^{-1}$ in the xz -plane. Similarly, linear compressibility β_l has the same constant value in the xy - and yz -planes. A 3D parametric surface representing the directional variation of β_l of CoNbMnSn alloy is a sphere. In the spherical polar plot, the radial parameter represents a value of $2.181 (\text{TPa})^{-1}$ for the linear compressibility β_l .

Spatial variations of shear modulus and Poisson's ratio of the CoNbMnSn are plotted in figures 4 and 5, respectively.

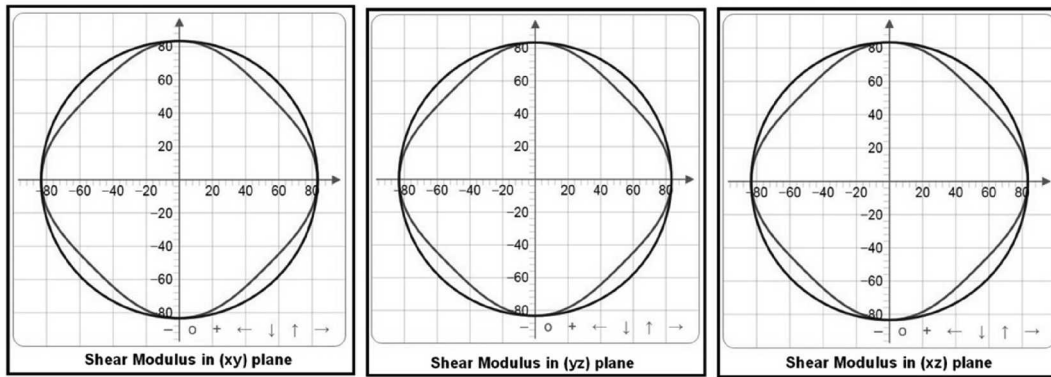


Figure 4. Spatial variation plots of shear modulus (in GPa units) of CoNbMnSn crystal.

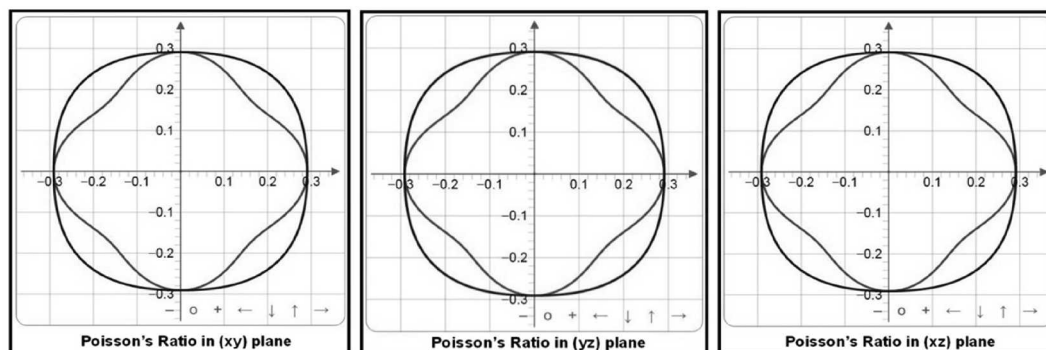


Figure 5. Spatial variation plots of Poisson's ratio (unitless) of CoNbMnSn crystal.

Figure 4 and figure 5 explore that variations of shear modulus G and Poisson's ratio ν are substantial in certain planes. So, these moderate variations are to be considered during device fabrications. Due to cubic symmetry of CoNbMnSn crystals, variations of shear modulus have symmetric pattern in certain planes.

4. Conclusions

The present study elucidates the elastic anisotropy of CoNbMnSn alloys. Elastic anisotropy plays a vital function in predicting the directions along which maximum external stress can be borne without fracture of crystals. The Young's modulus of CoNbMnSn alloy has maximum value of 211.60 GPa, which materializes along the [111] direction. The range of 191.38–211.60 GPa of Young's modulus indicates the sufficient mechanical strength of CoNbMnSn alloys. The ratio (Y_{\max}/Y_{\min}) for Young's modulus is 1.11, that is also almost equal to G_{\max}/G_{\min} for shear modulus. The values of directional-dependent shear modulus lie within an approximate estimated range of 74–84 GPa. The Poisson's ratio lies in the range of 0.237–0.314. The value of A^U (universal elastic anisotropy) is 0.017 for CoNbMnSn alloys. From the perspective of optimum performance with the mechanical stability of devices made of CoNbMnSn alloys, this study provides guiding points in ascertaining the preferred orientations of crystals for the device-fabrication. The present investigation reveals that elastic anisotropy of CoNbMnSn is not at an excessive level. Mainly, elastic anisotropy concerning to Poisson's ratio is substantial.

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SOCIAL SCIENCES

Administrative and Military Acumen of Women during Colonial Period in the Western Himalayan Region

Reeta Devi* & Anjali Verma**

ABSTRACT

Acknowledgement of administrative and military capabilities of women remained a domain of deliberate neglect for long in the pages of history. Despite becoming political heir at several junctures, patriarchy did not allow space for her contribution directly or indirectly in administration. The royal houses in western Himalayan region stand no exception to such biases.

Present research is an attempt to bring on pages the contribution of several un-named or scarcely named princesses and queens of western Himalayan region who contributed in the administration. With focus on colonial period, the time-span has extended threads from early medieval time to the independence with certain time gaps due to paucity of information or sources.

The conclusion indicates the 'problem' with the patriarch political framework of history with inherent biases of the sources and interpretations that kept ignoring the achievements and voices of women in western Himalayan royal houses. This first ever concrete study starkly indicate the burden of proof on unnamed women to prove her administrative acumen perfectly knowing that her contribution shall not be recorded. Conclusion also indicate that the kingdoms that were already in existence in the region had better tendency to name its princesses and queens than later established kingdoms whose kings were coming from northern plains and had strong patriarchy notions for state ruling. Paper also takes into consideration the contribution of western Himalayan women in freedom movement.

Key Words: Administration, Military, Princesses, Queens, Western Himalaya

Introduction

Women spheres, their contribution and participation at different levels are getting visible now with new researches. It was never the case in history that only rule of kings prevailed, but patriarchy kept wishfully aside the examples of queens and princess, ruling independently. Still this fact could not be concealed that women at various junctures in history reigned not only at the center or state level, but also in the smaller provinces. Recent study by Anjali Verma shows that there was no dearth of such examples during early medieval period where examples of ruling queens at pan-India level has been noticed in inscriptions.¹ Literary sources took a different stand by highlighting the capabilities and achievements of mostly ruling kings, not queens. Literary sources at points remained so biased that they kept un-naming the ruling queens. The region of western Himalayas stand no exception to such biases.

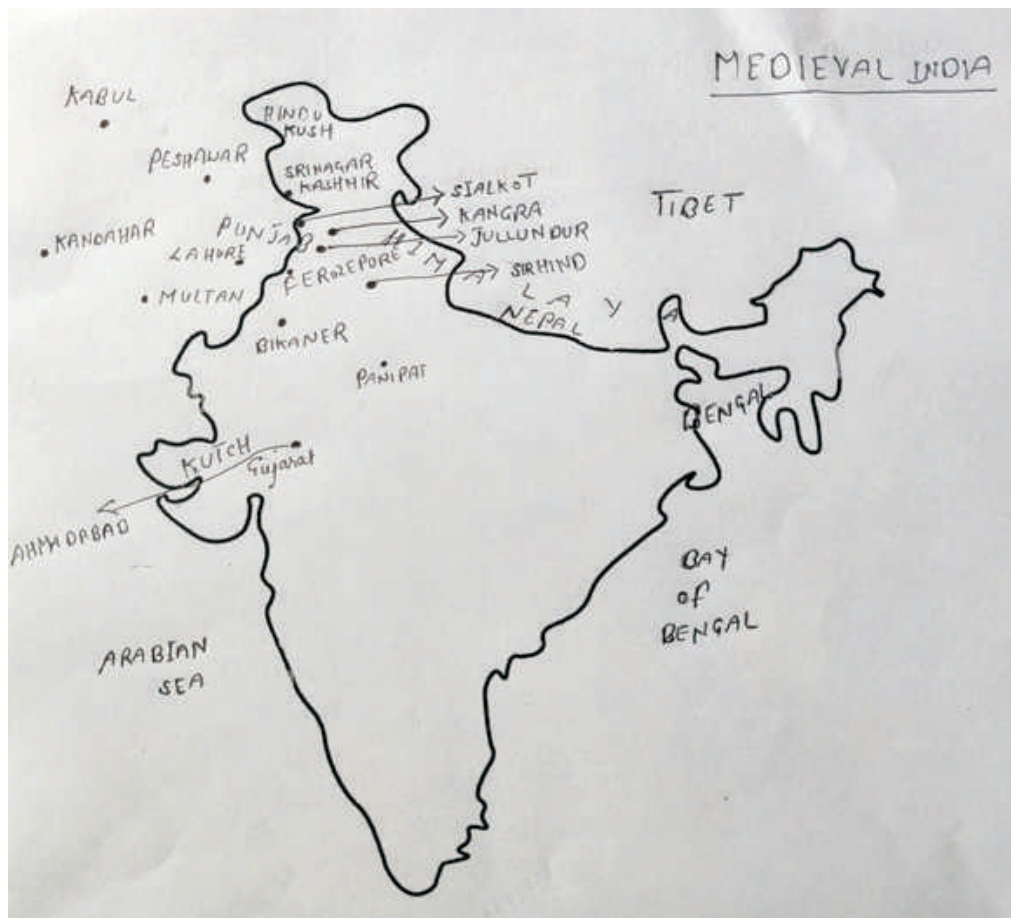
Present paper is the first ever attempt to bring forth certain named and un-named queens and

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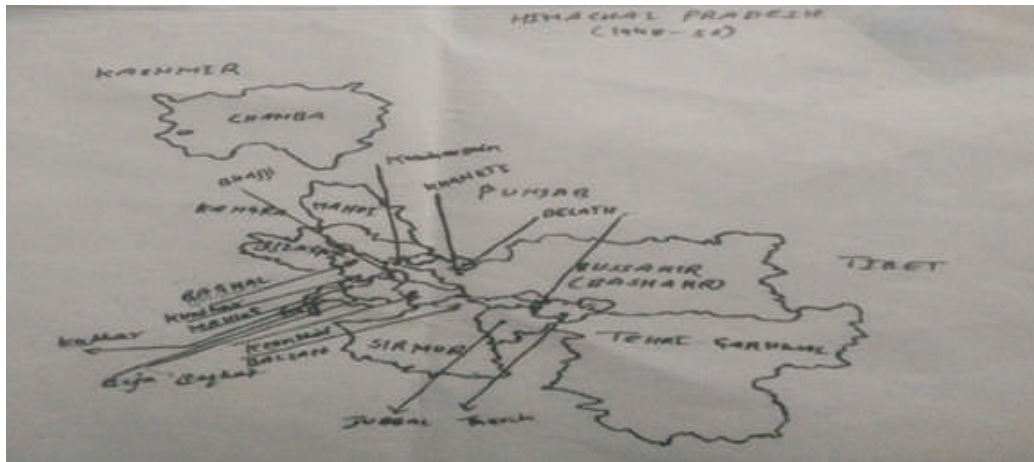
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princess of princely states of western Himalayan region who saved their states during crisis but their capabilities were never appreciated. Scarcity of evidences, names and lack of historical narratives kept these western Himalayan queens and princesses under dark corners for long. Their administrative acumen was never appreciated. Here also the study has certain gaps in chronology due to paucity of sources and data in literary and epigraphic sources available on women, still attempt has been made from first available reference on women in administration.



Map-I: Manually prepared map of western Himalayan reign during early medieval period²



Map:-2: Manually prepared map of erstwhile princely states with different boundaries shown under present boundaries of Himachal Pradesh³

Military Acumen of royal women

Princely states were existing in western Himalaya since sixth-seventh centuries as is evident from Mangarh report of ASI⁴ and Nirmand Copper plate. But the reference of ruling women does not appear till twelfth centuries. One cannot deny the fact that women remained part of polity, administration and military campaigns. In Nirmund Copper Plate, the name of Mihiralaksmi, mother of the Mahārājā Samudrasena of Kullu appears but not in ruling capacity.⁵

In this discussion, first spectacular example is found during the reign of Suraj Parkash (AC 1248-1259), who was the ruler of Sirmour. Suraj Parkash had shifted his capital from Kalsi to Ratesh. While he was staying in Ratesh, there was a rebellion in his old capital Kalsi (now in Dehradun), which was fought bravely by his daughter Kundana Devi.⁶ We get reference that, the princess also participated in the state war campaigns. Roop Kumar Sharma even claimed that Kundana Devi fought with Balban, sultan of Delhi.⁷ J.L. Mehta has also mentioned in his work, *Advanced Study in the History of Medieval India* about Balban's war campaign in Sirmour hills.⁸ H.M. Elliot and John Dowson in, *The History of India as Told by its own Historians: The Muhammadan Period* have mentioned the mountains of bardār (Bahadaraj) which is situated in present day Dehradun.⁹ Similarly, the capital of the ruler of Sirmour was also Kalsi (now in Dehradun), from which we can infer that must have been a war situation between Sirmour and Sultan of Delhi but at a very negligible level. Though no contemporary source of Balban or medieval period suggest the name and episode of Kundana Devi.

The absence of king in this episode indicate his lack of ability to run the administration of the state which was handled by princess and queens during crisis. Also, this case is an indication of strong military training being imparted to princess to deal with rebellions. It seems that Raja Suraj Parkash was aware of his daughter's abilities, so he did not return even during state crisis.

Besides princesses, state history of western Himalaya, we do find reference of queens who directly or indirectly became part of new state formation. One such incident was noticed during the rule of king Ban Sen (AC 1301-1346) of Mandi. Ban Sen was the son of Kanchan or Karanchan Sen (AC 1278) ruling the Manglur area in Kullu. His mother was the daughter of the rana (feudal of king) of

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Seokot (now in Mandi). Kanchan Sen was killed in the war campaign in 1278 AC while his queen was pregnant. She escaped to Seokot to save her life. As the rana of Seokot had no male heir, he adopted his daughter's son¹⁰ who later became the founder king of Mandi state. Hence, this un-named queen not only saved her father's lineage from extinction but also contributed indirectly in the formation of the princely state of Mandi.

Another reference was found during the reign of Abhaysandh Chand (AC 1302-1347) of Kahlur (Bilaspur). He had combat with the few royal soldiers of Delhi who were going to Lahore through the hill states. The reason for this combat was the cows caught for slaughter by the Muslim soldiers. In this battle the king of Kahlur was victorious. But later was murdered by deceit.¹¹ When Abhaysandh Chand's wives Ghasar Devi and Kumkum Devi came to know (of this murder), they planned to take revenge. These queens not only fought, but won the battle and brought back the dead bodies of husband and son from Muslim soldiers. But after this war, the queens committed sati.¹² Fighting bravely the war indicate their military talent and their administrative capabilities. As they were able to handle the administration in the absence of the king, hence might have received administrative training.

Sometimes tangled situation arose in the state where queen had to manage the show. One of the incident was noticed in Suket during the reign of king Mahan Sen (AC 1480), who was murdered for having illicit relations with the wife of a brahman. When the queen got the information of the king's murder, she cremated him silently without any question.¹³ From this incident it can be inferred that the queen was worried about the reputation of the royal family and simultaneously she had to manage that people of the state should not revolt. Died as infamous king, the queen did fair justice to the people without questioning his death and kept ruling. Such incidents are rarely highlighted and a wise queen remained un-named in the pages of history.

Women in administration and Politics

We do get the names of queens like Kumar Devi who was inscribed on the coins of Chandragupta-I and taken as a case of joint-administration.¹⁴ Another glaring example was of queen Didda of Kashmir whose name appear on the coins along with the king. In history, such incidents are considered as strong influence over the king and active participation of the queen in to administrative affairs of the state.¹⁵ But in the history of princely states of Himachal Pradesh, the name of *dra Devi did not get its due. During the reign of king Dharm Chand (AC 1528-63) of Kangra, the queen's participation in the administration is mentioned. The name of the king Dharm Chand is found on the obverse of those coins and the name of the queen *dra Devi on the reverse.¹⁶ Except her half-inscribed name on coins, we do not get any reference of this queen. In numismatics of Himachal Pradesh, we do not get any other reference of queen/s name.

Kings were under the influence of their queen or queen-mother as well. The understanding of queen or queen-mother in the politics of state could not be ignored. In Handur (present day Nalagarh tehsil of district Solan), in 1171 AC after the death of king Ajai Chand, the administration of the nascent kingdom was in the hands of his mother. She had to cope herself with a revolt of the Kanets, with whom she succeeded in negotiating.¹⁷ In an another example, during the reign of Sahib Sen (AC 1534-54), the ruler of the Mandi branch (that came out of the princely state of Suket) queen Parkash Dei had full influence over the administration of the state. This was indicated by the war between Sahib Sen and rana of Drang that drove at the instigation of the queen. The king of Mandi got salt mines as war booty.¹⁸

The queens also took care of economy of the state in the absence of the king. One of example has been cited by J. Hutchison and J.Ph Vogel in, History of the Punjab Hill States. During the reign of king Trilok Chand (AC 1605-1620) of Kangra, queen of Nagarkot (mother of Trilok Chand) took care of the administration and finance of the state. As per the practice, Bidhi Chand who was the father of Trilok Chand, had to go to Mughal court with his son (Trilok Chand) to show his presence for some limited tenure. In the absence of king, queen kept sending her ambassadors with gifts to Delhi court to save her family and state.¹⁹ The reference of Nagarkot queen has also been provided by H.M. Elliot and John Dowson in their work.²⁰

Women of the royal family certainly were beholder of land and money that they could give as grant or donation. The ninth Guru of the Sikhs Tegh Bahadur (AC 1621-1675), had friendly relations with the rulers of Kahlur (Bilaspur), which can be inferred from the fact of the arrival of Tegh Bahadur on the death of Dip Chand (AC 1636-65). Guru Tegh Bahadur stayed there to express grief to the (ruling) son Bhim Chand (AC 1665-92). It comes out that the queen gave three villages to Guru Tegh Bahadur.²¹ K.S. Narang has also indicated in his book, History of Punjab, that when Guru Tegh Bahadur retired from Kiratpur, he moved towards the hill region (Kahlur). In his way he obtained certain land as jagirs from the queen of Kahlur and founded a new city named Anandpur.²² From this grant we can infer that there was sufficient freedom to royal women to grant land, though the name of the queen has not been mentioned. So far as common women participation in military campaigns were concerned, very few references suggest her presence. Western Himalayan women soldiers have been described only in painting. We find such paintings done on the wall of Sultanpur palace in Kullu, which was built by king Jagat Singh (AC 1637-72) in the 17th century.²³ Much from these paintings cannot be deduced except that there could be an army of women or women were bodyguards of royal palace.

We also come across few references in the history of western Himalaya where supportive personal relations between king and queen during state (or war) crisis has been highlighted. Continuity of war or defeat certainly proved a blow to the prestige of any king, still to continue the war till victory or truce became sometimes an obligation. One such incident we came across during the time of Mahi/Budh Parkash (AC 1659-1676) in Sirmour where he faced several failures while fighting with Junga king. Feeling despaired, Mahi/Budh Parkash, wanted to withdraw from the war. Queen Guleri stood by the king courageously and asked him to complete this challenge. Also Guleri Rani offered to enter in to battle field if Mahi/Budh Parkash failed.²⁴ Such circumstances were stressful but queen's regular support kept king going. Thus, due to the courage of the Guleri rani, the king got a grand victory.

Another example is of un-named queen of Jagat Parkash (AC 1773-1792), the king of Sirmour. When Gulam Qadir Rohilla attacked during the rule of Jagat Parkash (AC 1773-1792), the king was terrified, but queen acted diligently and suggested to include Nontiram in the army, who was the ultimate warrior of the princely state. The queen's suggestion brought victory to the king in the war.²⁵

Another example comes during the time of Jai Singh Kanhiya who was the founder and main leader of Kanhiya misal. The description of Jai Singh Kanhiya's war with king Sansar Chand of Kangra during the 19th century is available. In that war we find reference of a slave girl. Jai Singh Kanhiya and head of Sukerchakiya were busy in mutual wars. Taking advantage of the situation, Sansar Chand (AC 1773-1823) started attacking other areas to increase his power and to get back the fort of Kangra which was under the Sikhs. For this, he first attacked Hazipur and then captured the states from Nagar to Mukerian. He also took the fort of Atalgarh, which was under Jai Singh Kanhaiya. In the battle for this

fort, a slave girl displayed her bravery. She did not allow Sansar Chand's siege to succeed. In the end, Sansar Chand had to lift the siege.²⁶

Queens kept holding the reigns after the death of kings. Mandalsa Devi of Sirmour state was the queen of Amar Parkash and mother of Rajendra Parkash. After the death of Amar Parkash (AC 1911-1933), his son Rajendra Parkash (AC 1933-64) became the ruler but the administration of state was completely under the control of the queen mother. Mandalsa Devi does not find mention in either Gazetteer of 1934 or 1969 of Sirmour but in the folk songs of Sirmour.²⁷

Queens were able to understand the crisis and deal with that. Quite a different case was noticed during the rule of king Prithi Pal (AC 1710-20) of Banghal state. King Sidh Sen of Mandi got married his daughter to king Prithi Pal. The only purpose of this marriage was to expand the boundaries of the Mandi state by subjugating the Bhanghal kingdom. After some time, Sidh Sen invited his son-in-law to Mandi and murdered by deceit. After this, Sidh Sen sent his army against the Banghal state. To face this attack, the queen mother sought the help of the king Man Singh of Kullu. In this battle the King of Mandi was defeated and the queen won.²⁸ Thus un-named queen-mother was able to save her state.

British and Western Himalayan Queens

The arrival of British changed the political scenario in small princely states of western Himalayan region. They started engulfing small states on one or another pretext. Queens opposed such moves in the absence of their kings. One such case was noticed in Baghat state where after the death king Mohindar Singh without a successor, his kingdom went under the British Government. But Mohindar Singh's widowed queens and his younger brother Vijay Singh opposed the British subjugation and appealed to the British Government. Due to appeal of the queens, Vijay Singh was made the next ruler of Baghat and the queen kept contributing in the administration of the state.²⁹

The next example is of queen Keonthali, who contributed significantly to the administrative work under the rule of king Shamsher Parkash (AC 1856-98) of Sirmour. In the absence of Shamsher Parkash, his queen Keonthali used to look after the Judicial and administrative work. The queen was very popular among the people of Sirmour.³⁰ Shemsher Parkash used to consult the queen on important issues that could be related to the administration of the state. The reign of Shemsher Parkash is said to be golden age of the princely state of Sirmour.

The queens of Sirmaur were exceptionally good in administration. Another example is of queen Kalindi Devi who was the daughter-in-law of Shamsher Prakash and queen of Ran Bijai Singh. During the rule of Shamsher Prakash, Kalindi Devi was ruling the village of Moginand in Sirmour.³¹ After the case of Bilaspur queen, this reference indicates that the queens were given villages in the form of Jagirs where they had absolute right to rule or gift.

Another description of contribution of the queen comes from Mandi. The name Amrit Kaur in the administrative work of state is found during the rule of king Joginder Sen (AC 1912-86) of Mandi state. She was the daughter of king Jagjit Singh (AC 1877-1949) of Kapurthala.³² The king, in a letter to Colonel Minchin expressed his gratitude for handling the administrative duties along with queen. When king went out of the state to get his military and judicial education, then the administration of the kingdom was managed by the queens along with colonel Minchin.³³

Western Himalayan Women in freedom movement

Later the wave of freedom movement gained momentum in various princely states of western

Himalaya. Several common women participated in the freedom movement of Himachal Pradesh. Some women who contributed in the struggle of liberation include Smt. Sarla Devi, Smt. Janki Devi, Smt. Gauran Devi, Smt. Chandravati and Smt. Durga Bai Arya. Sarla Sharma was born in 13th January, 1922 in Tehsil Dehra, District Kangra. She participated in student union in 1939 and demonstrated against the British. After this she contributed to the 'All India Farmer Conference' so much so that she came out openly against government in railways strike. After this she was the Vice-President of 'All India Peace Council'.³⁴

Another freedom fighter, Janki Devi was born in 1915 in district Bilaspur. She took part in the Prajamandal movement of Bilaspur with great enthusiasm. She was arrested and tortured by the state police.³⁵ Another freedom fighter, Gauran Devi, who was from Shimla District, also participated actively in the freedom movements from 1921 to 1947. She remained a volunteer and an active member of Swaraj movement. She was the first women to participate in burning foreign cloths movement.³⁶ Chandravati who was from Shimla district participated in the freedom movement due to which he had to suffer imprisonment and several tortures.³⁷ Durgabai Arya was born in 1884 in district Una. She also took part in the movement against foreign clothes and liquor, due to which she was jailed for two months.³⁸

Thus, Himachal Pradesh that remained and still holds a small political entity in the bigger states of western Himalayan region, holds a long legacy of queens who remained administratively and militarily skilled but the acknowledgement of their contribution was not duly made. Vamshavalis to twarikh and gazetteers, all mentioned kings and their place in state polity and placed the contribution of its princesses and queens on back-burner.

Conclusion

Though for the constraint of region and time, only princely states of present day Himachal Pradesh from medieval to colonial time has been taken in to consideration in this paper, still we cannot deny that the issue of political rights of women were dealt with conservative approach since centuries even in this small pocket of western Himalayan region. It was never the case that royal women were never a part of polity or administration, rather it was practically denied and literary veiled. Warfare and internal security were considered as male oriented activities and women were not considered fit to assume these roles. The princely states of Himachal Pradesh stood no exception where a long list of named and unnamed queens and mother-queens was found who became the flag-bearers during state crisis but were not duly acknowledged. This study is an attempt in the direction that women of western Himalaya region not only had understanding of polity and administration but she showed her acumen in several diplomatic treaties as well. These queens proved their mettle in several fields, including political, administrative or national movement.

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India's Strategic Autonomy vis-a-vis Mounting US' Hegemony

Sudhanshu Tripathi*

ABSTRACT

Indeed the current leadership in India continues to assert its independent course of decision making as regards crucial framing and execution of the country's foreign policy, while interacting with external powers for accomplishing its national interests. But the US' unparalleled ascendance in international relations has gravely hurt the national interests of Third World countries including India. While the US predominance in international relations has had a tremendous impact on the evolving course of international relations, the consequent power-politics between the US and USSR or capitalism and communism immediately after IIInd-World War adversely affected the global peace and security during the post war decades. In this scenario, India's national development goals still need independent actions and independent foreign policy characterized by strategic autonomy as 'nonalignment' with a view to procure its national interests and discourage alignment of nations in rival blocs for forging peace, progress and security throughout the world besides supporting multipolar world order and active participation in multilateral organizations.

Key Words: India's foreign policy, National interest, Peace Security, Strategic autonomy, Structural compulsions, Nonalignment, Tariffs.

Introduction

Indeed the ever-changing world today often poses considerable challenges or even threats to very survival of a state due to one reason or the other. Given the structural compulsions and constraints of the international relations as pointed out by a noted realist thinker John Mershemier, India's ancient moral traditions and rich cultural heritage characterized by vasudhaiv-kutumbkam and sarve bhavantu sukhinah...etc. always underscore its magnificent policy of humanism and globalism for welfare of the entire humanity (Nehru, 1989), besides upholding strategic autonomy with respect to country's independent foreign policy marked by the doctrine of non-alignment (Ganguly, 2010). Although this policy is often rejected as irrelevant after disintegration of erstwhile USSR and the demise of Cold War during closing years of 1980s, yet the rising membership of the Non-aligned Movement (NAM) sustains its relevance even in the current phase of international relations. Evidently, India and most of the non-aligned members never compromised with the non-alignment foreign policy so as to consistently pursue their national priorities, notwithstanding reasonable mutual differences among them over their respective national interests. While the global mainstream continues to surge ahead despite all obstructions to its way in the form of violence, terrorism, religious fanaticism, conflicts or full-scale war between nation states, the reasons behind systemic balance, evolving consistently out of the Laws of Nature sweeping across the entire nature itself always act to restore the hitherto maintained balance and order, both at individual and national level, and to reestablish peace and security in all over the world.

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The article here in its introduction part discusses some of the prominent features of India's foreign policy consonant with its cultural traditions against the backdrop of persisting structural offensives deliberately practiced by big powers against the Third World countries. The next part discusses selfish national-interests of the most of the powerful western powers in the Anglo-American world and their discriminatory policies against the Third World nation-states during the post-World War bloc-politics. While the third part analyses those reasons crystallized into structural offensives meticulously framed by big powers against the developing states, the next part discusses the consequences of amazing Chinese and Russian ascendance vis-à-vis the US' self-obsessed power-profile in the world. The fifth part discusses the Emerging Troika at the recent SCO summit paving way to the possible formation of an alternative world order replacing the US' supremacy. The sixth part points at likely failure in sustenance of the aforesaid Troika due to persisting mutual border conflicts among all three states, the next part analyses the US' tricky policies against India including larger Asia during President Trump's first term followed by President Biden and again under the current Trump 2.0. Further the eighth part deals with few US' scientific and technological expertise to be shared with India for enhancing New Delhi's overall global profile. The next one analyses America's all-round efforts to reclaim its hegemony in all over the world thus creating a hostile scenario once again for the Third World including India camouflaged under the garb of their (Third World) economic revival with consolidation of democracy and protection of fundamental rights. Against this backdrop, the article concludes highlighting the role of India's foreign policy marked by active participation in important global negotiations for progress and prosperity of the international community besides offering a viable option for the developing nations so as to establish a strong foundation for lasting peace and security in the world apart from encouraging the emerging multipolar world order.

The article herein uses historical-descriptive and comparative-analytical methods apart from employing ancient ideal-cultural as well as realist narrations to substantiate arguments raised and discussed therein.

Rising self-centered national interests: ignoring the collective conscience

Although a hardly secured inner balance either in a national leader or in an ordinary individual always leads to disorder in the outer world, yet the collective conscience of the entire humanity always reflects the hidden wishes of the supreme divine that essentially acts to restore the hitherto established balance, peace and order. Fortunately India's foreign policy always adheres to the Laws of Nature to respect supreme conscience as world peace and welfare of all including itself. But most of the powerful nations in the West, especially America, run after their short-term national interests (Stepensky, 2021), while ignoring the larger interests of the global humanity, thereby leading to immense troubles and agony to the common masses and their larger interests. Evidently those can effectively be reduced into the larger interest of all nations - big or small - the painful impacts of structural compulsions in terms of big power's monopoly over global financial institutions like WTO, World Bank and its soft-loaning agency IMF and hegemonic military architecture propagated through military alliances like NATO, now the disbanded WARSAW Pact, ANZUS, Bagdad Pact etc., accompanied by their huge weapons build up including nuclear weapons always deters the developing countries so as to compel them to follow these big powers. These apart these mighty powers have also formulated several discriminatory treaties regarding disarmament and arms control besides other treaties restraining proliferation of nuclear weapons like NPT, CTBT in a discriminatory manner keeping their armament's supremacy intact and have also maintained their full control over few prominent groupings viz. NSG, FMCT ect.. They also maintain monopoly in the UN Security Council by enjoying Veto Power by establishing a hierarchical power structure in the world wherein

the Third World countries have no scope to stand firm against discriminatory designs propounded by big powers. Evidently these developing countries had to compromise their national pride by accepting the much needed financial and military help from big powers under their terms so as to ensure their socio-economic progress and overall development to address their national societies and consolidate their political stability and security requirements.

Economic inequalities and military threats

Against this backdrop, the above mentioned structural compulsions significantly resulted into rising economic inequalities and mounting military threats altogether engendering their socio-economic stability and security concerns as witnessed in the recent short military flash-out between the US and Iran and Venezuela and also in long continuing Russia-Ukraine war and Israel-Hamas bitter armed conflict set to take an ugly turn. These are grave dangers indeed to the established peace and security in the world. And prevailing tensions between China and the US and also Taiwan, apart from simmering tensions between North Korea and South Korea including China's imperialist and militarist assertions in the Indo-Pacific including South China Sea are ample proof of injustice being perpetrated upon developing states since long (Tripathi, 2013). And that is a clear violation of Peace Treaty of Westphalia, 1648 enshrined thereafter in the United Nations Charter, laying the solemn foundation of the sovereign equality of nation-states.

But this golden principle has always been broken by the mighty powers many a times over on one ground or the other, not simply by using destructive force or waging full scale war for long but by employing discriminatory and interventionist policies too. And that continues up till now though suitably transformed mostly into imbalanced trade, finance and other economic offensives through the instrument of imperialism, neo-imperialism and multinational corporations (MNCs), besides trade-wars and imposing harsh tariffs upon developing economies. These evil designs consistently endanger their economic and socio-political interests along with scientific and technological monopoly and military conflicts with a view to turn them fall in line to the economic and security interests of the powerful nations. Similarly the Visa fee hike just announced by the US on 19-20th September 2025 may be characterized as another 'Black Swan' event against India as it can kill H-1B programme to much discomfiture of New Delhi. In this context, while the mounting threat of terrorism including global terrorism in its ever-changing shades do exert enormous pressure on the very survival of the international community, the structural offensives by big powers using the aforesaid muscular tactics (Daalder, 2003) viz. intervention and destabilization of developing states largely propel these hapless lots to take recourse to the counter-muscular tactics viz. terrorism, religious fundamentalism, ethnic clashes, disrupting their stable socio-cultural, economic and political order to its worst form, thereby uprooting peace, stability and security of the whole world.

US' self-occupied global vision vs. ascending Russia and Chinese ventures

Against this scenario, a consistently rising China and Russia in association with Teheran, North Korea, Pakistan and few more undemocratic rogue states - both economically and militarily - against the unprecedented supremacy of the United States (CFR, 2023) and also that of its allies in the Western Europe and Scandinavia, continue to assert passionately often in an unconventional way to secure their respective national interests, thus posing tremendous threats to the long established liberal-democratic order dominated by Anglo-European nations (Ganguly, 2025). While curious penchant for imperialist policies of the past centuries in the world still attracts President Trump 2.0 to consolidate its unchallenged global hegemony suffering cracks due to aforesaid reasons, the cumulative effect of the imperialist assertions by America may perhaps hurt the hitherto solid Anglo-

American Unity and the NATO alliance led by Washington itself meant to consolidate democracy throughout the world in general and the distinct liberal-democratic order in particular. Fortunately the US predominance in international relations even prior to the final closure of the first-World War after Versailles Treaty 1919, has had a tremendous impact as idealism or world-peace on the evolving course of international relations especially characterized by the American President Wilson's Fourteen Point Idealist action-program along with creation of the League of Nations with a view to establish lasting peace in the war-torn world. But the consequent power-politics due to successful Russian and Bolshevik Revolution staged under Lenin in February and October 1917 respectively thereby overthrowing the Czarist imperial government in Petrograd now known as St. Petersburg cautioned America as regards impending ideological rivalry of capitalism and communism. And that led to the US inclining towards realism and the consequent decades resulting into the onset of the second-World War drastically changed the pith and substance of its foreign policy to gradually consolidate into realism from the earlier idealism during later decades till today, thus reflecting its self-absorbed outlook towards the world, exclusively focused on the American national interests (Tripathi, 2005). And India had mostly suffered from this US approach towards South Asia in particular with few exceptions, wherein Pakistan derived maximum benefits to nurture its ISI, Army, Hardliner Mullahs and Terror Networks - all united under a single committed goal to destroy New Delhi anyhow. All these threats together tend to shift the so-obtained liberal-democratic order towards a likely new world order dominated by prominent developing economies of Third World viz. Brazil, South Africa, India, Argentina and more, along with the upcoming economic association called Shanghai Cooperation Organization (SCO), comprising China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, India, Pakistan, Iran, and Belarus, as that was recently witnessed in the latest SCO's 25th summit held during 31 August 2025 to 01 September 2025 at Tianjin in China. In fact, the SCO founded in 2001 has now emerged as an effective economic forum for the developing countries or Third World, striving hard to rebuild themselves after suffering centuries-long exploitation, thus forging the spirit of south-south cooperation (Tripathi, 2003) advocated much earlier by the Non-aligned Movement whereof India is a prominent founding member and firm believer in the doctrine of non-alignment (Rajan, 1990) reflecting the eternal-moral values. And one must not forget that these universal values viz. equality, liberty, justice, brotherhood, non-violence and peace etc. are the only cardinal features which are blessed to instil solace, comfort and security among all to make the world safe and secure and the human lives meaningful with substance in true sense of the term. In this scenario, India's foreign policy continues to strive ahead with suitable modifications and rising self-esteem and confidence as witnessed in the aforesaid SCO 2025 meet and Trump's compromising gestures with India's PM Narendra Modi on tariff issue, reminding once again the earlier cordial relations between India and the US during his first term.

New Troika

In fact, the SCO meet has almost altered the global scene with possible floating of a new common currency whereby the newly emerged Troika comprising Moscow, Beijing and New Delhi has considerably challenged the US' hitherto maintained global supremacy sustaining Washington's self-absorbed approach (Alden, 2024) in international relations and global affairs. Though the previous Troika comprising the US, China and India supposed to form a Tripolar World (Virmani, 2005) could not go ahead during post-cold war decades due to mutual disagreement over economic and trade issues especially between the US and China, how can the new Troika may proceed forward as Russia itself has been a victim of China's imperialist aggressions at Moscow's border and so is India, apart from ideological differences between Moscow and Beijing arising after the second-World War. In fact,

the US economy is already trailing behind due to suffering huge financial deficits vis-à-vis many highly developed strong economies like Japan, Germany, France, Australia, China etc. wherein amazing developments in the field of science and technology, super computers, cyber warfare, military weapons viz. long-range missiles carrying huge payloads including nuclear and arms technology etc. are some of their landmark achievements surpassing many powerful nations including America. Evidently, these developments have inevitably led to a new multipolar world order (Acharya, 2025), replacing the erstwhile US' led unipolar world emerged after disintegration of the erstwhile USSR at the end of 1980s and the demise of Cold War during early 1990s. While India continues to carry its flagship policy of non-alignment intact in the international relations, it essentially needs more and more American support to enter into the United Nations Security Council and many other prominent forums viz. G-8, AUKUS, Nuclear Supplier Group, Fissile Material Control Regime etc., apart from securing latest scientific technologies related to energy security particularly nuclear energy and other non-conventional sources of energy, super computer, information technology, space and ocean exploration, weather and monsoon studies, critical engineering technology, and latest medical advancements, besides military modernisation and development of latest arms and weapons etc.. Besides these, India faces grave threats on Mac-Mohan line or international borders with China due to Beijing's expansionist assertions and Pakistan exported cross-border terrorism and organized violence by international terror-networks including mega-drug cartels and big economic offenders etc., and fighting them inevitably demands Washington's clear and manifest support not only for itself but for overall peace and security of South Asia, West Asia and Central Asia too. Thus the so emerging global scenario demands from the international community to unite against the speedy erosion of the glorious tenets and cardinal values of the liberal, progressive and democratic international order (Nehru, 1989, *ibid*) that largely characterized the West's Anglo-American international system consolidating the spirit to pave way to the origin of the League of Nations and subsequently the United Nations after the end of the 1st and 2nd World War respectively. And that unity is further required to uphold the glorious Charters of above-mentioned global institutions, highlighting the collective voice as conscience of the international humanity reflected in the above-mentioned universal principle: "sovereign equality of nation-states", which itself emerged out of the Peace Treaty of Westphalia, 1648, to restrain balkanization of Europe and laying down a strong foundation to the lasting peace in the Europe. Again the international community must revive this solemn spirit by exploring a pro-people alternative that challenges exploitative capitalism of all shades and forms and the US led passion for brute imperialism by disowning the interests of West or Europe from its glorious position, thereby leading to re-emerge the unipolar world order. Further, to counter the US' imperialist designs co-extensive with Russian and Chinese expansionist and neo-colonial goals, the nation-states in the Global South and many Non-Aligned Movement's member-states must strengthen the spirit of the aforesaid south-south cooperation and various other instruments of regionalism and globalism, apart from investing in worker-centric policies and rejecting neo-liberal frameworks sustaining Western economic interests at the cost of specific local development. These besides, a "renewed focus on strengthening multilateral institutions such as BRICS and the NAM and regional-trade agreements outside the US influence is necessary..." (Raja, 2025) Also the global trade and tariffs policies must be restructured to prioritise fair labour-practices, environmental-protection and economic justice for developing nations besides restraining the emerging differences between the US and the west-European states in the overall interests of peace, security and liberal-democratic and progressive traditions of the West including NATO alliance, instead of serving the undemocratic and autocratic policies of both Russia and China and their cohorts especially North Korea, Hungary, Lebanon, Pakistan, Syria, Yemen and Iran and many such rouge states.

Unprincipled foundations

Although almost an unprincipled and selfish grouping wherein two major partners Russia and China, emerging out of the unprincipled foundations, struggle with each other over their common border and so does China and India confront each other over their long unresolved borders, their coming together just in the context of the US President Trump's harsh tariff war against India and China may not sustain long, especially against the current well-established liberal-democratic order highlighting the values of peace, liberty, equality, justice and welfare of all. Further, China continues to be a proclaimed imperialist and interventionist state bent upon destabilizing its neighbours in South Asia, South East Asia besides entire Indo-Pacific. In fact, Beijing's Belt and Road Initiative, apparently having economic and trade interests across the continents may very likely be having its hidden agenda of grabbing lands of participating countries along with their national assets like ports, given its earlier antecedents of capturing sovereign states viz. entire Tibet and lands in India, Manchuria, Hong Kong and more even prior to coming into existence of People's Republic of China in 1949. Evidently the entire Chinese exercise has meticulously been planned to accomplish global economic and political hegemony as soon as possible followed by overall supremacy in international and global affairs. Apart from the aforesaid Trumps' tariff offensives though much better was expected for South Asia especially India during changed behaviour of Donald Trump fighting presidential election for second term in 2024 with using PM Narendra Modi's slogans like sabka sath, sabka vikas and sabka vishvas etc., but that could not materialize as the current global scenario continues to be marked by the aforesaid disturbing trends.

US' anti-Indian stance

But the re-elected US President Donald Trump does not look pursuing the much desired foreign policy towards South Asia in general and India in particular as visible in the American actions towards Operation Sindoor, launched by India in retaliation to the Pakistan supported terror attack in Pahalgam in Kashmir on April 22, 2025, thus killing 27 innocent male tourists before their hapless families in the broad day light after identifying them to be non-Muslim. In the similar anti-India vein, the inhuman and brutal behaviour with the returned Indian immigrants from America in February 2025 - all caged in their hands as well through their legs alike hardened criminals awaiting death penalty - and the recent tariff hike against Indian exports and further asking its Apple i-phone company to windup its business in India or face 25% more tariff testify this prejudice against New Delhi. In fact the core concerns of the aforesaid US' foreign policy in the recent past also reflect this approach. Indeed, the important US' concerns in South Asia are viz. Afghanistan, Pakistan and China and they may be cited here to substantiate the argument in favour of India being a meaningful and worthwhile friend for America. As an expert observes over the US' dilemma during the end of the year 2020 was that whether or not "...the Biden Administration would persist with three key innovations under Trump - recognizing the futility of continued military presence in Afghanistan, downgrading the relationship with Pakistan and confronting Chinese assertiveness in Asia." (Raja Mohan, 2024) While reasonably addressing these concerns in the US' favour by ensuring its dominant presence to deter both Pakistan and China in South Asia and Indo-Pacific, the aforesaid concerns had elevated India's position in the hierarchy of the US' priority under President Trump. Consequently, Pakistan stands marginalized in the evolving US' strategic calculus for the first time since Soviet Russia military intervened in Afghanistan at the end of 1979 and that stands re-enacted in connection with the Russian inclination towards Islamabad during past two decades as well. This is why Pakistan has now taken sides with Saudi Arabia just to consolidate its position vis-à-vis India while undergoing through the fear-psychosis of Operation Sindoor Part-2 possibly to be launched by India against Islamabad against the

backdrop of PM Modi's consistent reiteration that this operation is not over. Carrying the same spirit, the US identified China as its direct opponent after more than four decades of honeymoon emerged out of Ping-Pong diplomacy in the early 1970s enjoying their cordial bilateral relations. Although the US' China strategy under President Trump led to "reimagine Asian geography as the Indo-Pacific, underscoring the significance of Indo into the Pacific, but that marked a decisive break from the earlier US' tradition of looking India through South Asian prism." (Raja Mohan, 2024, *ibid.*)

That was again characterized by the end of the US' inclination towards Pakistan while rebalancing its strategy towards South Asia under the tapestry of a more systematic and coherent policy for Asia vis-à-vis mounting challenges from China under the earlier American President Joe Biden. In fact, President Biden initiated many political and institutional measures in Asia not falling in line the Trump legacy so as to balance the economic pressure imposed by China. Among these significant measures, the elevation of the QUAD to summit level along with expanding the scope of strategic partnership with India are most pertinent as regards emerging bonhomie between the two largest democracies. (Bhatnagar, 2023) Notwithstanding these standing contradictions with the US, India consistently prioritised its supposedly cordial relations with Washington so as to elevate its economic potential and security build up reflecting its rising power profile in real-term global ranking, consonant with its foreign policy. Perhaps that turned fruitful in India's favour with some of the prominent scientific and technological expertise that America may very likely share with India.

Bilateral Indo-US partnership

It is in this context, the US' expertise in computer technology, nuclear energy, exploitation of unconventional sources for achieving energy security, weather and monsoon studies, earth sciences, space exploration, information technology, Artificial Intelligence, initiative on critical and emerging technologies (iEAT) unveiled in January 2023 under Joe Biden's presidency are some of the most significant achievements that America holds to its credit as these are still unavailable to any other power in the world including Russia and China. But all these are very useful for India, given its rising demands in all the aforesaid sectors of the bilateral India-US partnership, as they are meant to serve New Delhi's national interests, especially expanding aspirations of the people in India. If more intensive technological cooperation has been India's demand from the US, it has been carried to a new level. The iCET has also helped expand the focus beyond cooperation between the S&T agencies to building industrial cooperation that is set to boost India's national capabilities in advanced sectors like semiconductors and jet engine production in India. Biden's emphasis on building resilient supply chains and developing deeper cooperation among trusted geographies has not only put India at the centre of this strategy but has also mobilized the US's allies to join the efforts to accelerate India's growth in the emerging important areas. Evidently, the deepening India-US bilateral partnership is now a two-way mutual exercise, instead of being otherwise. Indeed the "Indian talent, companies and start-ups are now contributing to the US economy and security. It is not by accident that the US has emerged as the main destination for India's defence exports." (Sahni, 2024) Notwithstanding the above, the US continues to pursue its likely hidden agenda to regain its global ascendancy and for that India's cooperation and support may possibly prove to be a milestone, given New Delhi's rising power profile in the world (Tellis, 2005) added with its peace-loving and justice-seeking global approach as reflected in its foreign policy.

US' endeavour towards unilateralism

In fact, the US under Trump 2.0 now looks well-prepared to reclaim its unparalleled hegemony that it enjoyed after the demise of the USSR during closing years of 1980s onwards up till a multipolar

world order emerged around the beginning of the present century. While powers like China, Russia, Mexico, Germany, Italy, Israel, Turkey, Japan, Canada, Australia and the Scandinavian countries were consistently upcoming to challenge the “US-dominated international order” (Bhambhri, 2006) at this crucial juncture, Washington had been trailing behind from many of the aforesaid powers in critical sectors like industry, computer science, information technology, space exploration, climate and ocean science etc.. Besides the above-mentioned powers, few prominent states like India in South Asia, Indonesia in Southeast Asia, Brazil in South America and South Africa are elevating their economic and technical profile fast on the global stage by entering into the league of top 10 emerging economies characterized by their credible scientific and technological advancements, socio-economic growth and political consolidation apart from their distinct soft power and specific cultural attributes, altogether engendering fragmentation of the unipolar international order into the multipolar world (Acharya, *ibid*). Evidently the so emerged world order has been significantly contributing to India's foreign policy to accomplish its national interests by enjoying independent decision-making and freedom of action besides consistently upholding the principles inherent therein (foreign policy) aimed at serving the global humanity by establishing the spirit of globalism despite the US under Trump 2.0 doing contrary to this spirit just to reclaim its above-mentioned unparalleled hegemony throughout the world perhaps to return back to the then unipolar world (Sardar, 2002) during 1990s. That is clearly testified as the US can help-resolve the on-going crises in the world viz. Russia-Ukraine war and the Hamas-Israel war but President Trump 2.0 looks to be deriving economic mileage by arms trade and expanding influence therein perhaps to regain its global supremacy instead of initiating effective steps to save the world from possible holocaust.

Conclusion

Although any foreign policy making in the present uncertain era mostly revolves around power-seeking exercise aimed at procuring narrow and selfish goals, yet that has not been India's exclusive concern till today. Instead the current Indian leadership continues to consistently assert its independent course of decision-making regarding framing and execution of its foreign policy while interacting with most of the external powers including America, Canada, Turkey, China, Pakistan and others for accomplishing its national interests. Also India supports the growing reality of a multi-polar world, as it does, of a multi-polar Asia besides participating actively in global negotiations for common interests of international community. (Jaishankar, 2015) Evidently, the emerging realist approach in India's foreign policy underscores independent goals to be achieved by the country and for that its independent foreign policy characterized by nonalignment and non-conceit ensuring independent decision-making and freedom of action with a view to accomplish its vital national interests on the one hand, and discouraging alignment of nation-states in rival groups for forging world peace and overall global development, on the other. Evidently, India's foreign policy today still presents an alternative course of international relations, while acknowledging realist orientations, in the current peace-torn world devastated by fierce wars, natural calamities, man-made disasters due to unending selfish greed and cynical desires, thus protecting and preserving peace, progress and security by supporting multipolar world order and active participation in multilateral instrumentalities while upholding its strategic autonomy amidst mounting US' predominance almost everywhere in the international relations and global affairs.

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Post-Acquisition Performance of Sun Pharmaceutical Industries Limited: Evidence from a Major Pharmaceutical Merger

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ABSTRACT

In the present competitive business environment, merger and acquisitions (M&A) have emerged as dynamic process for companies to achieve peripheral growth and expansion of their operations. A merger is basically the combination of two or more companies into a single entity. The study conducted a comprehensive examination of financial performance of Sun Pharmaceutical Industries Limited before and after acquisition of Ranbaxy Laboratories. The data were collected for a period of twelve years from 2010 to 2021. The period was divided between two phases one is representing the period of before acquisition and the other one representing the after-merger period. The study selected various financial ratios representing liquidity, operational efficiency, profitability, capital structure, turnover and dividend policy. T-test analysis was applied to examine the changes in performance before and after the merger. It was observed that there is both positive and negative effects on the performance of Sun Pharmaceutical Limited. While it improved stability in certain ratios such as RONW and reduced dependence on debt. The company also faced challenges in liquidity and decline in profitability.

Key Words: Liquidity, Profitability, Capital Structure, Operational Efficiency, Dividend Policy

Introduction

In the fast-paced and competitive environment of business world, merger and acquisitions (M&A) have emerged as vital tools for companies to achieve external growth and expand their operations. A merger is essentially the combination of two or more companies into a single entity, which can take various forms. It may be the combination one or more companies merging into an existing one, or they may come together to establish an entirely new entity. During a merger there is a comprehensive amalgamation of assets, liabilities and interests of stakeholders from the merging companies. While an acquisition differs from a merger in terms of legal structure and control. It also involves a comprehensive combination of assets, liabilities and interests of stakeholders. The acquiring company assumes ownership of the target company's assets and liabilities and manages the integration of these elements into its own operations, with implications for shareholders, employees and customers of both companies. Mergers and acquisitions are strategic moves that companies make to reshape their corporate structure and enhance their competitive edge. The main objective behind such combinations is to achieve expansion and extension of the business which have also their presence in increased market share and competitiveness. These actions can significantly impact a company's market position and overall growth prospects. Within the global business environment seeks to find their places in the new advanced markets as part of their

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expansion strategy. This intense global competition emphasized the importance of corporate restructuring. During an acquisition the acquiring company purchases the assets along with liabilities of the target company.

The pharmaceutical industry in India is a significant player on the global platform and has earned a reputation for its strong manufacturing capabilities in producing a high-quality generic medication at affordable prices. India's pharmaceutical industry is one of the largest in the world by volume and it has a substantial presence in both domestic and international markets. Indian pharmaceutical companies export their products to over 200 countries making India a crucial supplier of affordable medicines globally. The country is a major supplier of generic medicines, which are more affordable alternatives to brand-name drugs. It has wide concentration on the research and development(R&D) to develop new drugs, formulation and delivery system.

One noteworthy merger in the pharmaceutical industry has been undertaken between Sun Pharma and Ranbaxy Laboratories. Sun Pharma is known for manufacturing a wide range of branded generics in India, United States and other parts of the world. Over the years, Sun Pharma has established itself as a major player in the pharmaceutical sector. The merger of Sun Pharma and Ranbaxy Laboratories was a significant move in the pharmaceutical industry. Ranbaxy was established in 1961, was a prominent pharmaceutical company. Sun Pharma acquired Ranbaxy for an amount of \$4 billion, making it one of the substantial M&A deals in the pharmaceutical sector. This merger was a strategic movement for securing a competitive advantage in the global pharmaceutical market. As the study seeks to find the post-merger performance of Sun-Pharma Ltd., it becomes essential to analyze how this significant corporate restructuring event affected the company's financial performance and overall success in the pharmaceutical industry.

This study is related to corporate finance and strategic management theories related to mergers and acquisitions. Specifically, it attracts the Synergy theory, which contends that mergers create value through combined performance beyond the individual capacity. The Efficiency theory emphasizes that assets and cost structures will be improved after acquisition. Agency theory, highlights the potential for post-merger incompetence and managerial objectives. Integration-Cost theory, highlights the short-run interruptions arises due to organizational, operational and cultural integration. The above theories jointly create a basis for interpreting the post-acquisition performance of Sun Pharmaceutical Industries Limited after acquiring Ranbaxy Laboratories.

Review of Literature

The study conducted by **Pradhan and Abraham (2005)** to examine the feature of overseas acquirers and non-acquirers in India's manufacturing and software sectors. The study included a sample of 922 industrial firms with 23 overseas acquirers and 211 software firms with 28 overseas acquirers during the period 2000-2003. They applied nonparametric Wilcoxon rank-sum test and discriminant analysis. Their findings indicated that overseas acquirers in the manufacturing sector tended to be large-sized and research-intensive while in the software sector, they were older, large-sized and export-oriented.

Beena (2006) conducted study to analyze mergers in the pharmaceutical sector during the post-liberalization period, including various performance parameters. The findings revealed that except for advertising and marketing intensity, there was a significant difference in performance between merging and non-merging companies. Merging entities generally exhibited better performance in most of the selected ratios after the merger, indicating improved financial and operational outcomes.

Ramkrishnan (2008) analyzed 87 mergers in India during the period of 1996 to 2002. The study compared the adjusted cash flow figures for each company with industry averages and compared pre- and post-merger cash flows, operating margin and turnover. The study concluded that all three parameters showed significant improvement in the post-merger period. Pre-merger financial strength had an impact on post-merger financial performance except for operating margins which did not affect post-merger operating margins significantly.

Kar and Soni (2008) examined the case of mergers in India during the period 1991-2001. The study applied regression analysis to know the impact of merger on RONW, Turnover, PAT and Book value per share. It was revealed that RONW had no significant impact from merger, while marginal increase was found in PAT and Book value per share. However, merger has positive impact on turnover, indicating that mergers could lead to higher sales and larger market share.

Saboo and Gopi (2009) analyzed the comparison between domestic acquisition and cross-border acquisition during the period 2000-2007 with the help of financial ratios. The findings of the study conducted by revealed that there were no significant changes in the pre- and post-performance of cross-border acquisitions with respect to these key financial ratios. In contrast, domestic acquisitions showed significant improvement in most of the ratios when comparing their pre- and post-acquisition performance.

Singh (2015) analyzed the performance of ICICI Bank before and after acquisition, covering the period from 2004 to 2014. Various financial ratios, including NPR, ROA, ROE, ROI, Return on Advances, DER, CR, QR and EPS were examined. The study applied t-test and found that some selected accounting ratios significantly changed after the acquisition, indicating an impact on the bank's financial performance.

Duggal (2015) researched on the post-combination performance of the Indian Pharmaceutical Industry during the period of 2000-2006. The study aimed to analyze the consequences of merger on operating and financial health. It noted a significant impact of performance, particularly immediately after reconstruction, and revealed that profitability had improved. The overall conclusion was that there was positive impact of acquisitions on operating and economic performance.

The study conducted by **Veena and Patti (2016)** observed the financial behavior of ICICI Bank Limited before and after mergers. The research found no significant difference between pre-merger and post-merger financial behavior. It was argued that there was no discernible relationship between liquidity ratios, leverage ratios, profitability ratios, growth ratios and the bank's performance. Finally, the study revealed that post-acquisition economic performance was better than pre-acquisition performance during the study period.

Patel (2018) examined the comparative performance before and after reconstruction of selected Indian banks from 2003-04 to 2013-14. The study highlighted a negative effect of mergers on Profitability Ratios. However, it also noted positive trends in EPS, profit per employee and business per employee after reconstruction. The conclusion suggested that after reconstruction, assets, equity, investment and advances of the banks increased but their respective return decreased due to underutilization of human resources.

Objectives and Methodology

The objective of this study is to examine the performance of Sun Pharmaceutical Limited before and after the acquiring Ranbaxy. The data were collected for a period of twelve years from 2010

to 2021 from 'Capitaline' Database. The timeframe is divided into two sections one from 2010 to 2015 indicating pre-merger period and the other is 2016 to 2021 indicating post-merger period. The post-merger period (2016-2021) mainly characterizes the integration phase after the acquisition of Ranbaxy Laboratories. During this phase, financial performance is affected by realized synergies and combined cost structures, reformation expenses and provisional inadequacies. Therefore, the examined post-merger performance should be understood as an integration of both short-term and long-term results.

The study incorporates various financial ratios representing liquidity, profitability, operating efficiency, capital structure, turnover ratios and dividend policy to assess the pre- and post-merger performance of the selected company. To accomplish the objective, statistical tool such as mean, correlation and t-test have been applied. This study aims to provide valuable insights into the changes in financial performance during the study period, comprised of pre-merger and post-merger period.

From a theoretical viewpoint, the different financial ratios are expected to respond differently after an acquisition. As per Synergy and Efficiency theories, the improvement in profitability and turnover ratios may be expected due to economies of scale, enhanced market access in the long run. However, as per Integration-Cost theory advocates that liquidity and operational efficiency ratios may decline in short run due to cost reform, increased working capital requirements and operational interventions. On the other hand, as per Agency theory, if firms adopt traditional strategies to reduce financial risk after acquisition, leverage may decline.

Hypotheses Development

- H₀₁: There is no significant difference in the Liquidity ratios before and after merger period.
- H₀₂: There is no significant difference in the Profitability ratios before and after merger period.
- H₀₃: There is no significant difference in the Capital Structure ratios before and after merger period.
- H₀₄: There is no significant difference in the Operational Efficiency ratios before and after merger period.
- H₀₅: There is no significant difference in the Turnover ratios before and after merger period.
- H₀₆: There is no significant difference in the Dividend policy before and after merger period.

Analysis and Interpretation

The table 1 below shows the results of liquidity and operational efficiency represented by the ratios current ratio and interest coverage ratio respectively. The mean of current ratio before the merger was 2.066, while after merger it decreased significantly to 0.848. this suggests that the company's short-term liquidity, as measured by current ratio, decreased substantially after the merger. A lower variance (0.0599) after the merger indicates that the current ratio became more consistent or stable after the merger. The Pearson's correlation coefficient between the pre-merger and post-merger current ratio is -0.89536, indicating a strong negative correlation. This implies that there is a higher inverse relationship between the current ratio before and after the merger. The t-statistic for the difference in means is 2.739 and the associated p-value for a one-tailed test is 0.0204 (or 0.0408 for a two-tailed test). Since the p-value is less than the significance level (0.05), it can be concluded that there is a statistically significant difference in the means of the current ratio before and after the merger.

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On the other hand, the mean of interest coverage ratio before the merger was very high at 1279.923, while after the merger, it decreased significantly to 3.3433. This suggests that the company's ability to cover its interest expenses with its earnings decreased substantially after the merger. Similar to current ratio, a lower variance after the merger indicates that the interest coverage ratio also became more consistent after the merger. The correlation coefficient is -0.2256, indicates a relatively weak negative correlation. It implies that there is lower negative correlation between both the periods. The result of t-statistic is 1.922 with a p-value for one-tailed test is 0.0563 and 0.1126 for a two-tailed test. The p-value is slightly above the typical significance level of 0.05 indicating significant difference in the means of the interest coverage ratio before and after merger.

Table 2 below indicates that Pre-merger mean of ROCE was 11.325 while after the merger it was decreased to 4.288, which indicates that the merger had a negative impact on the company's ROCE, with the decrease in both mean and variance of ROCE values. The correlation coefficient between the pre-merger and post-merger ROCE is approximately -0.5383, indicating a negative correlation between the two periods. The result of t-test suggests to accept the null hypothesis as with one-tailed p-value (0.1568) and two-tailed p-value (0.313) is higher than the significance level of 0.05.

The company experienced a significant decrease in its mean (pre-merger 9.705 to post-merger 3.875) indicating a potential liquidity issue. However, this decrease was accompanied by increased stability in the RONW due to the lower variance during the period of post-merger. The moderate negative correlation (-0.4847) between pre-merger and post-merger return on net worth ratio emphasizes the profound impact of merger on this aspect of company's financial performance. Similar to the return on capital employed (ROCE) the return on net worth (RONW), the study fails to reject the null hypothesis and therefore, it indicates that there is no significant difference in RONW during both pre-merger and post-merger period.

The table 3 below shows the analysis of the debt-to-equity ratio (DER) before and after the merger reveals several significant findings. Prior to the merger, the mean DER was relatively low at 0.0833 and the variance was 0.01606, indicating a degree of consistency in the data. The null hypothesis, assuming no significant change in DER before and after merger was tested using t-test with 5 degrees of freedom, yielding a t-statistic of approximately -3.5916. The one-tail p-value was calculated to be approximately 0.0078, which is less than the significance level of 0.05, and the critical t-value for a one-tail test with 5 degrees of freedom at a 0.05 significance level was approximately 2.0150. Similarly, the two-tail p-value was approximately 0.0157, with a critical t-value for a two-tail test of approximately 2.5706. These results suggest strong statistical evidence to reject the null hypothesis, indicating a significant decrease in the DER after the merger. This decrease implies that the company likely reduced its debt relative to equity following the merger, potentially reflecting changes in its financial structure or risk management strategies.

The analysis of the long-term debt-to-equity ratio (LTDER) before and after merger reveals a significant shift, with a mean increasing considerably from 0.0067 before the merger to 0.0733 after merger. The t-statistic of -11.95, much smaller than the critical values, indicates a strong difference. Moreover, the p-values both one-tailed (0.0000361) and two-tailed (0.0000722) are remarkably small, indicating strong statistical evidence against the null hypothesis of no difference. These findings suggest a significant reduction in the long-term debt equity ratio after the merger, highlighting its financial impact. Additionally, the correlation coefficient (0.9655) suggests a huge positive linear relationship between the pre-merger and post-merger period.

The t-test results as shown in table 4 compare the financial assets turnover ratio (FATR) before

and after the merger. The result indicates a significant difference in mean FATR, with a pre-merger mean of 2.175 and a post-merger mean of 1.512. The t-test is used to determine whether there is enough statistical evidence to reject the null hypothesis in favor of the alternative hypothesis based on the calculated t-statistics. In the above case the small p-value (0.015 for one-tailed and 0.029 for two-tailed) suggest that there is enough evidence to reject the null hypothesis in favor of the alternative hypothesis, indicating a significant difference in FATR before and after the merger.

There is a decrease in the mean ITR during the post-merger period. In this case the pre-merger ITR had a higher variance (1.553), indicating greater variability, decrease to 0.230 resulting in less dispersed and more consistency in data. There is a weak negative correlation (-0.345) between pre-merger and post-merger ITR values. The t-statistic of 1.052 and a p-value of 0.341 for the two-tailed test, it was found that there is not enough statistical evidence to reject the null hypothesis. The one-tailed p-value of 0.170 also suggests no significant difference in ITR before and after the merger. Consequently, the study fails to reject the null hypothesis, indicating that there may not be a significant difference in inventory turnover ratio due to the merger.

Before the merger, the mean debtors' turnover ratio (DTR) was 4.853 and after the merger, it decreased to 2.693. This indicates that, on average there was a substantial decrease in the DTR after the merger. The pre-merger DTR had a higher variance (1.830) suggesting greater variability in DTR values before the merger, while the variance decreased to 0.716, indicating less spread out and more consistent. The Pearson correlation coefficient is very close to zero (-0.020) suggesting that there is essentially no linear relationship between pre-merger and post-merger DTR values. The t-statistic value of 3.286 larger than the t-critical value with one-tailed p-value (0.011) and two-tailed p-value (0.022) both are less than the significance level of 0.05. Therefore, there is strong evidence to reject the null hypothesis in favor of the alternative hypothesis that there is significant difference in DTR before and after the merger.

The mean of total assets turnover ratio (TATR) before the merger was 0.417 and after the merger it decreased to 0.337, indicating a decrease in the TATR after the merger. The measure of variance indicates that there was a higher variance (0.011) before the merger in comparison the lower variance (0.005) indicates more consistency and stability. The correlation between pre- and post-merger TATR value is -0.760, indicating a strong negative linear relationship, between TATR values of both the periods. The t-statistic of 1.194 is less than the critical value along with p-value greater than the significance level of 0.05 indicates that the observed mean difference is not statistically significant.

Table 5 below demonstrates that the pre-merger mean is approximately 25.56 while the post-merger mean is significantly lower at -95.41. That indicates the average value has decreased after merger. The post-merger variance is significantly higher than the pre-merger variance indicating that the data points are more spread out after the merger. The measure of relationship states that there is little or no correlation between the value of pre-merger payout ratio and post-merger payout ratio. The t-statistic (0.603567), with a one-tailed p-value (0.286232) and two-tailed p-value (0.572464), both are greater than the significance level of 0.05. Therefore, it is observed that there is not enough evidence to reject the null hypothesis and hence it can be concluded that there is no significant difference in the dividend policy before and after the merger.

Conclusion and Suggestions

The study's primary objective is to evaluate the transformation in performance of Sun Pharmaceutical Limited before and after acquiring the Ranbaxy Laboratories Limited. It is observed that there is significant decrease in the liquidity position and operational efficiency of the company the

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merger. The merger had a negative impact on the Return on Capital Employed (ROCE), however, there is no significant difference in Return on Net Worth before and after the merger. In relation to capital structure, it is observed that there was substantial decrease in debt relative to equity. There is significant difference was found in two of the selected turnover ratios i.e., FATR and DTR, however, there is no significant difference in the inventory turnover ratio (ITR) and the total assets turnover ratio (TATR). Finally, after the merger, the result of dividend policy suggests no significant difference before and after the merger.

Overall, the result of this study delivers theory-consistent evidence on post-merger performance. The deteriorating liquidity and profitability ratios support the Integration-Cost and Agency theories, which shows short-term interruptions and financial adjustments subsequent to large-scale acquisitions. On the other hand, the decrease in leverage and stable increment in certain ratios such as RONW comply the Efficiency and Risk-Reduction perceptions of corporate finance. Finally, the observations suggest that the present acquisition should be understood as strategy-driven merger with temporary financial pressure rather than long-run value destruction.

Table 1: T-test analysis of the Liquidity and Operational Efficiency Ratios

	CR		ICR	
	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>
Mean	2.066667	0.848333	1279.923	3.343333
Variance	0.747867	0.059977	2643789	13.71431
Observations	6	6	6	6
Pearson Correlation	-0.89536		-0.22568	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	2.739042		1.922144	
P(T<=t) one -tail	0.020419		0.056309	
t Critical one -tail	2.015048		2.015048	
P(T<=t) two -tail	0.040839		0.112619	
t Critical two -tail	2.570582		2.570582	

Source: compiled through MS Excel

Table 2: T-test analysis of the Profitability Ratios

	<i>ROCE</i>		<i>RONW</i>	
	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>
Mean	11.325	4.288333333	9.705	3.875
Variance	142.28947	27.37593667	177.9497	47.99871
Observations	6	6	6	6
Pearson Correlation	-0.538312429		-0.48471	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	1.119944772		0.803926	
P(T<=t) one -tail	0.156815322		0.22897	
t Critical one -tail	2.015048373		2.015048	
P(T<=t) two -tail	0.313630645		0.457941	
t Critical two -tail	2.570581836		2.570582	

Source: compiled through MS Excel

Table 3: T-test analysis of the Capital Structure Ratios

	<i>DER</i>		<i>LTDER</i>	
	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>
Mean	0.083333	0.281667	0.006666667	0.073333
Variance	0.016067	0.000137	0.000266667	0.000827
Observations	6	6	6	6
Pearson Correlation	-0.70634		0.965535118	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	-3.59158		-11.95228609	
P(T<=t) one -tail	0.007841		0.0000361	
t Critical one -tail	2.015048		2.015048373	
P(T<=t) two -tail	0.015682		0.0000722	
t Critical two -tail	2.570582		2.570581836	

Source: compiled through MS Excel

Table 4: T-test analysis of the Turnover Ratios

	FATR		ITR		DTR		TATR	
	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>	<i>Pre-merger</i>	<i>Post-Merger</i>
Mean	2.175	1.512	4.747	4.110	4.853	2.693	0.417	0.337
Variance	0.312	0.034	1.553	0.230	1.830	0.716	0.011	0.005
Observations	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
Pearson Correlation	0.278		-0.345		-0.020		-0.760	
Hypothesized Mean Difference	0.000		0.000		0.000		0.000	
df	5.000		5.000		5.000		5.000	
t Stat	3.024		1.052		3.286		1.194	
P(T<=t) one -tail	0.015		0.170		0.011		0.143	
t Critical one -tail	2.015		2.015		2.015		2.015	
P(T<=t) two -tail	0.029		0.341		0.022		0.286	
t Critical two -tail	2.571		2.571		2.571		2.571	

Source: compiled through MS Excel

Table 5: T-test analysis of the Dividend Policy

	PAYOUT %	
	<i>Pre-merger</i>	<i>Post-Merger</i>
Mean	25.56333	-95.41
Variance	3075.082	233576.9
Observations	6	6
Pearson Correlation	-0.08176	
Hypothesized Mean Difference	0	
df	5	
t Stat	0.603567	
P(T<=t) one -tail	0.286232	
t Critical one -tail	2.015048	
P(T<=t) two -tail	0.572464	
t Critical two -tail	2.570582	

Source: compiled through MS Excel

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Voices from the Ground: A Qualitative Study on the Ban of 'Cool Lip' Tobacco Products in District Doda

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ABSTRACT

The increasing consumption of tobacco products, particularly among youth, has become a critical public health concern in many regions of India, including District Doda. In response, authorities have implemented a ban on 'Cool Lip' tobacco products to curb their usage. This qualitative study, titled Voices from the Ground: A Qualitative Study on the Ban of 'Cool Lip' Tobacco Products in District Doda, seeks to explore public awareness, community perceptions, and the challenges associated with the enforcement of this ban. Through in-depth interviews discussions with residents, shopkeepers, community leaders, and enforcement officers, the study captures a diverse range of experiences and insights. Findings reveal varying degrees of public awareness, with many residents acknowledging the health risks associated with 'Cool Lip' while others demonstrate limited understanding of the reasons behind the ban. Community attitudes are mixed; while some view the ban as a positive step towards safeguarding public health, others perceive it as a superficial measure lacking strong enforcement. Participants highlighted several challenges, including inadequate monitoring, easy availability through informal networks, and lack of sustained public education campaigns. Many respondents suggested the need for continuous awareness drives, stricter penalties for violators, and greater community involvement to enhance compliance. Overall, the study emphasizes the importance of a comprehensive, community-centered approach in tobacco control efforts. It also stresses the need for consistent policy enforcement, education, and collaboration among stakeholders to ensure the long-term success of such bans. The voices from the ground offer critical insights that can guide future public health strategies not only in District Doda but also in other similar socio-cultural contexts.

Key Words: Tobacco Ban, Public Awareness, Community Perception, Policy Enforcement, District Doda

Introduction

District Doda, located in the Union Territory of Jammu and Kashmir, is a picturesque and culturally rich region nestled in the lap of the Himalayas. Doda is part of the Chenab Valley and shares its borders with districts such as Kishtwar, Ramban, Udhampur, and Anantnag. The district headquarters is situated in Doda town, which lies along the banks of the Chenab River. Known for its scenic beauty, dense forests, and rugged mountains, Doda is also home to a mix of cultural and linguistic diversity, with people speaking Kashmiri, Bhaderwahi, Gojri, and Dogri among other languages. District Doda, though blessed with natural beauty and cultural richness, faces several developmental and public health challenges. Among these, the rising use of harmful substances like Coolip tobacco has become a growing concern, especially among the youth and rural population. With limited health awareness,

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lack of strict enforcement, and easy availability, Coolip tobacco products have penetrated deeply into the social fabric, posing serious threats to the well-being of the people. The need for a ban on Coolip tobacco in Doda is therefore urgent and justified. Such a measure would not only protect public health but also align with broader efforts to improve education, awareness, and quality of life in the district. Given Doda's relatively slow pace of development and healthcare outreach, proactive steps like banning Coolip tobacco can set a strong precedent for safeguarding future generations and fostering a healthier, more progressive society. Tobacco consumption remains a pressing public health concern in India, particularly among youth and marginalized communities. In recent years, the emergence of flavored and attractive tobacco products such as 'Cool Lip' a form of chewable tobacco often marketed in colorful packaging has led to increased usage among adolescents and young adults. District Doda, a region in Jammu and Kashmir, has witnessed a troubling rise in the use of such products, prompting local authorities to impose a ban on the sale and distribution of Cool Lip Tobacco (**Doda vide No. CEO/D/1920-2069 dated: - 12.04.2025**).

This qualitative study seeks to explore the ground-level impact of this ban, capturing the lived experiences, perceptions, and responses of key stakeholders including local shopkeepers, educators, health officials, and youth. By giving voice to the community, the study aims to understand the effectiveness, challenges, and social implications of the ban, while shedding light on the broader issues of tobacco control and public health awareness in rural settings. India is the second-largest producer and consumer of tobacco in the world. Tobacco products consumed in the country include both smoking and smokeless forms. Smoking products commonly used are **hookah, cohutta, chillum, ganja, beedi, mava, cigarettes, and cigars**. In contrast, popular smokeless tobacco products include betel quid, khaini, mishri, snuff, and gutkha. Nearly 50% of tobacco users in India are addicted to smokeless tobacco. In 2010, there were 68 varieties of smokeless tobacco products available in the market. Most carried cancer warning labels, except for loose tobacco products. Women showed a preference for 8 out of 29 commonly used gutkha brands, of which 15 were sold as loose tobacco packets without proper warnings. India has approximately 27.5 crore (275 million) tobacco users more than the entire population of Western Europe. Among them, 16.4 crore use only smokeless tobacco, 6.9 crore are exclusive smokers, and 4.2 crore use both forms. If current trends continue, it is estimated that tobacco use could lead to early mortality of up to 45 crore (450 million) people worldwide by 2050 (**Padhiary et al., 2020**).

Research Objectives

1. To explore public awareness and understanding regarding the ban on 'Cool Lip' tobacco products in District Doda.
2. To examine community perceptions, attitudes, and reactions towards the implementation of the 'Cool Lip' ban.
3. To identify challenges and suggestions from the community for effective enforcement of the tobacco ban in District Doda.

Research Questions

1. What is the level of awareness about the 'Cool Lip' tobacco ban in District Doda?
2. How do people perceive the effectiveness of the ban?
3. What challenges are faced in enforcing the ban, and what are the suggestions for improvement?

Review of Related Literature

Hui Yang et.al., (2022). The study revealed that Smokeless tobacco use among adolescents remains a public health concern worldwide. Although the prevalence among adolescents decreased in most countries, it remains high especially in the South-East Asian region. More strict and effective strategies and measures are needed to further curb the smokeless tobacco use among adolescents.

Ranabhat et.al., (2019). The study found that About 1/5 of youth used tobacco globally and it has multiple impacts on health economy and family integrity. The prevalence of tobacco use is decreasing but not at a satisfactory rate. The policies of tobacco control adopted by many countries are based on the WHO Framework Convention on Tobacco Control but have not necessarily focused on youth. Due to the physical and economic burden of tobacco consumption by youth, this is a high priority that needs to be addressed. In this digital age, creative tobacco control policies focusing on youth must be applied. Successful policies of tobacco control for youth that need to be replicated by context, country, region, and gender can be recommended. Tobacco control should be a social, public health, and quality-of-life concern rather than a business and trade issue.

Chellappa et.al., (2021). The study concluded that people in low socio-economic status had high nicotine dependency with inadequate knowledge on tobacco control policies. They strongly believe that an individual's self-restrain only can succeed him in quitting the habit.

Research Approach

The present study adopts a Qualitative Research Approach, as it aims to explore the lived experiences, perceptions, and voices of individuals affected by the ban on 'Cool Lip' tobacco products in District Doda. A qualitative approach is most suitable because it allows the researcher to gain deep, contextual, and descriptive insights that cannot be captured through numerical data alone.

Research Design

Within the qualitative paradigm, the study employs an Embedded Research Design. In this design, one primary qualitative method forms the core of the study (for example, in-depth interviews), while additional qualitative or supportive components are embedded within it to enrich and deepen the findings.

* An embedded design helps incorporate multiple sources of evidence.

Study Area:

District Doda, Jammu and Kashmir, India

Target Population:

Residents of District Doda, including:

Students (18+), Shopkeepers, Teachers, Community members, health workers.

Sampling Technique:

Purposive Sampling technique, selecting participants who are aware of or affected by the 'Cool Lip' ban. 30 participants were selected.

Tool used and Data analysis

Semi-Structured Questionnaire and content analysis were used in the present study.

Standardization of tool

For the present study, the tool was standardized to ensure accuracy, clarity, and appropriateness for data collection. As part of the standardization process, Content Validity and Face Validity were systematically evaluated.

Technique used for Analysis of Data

In the present study, the investigator used descriptive statistical technique that is called percentage and calculation of frequencies.

Analysis based on objective 1

“To explore public awareness and understanding regarding the ban on 'Cool Lip' tobacco products in District Doda”

Table 1

<i>Statement No.1</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
When did you first hear about the ban on 'Cool Lip' tobacco products?	6	6	6	6	6	30

Note: Multiple responses are additive

Table No. 1 presents the responses of students, shopkeepers, community members, health workers and teachers regarding they hear about the ban on Cool lip tobacco products. The following responses of the respondents which are following: -

- * I saw a poster near the gate (students).
- * Sarpanch meeting, social media, Smart T.V. etc. they told us that selling or using cool lip is now illegal (Shopkeeper, General residents).
- * We receive official communication from the Block Medical Officer (BMO) during meeting. They informed us to spread awareness in the villages. We were trained to counsel people about the harmful effects and inform them about the ban. (Health Workers).
- * They were informed by the ZEO office, social media and asked to conduct sessions in the school under the tobacco-free school initiative. Whereas, few teachers responded that they read about it in a government circular. Later, it was also discussed during the morning assembly.

Analysis based on Objective 2.

“To examine community perceptions, attitudes, and reactions towards the implementation of the 'Cool Lip' ban”

Table 2

Open ended items

<i>Statement No.2</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
What is your opinion about the government's decision to ban 'Cool Lip' tobacco products?	6	6	6	6	6	30

Note: Multiple responses are additive

Table No.2 presents the responses of the respondents regarding their opinion about the government decision to ban cool lip tobacco products. The following responses are: -

- * It's a good step. Many of our classmates used to try it secretly. Now at least they'll stop, while some students were addicted. they think it will help them in the long run, even if they're upset now (Students)
- * It's a wise decision. These products were spoiling our children. They were cheap and easily available. Whereas, some respondents support the ban, but the government should also run more awareness campaigns and provide alternatives for those addicted (Community member).
- * We fully support the ban. 'Cool Lip' is harmful and addictive, especially for teenagers. But enforcement needs to be strict. Therefore, it's a positive step, but continuous monitoring and community cooperation are essential (Health Worker)
- * It was much needed. Students were using it casually, thinking it's not serious. The ban gives us legal backing to stop them. While, very good move, but proper sensitization in schools and among parents is equally important (Teachers).

Objective 2

Open-ended item

Table 3

<i>Statement No.3</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
Have you observed any changes in people's behavior after the ban? (Please explain.)	6	6	6	6	6	30

Multiple Responses are Additive

Table No.3 presents the responses of respondents regarding they observed changes in people behavior after the ban. The following are the responses are: -

- * Yes, some boys who used to take another tobacco product during breaks have stopped. They're scared of being caught now. While, some students try to hide and still use it, but overall, its use

has reduced in school (Students).

- * Earlier, kids and even adults used to chew it openly. Now, they are more cautious or have stopped. While, some shopkeepers are no longer displaying it openly. Some have stopped selling it altogether (Community member)
- * Yes, fewer cases of youth complaints related to mouth sores or addiction. Many have approached us asking for help to quit. While, awareness has increased. People now ask whether other products are also banned (Health Workers)
- * There's more discipline now in the school premises. they've seen fewer incidents of students using such substances. After counseling sessions and announcements about the ban, many students have become more aware and cautious (Teachers)

Objective 2

Open-ended item

Table 4

Statement No.4	Students	Shopkeepers	Community members	Health workers	Teachers	Total sample
Do you think the ban is beneficial for the community? Why or why not?	6	6	6	6	6	30

Multiple Responses are Additive

Table No.4 presents the responses of the respondents regarding they think Coolip Tobacco ban is beneficial for the community. There are following responses are: -

- * Yes, it's good because many students were getting addicted. Now they think twice before using it. While, some don't like it because they miss it, but deep down they know it's harmful (Students)
- * We lost some income, but yes, it's better for the young generation. While people still ask for it, and we don't want trouble. If enforcement continues, we'll stop completely (Shopkeepers).
- * Yes, it's a welcome step. Kids were spoiling their health. Now, at least it has slowed down. While, the government did the right thing, but they should make sure it's implemented strictly (Community members).
- * Absolutely. It's harmful, especially to adolescents. The ban is beneficial for long-term health. While, they support this move and are spreading awareness through health campaigns (Health Workers)
- * Yes, it helps us create a safer school environment. Children now understand it's not allowed. While, this will bring a long-term behavioral change if combined with education and parental support (Teachers).

Analysis based on Objective 3

“To identify challenges and suggestions from the community for effective enforcement of the tobacco ban in District Doda”

Open-ended item

Table 5

<i>Statement No. 5</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
What difficulties, if any, have you noticed in enforcing the 'Cool Lip' ban?	6	6	6	6	6	30

Multiple Responses are Additive

Table No.5 presents the responses of respondents regarding they face difficulties when they noticed in enforcing the cool lip ban. The following responses are: -

- * Some students still bring it secretly. They get it from shops that sell it under the counter. While, it's easy to find if someone really wants it. So, the ban doesn't work completely (Students).
- * Shopkeepers say they lose income and some still sell it quietly. There's no regular checking. While, people who are addicted are not ready to stop. There's no support to help them quit (Community member)
- * Lack of coordination between departments is a problem. We spread awareness, but there's no follow-up enforcement. While, in remote areas, it's hard to monitor shops, and local influencers sometimes protect sellers (Health workers).
- * Parents are not fully cooperative. Some even say it's not harmful and scold teachers for interfering. While, students find new ways to get it. Without strong community support, the ban can't work well (Teachers).

Objective 3

Open-ended item

Table No 6

<i>Statement No.6</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
Do you think people are still accessing 'Cool Lip' secretly despite the ban? Please elaborate	6	6	6	6	6	30

Note: - Multiple Responses are Additive

Table No. 6 presents the responses of the respondents regarding they think people are still accessing cool lip secretly despite the ban. The following responses are: -

- * Yes, some students still find ways to get it. They go to other districts or buy it from sellers who hide it. While, a few of their classmates have told them they are still using it secretly. Even after the ban, it's not easy to stop for them (Students)
- * I think some people are still getting it from neighboring towns. They know where to buy it without being caught. While, some respondents responded that there are still people who are addicted and continue to buy it from unauthorized sources. Some people use another tobacco products. The ban doesn't stop them if they really want it (Community members).
- * I believe people are still accessing it. The ban might stop legal sales, but it doesn't stop those who are determined to use it. While, they've already seen cases where people try to buy from other areas or online. Enforcement needs to be stronger to make this ban effective (Health Workers).
- * Yes, some students are still getting it from shops outside the area or from other states. The ban isn't going to stop them overnight. While some respondents heard from some parents that their children are still using it secretly. The habit is hard to break (Teachers).

Objective 3

Open-ended item

Table 7

<i>Statement No.7</i>	<i>Students</i>	<i>Shopkeepers</i>	<i>Community members</i>	<i>Health workers</i>	<i>Teachers</i>	<i>Total sample</i>
What measures do you suggest to make the ban more effective and successful?	6	6	6	6	6	30

Note: - Multiple Responses are Additive

Table No 7 represents the responses of the respondents regarding they suggest to make the ban more effective and successful. The following responses are: -

- * There should be more awareness campaigns in schools, so students know why the ban is important. While, maybe if there were more severe punishments for those caught selling or using it, people would be more careful (Students).
- * Regular checks by the police and government officials in shops would discourage illegal selling. While, they need more community engagement, like awareness sessions in the village, to help people understand the harms (Community members).
- * Stronger enforcement is needed, and there should be regular monitoring of both retail shops and online platforms. Whereas, offering support programs to help people addicted to tobacco products would make a big difference (Health Workers).
- * They should be more proactive in involving parents, conducting workshops, and sharing

information about the risks of tobacco use. Whereas, enforcement needs to be consistent and across all areas, not just schools. Maybe local authorities can take a stricter stance against sellers (Teachers).

Discussion of Results

The study reveals that public awareness regarding the ban on 'Cool Lip' tobacco products in District Doda is present but uneven, with significant variations depending on age, education level, and rural-urban location. While many community members are aware of the health risks associated with such products, there remains a lack of detailed understanding about the specific provisions, purpose, and scope of the ban, indicating a gap in effective communication and public health outreach. Community perceptions and attitudes towards the ban are mixed yet largely supportive. Many respondents appreciate the intent behind the ban, recognizing it as a necessary step to safeguard youth and public health. However, there is also skepticism regarding its enforcement, with some viewing the move as symbolic rather than impactful. Notably, reactions range from approval and compliance to indifference or covert resistance, particularly in areas where tobacco use is deeply embedded in local culture or livelihood.

The study also identifies multiple challenges in the enforcement of the ban. These include inadequate surveillance, limited manpower, the persistence of black-market sales, and the absence of consistent punitive measures. Community members suggest that for the ban to be effective, there must be sustained awareness campaigns, community engagement, and stronger coordination between health departments, local administration, and law enforcement agencies. Educational institutions, religious leaders, and youth groups were frequently mentioned as key stakeholders that could help in reinforcing anti-tobacco norms. In conclusion, while the ban on 'Cool Lip' tobacco products in District Doda is a commendable initiative, its success hinges on greater community involvement, sustained public health education, and rigorous, transparent enforcement mechanisms. The voices from the ground emphasize that meaningful policy implementation must be participatory, locally contextualized, and backed by both preventive and punitive strategies.

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BUSINESS STUDIES

Tokenising Trust: The Future of Sustainable Service Engagement through Virtual Currencies

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ABSTRACT

The increasing convergence of technological innovation and sustainability imperatives has positioned sustainable service marketing as a strategic priority for contemporary organisations, particularly within the financial services sector. In this evolving context, the emergence of virtual currencies—including cryptocurrencies and central bank digital currencies (CBDCs)—introduces new possibilities for shaping environmentally responsible and transparent service ecosystems. This research paper investigate the role of virtual currencies in advancing sustainability-oriented service marketing by facilitating secure, traceable, and resource-efficient transactions, as well as by enabling token-based incentive mechanisms that promote pro-environmental consumer behaviour. Adopting a qualitative, concept-driven analytical approach, the study draws upon recent regulatory developments, industry practices, and illustrative cases from retail banking, hospitality, and digital service platforms in India. The analysis moves beyond descriptive narration to interpret how blockchain-enabled value exchange can reduce dependence on paper-based processes, enhance accountability, and strengthen consumer trust within service systems. This study critically examines persistent challenges related to regulatory uncertainty, technological readiness, and consumer adoption. The paper argues that virtual currencies, when embedded within broader digital transformation and sustainability frameworks, can contribute meaningfully to accountable, inclusive, and resource-efficient service marketing models aligned with long-term sustainability goals.

Key Words: sustainable service marketing, virtual currencies, blockchain, CBDCs, green consumer behaviour, digital service innovation

Introduction

Retail banking, also referred to as consumer banking, constitutes the interface between financial institutions and individual consumers. It encompasses a broad spectrum of financial services tailored to personal financial management, including savings and current accounts, personal loans, mortgages, and credit cards. Traditionally delivered through brick-and-mortar branches, retail banking has long served as the cornerstone of individual financial well-being and economic development by facilitating access to essential financial services (Arner et al., 2015). However, over the past decade, the landscape of retail banking has witnessed a paradigm shift catalysed by digital transformation, evolving customer expectations, and the proliferation of financial technologies (fintech). This shift has been marked by a transition from conventional banking models to more dynamic, customer-centric ecosystems. Digitalization, mobile banking, artificial intelligence (AI), and big data analytics have redefined service delivery frameworks, leading to an emphasis on

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personalized, efficient, and real-time banking experiences (Accenture, 2021). The banking customer of today expects seamless integration across platforms, enhanced security, and customized solutions—characteristics that demand a reinvention of traditional retail banking strategies. A pivotal development in this transformation is the emergence of virtual currencies and digital payment systems. Virtual currencies—ranging from centrally-backed digital currencies to decentralized cryptocurrencies—have introduced alternative value exchange mechanisms that are reshaping the future of money. As customers increasingly engage in digital ecosystems, the role of virtual currencies in retail banking has gained prominence (Tapscott & Tapscott, 2016). Banks are now exploring integration with blockchain technologies, tokenized loyalty programs, and central bank digital currencies (CBDCs) as tools for sustainable service marketing and customer engagement.

In this evolving context, sustainable service marketing becomes a strategic imperative. It involves not just the promotion of financial products but also the creation of value through trust, ethical conduct, digital empowerment, and long-term customer relationships. Integrating virtual currencies into the marketing mix necessitates a rethinking of traditional models, incorporating user education, regulatory compliance, and security frameworks to ensure credibility and acceptance (Zetzsche et al., 2020).

The interplay between digital innovation and sustainability in retail banking offers fertile ground for academic exploration. As financial institutions navigate these complex dynamics, it becomes essential to investigate how virtual currencies can be leveraged not just as payment tools but as strategic instruments in building sustainable, inclusive, and future-ready service ecosystems.

Strategic Relevance of Digital Innovation in Retail Banking

The future of retail banking is being decisively shaped by rapid technological advancements and evolving customer expectations. As banks strive to maintain competitiveness and consumer trust, understanding and adopting emerging trends is no longer optional—it is imperative. This section explores how digital transformation, artificial intelligence, and sustainability are collectively redefining the value proposition in retail banking, with significant implications for sustainable service marketing and the adoption of virtual currencies.

Enhancing Service Delivery Through Digital Platforms

Ubiquity of Mobile and Online Banking

The delivery of banking services has undergone a fundamental shift with the widespread adoption of mobile and online platforms. Mobile banking applications, digital wallets, and web-based portals have become routine points of interaction, allowing consumers to conduct financial activities at their convenience and without spatial constraints (PwC, 2022). Beyond enhancing ease of access, these platforms have altered the operational structure of retail banking by reducing dependence on physical branches and manual processing. This transition has enabled banks to streamline service delivery while reallocating resources toward digitally driven engagement and support mechanisms.

Data-Driven Personalisation

As customers increasingly interact with banks through digital channels, the volume and richness of behavioural data available to financial institutions have expanded significantly. By applying advanced analytics to these data streams, banks are able to move beyond generic product offerings and design personalised services aligned with individual preferences, financial needs, and usage patterns (Accenture, 2021). Such personalisation strengthens customer engagement and loyalty by fostering a sense of relevance and responsiveness, while also enabling more targeted and

value-driven marketing strategies that reflect evolving consumer expectations and ethical considerations.

Intelligent Automation for Efficiency and Security

1 AI-Powered Customer Experience

Artificial intelligence has become central to delivering consistent, round-the-clock customer service. From AI chatbots resolving basic queries to virtual financial advisors offering investment suggestions, these technologies are revolutionizing customer interaction models in retail banking (McKinsey & Company, 2021).

2 Risk Mitigation and Fraud Detection

Advanced machine learning algorithms enable real-time fraud detection, transaction monitoring, and credit risk assessment. These AI-driven tools contribute to building a secure and trustworthy digital banking environment, crucial for customer retention and regulatory compliance (Arner et al., 2017).

Embedding Sustainability into Banking Practices

1 Alignment with Ethical Consumerism

As customers become increasingly environmentally and socially conscious, banks are under pressure to reflect these values in their offerings. Financial products such as green loans and ESG-aligned investments are helping banks meet this demand while supporting global sustainability goals (OECD, 2020).

2 Corporate Social Responsibility and Brand Equity

Retail banks are expanding their CSR initiatives to include financial inclusion, education, and community development. These initiatives reinforce institutional credibility and improve customer trust, positioning banks as ethical contributors to societal well-being (UNEP FI, 2021).

Implications for Sustainable Service Marketing with Virtual Currencies

The convergence of digital transformation and sustainability presents a fertile ground for innovation in service marketing. Virtual currencies, when thoughtfully integrated into the retail banking ecosystem, offer opportunities for customer engagement through token-based loyalty programs, secure digital identities, and borderless financial transactions. As digital-native consumers seek values-driven relationships with their banks, service marketing must evolve to promote not just convenience and cost-efficiency, but also ethics, transparency, and long-term value.

Research Objectives

This research paper will offer a comprehensive perspective on how banks can adapt to changing consumer demands, leverage digital tools responsibly, and promote sustainable service models that foster trust and long-term engagement.

The primary objective of this study is to examine how emerging digital and sustainability-driven trends are reshaping the retail banking landscape in India. Specifically, the study seeks to:

1. To analyse the role of digitalisation and artificial intelligence in transforming retail banking services, with particular emphasis on service innovation, operational efficiency, security, and personalised customer engagement.
2. To examine the growing importance of sustainability and corporate responsibility in retail

banking, focusing on their influence on consumer perceptions, trust, and long-term relationship building within service marketing frameworks.

3. To explore the strategic implications of integrating virtual currencies and sustainable service marketing models into retail banking ecosystems, especially in terms of competitiveness, inclusion, and alignment with evolving ESG expectations.

Research Methodology

Research Method

This study adopts a qualitative, secondary-data-based analytical approach, suitable for examining emerging and evolving phenomena such as virtual currencies, sustainable service marketing, and digital financial innovation. Rather than pursuing statistical generalisation, the research aims to develop conceptual clarity and interpretive insight by synthesising evidence from academic literature, regulatory publications, and industry reports.

Analytical Framework

The analysis is guided by thematic content analysis, following an interpretive logic rather than a purely descriptive review. Relevant literature and reports were systematically reviewed and coded to identify recurring patterns related to (i) digital innovation in retail banking, (ii) sustainability-oriented service practices, and (iii) the strategic role of virtual currencies and blockchain-enabled incentives. These themes were subsequently analysed to examine how technological tools interact with sustainability objectives and consumer trust mechanisms within service ecosystems.

This framework enables the study to distinguish between surface-level technological adoption and deeper strategic implications for sustainable service marketing, particularly in the Indian retail banking context.

Sources Reviewed

The study draws upon:

- Peer-reviewed journals published primarily after 2022, including Journal of Financial Regulation and Journal of Financial Innovation and Sustainability
- Industry and consultancy reports from PwC, McKinsey, and Accenture
- Regulatory and policy documents issued by the Reserve Bank of India (RBI), World Bank, OECD, and UNEP FI
- Empirical updates on UPI, CBDC pilots, financial inclusion initiatives, and green finance practices in India

Comprehensive Analysis of Emerging Trends in Indian Retail Banking

The retail banking sector in India is experiencing a significant transformation shaped by rapid digital advancement, supportive regulatory frameworks, increasing sustainability concerns, and shifting consumer expectations. Together, these forces are redefining how banking services are designed and delivered, with direct implications for sustainable service marketing practices. As digital payment systems and virtual currencies continue to gain traction, banks are increasingly required to align their operational and strategic priorities with environmental responsibility, financial inclusion, and technological adaptability.

Artificial Intelligence and Sustainable Service Delivery

While existing literature frequently highlights the operational benefits of artificial intelligence in banking, the present analysis suggests a deeper strategic role. AI-driven systems do not merely enhance efficiency; they actively reshape sustainability outcomes by optimising resource allocation, reducing process redundancies, and enabling predictive decision-making. From a service marketing perspective, AI facilitates the transition from transactional engagement to relationship-oriented value creation, where sustainability becomes embedded in everyday service interactions rather than positioned as a peripheral CSR activity.

1. Digital Banking and Mobile Payments

Digital transformation has emerged as one of the most defining forces shaping India's retail banking landscape. The rapid penetration of smartphones and internet access, supported by policy initiatives such as Digital India and the post-2016 demonetisation push, has accelerated the adoption of digital payment systems (Reserve Bank of India [RBI], 2024). Central to this shift is the Unified Payments Interface (UPI), developed by the National Payments Corporation of India (NPCI), which has become the foundation of the country's digital payment ecosystem. By March 2024, UPI was processing more than 13 billion transactions per month, reflecting a remarkable expansion since its introduction in 2016 (Economic Times, 2024a). Applications such as Paytm, Google Pay, and PhonePe have become embedded in everyday financial behaviour, enabling instant, location-independent transactions. Beyond convenience, these platforms contribute to sustainable service delivery by limiting reliance on paper-based processes and supporting more energy-efficient digital transactions.

2. Artificial Intelligence and Automation

Artificial Intelligence (AI) and automation are redefining customer engagement and operational efficiency in Indian banking. AI-powered chatbots, such as HDFC's EVA, respond to millions of customer inquiries with high levels of accuracy, reducing the need for human intervention and ensuring 24/7 service availability (PwC India, 2024). Similarly, ICICI Bank has adopted AI-based fraud detection systems that have significantly lowered risk and enhanced trust. By 2025, AI is expected to cut operational costs in the banking sector by 20–30% (PwC India, 2024). Automation also facilitates efficient backend processing, allowing banks to reallocate human resources to more strategic, high-value functions. These developments contribute to sustainable marketing by improving customer satisfaction and reducing energy and labour resources.

3. Financial Inclusion and Expanding Reach

Financial inclusion remains a cornerstone of India's banking reforms, ensuring that marginalized populations have access to banking services. The Pradhan Mantri Jan Dhan Yojana (PMJDY), initiated in 2014, has brought more than 710 million unbanked individuals into the formal banking system as of 2023 (Press Information Bureau [PIB], 2023).

The Reserve Bank of India's Financial Inclusion Index rose from 60.1 in 2023 to 64.2 in 2024, reflecting increased accessibility and usage of financial products across rural and underserved communities (RBI, 2024). Such efforts support the democratization of finance and offer a framework for introducing virtual currencies and sustainable banking tools to low-income groups.

4. Focus on Sustainability and Green Banking

As climate change and environmental concerns intensify, Indian banks are incorporating sustainability into their operations. Green banking, which includes funding renewable energy projects and offering green bonds, is gaining momentum. The State Bank of India (SBI), for instance, raised

\$250 million through green bonds to finance clean energy and low-carbon infrastructure projects (Economic Times, 2023b). These activities not only build trust with socially conscious consumers but also align with the core tenets of sustainable service marketing—meeting present needs without compromising future generations.

5. Integration with Sustainable Service Marketing and Virtual Currencies

The convergence of digital innovation and sustainability is paving the way for virtual currencies and central bank digital currencies (CBDCs). In India, the RBI has launched pilot programs for the e-rupee (CBDC), which represents a milestone in sustainable financial service delivery (RBI, 2023). These digital currencies reduce the environmental cost of printing physical currency, offer traceable transactions, and can be seamlessly integrated with digital wallets and mobile banking platforms. Virtual currencies, when implemented responsibly, can enhance transparency, reduce transaction friction, and support inclusive economic development. They also provide opportunities for personalized loyalty and reward programs, aligning with sustainable service marketing by delivering value while minimizing resource consumption.

The transformation of Indian retail banking through digitalization, AI, financial inclusion, and sustainability is setting the foundation for future innovations, including virtual currencies. These trends are not isolated—they intersect with broader goals of environmental stewardship, operational efficiency, and customer-centricity. Banks that proactively adopt these models will be better positioned to offer sustainable, digitally native, and inclusive services, while also strengthening customer trust and brand loyalty.

Virtual Currencies and Consumer Trust

Rather than treating virtual currencies solely as alternative payment instruments, this study interprets them as trust-mediating mechanisms within digital service ecosystems. CBDCs, in particular, occupy a distinctive psychological space for consumers by combining technological efficiency with sovereign legitimacy. This dual character reduces perceived risk and enhances transparency, thereby supporting consumer acceptance in sustainability-oriented service models.

Structured Integration of Emerging Trends in Indian Retail Banking

The evolution of retail banking in India has been a carefully phased journey, driven by the need to remain competitive in a digitally empowered and sustainability-conscious market. To effectively adopt the emerging trends of digitization, artificial intelligence (AI), financial inclusion, and sustainability, Indian retail banks have undertaken a strategic transformation process organized across four interrelated phases. Each phase reflects a systemic shift in service delivery, customer engagement, and ethical responsibility—critical pillars for future-ready banking models, especially in the context of sustainable service marketing and virtual currencies.

Phase 1: Establishing a Digital Banking Infrastructure

The digital revolution in India's banking sector began with foundational investments in robust digital infrastructure. Banks developed secure and intuitive mobile applications, online banking portals, and digital wallets tailored to both urban and semi-urban populations. These platforms became the frontline interfaces for customers, facilitating real-time transactions, bill payments, and customer support. The government's Digital India initiative, combined with policies like demonetization, accelerated the nationwide adoption of digital payment systems (Reserve Bank of India [RBI], 2024). This phase also prioritized cybersecurity and user data protection, essential for building trust in online services. With initiatives like the Unified Payments Interface (UPI) becoming

mainstream—registering over 8 billion transactions monthly as of 2023 (Economic Times, 2023)—the Indian banking sector has succeeded in providing scalable and inclusive digital solutions. As virtual currencies begin to enter mainstream discourse, this infrastructure serves as a foundation for piloting and integrating central tokens or CBDCs (Central Bank Digital Currencies) in the future.

Phase 2: Leveraging Artificial Intelligence and Predictive Analytics

With digital platforms in place, banks moved toward integrating AI and data analytics into their service offerings. This phase aimed at transforming the customer experience from transactional to predictive and personalized. AI tools, such as chatbots, voice assistants, and smart analytics engines, have become commonplace in retail banking operations. For instance, HDFC Bank's AI chatbot "EVA" has handled over 5 million queries with high accuracy and satisfaction rates (PwC India, 2024). Moreover, predictive analytics enables financial institutions to anticipate customer behaviour, credit risks, and product requirements based on transactional data. These tools are not only reshaping marketing strategies but are also vital in fraud detection and regulatory compliance. Automation of repetitive tasks in back-end operations has contributed to a 20–30% reduction in operational costs (PwC India, 2024), allowing banks to reinvest in innovation and service improvement. These AI-driven models could be instrumental in managing the volatility and complexity of virtual currency systems, especially when targeting hyper-personalized offerings or blockchain-based services.

Phase 3: Expanding Financial Access and Inclusion

Recognizing that technology must be inclusive, Indian banks have entered the next logical phase of financial democratization. The Pradhan Mantri Jan Dhan Yojana (PMJDY) initiative has been a game-changer, bringing over 490 million individuals into the formal financial system by 2023 (Press Information Bureau [PIB], 2023). Many of these accounts are in rural and underserved areas, previously excluded from banking services due to geographic and economic barriers. In response, banks have expanded rural outreach by deploying mobile banking vans, micro ATMs, and business correspondents. Financial literacy campaigns further support this expansion by educating communities about banking tools, digital payments, and credit facilities. This inclusive framework lays the groundwork for exploring the use of virtual currencies in public benefit schemes, remittances, and micro-loans—areas where blockchain technology and decentralized finance (DeFi) could enhance transparency, traceability, and speed.

Phase 4: Integrating Sustainability and CSR into Banking Practices

The final and ongoing phase emphasizes the integration of environmental and social responsibility into banking operations. In an era where customers—especially younger generations—prioritize ethical business practices, sustainability has become a strategic imperative. Indian banks have taken concrete steps such as issuing green bonds, promoting clean energy loans, and supporting social welfare projects through CSR initiatives. For instance, the State Bank of India (SBI) has issued green bonds to fund renewable energy and sustainable development projects (Economic Times, 2023a). Moreover, banks are aligning their operations with ESG (Environmental, Social, and Governance) benchmarks, driven not just by regulatory compliance but also by stakeholder expectations. This trend complements the vision of sustainable service marketing, where banks market not only financial products but also values such as environmental care, inclusivity, and ethical governance. This phase holds special relevance for virtual currencies, as decentralized systems can be designed to reward environmentally sustainable behaviours—such as carbon credits, green tokens, or impact investing platforms. Virtual currencies could also facilitate cross-border microdonations, real-time CSR reporting, and transparent ESG tracking systems for banks and

consumers alike.

Indian retail banks are demonstrating a logical and holistic approach to adopting emerging trends by sequentially building digital capabilities, embedding AI, extending financial inclusion, and fostering sustainability. These phases not only modernize banking practices but also provide a structured framework for integrating future innovations like virtual currencies. As banks progress along this transformation journey, they are laying the foundation for a financial ecosystem that is not only efficient and secure but also inclusive, personalized, and sustainable. In doing so, they embody the core tenets of sustainable service marketing—reimagining financial services not just as products, but as platforms for societal good.

Critical Evaluation of Emerging Trends and Their Impact on the Financial World

The integration of digital technologies, artificial intelligence, financial inclusion frameworks, and sustainability principles in Indian retail banking represents a profound transformation of the financial landscape. However, these trends come with a nuanced balance of advantages and challenges that ripple beyond the banking ecosystem into the global financial order. For sustainable service marketing and the future integration of virtual currencies, it is essential to critically evaluate how these developments impact stakeholders, operations, and regulatory paradigms.

Digital Banking: Enhanced Access vs. Cybersecurity Risks

Digital banking has revolutionized consumer access to financial services. The rapid adoption of mobile applications, UPI, and digital wallets like PhonePe and Paytm has democratized financial access and reduced the dependence on physical banking infrastructure (Economic Times, 2023). However, this increased digital dependency brings heightened vulnerability to cybercrime. As digital transactions surge, cyberattacks such as phishing, identity theft, and malware infiltration have also grown. According to the Indian Computer Emergency Response Team (CERT-In), India witnessed over 13 lakh cybersecurity incidents in 2022 alone. While banks have introduced multi-factor authentication and AI-based fraud detection systems, many customers—especially in Tier 2 and Tier 3 cities—remain unaware of digital hygiene practices (PwC India, 2024). For virtual currencies, these vulnerabilities pose even greater concerns. Blockchain and decentralized systems are designed for transparency, yet user-side security—such as private key management—remains a critical weak link. Therefore, future policies must integrate user education and security innovation as foundational components of digital financial inclusion and crypto-adoption frameworks.

AI and Automation: Operational Gains vs. Workforce Displacement

Artificial intelligence and automation have ushered in significant efficiencies in Indian banking. Customer service bots, predictive analytics for lending, and AI-enabled fraud detection have made operations leaner and smarter. ICICI Bank and HDFC Bank's deployments of AI systems have reportedly led to faster decision-making and improved customer satisfaction (PwC India, 2024). However, the automation wave also leads to job redundancies, particularly in clerical, support, and data entry roles. The Indian Banks' Association (IBA) has acknowledged that while automation reduces operational costs, it necessitates large-scale workforce reskilling. The financial sector has seen the emergence of new roles in data science, cybersecurity, and digital strategy—but the transition is neither uniform nor equitable. This tension is particularly relevant to sustainable service marketing. A sustainable banking model must not only serve external customers but also consider internal workforce welfare. Upskilling programs, fair transition policies, and hybrid workforce models must be embedded into HR frameworks. Furthermore, as AI becomes integral to crypto-wallet

security and smart contracts, employee training must align with the evolving financial tech ecosystem.

Financial Inclusion: Socioeconomic Benefits vs. Literacy Gaps

The Indian government's focus on financial inclusion through schemes like PMJDY has yielded measurable socioeconomic benefits. By 2023, over 70% of Indian adults held a bank account, and savings rates in rural households have increased (PIB, 2023). Microloans, insurance schemes, and digital remittances have empowered low-income populations, contributing to grassroots economic development. Yet, financial inclusion alone does not equate to financial empowerment. A significant proportion of new account holders remain passive users due to low levels of financial literacy. The 2022 RBI Financial Literacy Index showed wide regional disparities in understanding basic banking, digital safety, and investment products (RBI, 2024). In the absence of targeted education, financial inclusion risks becoming symbolic rather than substantive. The application of virtual currencies in such settings amplifies this challenge. While decentralized currencies promise low-cost, borderless transactions, their volatility and technological complexity may confuse untrained users. Therefore, inclusion strategies must be accompanied by scalable literacy initiatives that demystify both traditional banking and emerging fintech models.

Sustainability: Ethical Impact vs. Profitability Constraints

India's banking sector has shown a commendable pivot toward environmental sustainability. Institutions like SBI and Yes Bank have issued green bonds, promoted clean energy loans, and embraced ESG (Environmental, Social, Governance) benchmarks (Economic Times, 2023a). These initiatives align banks with global sustainable finance movements and enhance brand equity among ethically conscious consumers. Nonetheless, sustainability efforts are capital-intensive and long-gestation in nature. Green projects, by design, often have lower short-term profitability compared to conventional investments. Smaller and mid-tier banks, with limited capital buffers, may find it challenging to allocate funds toward sustainable finance without regulatory or governmental support. Moreover, ESG metrics are still evolving in India, and a lack of standardization may dilute the accountability of such initiatives. In the context of sustainable service marketing, this tension is critical. Institutions must find innovative models to integrate sustainability without compromising financial health. One such opportunity lies in virtual currencies that are "eco-tokenised"—rewarding customers for green behaviours like carbon neutrality, e-vehicle usage, or renewable energy adoption. These tokens could also be linked to green investment products, bridging the gap between sustainability and profitability.

The interplay of digital transformation, artificial intelligence, financial inclusion, and sustainability is reshaping the contours of retail banking in India. While these trends offer unprecedented advantages, they also pose complex challenges in cybersecurity, workforce transition, financial literacy, and capital allocation. A critical and balanced evaluation reveals that true transformation lies not in adopting technologies alone, but in embedding them within a holistic framework of responsible banking, equitable access, and long-term impact. As India steps toward adopting virtual currencies and decentralized finance platforms, it must integrate these lessons into policy design, organizational strategy, and consumer engagement models. Only then can retail banking evolve into a sustainable, inclusive, and future-ready financial ecosystem—redefining the essence of service marketing in the digital age.

Identified gaps based on the critical evaluation

Trend	Observed Progress	Identified Gaps / Challenges
Digital Banking	With the rapid adoption of UPI, mobile wallets, and Internet banking; India leads globally in digital payment volumes.	- Cybersecurity threats persist (e.g., phishing, digital fraud). -Low digital literacy in rural and semi-urban areas.
AI and Automation	Enhanced efficiency through AI chatbots, predictive analytics, and fraud detection; cost savings reported by leading banks.	- Potential job displacement without clear reskilling pathways. -Technology adoption varies significantly across banks.
Financial Inclusion	Over 70% of adults now have bank accounts; the major success of PMJDY and Jan Dhan Yojana; improved access to microfinance services.	- Financial literacy remains weak, limiting account utilization. -Digital infrastructure gaps in remote rural regions.
Sustainability and Green Banking	Growth in green bonds and eco-loans; rising CSR involvement; alignment with ESG standards.	- High capital investment is needed, especially burdensome for smaller banks. -Lack of standardization in ESG reporting.
Virtual Currencies (Implications)	Not yet mainstream in India but gaining attention; potential in sustainable service marketing (e.g., eco-tokens, loyalty rewards).	-Regulatory uncertainty and consumer scepticism. -Inadequate public knowledge of blockchain/crypto concepts.

Summary of Key Findings

1. Proliferation of Digital Financial Interfaces

India's retail banking sector has undergone a significant transformation with the adoption of digital banking platforms. Initiatives like Digital India, coupled with increased smartphone penetration and improved internet access, have propelled the growth of digital payments. The Unified Payments Interface (UPI), in particular, has been a cornerstone of this transition, processing over 8 billion transactions monthly as of 2023 (NPCI, 2023). These platforms have enhanced consumer convenience, enabling real-time, branchless banking, and reshaping the traditional service delivery model.

2. Strategic Integration of AI for Operational Intelligence

Artificial Intelligence (AI) and automation have emerged as pivotal tools in enhancing service efficiency and customer engagement. Banks like HDFC (EVA) and ICICI (iPal) have deployed AI-

powered chatbots to manage customer queries at scale, significantly reducing human intervention in routine service tasks (PwC India, 2023). AI also supports risk modelling and predictive analytics, enabling banks to detect fraud proactively and deliver hyper-personalized financial products. These applications underscore AI's role in improving customer trust, cost efficiency, and regulatory compliance.

3. Deepening of Financial Access and Social Equity

Government-led financial inclusion initiatives in India, most notably the Pradhan Mantri Jan Dhan Yojana (PMJDY), have substantially widened access to retail banking services. By 2023, more than 490 million bank accounts had been opened under the scheme, extending formal financial access to large segments of rural and underserved populations (RBI, 2023). The parallel expansion of digital and mobile banking platforms has further eased access to savings, credit, and insurance products, enabling greater participation in the formal financial system. Collectively, these developments have contributed to economic empowerment and the gradual formalisation of financial behaviour among demographic groups that were previously excluded from mainstream banking.

4. Transition Toward Sustainable and Ethical Banking

Sustainability has become an essential dimension of modern banking practices in India. Financial institutions are increasingly incorporating environmental, social, and governance (ESG) factors into their operations. Banks such as SBI have issued green bonds to finance renewable energy, clean water, and low-carbon infrastructure projects (Climate Bonds Initiative, 2024). In parallel, banks are actively participating in Corporate Social Responsibility (CSR) programs, with many allocating 2% of net profits towards health, education, and environmental initiatives. These practices foster consumer trust, align brand values with customer expectations, and contribute to long-term value creation.

Anticipated Trajectories in Retail Banking: Technology, Inclusion, and Sustainability

The transformation of retail banking in India is accelerating, driven by a confluence of digitization, automation, inclusion, and sustainability. These trends are not only reshaping how services are delivered but are also redefining the competitive landscape. As banks continue to adapt, the following insights present the likely implications for the future of retail banking—especially relevant in the context of integrating virtual currencies into sustainable service marketing frameworks.

Digital and Mobile Banking: Toward a Cashless, Efficient Economy

India's digital banking ecosystem is on the cusp of widespread transformation, driven by deepening smartphone penetration and low-cost internet availability. According to the Telecom Regulatory Authority of India (TRAI), mobile internet penetration is expected to surpass 80% by 2026. This environment is fertile for expanding mobile and digital banking, particularly in semi-urban and rural areas. Platforms like the Unified Payments Interface (UPI) and digital wallets are likely to play a crucial role in making banking services more accessible, efficient, and inclusive (NPCI, 2023).

The shift to a cashless economy also opens doors for integrating virtual currencies and central bank digital currencies (CBDCs) into mainstream banking. The Reserve Bank of India's digital rupee pilot is an example of how virtual currencies can coexist with mobile-based payments while offering traceable, secure, and cost-effective alternatives (RBI, 2023). The long-term implication is a reduction in physical banking infrastructure needs and enhanced service delivery with lower transaction costs.

Artificial Intelligence: Personalized Banking at Scale

The continued adoption of AI and automation is set to redefine customer engagement in retail banking. Future advancements will go beyond chatbots and predictive analytics, evolving into real-time advisory services powered by natural language processing (NLP) and behavioural analytics. AI-based systems could also manage complex queries related to investment decisions, insurance products, or sustainability-linked loans (PwC India, 2023). From a service marketing perspective, AI enables hyper-personalized engagement—targeting customers with individualized offers and communication. This strengthens loyalty and improves conversion rates, particularly when bundled with incentives like blockchain-based loyalty points or tokenized virtual rewards, which are gaining attention in sustainable marketing strategies (Chatterjee & Bera, 2022). While AI enhances operational efficiency, it may also lead to workforce restructuring. Banks will need to upskill employees in areas such as data analytics, cybersecurity, and digital product management to remain competitive in the AI-enabled banking ecosystem.

Financial Inclusion: Catalysing Economic Participation through Technology

Financial inclusion remains a cornerstone of India's banking agenda. The next frontier lies in bridging the service quality gap in underserved areas. The Pradhan Mantri Jan Dhan Yojana (PMJDY) has laid the groundwork, with over 490 million accounts opened by 2023 (Ministry of Finance, 2023). Future strategies will likely emphasize product diversification—including microloans, crop insurance, and pension products—delivered via mobile platforms or fintech intermediaries. Blockchain and virtual currencies also hold the potential to support microtransactions with lower fees, making financial products more affordable for low-income populations. Smart contracts could automate microcredit disbursements and repayments, ensuring transparency and minimizing human errors (World Bank, 2023). These digital models can bridge service gaps in remote areas while fostering greater participation in the formal financial system.

Sustainability: The Green Imperative in Retail Finance

The emphasis on sustainability within India's retail banking sector is expected to intensify in the coming years. Banks have already begun integrating environmental and social considerations into their operations through investments in green bonds, renewable energy financing, and structured CSR initiatives. Going forward, a greater share of financial activity is likely to be directed toward ESG-compliant products, with transparent sustainability metrics emerging as an important source of competitive advantage.

Virtual currencies and blockchain-based systems can play a supportive role in this transition by enabling traceable and verifiable transactions that align with sustainability objectives. Mechanisms such as tokenised carbon credits or decentralised finance (DeFi) platforms offer new pathways for funding green projects by reducing intermediary costs and improving transparency (Climate Bonds Initiative, 2024). From a service marketing perspective, such innovations have the potential to reshape customer engagement by appealing to ethically motivated consumers and investors who prioritise responsible financial practices.

Regulatory and policy support is likely to further reinforce this shift. Measures such as priority lending for green projects and incentives for issuing green bonds can embed sustainability more firmly within core banking strategies rather than confining it to peripheral CSR activities. Overall, the trajectory of Indian retail banking points toward deeper digital integration, intelligent automation, expanded financial access, and a stronger commitment to environmental stewardship. Within this evolving landscape, virtual currencies and blockchain technologies represent enabling tools that, when combined with AI, digital wallets, and decentralised finance, can support sustainable service

marketing models grounded in transparency, inclusion, and long-term trust.

Implications

- **Reimagining Value Propositions:** Marketers can embed virtual currencies into service ecosystems (e.g., for eco-friendly travel, digital education, or green energy) to create shared value.
- **Building Trust Through Transparency:** Blockchain-enabled platforms offer traceable use of funds, which can appeal to ethically-driven consumers.
- **AI-Driven Personalization with a Purpose:** GenAI tools can tailor sustainable offerings, promoting services that align with a customer's carbon footprint, social values, or financial goals.
- **Financial Empowerment at the Core:** With inclusion tools like UPI and PMJDY, marketers can design services that are affordable, accessible, and digitally enabled, aligning perfectly with sustainability and equity goals.
- **Green Loyalty Programs:** Virtual currencies can be used in rewards for sustainable behaviours—such as using public transport or making eco-friendly purchases—thus driving eco-conscious consumption.
- **Policy-Backed Innovation:** Marketing strategies must stay aligned with frameworks like the RBI's Financial Inclusion Index and the CBDC roadmap, ensuring legal compliance and systemic impact.

Conclusion

The transformation of India's retail banking sector reflects a broader shift toward digitally enabled, inclusive, and sustainability-driven service ecosystems. This study demonstrates that virtual currencies—particularly CBDCs and tokenised incentive systems—have the potential to function as strategic instruments rather than merely transactional tools within sustainable service marketing.

From a theoretical standpoint, the findings extend existing service marketing and sustainable finance literature by illustrating how tokenised value exchange can influence consumer behaviour through transparency, traceability, and incentive alignment. Virtual currencies emerge not only as technological innovations but as behavioural and relational mechanisms that connect sustainability objectives with consumer participation.

From a managerial perspective, the study highlights that banks integrating AI-enabled analytics, digital payment infrastructure, and blockchain-based incentives can design more credible and engaging sustainability-led service offerings. Tokenised rewards, when aligned with environmentally responsible behaviour, offer a practical pathway for embedding sustainability into everyday banking interactions.

However, realising this potential requires careful attention to regulatory clarity, digital security, financial literacy, and ethical AI deployment. Without these foundations, the promise of virtual currencies in sustainable service marketing may remain underutilised. Overall, the evolution of retail banking in India suggests that sustainability, technology, and service marketing are no longer separate strategic domains but interdependent elements of a future-ready financial ecosystem.

Suggestions

- Banks should leverage blockchain and CBDC infrastructure to introduce transparent, token-based loyalty programs that reward customers for eco-conscious behaviour (e.g., lower carbon

footprint purchases).

- Financial institutions must invest in awareness programs to improve consumer understanding of virtual currencies and sustainable finance.
- Collaboration between banks, fintechs, and regulatory bodies can accelerate innovation in green digital products, such as tokenized green bonds or DeFi-based microloans.
- Reskilling initiatives are needed to prepare the workforce for a data-driven and virtual currency-integrated environment.

Limitations of the Study

- The research is conceptual and does not include primary empirical data or field-based case studies to validate theoretical claims.
- Virtual currency adoption in India is still in its early stages, and regulatory clarity is evolving, which may affect long-term projections.
- The impact of customer behaviour, financial literacy, and the digital divide on virtual currency acceptance in rural markets has not been deeply explored.
- The focus has largely been on retail banking; the implications for other banking sectors (e.g., corporate or investment banking) remain unaddressed.

Scope for Future Research

- Future studies could explore consumer perception and adoption of virtual currencies in sustainable financial products through surveys or interviews.
- A comparative analysis between India and other emerging economies can offer insights into global best practices in green finance and blockchain-enabled service marketing.
- Investigating the role of DeFi (Decentralized Finance) in expanding financial inclusion via virtual currencies would add depth to the literature.
- Longitudinal studies tracking the environmental and economic impact of sustainable service marketing initiatives can validate long-term efficacy.

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“Role of Personality Traits in Trading App Adoption: A Study of Retail Investors in Jammu”

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ABSTRACT

Mobile trading applications have transformed the financial sector, enabling retail investors to trade stocks with unprecedented ease. This study examines factors influencing trading app adoption among retail investors in the Jammu region of India. Based on the Technology Acceptance Model (TAM) and Big Five personality model, the research explores how personality traits affect perceived usefulness, how perceived usefulness influences intention to use trading apps, and potential moderating effects of age and gender. Data was collected from 150 retail investors through a structured questionnaire. Multiple regression analysis showed that personality traits, particularly conscientiousness, significantly affect the perceived usefulness of trading apps. Furthermore, perceived usefulness emerged as a strong predictor of intention to use these applications. Age and gender did not moderate the relationship between perceived usefulness and adoption intention. These findings have implications for app developers and marketers, suggesting that emphasizing practical benefits drives adoption across demographic groups.

Key Words: Personality traits, Perceived usefulness, Trading apps, Retail investors, Technology adoption, Big Five personality model, Demographic factors

Introduction

The rapid advancement of technology has profoundly reshaped the financial sector, especially stock trading (Havakhor et al., 2024). Mobile trading applications have emerged as powerful tools allowing retail investors to engage in financial markets with unprecedented ease and accessibility. These apps offer convenience, accessibility, and real-time data, features reserved for institutional investors or those with access to professional brokerage services (Nair et al., 2022). The growing affordability of smartphones and Internet access has further accelerated the adoption of trading apps, particularly in emerging markets, such as India. This study explores the factors influencing the adoption of trading apps among retail investors in the Jammu region of India.

The current research aims to enhance insights into the adoption of mobile trading apps in the context of financial services by examining three key aspects: the impact of personality traits on perceived usefulness, the possible moderating impacts of demographic parameters like age and gender, and the impact of perceived usefulness on behavioral intention to adopt trading apps.

The theoretical basis of the current study is established on the Big Five personality model and the Technology Acceptance Model (TAM). The TAM, as introduced by Davis (1989), asserts that perceived usefulness is a pivotal factor influencing the adoption of technology, and the Big Five personality model (McCrae & Costa, 1999), comprising Neuroticism, Conscientiousness,

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Extraversion, Agreeableness, and Openness to new Experiences, offers a framework for comprehending individual distinctions in behavior and attitudes.

Furthermore, individual differences, including personality traits, age, and gender, may influence investors' perceptions of trading apps' utility. Previous research suggests that traits such as conscientiousness and openness affect technology adoption (Devaraj et al., 2008), whereas demographic factors such as age and gender may serve as moderators (Venkatesh et al., 2003; Lee, 2009). However, there is a notable paucity of research examining these factors within the context of trading apps, particularly among retail investors in India.

The research hypotheses explored the relationships between personality traits, perceived usefulness, and behavioral intention, as well as the moderating effects of age and gender on these relationships.

This study investigated the complex relationship between personality traits and demographic factors in the context of trading app adoption. By analyzing the interaction of these variables, we aim to offer a more detailed understanding of user behavior on digital financial platforms. This understanding can guide app developers and financial educators in devising customized and effective solutions for diverse user groups.

REVIEW OF LITERATURE

PERSONALITY TRAITS

Personality traits are recognized as key determinants of individual behavior across life domains, including financial decision-making. The Big Five Personality Model, comprising Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, is the most accepted framework for understanding personality traits (McCrae & Costa, 1999).

Openness to experience is linked to creativity, curiosity, and readiness for new technology. According to Durand et al (2008), people with high levels of openness are more likely to experiment with digital investment tools and embrace innovative approaches.

Conscientiousness encompasses organization, responsibility, and planning abilities. Conscientious people are more likely to exhibit long-term investment behavior and less frequent but more thoughtful trading (Mayfield et al., 2008).

Extraversion is linked to sociability, assertiveness, and excitement-seeking behavior. Extraverts may engage in more active trading and riskier investments through the apps' interactive, fast-paced nature (Oehler et al., 2017).

Agreeableness encompasses trust, cooperation, and preferences for harmonious interaction. Individuals with high agreeableness may avoid high-risk investments or technologies that require aggressive decision making (Rossier et al., 2005).

Neuroticism is related to anxiety and fear of loss. Neurotic individuals may avoid investing in or overreacting to short-term market movements, leading to inconsistent use of trading apps (Pak & Mahmood, 2015).

Brown & Taylor (2014) show that these traits influence risk-taking behavior, investment preferences and digital finance adoption. Studies suggest that personality traits affect PU. Personality has been proposed as an external factor that affects behavioral beliefs (Devaraj et al., 2008). Shih & Fan (2013) found that individual differences affect the acceptance of technology. Personality traits

predict perceived usefulness (O’Cass & Fenech, 2003). Glassberg (2000) noted optimal stimulation level had significant positive effect on perceived usefulness as a personal characteristic.

Devaraj et al. (2008) found that agreeableness was positively linked to perceived usefulness. They noted that conscientiousness influences the connection between perceived usefulness and intention to use, while neuroticism is negatively related to perceived usefulness. Svendsen et al. (2013) showed extraversion positively relates to perceived usefulness. Landers & Lounsbury (2006) discovered that students' agreeableness, conscientiousness, and extraversion levels were inversely related to Internet usage. Ozbek et al (2014) found that neuroticism negatively affects perceived usefulness, which positively influences intention to use. However, they found insufficient evidence of the effects of extraversion, agreeableness, and openness on perceived usefulness.

The following hypothesis has been formulated based on the above argument:

H1: Personality traits have significant impact on perceived usefulness.

PERCEIVED USEFULNESS

Perceived usefulness is defined as the belief that using technology can enhance performance (Davis, 1989). This concept is particularly relevant to mobile stock trading applications because mobile services offer additional benefits. An individual's attitude is directly influenced by perceived usefulness (Kriřhnan et al., 2016), which increases their intention to adopt a new technology (Pham & Ho, 2015).

Empirical studies have underscored the influence of perceived usefulness in determining behavioral intentions in financial technology. Rahi et al (2019) discovered that perceived usefulness is a significant predictor of intention to utilize internet-banking services, emphasizing its superiority over ease of use. Similarly, Lee (2009) shows that people are more inclined to embrace e banking when they view it as advantageous for managing finance.

Chiu & Cho (2020) highlight the importance of the utility of trading applications for both initial adoption and sustained usage. This factor exerts a greater influence than perceived usefulness. This finding aligns with Technology Acceptance Model (TAM) literature, which suggests that behavioral intention is closely linked to performance-related beliefs about technology (Venkatesh & Bala, 2008).

On the basis of above review, the following hypothesis is formed: -

H2: Perceived usefulness influences the behavior intention to use trading apps.

ROLE OF DEMOGRAPHIC FACTORS

Age influences technological comfort and financial objectives. Research has shown that younger individuals exhibit distinct behaviors compared to older adults. Older individuals approach technology cautiously, preferring face-to-face interactions because of skepticism (Fox & Connolly, 2018). Im et al. (2003) identified age as a significant predictor of new consumer electronic ownership. Harnadi (2019), Lee (2009), Venkatesh et al. (2003), and Venkatesh et al. (2012) explored how age moderates the relationship between various factors and behavioral intention (BI). Venkatesh et al (2012) found age to be a significant moderator, with stronger effects on younger individuals, whereas Lee (2009) considered age less significant. Lee (2009) and Venkatesh et al (2003) investigated age's moderating effect on social influence and BI, with contrasting findings. Venkatesh et al (2003) observed a stronger effect on older individuals, while Lee (2009) found age's impact not significant.

Venkatesh et al (2012) used age as a moderator between perceived value (PV) and habit on BI, finding a stronger effect on older individuals.

Age moderates the relationship between technology usage and perceptions (Yi et al., 2005). Technology anxiety affects adoption differently across age groups, with older individuals experiencing more anxiety (Demirci & Ersoy, 2008; Morris & Venkatesh, 2000; Porter & Donthu, 2006). Age enhances perceived usefulness, cost, and system quality, influencing attitudes towards the intention to adopt mobile banking (Riquelme & Rios, 2010). According to Faqih & Jaradat (2015), age and gender significantly moderate mobile technology adoption in Jordan's healthcare systems.

Due to limited experience with computers and the Internet, older adults tend to have lower self-efficacy perceptions when learning the Internet (Porter & Donthu, 2006). In mobile learning in Taiwan, Wang et al. (2008) found that age moderated effects of effort expectancy and social influence on intention. Older respondents experienced higher levels of insecurity and discomfort than younger respondents (Demirci & Ersoy, 2008).

Some studies argue that age does not significantly influence online behavior. Technologies like computers, Internet, and mobile devices are now accessible to a broader population regardless of age or social class. Hernández et al. (2011) noted that while there was user profile bias during initial technology introduction, demographic differences have diminished over time. In a study of Chinese participants, Chong (2013) found a significant relationship between age and m-commerce usage. Similarly, Martins et al. (2014) discovered that age influences behavioral intention to adopt internet banking in Portugal, with older respondents showing greater intention to use internet banking.

The following hypothesis has been based on the above argument:

H3: Age moderates the relationship between perceived usefulness and intention to use trading apps.

Gender significantly impacts financial behavior, as documented in previous research. Barber & Odean (2001) discovered that men tend to trade more often than women do, largely because of their greater risk tolerance and overconfidence. In contrast, women are generally more cautious and focus on long-term strategies. Gender acts as a moderating factor in the relationship within the technology acceptance model. Harnadi (2019), Lee (2009), Venkatesh et al. (2003), Venkatesh et al. (2012), and Wang et al. (2008) examined the role of gender as a moderator in the acceptance of online gaming and consumer technologies.

Research highlights gender as crucial factor in technology adoption, with males generally more inclined to embrace technological innovations. Zhang & Prybutok (2003) found men more likely to participate in online shopping. Studies on mobile banking (Amin et al., 2006), internet banking (Akinci et al., 2004), and mobile chat services (Nysveen et al., 2005) support that men are more technologically inclined than women. Additionally, Demirci & Ersoy (2008) noted men exhibit higher levels of innovation in technology use.

Gender moderates the relationship between perceived usefulness and behavioral intention. Males exhibit stronger perception of usefulness and are more likely to adopt new technologies based on this perception. Cheung and Lee (2011) found that male students' attitudes towards an Internet-based learning medium were more significantly influenced by perceived usefulness than females. Similarly, Liu et al. (2015) noted that males showed a more positive correlation between personal innovativeness and intention to use mobile coupon applications.

Several studies investigating perceived usefulness show inconsistent findings. Nysveen et al.

(2005) identified no significant gender differences in moderating effects of usefulness. Similarly, Hernández et al. (2011) report no gender disparity in technology usage among experienced online shoppers.

Gender dynamics affect technology adoption differently across cultural and demographic contexts. In rural India, gender roles shape financial decisions, with men handling financial matters while women manage household duties. Consequently, men might be more involved in mobile banking (Glavee-Geo et al., 2017; Riquelme & Rios, 2010). Likewise, Suki (2011) found that in Malaysia, younger, educated males were influenced more by perceived playfulness and ease of use in adopting online music technologies.

Studies have raised questions about gender's significance as a moderating factor despite general trends. Lee et al. (2010) found that gender did not significantly influence behavioral intention. Similarly, Jambulingam (2013) reported that neither age nor gender affects the relationship between determinants of mobile technology adoption and behavioral intention.

Based on review, the following hypothesis is formed: -

H4: Gender moderates the relationship between perceived usefulness and intention to use trading apps.

OBJECTIVES

1. To examine the effect of personality traits (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) on perceived usefulness (PU) of trading apps.
2. To analyze how perceived usefulness affect the behavior intention to use trading apps.
3. To investigate whether demographic factors such as age, gender moderate the relationship between perceived usefulness and behavior intention to use trading apps.

HYPOTHESES

H1: Personality traits have significant impact on perceived usefulness.

H2: Perceived usefulness influences the behavior intention to use trading apps.

H3: Age moderates the relationship between perceived usefulness and intention to use trading apps.

H4: Gender moderates the relationship between perceived usefulness and intention to use trading apps.

Figure1: Research model

Source: Prepared by the authors.

RESEARCH METHODOLOGY

The present research employed a quantitative methodology. The study focuses on retail investors actively involved in trading in the Jammu region of India. A non-probability sampling method, specifically convenience sampling, was used because of the large and hard-to-count population of retail investors. This method allowed easy access to participants who were willing to contribute to the research. Responses from 150 retail investors were collected, which were deemed sufficient for statistical analysis and aligned with the minimum requirements for behavioral research, as suggested by Hair et al. (2019).

The data collection tool was a structured questionnaire designed using validated scales from

previous research. Items assessing personality traits were adapted from Donnellan et al. (2006), perceived usefulness from Venkatesh & Bala (2008), and behavioral intention from Mensah et al. (2020). Each item was evaluated using a five-point Likert scale, with options ranging from strongly disagree (1) to strongly agree (5), to maintain uniformity, comparability, and reliability of the responses among participants.

The questionnaire was distributed online and offline to retail investors in the Jammu region. The study's academic nature was communicated to the participants, and their participation was voluntary. Steps were taken to maintain anonymity and confidentiality of their responses. The Statistical Package for the Social Sciences (SPSS) was used for data processing and analysis.

Table 1.

DATA ANALYSIS AND FINDINGS

Multiple regression analysis was performed to investigate how personality traits, specifically the Big Five dimensions (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism), influence Perceived Usefulness. The Model Summary showed that these predictors together accounted for 23.8% of the variance in perceived usefulness ($R^2 = 0.238$, Adjusted $R^2 = 0.120$). This indicates that personality traits significantly contribute to the variation in perceived usefulness, although a substantial portion remains unexplained by the model. Additionally, the ANOVA findings indicated that the regression model as a whole was statistically significant, $F(20, 129) = 2.016$, $p = .010$, suggesting that when considered collectively, personality traits significantly predicted perceived usefulness.

Upon examining the coefficient table, it was observed that out of all the predictors, only the conscientiousness item C4 ($\beta = .235$, $p = .016$) significantly and positively influenced perceived usefulness. This finding suggests that individuals with higher levels of conscientiousness, particularly in terms of responsibility and task orientation, tend to perceive the system as more useful. The other personality traits, including Openness, Extraversion, Agreeableness, and Neuroticism, did not individually predict perceived usefulness significantly (all p -values $> .05$), although Agreeableness item A4 was close to significance ($p = .093$). Collinearity diagnostics (tolerance $> .40$, VIF < 2.1) showed that multicollinearity was not an issue in the model. The residual statistics indicated no significant deviations, implying that the assumptions of normality and homoscedasticity in the regression were satisfied.

The results indicate that personality traits have a notable, yet moderate, influence on the usefulness of a system. Conscientiousness, in particular, emerges as the most significant predictor, implying that individuals who are more organized and responsible are inclined to view a system as beneficial. Conversely, the effects of the other traits on perceived usefulness were not significant. The lack of significant impact from openness, extraversion, agreeableness, and neuroticism suggests that these traits might have a less direct role in shaping perceptions of usefulness, or that their effects could be influenced by other factors such as ease of use, user motivation, or previous experience with technology. For instance, extraverts might depend more on social approval, whereas those who are open may prioritize innovation over utility.

Table 2

Table 3

Table 4

Table 5

The hypothesis that perceived usefulness influences intention to use trading apps was tested using a regression analysis. Perceived usefulness is a significant predictor of users' intention to use trading apps, as demonstrated by the model's explanation of 39% of the variance in behavioral intention ($R^2 = .390$, Adjusted $R^2 = .386$). Statistical significance was found in the regression model. ($F(1, 148) = 94.775$, $p < .001$), reinforcing that perceived usefulness is a key predictor of behavioral intention. The unstandardized coefficient ($B = .616$, $SE = .063$) indicates that a one-unit increment in perceived usefulness results in a 0.616-unit rise in behavioral intention, assuming that other factors remain constant. The standardized coefficient (Beta = .625) demonstrates a moderately strong positive effect of perceived usefulness on behavioral intention, with the relationship being highly significant ($t = 9.735$, $p < .001$). Since only one predictor is used, tolerance (1.000) and VIF (1.000) indicate that there are no multicollinearity problems. The residual statistics showed a good distribution without extreme outliers, supporting the robustness of the model.

These findings provide compelling evidence in support of the hypothesis. The perceived usefulness of trading apps exerts substantial and favorable impact on behavioral intentions of users to adopt these platforms. This indicates that the greater the perceived usefulness of trading apps, the stronger is the intention of users to engage with them.

Table 6

Table 7

Table 8

Table 9

The moderation analysis tested whether age moderates the connection between behavioral intention to use (BI) and perceived usefulness (PU) of trading apps. The sum of squares of the regression model ($SS = 47.566$) was notably higher than the residual sum of squares ($SS = 70.984$), suggesting that the predictors together account for a significant portion of the variance in behavioral intention. Perceived Usefulness was identified as a significant positive predictor of behavioral intention ($\beta = .624$, $t = 9.709$, $p < .001$). Conversely, neither Age nor the interaction term (PU_Age) emerged as a significant predictor ($\beta = .058$, $t = .897$, $p = .371$) ($\beta = .090$, $t = 1.405$, $p = .162$). Consequently, behavioral intention is strongly predicted by perceived usefulness, age and the interaction effect are not. Tolerance values exceeding .99 and VIF values around 1.00 indicate that multicollinearity is not a concern in this model. The residual statistics showed a balanced distribution, with an approximate 0.69 standard deviation and a mean residual of 0, and no extreme standardized residuals, indicating that the regression assumptions were satisfied.

The analysis indicated that age neither exerts a direct effect nor moderates the relationship between perceived usefulness and behavioral intention. The moderation hypothesis is not supported, suggesting that the PU-BI relationship remains consistent across age groups, suggesting that irrespective of whether users are younger or older; their decision to adopt trading apps is predominantly influenced by perceived usefulness rather than age-related factors.

Table 10

Table 11

Table 12

Table 13

The analysis of multiple regression was conducted to investigate the influence of perceived usefulness, gender, and the interaction between perceived usefulness and gender on the behavioral intention to use trading applications. The model explained about 39.2 percent of the variance in BI total (**R² = 0.392, Adjusted R² = 0.380), and it showed statistical significance (F (3, 146) = 31.394, p < 0.001). The estimated standard error is 0.703, indicating that predicted BI total values closely approximate the observed scores. Analysis of the regression coefficients revealed that PU_c exerted a significant positive impact on BI total (B = 0.664, β = 0.674, t = 6.109, p < 0.001), suggesting that higher perceived usefulness is a strong predictor of increased behavioral intention to use trading applications. Conversely, Gender num (B = - 0.029, p = 0.807) and PU_Gender (B = -0.078, p = 0.564) were not significant predictors, indicating that neither gender nor the interaction of perceived usefulness with gender significantly influenced behavioral intention in this sample. Collinearity diagnostics revealed VIF values < 3 and tolerance values > 0.3, confirming that multicollinearity was not a concern. Residual analyses indicated that the model's assumptions were reasonably met, with residuals centered around zero and no extreme outliers affecting the results.

The findings underscore the importance of perceived usefulness in influencing users' intention to adopt trading apps. The lack of significant effects of gender indicates that perceived usefulness influences behavioral intention similarly for both male and female users. While the hypothesis that perceived usefulness affects behavioral intention was confirmed, the hypothesis suggesting gender as a moderator was not satisfied.

Table 14

Table 15

Table 16

Table 17

CONCLUSION AND IMPLICATIONS

This study explored the elements influencing the acceptance of trading apps among retail investors in Jammu, focusing on personality traits, perceived usefulness, and demographic characteristics. The findings indicate that personality traits collectively play an important role in how investors evaluate trading apps. In particular, conscientious individuals are more likely to perceive trading applications as useful, suggesting that organized, responsible, and disciplined investors tend to value the functional benefits of these platforms more strongly.

The study also confirms that perceived usefulness is the key factor driving investors' intention to use trading apps. Investors are more willing to adopt trading apps when they perceive them as helpful and effective. This relationship remains consistent across different age groups and genders, indicating that perceived usefulness influences adoption intention in a similar manner for all users.

In essence, the study highlights the central role of perceived usefulness in encouraging the adoption of trading applications and demonstrates that individual differences in conscientiousness shape these perceptions. These findings have important implications for developers and marketers of trading applications. Emphasizing the practical benefits and functional value of these applications appears to be the most effective strategy for enhancing adoption, regardless of the target demographic. Additionally, tailoring app features to appeal to conscientious users may further enhance perceived usefulness and increase adoption rates.

Given that usefulness is valued similarly across demographic groups, marketing strategies should prioritize performance, reliability, and ease of use rather than relying solely on demographic segmentation. Furthermore, as many retail investors are still in the early stages of using trading applications, integrating trading technologies into financial literacy and investor education programs may help users make more informed and confident investment choices.

LIMITATIONS AND SCOPE FOR FUTURE WORK

While prior research has produced significant findings, this study has some limitations that warrant consideration. First, the focus on respondents from the Jammu region may limit the generalizability of the results to the broader population of Indian retail investors. Given India's large population and demographic diversity across regions (North, South, East, and West), future research should apply this model to all zones to ascertain parallels and divergences. This will assist tech firms in formulating targeted strategies to meet user expectations. Second, the sample size of 150 participants was relatively small, potentially affecting statistical robustness and conclusion reliability. Third, the cross-sectional design limits the observation of behavioral intention changes over time; future longitudinal studies could provide deeper insights into usage patterns. Additionally, only age and gender were considered as moderating factors, while investment experience, income, and educational qualifications were not examined. Lastly, while the findings highlight conscientiousness in shaping usefulness perceptions, they suggest that other personality traits might influence technology adoption. This finding indicates the need to investigate the interactions between personality and factors such as risk tolerance, investment experience, and financial literacy. Future research should explore how personality traits affect long-term adoption and continued use of trading apps to better understand investor behavior.

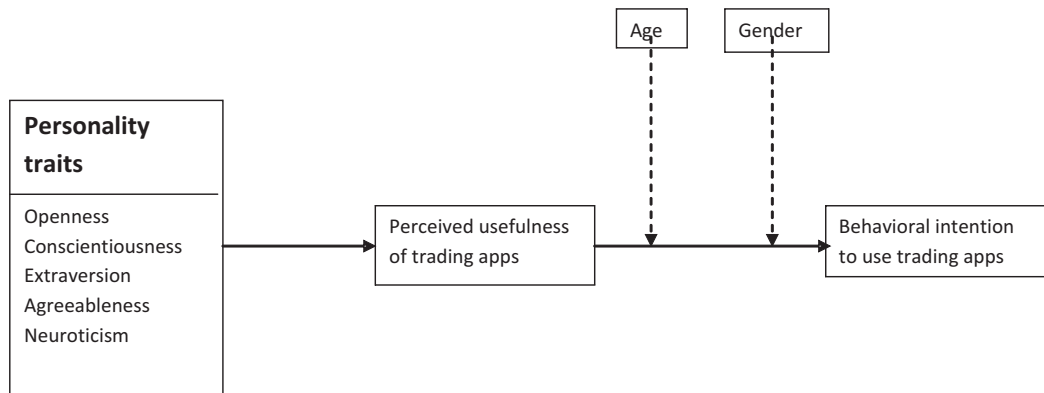


Figure1: Research model

Source: Prepared by the authors.

Table 1. Descriptive Statistics of Survey Data (N = 150)

Variable	Category	Frequency	Percentage (%)
Gender	Male	93	62.0
	Female	57	38.0
Age	18 to 25 years	58	38.67
	25 to 40 years	80	53.33
	40 to 60 years	11	7.33
	Above 60 years	1	0.67
Educational Background	Upto high school	1	0.67
	Higher Secondary	20	1.33
	Graduate	58	38.67
	Post Graduate	66	44.0
	Doctorate	5	3.33
Occupation	Employed (Private Sector)	53	35.33
	Student	51	34.0
	Employed (Public Sector)	23	15.33
	Self Employed	21	14.0
	Research Scholar	1	0.67
	Housewife	1	0.67
Monthly Income	Less than 20,000	46	30.67
	20,000 to 40,000	41	27.33
	40,000 to 60,000	31	20.67
	60,000 to 80,000	13	8.67
	80,000 to 1,00,000	11	7.33
	More than 1,00,000	8	5.33
Investment Experience	Less than 1 year	78	52.0
	1 to 3 years	43	28.67
	3 to 5 years	15	10.0
	More than 5 years	14	9.33

Source: Prepared by the authors.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.488 ^a	.238	.120	.849

Source: Authors' own findings.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.071	20	1.454	2.016	.010 ^b
	Residual	92.997	129	.721		
	Total	122.068	149			

Source: Authors’ own findings.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error				Beta	Tolerance
1	(Constant)	1.404	.620		2.264	.025		
	O1	.057	.074	.071	.769	.443	.700	1.429
	O2	-.020	.077	-.025	-.257	.798	.612	1.633
	O3	.098	.076	.121	1.292	.199	.674	1.485
	O4	-.014	.072	-.019	-.201	.841	.669	1.495
	C1	.029	.069	.042	.426	.671	.613	1.632
	C2	.032	.075	.039	.426	.671	.714	1.400
	C3	-.003	.060	-.004	-.046	.963	.812	1.231
	C4	.187	.077	.235	2.431	.016	.630	1.587
	E1	.039	.065	.054	.594	.553	.723	1.382
	E2	.029	.068	.041	.420	.675	.629	1.589
	E3	-.041	.062	-.060	-.664	.508	.727	1.375
	E4	.029	.071	.039	.414	.680	.676	1.479
	A1	.092	.095	.107	.964	.337	.478	2.091
	A2	.010	.080	.013	.130	.897	.601	1.665
	A3	-.021	.075	-.029	-.284	.777	.569	1.757
	A4	.168	.099	.183	1.691	.093	.504	1.983
	N1	-.003	.067	-.004	-.049	.961	.772	1.295
	N2	-.025	.067	-.031	-.374	.709	.858	1.165
	N3	.050	.074	.068	.670	.504	.581	1.721
N4	-.052	.069	-.071	-.748	.456	.659	1.518	

Source: Authors’ own findings.

Table 5. Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.72	4.78	3.82	.442	150
Residual	-3.139	1.979	.000	.790	150
Std. Predicted Value	-2.506	2.156	.000	1.000	150
Std. Residual	-3.697	2.331	.000	.930	150

Source: Authors' own findings.

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.625 ^a	.390	.386	.69879	.390	94.775	1	148	.000

Source: Authors' own findings.

Table 7. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	46.280	1	46.280	94.775	.000
	Residual	72.270	148	.488		
	Total	118.550	149			

Source: Authors' own findings.

Table 8. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.454	.248		5.851	.000		
	PU _{total}	.616	.063	.625	9.735	.000	1.000	1.000

Source: Authors' own findings.

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0696	4.5325	3.8080	.55732	150
Residual	-3.37858	1.93043	.00000	.69645	150
Std. Predicted Value	-3.119	1.300	.000	1.000	150
Std. Residual	-4.835	2.763	.000	.997	150

Source: Authors’ own findings.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.633	.401	.389	.69728	.401	32.611	3	146	.000

Source: Authors’ own findings.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.566	3	15.855	32.611	.000
	Residual	70.984	146	.486		
	Total	118.550	149			

Source: Authors’ own findings.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.801	.057		66.545	.000		
	PU_c	.615	.063	.624	9.709	.000	.994	1.006
	Age_c	.006	.007	.058	.897	.371	.992	1.009
	PU_Age	.012	.008	.090	1.405	.162	.996	1.004

Source: Authors’ own findings.

Table 14. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.626	.392	.380	.70256	.392	31.394	3	146	.000

Source: Authors' own findings.

Table 15. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.487	3	15.496	31.394	.000
	Residual	72.063	146	.494		
	Total	118.550	149			

Source: Authors' own findings.

Table 16. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.821	.095		40.335	.000		
	PU c	.664	.109	.674	6.109	.000	.342	2.920
	Gender num	-.029	.120	-.016	-.244	.807	.974	1.027
	PU Gender	-.078	.135	-.063	-.578	.564	.348	2.874

Source: Authors' own findings.

Table 17. Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.1380	4.6023	3.8080	.55856	150
Residual	-3.33493	1.86199	.00000	.69545	150
Std. Predicted Value	-2.990	1.422	.000	1.000	150
Std. Residual	-4.747	2.650	.000	.990	150

Source: Authors' own findings.

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Factors Influencing the Consumer Intention to Buy from Online Shopping Platforms: An Empirical Study with reference to North India

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ABSTRACT

The fast advancement of ICT and the proliferation of internet have increased the importance of Electronic Commerce (e-commerce) companies and users. In developing countries, especially in India, e-commerce can play a strong role to overcome financial exclusion and physical distance by allowing local population to shop online. In the recent year, India has witnessed a peak in internet and smartphone penetration in its market. With the help of the "Digital India" initiative, there were 830 million internet users and connections in 2021 (IBEF, 2023). According to the IBEF (2023) report, India's e-commerce industry is expanding as a result of the country's growing internet user base, smartphone penetration, and rising incomes. As India is on its way to becoming the third-largest consumer market, the Deloitte India Report projects that the country's online retail market will grow from US\$ 70 billion in 2022 to US\$ 325 billion by 2030, primarily as a result of the e-commerce industry's explosive growth in tier-2 and tier-3 cities. By offering fresh perspectives on the elements influencing acceptance and the ways in which culture shapes individual use behaviour in a developing nation, the current research contributes to the body of knowledge on e-commerce acceptance. To understand and highlight the role of various constructs, including effort expectancy, performance expectancy, social influence, and individual level cultural values (personal cultural orientations), as key factors influencing the targeted group's perception towards online shopping, the study employs one of the key technology acceptance frameworks, the UTAUT model of Venkatesh et al. (2003), with personal cultural orientations from Sharma (2010). The study's findings demonstrated that, of the factors that were identified, effort expectancy, performance expectancy, social influence, and individual level cultural values, all had a significant impact on behavioural intention for using online shopping, with effort expectancy having the greatest effect.

Key Words: Individual Level Culture, Behavioral Intention, Usage, Online Shopping

Introduction

With the help of sophisticated global applications offered by ICT, people can dynamically communicate across distances in order to accomplish shared goals. Global company operations have undergone a transformation because of ICT advancements and the Internet (Ovia, 2008). Due to the globalisation of the market, the rise in internet access, and the expansion of e-commerce websites and applications, the use of electronic commerce, or e-commerce, has expanded significantly in various regions of the world during the past few years (Sharma and Mehta, 2016).

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Because of the Internet's unique ability to break down geographical barriers and provide convenience, a wide range of businesses are increasingly leveraging this innovative business channel, which has led to the rapid proliferation of e-commerce and the Internet.

As more and more people turn to the Internet to make purchases of products and services, e-commerce is becoming a global phenomenon (Mehta and Sharma, 2019). The most common online activity in the world is shopping, which has helped businesses sell a wider range of goods to consumers and grow their customer base (Loureiro & Breazeale, 2016). The internet has created a dynamic cyberspace with endless opportunities and possibilities for online markets. Traditionally, individuals and families visit shopping centres or specific outlets to shop for items ranging from groceries to fashion clothing, apparel, and electronics (Zahra, Rasheed and Hassan, 2018). The act of buying and selling goods and services online through a portal using internet is known as e-commerce, and it includes online shopping (Howladar et al., 2012). While e-commerce can refer to all economic activities conducted via an electronic medium, online shopping is one component of it (Cao et al., 2010). Customers' shopping and purchasing habits have evolved over the past 20 years, and they now find internet shopping to be quite convenient as it saves them time and energy by eliminating the need to visit physical stores (Williams et al., 2006). As per the research by IBEF (2023), the swift increase in net users and mobile phone penetration, along with rising incomes, has facilitated the growth of the e-commerce sector in India. "As per Deloitte India Report, India is forecasted to become the third-largest consumer market in the world, and the country's online retail market is expected to grow from US\$ 70 billion (in 2022) to US\$ 325 billion by 2030. The reason for this is the rapid e-commerce expansion in country's Tier-2 and Tier-3 cities" (IBEF, 2023).

E-commerce is a rapidly evolving business sector in the globalised world, with its operations erasing national boundaries and nations with advanced e-commerce systems are aiming to attract clients from abroad (Tikhomirova et al., 2021). There is now more competition in the global e-commerce market, so online businesses can no longer trust that just because they create a website, people will visit and make purchases (Mehta and Sharma, 2019). So, understanding why customers plan to make purchases online is crucial for the growth of both domestic and international online shopping businesses (Tarsakoo & Charoensukmongkol, 2019). In order to accomplish this, it is essential for ecommerce platforms that are growing internationally to comprehend the personal characteristics of their potential clients (Tikhomirova et al., 2021). For examining the factors that encourage and hinder online shopping, academic and commercial research has frequently focused on the traits, opinions, perceptions, and actions of consumers (Chaparro-Peláez et al., 2016). According to Alnefaie and Kang (2024), culture is an essential component of human life and greatly influences our attitudes, behaviours, thoughts, and interpersonal relationships. Customers' interactions, communication, and information interpretation with online businesses are influenced by culture. A lot of research has been done on how cultural beliefs affect the adoption and usage of online shopping. Teo and Huang (2019) suggested that developers should evaluate technology acceptance based on people's cultural values in order to successfully create social technologies and increase the accessibility of technological equipment. This is due to the fact that culture has a big impact on how people adopt technology.

Over the past thirty years, Hofstede's cultural framework has dominated research paradigms by being widely applied in a variety of contexts to investigate culture and its effects (Kirkman et al., 2006). Hofstede's model aims to investigate the ways in which culture shapes a country. However, there is a great deal of individual variation in cultural values, which necessitates careful thought

because these variations may have a big influence on a person's behavior. The majority of e-commerce studies on cultural issues examine culture at the national or cross-cultural level using Hofstede's (1980) country scores on cultural dimensions. However, McCoy et al. (2005) contended that using national cultural values for understanding and evaluating cultural traits at individual level is inappropriate. This is due to the possibility that the social, religious, and ethnic groups with their own distinct and diverse cultures can have an impact on and modify the cultural traits that individuals acquire from their national culture. It is necessary to determine users' individual level cultural features in order to avoid using of national level cultural values and characteristics to stereotype the individuals (Ford, Kotze, and Marcus, 2005). Despite the abundance of prior research that has examined the determinants of online shopping intention, only a limited number of studies have addressed the cultural perspective to clarify the way different cultures can influence the online shopping intention (Eine and Charoensukmongkol, 2021).

To cope with these gaps, an empirical study is conducted adopting an individual level culture value perspective. In detail, it is investigated how cultural elements at individual level influences customer online purchase intentions. The study uses one of the important technology acceptance framework "Unified Theory of Acceptance and Use of Technology (UTAUT)" model of Venkatesh et al., (2003), with personal cultural orientations from Sharma (2010) to understand and highlight the role of different constructs namely effort expectancy, performance expectancy, social influence and individual level cultural values (personal cultural orientations) as main factors affecting the perception of the targeted group towards online shopping.

Review of Literature

Acceptance Models

To explain technology acceptance and use, several theoretical models have been developed, primarily based on theories in psychology and sociology (Venkatesh et al., 2012). The Technology Acceptance Model (TAM), which was created by Davis (1986) and has two dimensions—usefulness and simplicity of use—is one of the most well-researched and reliable models for describing the adoption behaviour of information technology (IT) and information systems (IS) (Marchewka, Liu, and Kostiwa, 2007). However, TAM excludes metrics like task fit (Wu, Chen, and Lin, 2007), enjoyment (Bruner II and Kumar, 2003), social factors, and anxiety factors (McFarland and Hamilton, 2006) and attitude toward using technology (Venkatesh et al., 2003). These measures have been included in other technology acceptance models besides TAM, and multiple technology acceptance models' measures have been integrated into a single model. Venkatesh et al. (2003) created the Unified Theory of Acceptance and Use of Technology (UTAUT) model to better understand and predict end users' acceptance and use of information technology. In order to forecast user acceptance and use of information technology more accurately than any one model could have done on its own, this model looked at eight separate models and combined the elements of each into a single, cohesive model. The theory of planned behaviour (TPB), the theory of reasoned action (TRA), the motivational model (MM), the technology acceptance model (TAM), the model of PC utilisation (MPCU), the innovation diffusion theory (IDT), and the social cognitive theory (SCT) have all been integrated into the UTAUT model.

Individual Level Culture

Since, culture is a system of behaviour, values, conventions, and fundamental assumptions, it is difficult to define culture using single definition (Mehta and Sharma, 2019; Bearden et al., 2006;

Myers and Tan, 2002). Culture can be defined in a number of ways, including the way individuals resolve conflicts and solve problems (Schein, 1985); the content that is transmitted and created in meaningful symbol systems such as patterns of values, ideas, and other important human behaviour (Kroeber and Parsons, 1958); and the mental programming which sets one human group apart from another (Hofstede, 1980). Cultural value studies fall into two categories: the first examines cultural values at the national level and looks into how they relate to other national-level constructs (Hofstede, 2001 for a list of examples). The second category holds that an individual's perception of culture can have a different impact on them in a given country (Srite and Karahanna 2006; Karahanna et al., 2005; Ford et al., 2003; McCoy et al., 2005; Sharma, 2010). The current study falls under the second category, which makes the assumption that culture can be studied at individual level and treated as a variable at that level. Individuals in any specific country might be influenced by culture in different ways depending on their own perspective (Srite and Karahanna, 2006; Karahanna et al., 2005; Sharma, 2010). So, culture must be considered as individual-level variable in individual-level analysis (Mehta and Sharma, 2019).

Sharma (2010) fills this void by examining the pertinent literature on consumer behaviour and cross-cultural psychology in order to reinterpret Hofstede's cultural determinants as personal cultural orientations at the individual level. Oyserman et al. (2002a) state that personal cultural orientations at the individual level are made up of both personal beliefs derived from particular individual experiences and common cultural values and conventions. Research on the significance of cultural elements in the field of e-commerce website design has been conducted by Sohaib and Kang (2015), Lacka (2014), and Lim et al. (2004), who are closer to the current setting (online shopping) and field of study. Therefore, the two Hofstede cultural dimensions—individualism against collectivism and uncertainty avoidance—are the most crucial for understanding how cultural dimensions affect online commerce. Rethinking individualism vs collectivism as independence and interdependence, and uncertainty avoidance as risk aversion and ambiguity tolerance, Sharma (2010) reinterpreted Hofstede's cultural elements.

The objectives of the study:

1. To understand factors affecting online shopping usage behaviour of customers.
2. To understand and study the role of individual level cultural values on the use of online shopping platforms.

Hypotheses and Research Model

Performance expectancy means the extent up to which person thinks that engaging in online buying would be advantageous while using e-commerce (Chiemeke and Ewiekpaefe, 2011; Venkatesh et al., 2003). It infers that people will use computers if they perceive benefits from them (Baptista and Oliveira, 2015; Compeau and Higgins, 1995). It is anticipated that one of the key elements directly influencing acceptance intention is performance expectancy (Baptista and Oliveira, 2015; Luo et al., 2010; Bandyopadhyay and Fraccastoro, 2007). According to Rahi et al. (2018), the best indicator of its impact on technology adoption is the performance expectancy variable. Oliveira et al. (2016) and Herrero et al. (2017) provide support for this study by demonstrating that behavioural intention is positively impacted by performance expectations. Performance expectations are a strong predictor of long-term technology use, according to several studies. Research on technology acceptance by Rahi et al., (2019) and Chua et al., (2018), have identified the performance expectancy as major driver of banking technology adoption. Therefore, we hypothesize:

H1: There is a significant relationship between online shoppers' performance expectancy and behavioural intentions to use online shopping.

Chriemeke and Ewwiekpaefe (2011) and Venkatesh et al. (2003). has defined effort expectancy in terms of online shopping (e-commerce) as the degree of ease associated with using e-commerce and this factor refers to the perceived amount of work that the user needs to invest to understand and operate e-commerce. Numerous studies reveal that users are more likely to embrace a technology that they believe to be simpler to use than others (Davis, 1989). Ease of use (Moore and Benbasat, 1991), complexity (Thompson et al., 1991), and perceived ease of use (Davis et al., 1992) are the metrics used to evaluate effort expectation. Some customers are savvier when it comes to internet buying than others, so they should anticipate using the services with less difficulty and becoming used to them more quickly.

Additionally, it is researched that the persons' effort expectancy in terms of ease-of-use, would increase their likelihood of using them again in the future (Abbad, 2021; Beh et al., 2021; Queiroz et al., 2021). Martins, Oliveira, and Popovic (2014) and Miltgen et al. (2013) also claimed in their studies that effort expectancy helps us make accurate predictions about whether someone will adopt a new technology. Earlier, Venkatesh et al. (2012) looked into this and claimed about the link between effort expectancy and behavioural intention in the context of customers. As a result, we hypothesize:

H2: There will be a significant relationship between online shoppers' effort expectancy and behavioural intentions to use online shopping.

The degree to which a person believes that significant persons (e.g., peers, superiors, subordinates, relatives, etc.) think that they must engage in e-commerce is known as social influence (Chiemeke and Ewwiekpaefe, 2011; Venkatesh et al., 2003). The normative pressure that comes from a person's social group's recommendation of their use of technology and their desire to match up to the group's common perception of it is reflected in social influence (Venkatesh et al., 2012). It is made up of social factors, subjective norms, and image constructs that have been found to share conceptual similarities. According to research, customers' intents about technological views are largely determined by their social norms, both directly and indirectly (Tan, Chong and Lin, 2013; Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez, 2015). Social influence has a statistically significant direct effect on behavioural intentions, according to Tarhini et al. (2017) and Wang and Sun (2016). Earlier studies conducted on acceptance behaviour by authors Wei and Lu (2014), Akbar (2013), Venkatesh et al. (2012) and Venkatesh et al. (2003), it was asserted that social influence has direct impact on behavioural intentions. But according to Alalwan et al. (2018) and Straub (1997), social influence had a direct impact on behavioural intentions that was only marginally statistically significant. Therefore, we hypothesize:

H3: There will be a significant relationship between social influence on online shoppers and their behavioural intentions to use online shopping.

Research on how culture and individual values affect the adoption of technology and commerce has become increasingly important in recent years (Vos & Boonstra, 2022; Vatan et al., 2022; Gvili & Levy, 2021). One of the most frequently mentioned obstacles to the successful adoption of technology is a lack of understanding of the cultures and cultural differences of consumers (Alvarez Jaramillo et al., 2019). The studies conducted by Tarhini et al. (2017) and Alshare and Mousa (2014)

on technology acceptance, it was found that cultural factors play a crucial role in technology acceptance. Im et al. (2011) and Srite and Karahanna (2006) assert that culture influences how people use information systems and cultural values even have a significant moderating effect on people's acceptance of technology. Park, Yang, and Lehto (2007) argue that cultural factors should be included in acceptance models as it has been discovered that some variance in how people view and use IT can be explained by differences in country cultures (Png, Yan and Wee, 2001; Tan, Watson and Wee, 1995; Straub, 1994). Despite earlier investigations, there is still a dearth of research on cultural variations and differences in technology adoption, which restricts understanding of this concept for both developers and consumers (Harnadi, 2025).

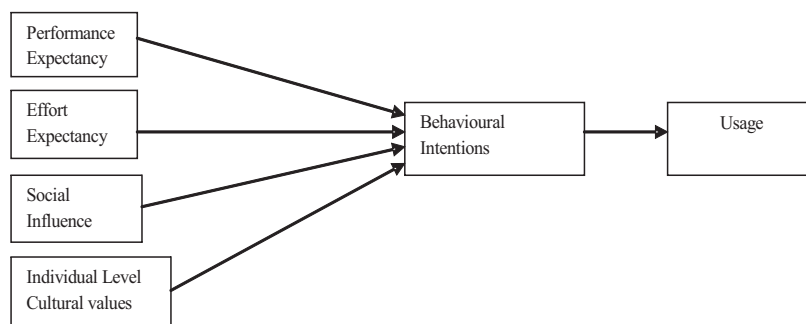
As was previously indicated, most IS research operationalizes culture at the national or cross-cultural level when addressing cultural concerns connected to technological acceptability. Since most IS research on cultural issues pertaining to technology acceptance operationalizes culture at the national or cross-cultural level, it is not possible to assume that the cultural characteristics of the entire country under study are representative of its citizens. This is because it's possible that belonging to social, religious, or ethnic groups that have different cultures from one's own may affect or change the cultural qualities that people pick up from their own culture. Thus, in order to comprehend the cultural issues, individual level cultural values are used and we therefore hypothesize:

H4: There is a significant relationship between individual level cultural values of online shoppers and their behavioural intention to use online shopping.

Usage of an ecommerce platform can be defined as the degree and manner in which customers utilize the capabilities of an online shopping environment like frequency, appropriateness, extent, and purpose of platform use (Petter, DeLone and McLean, 2008). According to Fishbein & Ajzen (1975) and Davis (1989) user acceptance and actual system usage behaviour are determined by the user's behavioural intention to utilise the information system As studied by Purwanto & Loisa (2020), a consumer's intention to carry out particular actions is referred to as behavior and the intention to use mobile banking systems has a favourable and significant impact on how people actually use them. Mardiana, Tjakraatmadja, and Aprianingsih (2015) also in their study stated that a user's attitude before using the system indicates their intention to use it and this intention will lead to actual use. Additionally, Tandi and Questier (2014) found that actual utilisation of communication technologies is predicted by behavioural intention. Hence, we hypothesize:

H5: Behavioural intention is significantly related to online shopping usage.

Based upon these hypotheses, the Research Model proposed is:



Source: Proposed by author

Research Methodology

Sample Size and Design

For the purpose of sampling, the population from North India has been divided into two mutually exclusive and exhaustive strata, one for each of the two cities, namely Jammu (a Tier 3 city) and Chandigarh (a Tier 2 city). Afterwards, random sampling technique has been applied to each stratum to form a test group. Online shoppers from these two cities were selected as study participants. The information was gathered from staff members and students at various colleges and universities located in these two cities and had shopped online recently during the past 3 months. Around 800 online shoppers (400 from Jammu and 400 from Chandigarh) were contacted offline and online using a structured questionnaire. According to Krejcie and Morgan (1970), a sample size of 384 is advised for an indefinite population or more than 10 lakh respondents, while Schumacker and Lomax (2004) proposed that a sample size of 250–500 respondents is adequate for consumer research. As a result, the study's sample size was rounded up to 400. Out of the 800 responses received only 585 (285 from Chandigarh and 300 from Jammu) were found to be complete in all respects and thus comprised the final effective sample size.

Questionnaire: A questionnaire was used to gather the necessary data. There were four sections on the questionnaire. Five questions are included in the first section, which is about the respondents' demographic data. The second section has a total of 16 questions and used to measure individual level cultural values. Scale encompassing the four major dimensions of Personal Cultural orientations namely Independence, Interdependence, Ambiguity Intolerance, and Risk Aversion that can explain individual level cultural values has been adopted. The items used for measuring these four were adapted from Personal Cultural Orientations scale given by Sharma (2010). In addition, 15 questions were employed in the third section to measure e-commerce acceptance behaviour. The items were taken from Venkatesh et al. (2003)'s UTAUT model and used by Celik (2015) to measure the UTAUT constructs of Performance Expectancy, Effort Expectancy, Social Influence and Behavioural Intention. In the fourth section, Usage was measured with the items take from the study done by Klopping and McKinney (2004) and Davis (1989). A 5-point Likert scale was used to rate the questionnaire item ("Strongly agree," "Agree," "Neutral," "disagree," and "strongly disagree," respectively; see points 5, 4, 3, 2, 1).

Validity and Reliability Tests

The instrument's face validity and content validity were ensured by the literature review and a pilot study with 200 participants. The pretesting procedure made sure that participants comprehended the instrument's items precisely as the researcher had intended. The researcher then gathered the final set of data.

Cronbach's alpha was used to assess the scales' reliability after the data was imported into IBM SPSS 21.0, and the results fell within the permissible range of 0.70–0.95 (Sharma & Mehta, 2016; Tavakol & Dennick, 2011). Table 1 provides the values for Cronbach's Alpha. The prerequisites for conducting an exploratory factor analysis were then verified. Both the Kaiser-Meyer-Olkin (KMO) and the Bartlett test of sphericity showed significant results, above the minimum value of 0.70.

Table1. Cronbach's Alpha

Reliability Statistics	Cronbach's Alpha	Number of Items
Performance Expectancy (PE)	.802	4
Effort Expectancy (EE)	.827	4
Social Influence (SI)	.743	4
Behavioural Intention (BI)	.840	3
Usage (U)	.810	4
Individual Level Cultural Values (ILCV)	.832	16

Source: Based on results.

Data Analysis and Interpretation

Multiple regression analysis was done on SPSS using Enter method for testing the hypotheses 1, hypothesis 2, hypothesis 3 and hypothesis 4 (Tables 3 and 4).

Table 2. Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.596 ^a	.434	.421	.44561

a. Predictors: (Constant), ILCV, SI, PE, EE

Table 3. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.216	.359	-.602	.548	
PE	.152	.060	.184	2.359	.001
EE	.374	.087	.330	4.315	.000
SI	.133	.058	.149	2.354	.020
ILCV	.383	.026	.210	18.695	.000

a. Dependent Variable: BI

According to the above tables, the behavioural intention (BI) R² value is 0.421, meaning that 42.1 percent of the variance of the construct was explained by effort expectancy (EE), performance expectancy (PE), social influence (SI), and individual level cultural orientations (ILCV). Effort

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expectancy (beta = 0.330) has the biggest effect on behavioural intention, followed by personal cultural orientations (beta = 0.210), performance expectancy (beta = 0.184), and social influence (beta = 0.149).

The results revealed that effort expectancy (EE), performance expectancy (PE), social influence (SI), and individual-level cultural orientations (ILCV) all have a big positive effect on the behavioural intention (BI) to use online shopping, with beta coefficients of 0.330, 0.184, 0.149, and 0.210, respectively. So, hypotheses 1, 2, 3, and 4 are accepted.

In addition to this, multiple regression analysis was applied again to test the study's hypothesis 5. Table 4 and 5 show that Behavioural Intention (BI) explains a lot of the differences in usage ($p < 0.01$, $R^2 = 0.347$, Adjusted $R^2 = 0.346$). With a beta coefficient of 0.589, Behavioural Intention (BI) has a big positive effect on usage (U).

Table 4. Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.589	.347	.346	.64509

a. Predictors: (Constant), BI

Table 5. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.127	.162		.785	.433
	BI	.957	.042	.589	23.000	.000

a. Dependent Variable: U

Discussion and Implications

This novel theoretical model combines the individual level cultural values (personal cultural orientation components) from Sharma (2010) with the UTAUT model given by Venkatesh et al. (2003) to explain the acceptance and usage of e-commerce. The study revealed that 42.1% variation in the behavioural intention can be demonstrated by the present research model. It was shown that behavioural intention over use was significantly influenced by different dimensions namely effort expectancy, performance expectancy, social influence, and individual cultural orientations.

The factor that has the biggest influence on e-commerce use is effort expectancy. The results demonstrated that when consumers perceive online shopping to be convenient and beneficial, they are more likely to use it. Long-term, regular use of technology should reduce effort expectancy, according to a number of scholars (Agarwal and Prasad, 1997; Thompson et al., 1991; Thompson et al., 1994). However, recent studies show that its predictive power remains valid in situations of voluntary technology adoption (such as online shopping) even after the initial experience period (Lin and Nguyen, 2011). The results of the study also demonstrate that effort expectancy has a higher path

coefficient (0.330) to behavioural intention than performance expectancy (0.184), confirming the importance of effort expectancy in acceptance.

In a global setting, e-commerce businesses may benefit from the implications of this study. Businesses can create acceptance strategies for online shopping platforms that, in the end, encourage the use of IT. Individual cultural values play an equally important role in the design of an online shopping platform as do performance acceptance, effort expectancy, social influence, and facilitating conditions. This study also demonstrates how culture influences the adoption of e-commerce in India, a sizable emerging market with huge commercial potential for global e-commerce companies. In this way, the study's findings can help companies looking to profit from the Indian market. The findings show that individual cultural values have an impact on consumers' intentions to use online shopping platforms. From a marketing perspective, this information can be used to develop useful products for clients who are more likely to shop online in India.

From an academic perspective, this study seeks to advance knowledge of online shopping platform acceptance and usage in Indian culture, thereby contributing to e-commerce research. Additionally, in order to better understand how Indian online buyers use e-commerce in their lives, the UTAUT model proposed by Venkatesh et al. (2003) was expanded to include individual level cultural values. This is the first study to look at how individual-level cultural values and UTAUT variables affect e-commerce usage in India. The results show that Indian cultural values support online shopping.

Conclusion and Future Scope of Research

To achieve the first goal of the study, which was to identify the factors influencing e-commerce acceptance and usage, a number of constructs affecting acceptance of online shopping platforms were examined with the help of hypotheses 1, 2, 3, and 4. Behavioural intention over use was found to be significantly influenced by social influence, individual level culture, effort expectancy, and performance expectancy. Among these, effort expectancy was the most influential, followed by social influence, performance expectancy, and cultural values at the individual level, in that order. Thus, the main objective of the study was accomplished.

The second objective of the study was to look into how people's acceptance of online shopping and e-commerce is influenced by their own cultural values. This study has offered both theoretical and empirical support for the positive correlation between online shopping and personal cultural orientation, which defines cultural values at the individual level. This implies that cultural values promote online shopping.

In a worldwide setting, e-commerce businesses may benefit from the implications of this study. Businesses can create acceptance strategies that, in the end, encourage online purchasing. While performance expectations, effort expectations, and the social influence are crucial when it comes to using technology, culture also plays a big part in the design of e-commerce websites through personal cultural orientations. Marketing-wise, this information can be used to develop solutions that benefit customers and have a higher likelihood of being adopted. Finally, this study aims to improve our knowledge of how e-commerce shopping platforms are accepted in non-Western cultures. The current study builds on previous research by integrating individual level cultural values and investigating the ways in which these cultural values influence consumers' technological acceptance behaviour.

Despite its implications and contributions, this study has limitations and offers room for further investigation. First, internet shoppers from two cities in the state of North India make up the study's

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sample. Expanding the sample size to include a greater number and a wider range of units for analysis would be advantageous in future studies. Furthermore, a broader sample of people from different states, ethnic groups, and technological advancements can validate the study's findings, which could reveal similarities and differences in the uptake of e-commerce. Additionally, because cross-sectional data only captures a single point in time, researchers may want to consider conducting a longitudinal analysis to delve deeper into the study's findings.

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ARTS & HUMANITIES

On time and Flux : A review essay of modernist and postmodernist works

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ABSTRACT

Time has been a very interesting theme of any discipline like literature, science, philosophy and religion. Art and culture, somehow, try to capture the reality but the expression and symbols of projecting the notion of time differ from artist to artist. On the other hand, flux describes something that always changes from one form to another. Flux also means the continuous flowing of multiple events that cause multifaceted reality and plurality within it. This review essay attempts to show the politics of representation of time and its varied connotations in the literary and cinematic texts.

Key Words: Time, flux, modernism, postmodernism,, non-linearity

Introduction

Body of discussion:

Modernist artists believed that their reality is fluid. It is fleeting way. Therefore, they experimented with the stream of consciousness mode. To some extent, they also retained belief in the notion of the clock time. French philosopher Henri Bergson came up with his theory of Duration or 'Duree' which is about time and consciousness. It is both linear and chronological. Duration, to him, is the stream of time. It can only be seen through small fragments and can never make a complete image. To grasp duration, one has to depend on intuition. Charles Baudelaire in his poem 'Paris spleen' discusses time as a pressure that does not let people fully enjoy their lives- "You have to be always drunk. That's all there is to it- it's the only way. So as not to feel the horrible burden of time that breaks your back and bends you to the earth, you have to be continually drunk." In the poem 'The clock' from "The Flowers of evils" he discusses time as evil-

“...Clock! Terrifying, Sinister god,
Whose finger threatens us and says: “Remember!
The quivering sorrows will soon be shot
Into your fearful heart, as into a target”

According to Baudelaire, “Time is a greedy player.” We can never grasp time but we can know its existence through fragments. To Baudelaire and Bergson, time is superior to human being. Salvador Dali's 'The persistence of memory' is a surrealist work that depicts melted clocks. It signifies that time is fleeting away. Dali defined art as hand painted dream photographs. It can also be interpreted that it is dream state where the melting clocks symbolize the time. It also epitomizes the delusive feature of time. The melting clock symbolizes the world, technology and its progressed society losing power against time.

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In 'Passing time' Maya Angelou describes the ongoing floating nature of time. In the poem 'In a dark time' Theodore Roethke utilizes dark time in order to get familiar with her silent, dark, buried selves. She wants to free her fear, desires one by one at night. 'Always for the first time', 'Less time' by Andre Breton— these poems connote the surrealist impression of time.

The chiming of 'Big ben' is a refrain in Woolf's "Mrs. Dalloway" where the author narrates her story about a single day. Woolf has written this novel in the stream of consciousness technique that indicates her spontaneous stream of thoughts but is interrupted by the ticking of clock. In 'Rhapsody on a windy Night', Eliot tells the clock time at every intervals. Joyce in "Ulysses" plays with the very concept of time. For Fredric Jameson, postmodernism is a reaction against the totalizing philosophies of the enlightenment period. Jean Francois Lyotard argues that the word postmodern implies a meaning of the notion 'postmodern' as something coming after modern. According to Lyotard, one point about this perspective is that the 'post' of postmodernism has the sense of a simple succession, a diachronic sequence of periods in which each one is clearly identifiable. The post indicates something like a conversation; a new direction from the previous. Postmodernism celebrates paradoxes, plurality, irony, hyperrealism, metafiction, vague concept of time, history and space, open endedness etc. History is associated with time. It is the study of the past which is generally considered as linear, institutionalized, and constructed according to the modernist point of view. On the other hand, postmodernists believe that the individual experiences are more important than the any structured, hierarchical pattern of history. Linda Hutcheon in her "A poetics of postmodernism: History, theory, Fiction" states that Historiographic metafiction refutes the natural or common sense of distinguishing between historical fact and fiction. In the modernist notion, time is the flow that goes with the string of events or with the flow of story. Postmodernist breaks the rules about time to go beyond the established norms of fiction writing. To them, time is multifaceted; there is the disruption of clock time. The author can posit his characters in present time and can suddenly go back to past. Therefore, these writers play with the possibilities of subjective and objective experiences of time. Apart from it, postmodernist novelists deal with the psychological time. Psychological time refers to the time that occurs in our mind, memory. In "The French Lieutenant's Woman" John Fowles uses the notion of 'New Woman' in the reference of Victorian age. Thus, he intermingles present, past and future within a single whole. He also states that Sarah woodruff has been found sleeping in Rossetti's house. It shows the postmodern concept of time. In "If on a winter's Night a traveller," Italo Calvino firstly states that it is not the story rather fragmented experiences of the reader who will read it. The book opens with a curious line "You are about to begin reading Italo Calvino's new Novel, If on a Winter's night a traveller." This statement shows the gap between the reality and the fiction. "Inception," "Eternal sunshine of the spotless mind," "About time," "Midnight in Paris" are some movies where the directors experiment with the clock time. They also depict dream within dream in the conscious mind of the characters. Disruption in clock time creates psychological anarchy as well as the unresolved flux.

Postmodern drama revisits past to distort the notion of linear progress of time and events. Tom Stoppard in "Artist Descending a staircase" uses flashbacks, jump in scenes etc. On the other hand, this title is taken from the masterpiece Of Marcel Duchamp ("Nude descending a Staircase, No.2") Beckett in "Waiting for Godot" experiments not with the structure of the play but also with the language and the very notion of time. 'Tomorrow will never come' becomes a catch phrase that unfolds many unresolved, multidimensional facts. To him, tomorrow is not a particular time or a day rather it is his revelation, utterance about the deep-rooted futility of his existence. "Six characters in Search of an Author" by Luigi Pirandello is the absurdist metatheatrical play about the fleeting relationships among

author, readers, characters and theatre practitioners. This unique play deconstructs the existing, pre-conceived belief about the origin of any creation and shows the ungraspable flux latent in the text as well as in our mind.

Bertolt Brecht has created alienation effect in his plays in order to make the audiences thoughtful about the gulf between the reality and the fiction. He has used his plays as political propaganda. Moreover, Jean Baudrillard has popularized the concept of 'Hyperreal' which signifies something "more real than real." In this context, he has referred to the Disneyland which is full of illusions, phantasms, imaginary elements etc. This ambiguity, somehow, upholds the truth behind flux.

In this way, the concept of time has been changed in the context of Modernism and Postmodernism. Thus, this review essay tries to project the changing meaning and ethos of time and flux by pointing out some modernist and postmodernist literary and non-literary texts.

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Counter-Modernity and Ecosystem: A Socio-Cultural Analysis of the Puroik Tribe in Arunachal Pradesh

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ABSTRACT

This research paper delves into the socio-cultural fabric of the Puroik tribe of Arunachal Pradesh, India, examining how their traditional lifestyle embodies principles of counter-modernity and sustainable ecosystem interaction. Historically marginalized and subjected to bonded labour, the Puroik community has maintained a unique cultural identity through oral traditions, indigenous practices, and a deep connection with their natural environment. This study employs qualitative methodologies, including ethnographic fieldwork and literature review, to explore aspects such as demography, language, food habits, lifestyle, and the impact of governmental policies. The findings highlight the resilience of the Puroik people in preserving their cultural heritage amidst external pressures and the significance of their ecological knowledge in contemporary discussions on sustainable living.

Key Words: Puroik Tribe, Counter-Modernity, Indigenous Practices, Ecosystem Sustainability, Arunachal Pradesh

Introduction

The question of modernity and its impacts on indigenous communities has long been a central concern within postcolonial and anthropological studies. In the rapidly transforming socio-economic landscape of Northeast India, the Puroik tribe of Arunachal Pradesh offers a pertinent case study for interrogating the tensions between traditional indigenous lifeworlds and the pressures of modernisation. Known until the late twentieth century by the exonym 'Sulung'—a label heavily associated with a stigmatised history of bonded labour and subjugation—the community's official adoption of the name 'Puroik' in 1976 was not merely semantic but symbolic of a broader reclamation of identity and autonomy (Taba, 2023). The Puroiks' struggle is emblematic of counter-modernity, a form of resistance that does not reject progress per se, but questions the homogenising and extractive logic of mainstream development models.

Geographically, the Puroik tribe is dispersed across the East Kameng, Kurung Kumey, Papumpare, West Kameng, and Upper Subansiri districts of Arunachal Pradesh, with smaller populations scattered in the adjoining areas of Assam. Their settlements are typically located in hilly, forested zones, far removed from urban centres, thus fostering a way of life that is intricately interwoven with the local ecology. The Puroiks are not merely inhabitants of these environments; they are ecological participants whose livelihood, cosmology, and social practices reflect a deep respect for the land and its regenerative cycles (Ramjuk, 2023). In this context, counter-modernity is not a reactionary stance but a lived epistemology grounded in interdependence, sustainability, and non-anthropocentric worldviews.

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Unlike many communities that have experienced forced assimilation through policy mechanisms and cultural erasure, the Puroiks have resisted such transformations by cultivating adaptive resilience. Their economy, though increasingly impacted by external interventions, still draws significantly on forest-based subsistence activities such as sago extraction, foraging, hunting, and fishing. This ecological embeddedness is not only material but epistemic—constituting a mode of knowledge production that challenges the Cartesian binaries of nature versus culture, human versus non-human, and tradition versus modernity (Blench, 2008). The Puroik worldview exemplifies what Arturo Escobar terms a 'pluriverse'—a world where multiple ways of knowing and being coexist, often in opposition to the singular, technocratic trajectory of Western modernity.

Historically, the Puroik community has been subject to structural discrimination and socio-economic exclusion. One of the most egregious manifestations of this has been the legacy of bonded labour. Often forcibly attached to dominant tribal groups such as the Nyishi, many Puroik families were compelled into hereditary servitude without access to education, land, or civic participation (Taba, 2023). While legislative interventions and social activism have brought some relief, the scars of this historical injustice continue to influence their contemporary socio-political positioning. Despite being designated as a Scheduled Tribe (ST) by the Government of India in 1994, the benefits of state welfare schemes have been unevenly distributed, and the community still grapples with issues of livelihood insecurity, educational deprivation, and political marginalisation (Ramjuk, 2023).

Moreover, the assimilationist tendencies of mainstream development policies often overlook the distinct needs and knowledge systems of tribes like the Puroiks. Projects involving deforestation, infrastructure development, or relocation disrupt their traditional territories and practices, thereby engendering forms of cultural dislocation and ecological degradation. The state's development agenda, although well-intentioned in principle, frequently prioritises economic indicators over cultural sustainability and environmental ethics. Consequently, the Puroik experience illuminates a paradox within the discourse of modernity: the promise of progress comes at the cost of dispossession and epistemic violence. As Taba (2023) argues, any meaningful policy intervention must be historically informed, culturally sensitive, and community-driven.

In terms of cultural resilience, language serves as a crucial vector for identity maintenance among the Puroiks. Though their language lacks a formal script and is largely transmitted orally, it encapsulates a wealth of indigenous knowledge—ranging from ethnobotany and ecological ethics to kinship structures and ritual practices (Blench, 2008). Oral traditions are not passive carriers of the past but active instruments of cultural continuity, enabling intergenerational knowledge transfer and collective memory formation. In this sense, the Puroik language is not merely a communicative medium but a repository of an entire epistemological universe.

The role of women within Puroik society further challenges conventional assumptions about gender in tribal communities. While patriarchy is present to varying degrees, women often play vital roles in agricultural production, food gathering, and ritual performance. Their embodied knowledge—especially in areas like herbal medicine, forest navigation, and food processing—is integral to the community's survival strategies. However, the imposition of external legal and bureaucratic frameworks has sometimes disrupted these traditional roles, rendering women more vulnerable to marginalisation under the guise of development (Ramjuk, 2023).

Educational access is another critical arena where the tension between counter-modernity and state-driven modernisation is vividly evident. While the expansion of literacy is undoubtedly a positive development, the pedagogical models employed in formal schools often fail to reflect or

respect indigenous epistemologies. The result is a form of cultural alienation, wherein Puroik children are taught to disassociate from their own traditions in order to succeed within a system that privileges mainstream norms and languages. This is not merely a cognitive shift but a political act, wherein the community's indigenous knowledge systems are rendered invisible or inferior. To rectify this, scholars and activists have advocated for multilingual education models that incorporate mother-tongue instruction alongside official state languages, thereby promoting inclusive and culturally relevant learning outcomes (Taba, 2023).

The broader ecological significance of the Puroik way of life cannot be overstated. In an era marked by climate crisis, biodiversity loss, and unsustainable resource extraction, their practices of rotational agriculture, minimal waste production, and seasonal foraging provide viable alternatives to the dominant modes of consumption. Their embeddedness in the ecosystem is not a romanticised relic of the past but a forward-looking strategy for survival. This aligns with contemporary calls for ecological justice, which argue for the integration of indigenous environmental stewardship into national and global sustainability agendas. In this light, the Puroik community is not a 'backward' population in need of modernisation, but a knowledge-bearing collective that can contribute meaningfully to planetary well-being.

To understand the Puroik tribe through the lens of counter-modernity, then, is to recognise the legitimacy of alternative lifeworlds and the necessity of pluralistic futures. It demands that scholars, policymakers, and civil society actors move beyond tokenistic inclusion and engage in sustained dialogues with indigenous communities on their own terms. The Puroik people, despite enduring historical trauma and contemporary marginalisation, continue to embody a mode of life that values reciprocity, ecological balance, and cultural dignity. Their story is not only one of survival but of critical resistance—resistance that speaks not just to the past but to the urgent imperatives of the present and the possibilities of the future.

Methodology

The methodology adopted for this research stems from a qualitative and interpretive framework, acknowledging the complexities and nuances of studying an indigenous community like the Puroiks, who have historically been underrepresented and often misrepresented in mainstream discourses. Given the socio-cultural embeddedness of the research questions, qualitative tools such as ethnography, in-depth interviews, oral history collection, and participant observation were deemed most appropriate. These tools enable a deeper engagement with the lived experiences, belief systems, and ecological practices of the Puroik people, allowing for an insider-oriented representation of their lifeworlds.

The research employed a triangulated methodological design, integrating field-based primary data collection with extensive secondary literature review. Field visits were conducted in selected Puroik-inhabited areas of East Kameng, West Kameng, Kurung Kumey, and Papumpare districts between September 2023 and January 2024. The selection of these regions was based on demographic significance and accessibility, ensuring a broad representation of the Puroik population across diverse ecological zones. Local NGOs, such as the Arunachal Puroik Welfare Society (APWS), and community leaders were consulted to establish rapport with informants and gain consent for participation.

Participant observation was one of the foundational research tools, enabling the researcher to closely observe community practices including rituals, food preparation, agricultural techniques, linguistic usage, and daily social interactions. The unobtrusive nature of this method was particularly

suitable for a community like the Puroiks, whose traditional reticence towards outsiders often inhibits direct questioning. Spending prolonged periods within the community, partaking in their meals, attending festivals, and living in close proximity to their environment allowed for the emergence of tacit cultural knowledge which may not have surfaced through formal interviews alone.

Semi-structured interviews were conducted with 28 individuals, comprising elders, women, youth, and traditional knowledge keepers. These interviews were conducted in the local dialects with the aid of translators, and were audio recorded (with permission) to maintain accuracy. Questions centred around traditional ecological practices, linguistic usage, gender roles, food systems, and perceptions of governmental policies. The flexibility of the semi-structured format permitted the participants to narrate their stories freely, often leading to rich, layered accounts of memory, migration, and resistance. All participants were made aware of the ethical protocols, including their right to withdraw at any time and the guarantee of anonymity.

In addition to the interviews, oral histories were gathered from elders who possess cultural memory of past generations, including experiences of bonded labour, forest dwelling, and community displacement. This was crucial, as much of the Puroik history remains undocumented in written sources. These oral histories offered insights not only into individual trajectories but also collective narratives of endurance and transformation. As Taba (2023) notes, the absence of written documentation has historically placed the Puroiks at the margins of policy planning and scholarly discourse; thus, oral accounts serve as a vital epistemic intervention.

Secondary data was sourced from government reports, anthropological surveys, linguistic fieldwork (e.g., Blench, 2008), and peer-reviewed journal articles. These sources provided the historical and policy context necessary for triangulating findings and understanding how state-driven narratives have evolved concerning the Puroiks. Documents from the Office of the Registrar General of India, the Ministry of Tribal Affairs, and the Arunachal Pradesh state archives were reviewed to gain demographic and legal data. Ethnographic works such as those by Ramjuk (2023) were also instrumental in situating the present research within an existing academic conversation.

Data analysis was conducted through thematic coding using NVivo software. Recurring patterns, motifs, and concerns voiced by participants were categorised under broad themes such as "ecological knowledge," "linguistic resilience," "gendered labour," and "policy neglect." This thematic approach allowed for both inductive insights and deductive comparisons with existing literature. Field notes were simultaneously examined to cross-reference observations with verbal accounts, ensuring methodological rigour and consistency.

Ethical considerations were integral throughout the research process. Informed consent was obtained verbally due to varying literacy levels among participants. Confidentiality was ensured by anonymising names and locations. The research protocol adhered to the ethical standards of the Indian Council of Social Science Research (ICSSR) and was approved by the Institutional Research Ethics Committee of Nagaland University.

The methodological choices underpinning this research recognise the importance of decolonising knowledge production. Instead of imposing an external academic gaze, the study foregrounds Puroik voices, experiences, and epistemologies, aligning with Spivak's (1988) critique of epistemic violence and the need for subaltern articulation. By embedding the research in community-grounded methods and privileging emic perspectives, this paper contributes to an ethically responsible and contextually grounded understanding of the Puroik way of life.

Demography

The demographic structure of the Puroik tribe reveals patterns of marginalisation, spatial dispersion, and slow-paced socio-economic mobility, all of which significantly influence their socio-cultural dynamics. According to the 2011 Census of India and subsequent state surveys, the Puroik population is estimated at over 10,000 individuals (Taba, 2023). However, unofficial estimates by local organisations, such as the Arunachal Puroik Welfare Society, place the number closer to 15,000, considering undercounting in remote areas and migratory patterns.

The community is primarily concentrated in the East Kameng district of Arunachal Pradesh, which is home to over half the Puroik population. Other significant settlements exist in the districts of Kurung Kumey, Papumpare, West Kameng, and Upper Subansiri. A few groups have migrated to Assam's Sonitpur and Biswanath districts, forming enclaves that maintain close ties with their ancestral roots. Most Puroik settlements are located in mountainous terrains, near forest fringes, or along river valleys, thereby sustaining their traditional forest-dependent lifestyle.

These geographical locations, while enabling ecological resilience, also result in infrastructural neglect. Many villages remain unconnected by motorable roads, and access to healthcare, education, and public distribution systems remains uneven. The demographic challenge thus intersects with spatial marginality—a condition where physical remoteness reinforces socio-political invisibility. As Taba (2023) highlights, the developmental outreach of the state is often inversely proportional to the community's geographic inaccessibility.

The age distribution of the Puroik population shows a high percentage of youth and children, indicative of a growing community despite systemic deprivation. However, the literacy rate remains substantially below the state average, especially among women. Male literacy is estimated at around 45%, while female literacy lingers below 30%, reflecting the long-standing barriers to formal education caused by both cultural and logistical factors (Ramjuk, 2023). These statistics, however, must be interpreted with caution, as they do not fully capture the knowledge systems and oral pedagogies inherent in the community.

Occupationally, the Puroiks have traditionally been dependent on forest-based livelihoods. Shifting cultivation, bamboo crafts, fishing, and wild sago processing form the backbone of their subsistence economy. However, there has been a gradual occupational diversification in recent years, particularly among younger members who are employed in manual labour, construction, and occasionally in state-run welfare schemes like MGNREGA. Despite these shifts, most households continue to rely heavily on non-monetised forms of exchange and barter within kinship networks, particularly during lean agricultural seasons.

Socially, the Puroik community is divided into several clans, each possessing distinct oral histories and kinship responsibilities. These clans are exogamous and form the primary units of social organisation. Clan elders are often custodians of community memory, mediating disputes and performing rituals. While the younger generation is increasingly drawn to urban centres for education or employment, their cultural ties to the village remain strong, often evidenced through seasonal returns and participation in traditional festivals.

Gender dynamics within the demographic structure reveal a nuanced picture. While patriarchy is prevalent, women play an indispensable role in food production, childcare, and transmission of cultural knowledge. Women are also responsible for foraging, weaving, and preservation of seeds and herbs. The demographic burden of multi-tasking often rests on them, especially in the absence of

male members who migrate seasonally for wage labour (Ramjuk, 2023).

Health indicators in Puroik-inhabited regions are similarly concerning. High rates of malnutrition, anaemia, and preventable diseases like tuberculosis persist due to lack of medical infrastructure and reliance on traditional remedies. Immunisation coverage is irregular, and maternal health facilities are virtually absent in many villages. State health missions have attempted to bridge this gap through mobile health vans and community health workers, but logistical challenges often derail these efforts (Taba, 2023).

Census data and ethnographic findings jointly demonstrate that demographic vulnerability is both a cause and effect of policy neglect. The Puroiks' population dynamics must therefore be understood not merely as statistical abstractions but as indicators of broader structural exclusions. Any developmental planning for the Puroiks must begin by recognising these demographic patterns and designing interventions that are sensitive to their spatial, occupational, and cultural contexts.

Language

The language spoken by the Puroik tribe stands as a powerful marker of their cultural uniqueness, historical continuity, and epistemic autonomy. Classified within the Tibeto-Burman family, the Puroik language is an unwritten and endangered language spoken exclusively by the members of this tribe across various districts of Arunachal Pradesh (Blench, 2008). It functions not only as a tool of communication but as a vessel of collective memory, identity, and indigenous knowledge.

The Puroik language remains primarily oral, lacking any standardised script or orthography. This has historically rendered it vulnerable to linguistic erosion, especially as younger generations increasingly engage with dominant regional languages such as Nyishi, Hindi, and Assamese. Despite this vulnerability, the language continues to thrive in cultural and domestic domains, transmitted intergenerationally through folklore, songs, ritual chants, and oral storytelling. As Blench (2008) observes, the Puroik lexicon contains numerous terms that encapsulate ecological practices, kinship models, and animistic cosmologies—terms that are often untranslatable into modern bureaucratic idioms.

Linguistically, Puroik exhibits features such as monosyllabic roots, agglutination, and a tone system that are typical of several Tibeto-Burman languages. However, it also possesses unique syntactic constructions and phonological structures, indicating a long period of isolation and independent evolution. Efforts at linguistic documentation have been sparse, but scholars such as Blench (2008) and Taba (2023) have contributed to the phonetic and grammatical mapping of the language, emphasising the urgency of preservation.

Language use varies across districts. In areas with greater exposure to Nyishi populations, there is significant bilingualism, especially among the youth. However, in more remote villages, monolingualism in Puroik is still prevalent. This variation illustrates the complex interplay between cultural resilience and linguistic assimilation. Women and elders are the primary custodians of linguistic tradition, often acting as informal educators for children. Their role in oral pedagogy is crucial for maintaining linguistic vitality.

Food

Food among the Puroik tribe is not merely a means of sustenance but a profound expression of ecological wisdom, cultural belonging, and survival ethics. The dietary practices of the Puroik people are firmly rooted in the forest economy and seasonal cycles, reflecting a deep attunement to the rhythms of nature. Central to their cuisine is the sago palm (*Metroxylon sagu*), locally referred to as

Rangbang, which is processed into a starchy paste and consumed as a staple food (Ramjuk, 2023). This traditional practice of sago extraction, involving labour-intensive techniques such as pounding, leaching, and sun-drying, illustrates an intimate understanding of ecological resource management.

The act of gathering food is a communal affair, often involving multiple members of the family or clan. Foraging for wild tubers, yams, mushrooms, bamboo shoots, and leafy vegetables forms a routine part of the Puroik dietary system. These practices not only provide nutrition but also embed cultural rituals and oral narratives associated with specific plants and harvest seasons. Certain mushrooms are known only to elders who pass on the knowledge orally, along with proverbs and songs related to rain cycles and soil fertility (Taba, 2023).

Meat consumption includes wild game such as wild boar, deer, and small mammals, as well as fish from local rivers. The community also practises seasonal hunting using traditional traps and spears, and fishing techniques that involve bamboo implements and herbal fish poisons. However, hunting is regulated by customary norms and rituals that ensure ecological balance. For instance, some animals are hunted only during certain times of the year, and ceremonial offerings are made to forest spirits as a mark of respect.

Fermentation is a significant culinary method among the Puroiks. Local beverages such as apo (rice beer) are fermented in bamboo containers and consumed during communal feasts, rituals, and festivals. These food practices are deeply embedded in their cosmology and collective identity. Unlike industrial food systems, the Puroik culinary tradition is largely non-commercial, organic, and waste-free.

In recent years, however, the incursion of market-driven products such as packaged noodles, processed rice, and sugary drinks has begun to disrupt traditional food habits, especially among children and youth. This dietary shift has implications not just for nutrition but also for cultural erosion. Yet, in more remote villages, traditional food remains predominant, often forming part of social rituals such as marriages, funerals, and agricultural celebrations.

Food sharing is another cultural norm that reflects the Puroik ethos of collectivism. Guests are always offered meals, often including items foraged or hunted specifically for the occasion. Food also functions as a medium for community bonding and inter-generational learning, especially during festivals like Longte and Soro Nyoko, where elders narrate folktales over shared meals (Ramjuk, 2023). Thus, the Puroik food system is a living testament to their counter-modern worldview—one that values reciprocity, sustainability, and ancestral continuity.

Lifestyle

The lifestyle of the Puroik tribe is a synthesis of ecological adaptability, cultural memory, and resilient simplicity. Living in harmony with the forest ecosystem, their daily routines are structured around agricultural cycles, foraging routes, seasonal changes, and kinship obligations. Most Puroik households are self-built using locally available materials like bamboo, thatch, and timber. The architecture of their homes reflects environmental pragmatism—elevated platforms protect against floods and pests, while sloping thatched roofs shield against monsoon rains.

Social life is deeply communal. Extended families live in close proximity, often sharing work, food, and responsibilities. The absence of rigid economic hierarchies contributes to an egalitarian structure where cooperation is prioritised over competition. Child-rearing is a collective effort, with siblings, cousins, and even neighbours playing a part in nurturing the young.

Time is perceived not in linear hours but in relation to natural phenomena—sunrise, bird calls,

lunar phases, and flowering patterns. This ecological temporality shapes work ethics and seasonal celebrations. Rituals and festivals are aligned with agricultural rhythms and forest-based events, reinforcing the interconnectedness of life and environment.

Art, music, and storytelling are integral to Puroik lifestyle. Traditional songs (bene) and dance forms are performed during rites of passage and harvest ceremonies. Musical instruments like the bamboo flute and drum are crafted from local materials and often imbued with symbolic meaning. Oral narratives, shared around evening fires, serve as vehicles of cultural transmission, carrying myths, genealogies, and moral teachings (Taba, 2023).

Gender roles, while demarcated, are complementary. Women undertake significant roles in food preparation, herbal medicine, weaving, and child education. Men are typically involved in hunting, construction, and ritual leadership. However, decision-making is often collective, with elders and women consulted on important matters. This division of labour is more functional than hierarchical, and both genders are accorded respect within their roles.

Recreation involves community games, storytelling, and craft-making rather than consumer-driven entertainment. There is a visible absence of commercial goods, media exposure, and technological intrusion in many Puroik villages. This lifestyle of minimalism, far from being a sign of deprivation, represents a conscious and adaptive mode of living that resists the fast-paced, consumption-oriented logic of modern urban societies.

Nonetheless, the Puroik way of life is under threat from various external forces—deforestation, infrastructural development, climate change, and state-led resettlement schemes. These pressures often disrupt the delicate balance they maintain with their ecosystem and introduce alien values that may dilute their traditional lifeworlds. Despite these challenges, the Puroiks have continued to uphold a lifestyle rooted in environmental ethics, spiritual continuity, and cultural cohesion.

Government Policy

Government policies regarding the Puroik tribe have evolved over time, moving from neglect and categorisation under bonded labour to recognition and targeted welfare schemes. The official recognition of the Puroiks as a Scheduled Tribe in 1994 marked a turning point in their political and social visibility (Taba, 2023). This classification entitled them to benefits under affirmative action programmes, including reservations in education, employment, and political representation.

Despite this recognition, the actual implementation of welfare measures has been uneven and often poorly aligned with the community's specific needs. Programmes under the Ministry of Tribal Affairs, such as Eklavya Model Residential Schools and Vanbandhu Kalyan Yojana, have had limited reach in remote Puroik settlements. The disconnect between policy intent and on-ground reality is exacerbated by logistical constraints, cultural misalignment, and lack of participatory planning.

One significant area of policy engagement has been the eradication of bonded labour. Through advocacy and judicial intervention, NGOs and tribal activists have brought attention to the historical servitude experienced by the Puroiks, especially under dominant tribes such as the Nyishis. Legislative frameworks such as the Bonded Labour System (Abolition) Act of 1976 have been enforced with varying degrees of success, often hindered by local resistance and administrative inertia (Taba, 2023).

Health interventions have included the deployment of mobile medical units and training of local health workers. However, these are irregular and often face cultural barriers, as many Puroiks still rely on traditional medicine. The absence of culturally trained health personnel and inadequate translation

services hinder access to formal healthcare.

In the sphere of language preservation, there has been negligible governmental effort. Most literacy campaigns and school curricula are conducted in Hindi or English, with little accommodation for indigenous languages like Puroik. This linguistic neglect contributes to educational alienation and cultural disintegration.

On a more hopeful note, some grassroots policies have begun incorporating community participation. Self-help groups, women's cooperatives, and forest user groups have been supported under Integrated Tribal Development Programmes (ITDPs). These initiatives, though small-scale, indicate the potential for culturally responsive governance.

Overall, the policy framework remains paternalistic, driven by a top-down logic that prioritises assimilation over autonomy. For the Puroik community to truly benefit from state policies, there must be a paradigm shift towards inclusive planning, where tribal voices are central to decision-making processes.

Conclusion

The Puroik tribe of Arunachal Pradesh offers a compelling narrative of resistance, resilience, and ecological wisdom in the face of modernity's homogenising forces. Their socio-cultural practices, ranging from food habits to language, lifestyle, and rituals, collectively represent a counter-modern ethos grounded in community, sustainability, and spiritual harmony with nature. Far from being 'backward' or 'primitive', the Puroik worldview embodies an alternative modernity that challenges dominant paradigms of development, consumption, and progress.

Through a multi-layered exploration of their demography, linguistic tradition, food systems, and governmental interventions, this study reveals the richness and complexity of the Puroik way of life. It also underscores the urgent need for culturally sensitive policies, inclusive education models, and sustainable development approaches that do not compromise indigenous epistemologies.

As global discourses increasingly turn towards ecological justice, decolonial thinking, and pluralistic futures, the voices of communities like the Puroiks must be placed at the centre. Their lived knowledge—rooted in generations of observation, adaptation, and reverence for nature—offers invaluable lessons for building equitable and resilient societies. Any future imagining of modernity must, therefore, accommodate and celebrate such indigenous worldviews, not as remnants of the past but as viable blueprints for the future.

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Between Watching and Reading: A study of Court Masques in Theatre and in Print

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ABSTRACT

This paper wishes to examine the politics of visual culture in the masques of the Jacobean age. I wish to examine the masque in The Kenilworth Entertainment (1575) which was the source of Shakespeare's A Midsummer Night's Dream (1596), which further inspired Ben Jonson's Oberon, the Faery Prince (1611) with costumes, stage effects and props done by Inigo Jones. The paper raises a few questions: Is an Elizabethan court entertainment different from a Jacobean royally commissioned masque? How do the music and spectacle of the masque get transformed onto the printed pages for the readers? Do masques have a double life – one performative and the other as print artifact? Does the change from manuscript to print deprive the writers their ownership of utterance and power to mesmerize the audience? The aim is to study the reception of the masques by different audience under different settings and the effect of their final printed versions on readers.

Key Words: masque; A Midsummer Night's Dream; The Kenilworth Entertainment; Oberon, the Faery Prince;

Introduction

In Shakespearean scholarship, the masque or pageantry occupies, at best, a peripheral space. The reasons are not far to seek. Masques were court performances often associated with Christmas festivities and wedding celebrations. By their very nature, masques were ephemeral, written for a specific occasion and hardly performed more than once. Masques, unlike plays, did not arouse curiosity or provoke thought but instead only appealed to the aesthetic sense with its elaborate spectacles, music and stage designs. Shakespeare's masques have received very little attention from scholars, firstly, because he had not produced masque as an independent, exclusive genre and secondly, Shakespeare's masques were not royally commissioned for court audience. In fact, Shakespeare's masque-like scenes were never the high point of his plays. A humanist scholar, Francis Bacon, dismissed masques as toys to flatter monarchs: "These things are toys" (Bacon, 1). If masques legitimized and affirmed kingly power, why did Shakespeare include some masques within his plays?

New Historicist scholars like Stephen Orgel, Roy Strong, Jonathan Goldberg have been interested in the masque due to the coalescence of the aesthetic and political in the same form. This paper, however, hopes to move beyond the New Historicist interpretation of masques as performing power to investigate the production and reception of spectacles and masques in the court circle, in the public theatres and in the print form. How is an Elizabethan court entertainment different from a Jacobean royally commissioned masque? How does the music and spectacle of the masque get transformed onto the printed pages for the readers? Do Shakespeare's masques, which are

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integrated within the plays and open to reception to a wide range of audience, remain untouched by the mercantile print economy. Do masques have a double life – one performative and the other as print artifact. Does the change from manuscript to print deprive the writers their ownership of utterance and power to mesmerize the audience. In this context, I aim to examine three different masques: firstly, an Elizabethan court masque *The Kenilworth Entertainment* (1575) produced by the queen's favourite Robert Dudley in his castle. This entertainment was supposed to have influenced Shakespeare to write *A Midsummer Night's Dream* (1595/96), his most popular play in the spirit of a masque, and finally an adaptation of Shakespeare's play by Ben Jonson in a Jacobean court masque titled *Oberon, The Faery Prince* (1611). The aim is to study the reception of the masques by different audience under different settings and the effect of their final printed versions on readers.

II. Elizabethan Court Masque

The Elizabethan masque combined masquerade, pageantry and entertainment by courtiers in disguise. The court masque worked as celebration or as offering to the queen. Frances Yates has argued how the cult of Queen Elizabeth I was carefully constructed through verbal and visual rhetoric of splendor and authority by attiring herself in extravagant costumes and wigs, commissioning triumphal arches and civic spectacles, patronizing literary pieces to promote the cult of Aestreae and the Virgin Queen'. A repertoire of literary productions celebrated the cultic deification of the queen and the public manifestation of her power. The civic pageants staged for Elizabeth were closely associated with her country progresses in summer when a large entourage would reside at the country house of any ambitious courtier and entertain the queen. The *Kenilworth Entertainment* in 1575 was one such lavish carnival arranged by her favourite courtier Robert Dudley, Earl of Leicester, who hoped to woo the queen in his own home grounds and win her hand in marriage. Leicester displayed huge life size portraits of himself and the queen throughout the *Kenilworth Castle* staging his importance as "the man closest to the queen" and constructing his image as "a prince consort or king" (Susan Frye, 79). Elizabethan pastimes like *The Kenilworth Entertainment* (1575) fused courtly love with chivalric motifs. The pomp, display, music, dance, fireworks, festivity and pageantry were all a part of an extended marriage proposal and an elaborate courtship ritual. The spectacle and masque while celebrating the power of the queen also managed to focus on the image of the courtier lover who had stage managed this entertainment. The queen was urged to command over the 'the lake, the lodge and the lord' of the house. The pageantry included gifts bestowed on the royalty by the figures dressed up like *Echo* and *The Savage Man*. The festivities underlined the theme of marriage over chastity where a mock folk marriage of a thirty five year old was enacted in the tillyard. George Gascoigne's masque of *Zabeta* (the tale of Diana's nymph *Zabeta*, who had resisted marriage for seventeen years past, is urged to marry by *Iris*) was supposed to have been performed but was probably cancelled by the queen because of its overt symbolism. Subsequently the appearance of *Deepdesire*, a hollybush with sharp prickly leaves offered Leicester a final opportunity to proclaim his chivalric devotions and declaration of his love to the queen. Elizabeth Goldring notes that over a period of nineteen days, different masques, pageantry, spectacles were produced which celebrated the power of the queen and paid homage to her. But at the same time, the revels and the large portraits tried to present Leicester as the most suitable consort for Elizabeth. The authority of the earl ruling over the entire revels and the authorial intention of wooing the queen is clear in the masque performed for the Queen.

We do not know whether the script of the masque was circulated in the court circle but the masque was performed in the presence of certain Elizabethan courtiers. Thus Leicester had control over not

only the form and the content but also the select audience of the entertainment. The Kenilworth Entertainment can be read as a site of negotiation between differently empowered participants of the court. The elaborate paraphernalia and masque created at Leicester's expense was made with an expectation of gain, in this case not monetary, but a reward of power position of a prince consort. Yet, the queen was the final authority, she did not allow the masque of Zabeta to be presented, clearly indicating her desires to remain single. She did not agree to marry Leicester with the result that his panegyric dedicated to the queen remained to be a loss for the poet where both the value of gift and the monetary value of the production were not recognized. Yet, the masque of the entertainment became a site of contested power based on the courtier's proximity to the queen and privileges granted to him. Leicester's court masque projects an illusion, a magic, disavows the labour of the actors putting up the spectacle, represents the speeches of the actors as spontaneous, unrehearsed and immediate; in other words, the court masque is dreamlike, seductive and commodity intensive. Yet it fails to persuade the monarch. It only exposes the anxiety of Leicester to please the queen and realize his social ambition. This court dynamics cannot be replicated in a public theatre.

III. Shakespeare's A Midsummer Night's Dream

A Midsummer Night's Dream is Shakespeare's fantasy play in the spirit of the masque with a medley of poetry, song and dance. It is assumed to have been written either to grace the wedding of Elizabeth Vere with Earl of Derby in 1595 or that of Elizabeth Carey to Thomas Berkeley in 1596. But there is no evidence to prove that the play was written for the court wedding entertainment. Helen Hackett terms it a dual-purpose play, to appeal to courtly tastes at a royal wedding and to run successfully to playhouse public (Hackett, 339). The play was recorded to have been performed in court in 1605 and subsequently in theatres. We do not know the extent to which the play has been transformed from a masque for private performance to a play designed for public in theatre. Similarly, a later play of Shakespeare The Tempest containing a masque was performed for a court audience in 1611 at Whitehall. The second performance was also at the command of the King during the marriage celebration of Princess Elizabeth to the Elector Palatine in 1612. The play was subsequently performed at the Blackfriars theatre for public. What is important to recognize is that the masques of Shakespeare were not independent, royally patronized production for elite court audience only. Yet the two plays containing masques are thought to have had their first productions in court. Did Shakespeare write these masques keeping in mind a heterogeneous audience in theatre or for a royal aristocratic audience? Shakespeare was aware of the difference in the reception of the plays depending upon the audience. In fact, the plays were informed by the dynamics of court audience versus theatre audience.

Shakespeare's A Midsummer Night's Dream has a masque like quality which made it easier for later productions to adapt it in various ways. In 1692 the play was reworked by Thomas Betterton into a spectacular opera with music by Henry Purcell called The Fairy Queen. The text was reduced and each act ended with a transformation scene like swans swimming on a river with a bridge over it like two dragons or a Chinese garden. The play became "an elaborate vehicle for the Baroque music and spectacle" which "wonderfully satisfied court and town" (John Downes, 43). In the eighteenth century, there were various other operatic adaptations of the play including David Garrick's The Fairies (1755) which again incorporated lots of songs and dances and ended with a pageant of the 'Triumph of Theseus' including "the Cretans, The Amazons, the Centaurs, the Minotaur, Ariadne in the Labyrinth, veil of Minerva and the Golden Fleece". Over the centuries, the play had been transformed into several opera, ballads, masques and spectacles playing out the fantasies of fairies and lovers where

the visual splendor, dreamlike quality and poetical imageries were focused upon.

However, the play does not fit into the stereotypical convention of court pageantry. It has been surmised that Shakespeare's play had been influenced by Leicester's *The Kenilworth Entertainment*. Oberon's speech in which a mermaid's song makes the tempestuous sea grow calm represents a memory of the earlier entertainment where a water pageant displayed Arion on a dolphin's back. The play also contains a graceful compliment to Queen Elizabeth as a virgin queen, throned 'by the west' (2.1.158). Despite all this, Shakespeare's play is very different from a court masque. The play is not focused on the symbolic seat of royal power but rather on the "largely uncharted territory on the fringes and margins of society where rules of power seem to break down" (Harold Bloom, 38). The dramatis personae show three distinct class of characters: the courtly figures Theseus and Hyppolita belonging to privileged class and they are aware of the rituals of courtship, on the other end of the social spectrum are the crude "mechanicals" who perform a play for the wedding feast of Theseus and Hyppolita while the third category is that of fairies, their king Oberon and their queen Titania. The play raises questions about efficacy of such courtly masques where the audience is transformed into spectators watching magic. Stephen Orgel notes that magic here is "an erotic control mechanism" since it is an instrument of a patriarchal order, 'not at all liberating but ultimately controlling'. (Orgel, 89). The magic in the play cannot hide the class and gender conflicts so central to the theme of the play. The humble mechanicals are amateurs performing a classical play 'Pyramus and Thisbe' instead of courtly masquers. The boors led by Quince attempt to play a tragedy in verse which turns out to be a parody of the court masque, an antimasque mocking the absurdity of a wedding night celebration. The play within a play has misplaced accents, absurd rhyme and comic representation of wall, moonshine, and lion. The play is darkly comic with the lovers dying on the stage after being attacked by a lion. The stage audience is seen to be impatient with the masque which delays the consummation of the marriage. Hippolyta expresses boredom: "This is the silliest stuff that ever I heard" (5.1.203) but Theseus reminds her 'in courtesy, in all reason, we must stay the time". Courtesy demands court audience to sit through the performance offered to them in 'simplicity and duty" (5.1.83).

This brings us to question Shakespeare's use of an antimasque in the play performed by proletariats like Quince and his group. He is clearly playing off the reactions of the onstage audience against those of the offstage audience or theatre audience. Shakespeare's antimasque is performed by "rude mechanicals" whose lack of imagination or courtesy make them laughing stock for the Theseus and Hyppolyta. Ironically, the aesthetic failure of the antimasque *Pyramus and Thisbe* is its commercial success because it reveals the ideological fault lines of what happens when the courtiers, amateur actors, university students are replaced by English mechanicals as actors.

Theseus: The best in this kind are but shadows; and the worst are no worse, if imagination amend them.

Hyppolita quickly points out: It must be your imagination then, and not theirs.
(5.1.205-207)

The onstage courtly couple can laugh and distance themselves from the rude players acting out 'Pyramus and Thisbe' because Quince, Bottom and others have neither imagination to achieve the dramatic illusion nor the courtesy trope required by a courtier to flatter the monarch. The actors were anxious that the masque would never please and would rather frighten the ladies. So Bottom suggested a prologue before each dialogue which would alleviate the fears of the audience. He

explains:

let the prologue seem to say we will do no harm with our swords, and that Pyramus is not killed indeed; and for the better assurance, tell them that I, Pyramus, am not Pyramus, but Bottom the weaver. This will put them out of fear. (3.1.14-17)

In court masques, the royal audience sees a constructed series of images, visuals so polished and coherent that the ideological and human labour of their making is hidden from the view. Thus royal masques produce only a consumer and a fetishist. In Shakespeare's theatre, the masque recognizes the labour, the social class hierarchy and the effect on the audience. The theatre audience has a privileged perspective of watching the antimasque as well as the onstage audience of the masque. The audience of the public playhouse can watch the play within the play without being condescending as Theseus and Hippolyta or as oblivious as the lovers. 'Pyramus and Thisbe' is a parody of a court masque written and performed by the artisan workers who wish to accommodate themselves to aristocratic demands. However, it can also be associated with the threat and social disruption that marked the discontent of the labourers in 1590s England. Stanley Wells rightly argues that "Pyramus and Thisbe contains and controls the kind of social unrest the workers were demonstrating. But it gives the workers a chance of metamorphosis, a change in the status of the kind that only the theatre can confer." (Wells, 94).

Shakespeare is aware that masques are elitist, court centred and consensual. If he has to produce a masque for the public playhouse, he needs to shift its power and authority from the centre to the margins, from courtiers to the simple players, from the private spectators to the public audience. While the courtly masque has a selective intended audience, Shakespeare's play is for a heterogeneous audience across classes. In *The Kenilworth Entertainment*, the actors were amateurs engaged in service to their patrons, but in the public theatre, Shakespeare's actors were artisans, vagabonds, itinerant peddlars and amateur actors who struggled to make a living by the stage. Shakespeare's *A Midsummer Night's Dream* works in a minimalist Elizabethan stage where the plans go awry, Puck instills eyedrops in the wrong eyes, the players try to set up a stage with impressive effect but the stage keeps crashing down around them. The play allows us to see what usually remains hidden, the labour that goes into each performance. The laughter generated by the parody of a romantic tragedy *Pyramus and Thisbe* also releases the audience from class tensions. While in a court masque, there is a surveillance mechanism where each courtier is caught in the ritual of courtship and supervision, the audience in the playhouse can escape from the surveillance of feeling, attitude and expression. Comic laughter acts as a useful resistance to authority and escape from social pressures.

IV. Jonson's Masque in Jacobean Court

Shows! Shows! Mighty Shows!

The eloquence of masque! what need of prose,

Or verse, or sense, t^h express Immortal you^o

You the spectacle of State! 'tis true

Court Hyro-gly—phics! And all arts afford,

In the mere perspective of an inch board...

Painting and carpentry are the soule of masque

Pack with your pedling poetry to the stage

This is the money –gett, mechink age!

(Ben Jonson, 'An expostulation with Inigo Jones',)

Ben Jonson may have been critical of Inigo Jones's stage machinery, but Jonsonian plays worked on the visual and musical aspects rather than the plot or narrative. Shakespeare's *Dream* prompted another Jonsonian masque named *Oberon, the Faery Prince* (1611) with costumes, stage effects and props by Inigo Jones. It was an extravagant performance dedicated to Henry Frederick, Prince of Wales, son and then heir of James I. Jonson's masque has a trivial plot where Oberon visits the English court to pay homage to the king. The masque introduced new machinery to show a great throne with shifting light and colours. While Shakespeare's *Dream* could be produced on a bare stage with minimalist props, Jonson's masque created a spectator-fetishist, one who takes pleasure in stage decoration, ornaments that deceive the sight and create a desire for delightful magic of exotic and enticing pageantry. For the show, Inigo Jones and Jonson created new machinery and stage props. It also contained numerous musical pieces with shawm, cornett, sackbut and record players. Jonson's stage included a rocky landscape on a pair of huge shutters which opened to reveal a castle. Daniel Albright's reminds us that metamorphosis is central to the aesthetic of both *A Midsummer Night's Dream* and *Oberon*. In Shakespeare's play the metamorphosis is crude where Puck turns into a bear and Bottom into an ass – a stagecraft where all elements of plot and character seem to fly out of control. But Jonson's masque is about control, the change of scene and colours and lighting and timing of fireworks is well managed. Each and every detail of the stage is under the surveillance of the king. The commodified stage with allegorical figures appears to be separate from the material and social reality of the actors, thus completely disavowing their labour that goes into creating this magical world.

V. Masques in Print

How is the visual and aural rhetoric for the audience carried forward in the textual production of the masque? The print culture in seventeenth century afforded benefit in canvassing panegyric to a wider readership than script ever could. Lauren Shohet argues that court masque live a double life: as an elite, private, densely emblematic performance form and one that could cater to the nascent print public sphere. But Shohet refers to Jacobean court masques whose visual language requires to be transformed to the verbal medium for the readers. For Ben Jonson, print was a vehicle for establishing his literary career as an author. The material production of manuscripts was a commercial venture for Jonson as the gift economy of patronage was transformed into market economy. Jonson was careful to write a different annotated text for his wider readership beyond the aristocratic court circle. However, Shohet's argument does not hold true for Shakespearean masques. Unlike Ben Jonson, Shakespeare's plays were always written as scripts for performances and not as printed texts. Yet they survive only as printed texts for us to read. Shakespeare had always focused on the performance culture and did not take interest in the 'readerly' editions of his plays. He did not overtly control either his authorship over his text or his power over his audience. He did not seek the help of theatrical props to build up a magical world in *A Midsummer Night's Dream*. He allowed his audience and readers to take flights of fantasy and imagine a dream world of fairies. The masques in Shakespeare's plays focus both on the verbal and visual medium and could build up a spectacle with words. He was adept at narrating the visual or using words to create vivid images. Shakespeare's rhetorical virtuosity in the masque form could create speaking pictures for the theatre audience. The rhetorical skills of ekphrasis (verbal representation of visual image), hypotyposis (a vivid description of scenes) and enargeia (to present absent things right before the eyes) allowed Shakespeare's readers

to receive his masques without any major transformation. His ability to seduce his audience with rhetoric, to create a magical world with words and to persuade with passionate exchanges could mesmerize his audience and his readers alike. Shakespeare's masques in plays occupy a peripheral space but they are not ephemeral performances for a particular occasion but universal in its appeal to theatre audiences and readers alike.

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