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Title

राष्ट्रीय शिक्षा नीति 2020 में विद्यालयी शिक्षा: सुझाव, चुनौतियाँ एवं समाधान
Socially Responsible Technology: The Case of the Metaverse in India
Industrial Development in India: Legal Framework and Government Policies
फोटोग्राफी का मनोवैज्ञानिक प्रभाव
Nutritional Properties of Dairy Products
Explainable Artificial Intelligence (XAI) for Healthcare:
Enhancing Transparency and Trust
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E-Payment Services in Private Banking Companies in
Muzaffarnagar (Uttar Pradesh)
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Health: Causes and Curative
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and Job Satisfaction: Initial Findings
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COVID-19
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Causes and Curative
A Study on the Usage of Spoiled Milk
Water Pollution By Sugar Mills And Distillery Spent Wash

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राष्ट्रीय शिक्षा नीति 2020 में विद्यालयी शिक्षा: सुझाव, चुनौतियाँ एवं समाधान

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सारांश

स्वतंत्रता मिलने के साथ ही शिक्षा व्यवस्था को दुरुस्त करने, शिक्षा को भारतीय संस्कृति का वाहक बनाने तथा सामाजिक एवं आर्थिक आवश्यकताओं की पूर्ती का साधन बनाने के दृष्टिकोण से माध्यमिक शिक्षा आयोग(1952), कोठारी आयोग(1964) तथा राष्ट्रीय शिक्षा नीति 1986 का गठन किया गया। इन महत्वपूर्ण आयोगों के द्वारा समय-समय पर दिये गये सुझावों के माध्यम से प्राथमिक से लेकर उच्चतर माध्यमिक शिक्षा के क्षेत्र में आमूलचूल परिवर्तन किये गये। जिसके सुपरिणाम को हम भारत की विकास यात्रा के संदर्भ में देख सकते हैं। इसी कड़ी में 21वीं सदी के अनुरूप शिक्षा को पुनर्गठित करने के उद्देश्य से राष्ट्रीय शिक्षा नीति 2020 को भारत सरकार ने 29 जुलाई 2020 में स्वीकृत कर शिक्षा के क्षेत्र में क्रांतिकारी सुधार की पहल कर दी है। इस संदर्भ में राष्ट्रीय शिक्षा नीति 2020 द्वारा निर्देशित किये गये सुझावों, अमलीकरण में आने वाली चुनौतियों एवं उसके समाधान की चर्चा प्रस्तुत प्रपत्र के माध्यम से की गई है।

मुख्य पद: राष्ट्रीय शिक्षा नीति 2020, गुणवत्तायुक्त शिक्षा, अमलीकरण संबंधी चुनौतियाँ

सीखना मानव की एक स्वाभाविक प्रक्रिया है। सीखने की इस स्वाभाविक प्रवृत्ति के माध्यम से मानव ने प्राकृतिक घटनाओं का सूक्ष्म अवलोकन कर जीवन के लिए उपयोगी अन्वेषण किया है। इन जीवनोपयोगी अन्वेषणों में पथर के औजार, अग्नि उत्पन्न करने की कला, पहिया, कृषि, एवं सबसे ज्यादा महत्वपूर्ण साथ रहने की प्रवृत्ति के विकास को समावेशित किया जा सकता है जिसकी खोज कर आदिमानव, मानव बना। इन सारे अन्वेषणों को उसने प्रकृति के बीच रहकर अपने सूक्ष्म अवलोकन के माध्यम से खोजा एवं सीखा। यह सीखने के प्रक्रिया अनौपचारिक थी, जिसमें प्रकृति अनायास ही शिक्षक, मानव विद्यार्थी एवं एवं शैक्षिक संस्था के रूप में प्रकृति स्वयं थी।

कालान्तर में समूह के अधिक संगठित होने, जनसंख्या वृद्धि होने तथा जीवन की आवश्यकताओं की जटिलताओं को पूर्ण करने के लिए परिवार ने शिक्षा की जिम्मेदारी संभाली जो धीरे-धीरे औपचारिक स्वरूप धारण करते हुए गुरुकुल एवं आधुनिक समय में विद्यालय के रूप स्थानान्तरित हो गई है। यह विद्यालयी शिक्षा भारत के विकास एवं समृद्धि की नींव मानी जाती है। सन् 1947 में स्वतंत्रता मिलने के साथ ही शिक्षा व्यवस्था को दुरुस्त करने एवं शिक्षा को भारतीय संस्कृति का

वाहक बनाने तथा सामाजिक एवं आर्थिक आवश्यकताओं की पूर्ती का साधन बनाने के दृष्टिकोण से माध्यमिक शिक्षा आयोग(1952), कोठारी आयोग(1964) तथा राष्ट्रीय शिक्षा नीति 1986 का गठन किया गया। इन महत्वपूर्ण आयोगों के द्वारा समय-समय पर दिये गये सुझावों के माध्यम से प्राथमिक से लेकर उच्चतर माध्यमिक शिक्षा के क्षेत्र में आमूलचूल परिवर्तन किये गये। जिसके सुपरिणाम को हम भारत की विकास यात्रा के संदर्भ में देख सकते हैं।

लेकिन इससे संतुष्ट हो बैठ जाने की अपेक्षा 21वीं सदी के अनुरूप शिक्षा को पुनर्गठित करने के उद्देश्य से राष्ट्रीय शिक्षा नीति 2020 को भारत सरकार ने 29 जुलाई 2020 में स्वीकृत कर लिया है। इस नीति द्वारा निर्देशित किये गये सुझावों, अमलीकरण में आने वाली चुनौतियों एवं उसके समाधान की चर्चा प्रस्तुत प्रपत्र के माध्यम से की गई है।

राष्ट्रीय शिक्षा नीति 2020 में विद्यालयी शिक्षा के संबंध में दिये गये प्रमुख सुझाव

1. विद्यालयी शिक्षा के स्वरूप संबंधी बदलाव इस नीति के प्रमुख सुझावों में से एक है। प्राथमिक शिक्षा के दायरे में पूर्व विद्यालयी शिक्षा को भी शामिल कर लिया गया है। अभी

- तक विद्यालयी शिक्षा का स्वरूप 10+2 रहा है जिसमें पांच वर्ष की प्राथमिक शिक्षा (कक्षा 1 से 5 तक), 3 वर्ष की उच्च प्राथमिक शिक्षा (कक्षा 6 से 8), दो वर्ष की माध्यमिक शिक्षा (कक्षा 9 एवं 10) तथा 2 वर्ष की उच्चतर माध्यमिक शिक्षा का प्रावधान रहा है। जो अब बदलकर 5+3+2+4 का स्वरूप ले चुका है। इसमें 5 वर्ष फाउन्डेशनल स्तर (3 वर्ष पूर्व विद्यालयी शिक्षा एवं कक्षा 1 से 2 की विद्यालयी शिक्षा), 3 वर्ष प्रिपैरेटरी स्तर (कक्षा 3 से 5), 3 वर्ष मिडिल स्तर (कक्षा 6 से 8 तक) एवं 4 वर्ष की माध्यमिक स्तर की शिक्षा का प्रावधान किया गया है।
2. हर बच्चे की विशिष्ट क्षमताओं की स्वीकृति, पहचान और उनके विकास हेतु मुख्य धारा के विद्यालयों में उनके समावेशन को को आवश्यक माना गया है।
 3. बुनियादी साक्षरता और संख्याज्ञान को सर्वाधिक प्राथमिकता देना तथा 100 प्रतिशत माध्यमिक स्तर नामांकन को इस शिक्षानीति का प्रमुख लक्ष्य बनाया गया है।
 4. बहु-विषयक दुनिया के लिए विज्ञान, सामाजिक विज्ञान, कला, मानविकी और खेल के बीच एक बहु-विषयक (multidisciplinary) और समग्र शिक्षा का विकास अनिवार्य माना गया है।
 5. शिक्षा एक सार्वजनिक सेवा है, के ध्येय मंत्र को मानना एवं एक मजबूत, जीवंत, सार्वजनिक शिक्षा प्रणाली में पर्याप्त निवेश करने का सुझाव है।
 6. ड्रापआउट बच्चों की संख्या कम करना और सभी स्तर पर शिक्षा की सार्वभौमिक पहुंच सुनिश्चित करना।
 7. कक्षा 6 और 8 के दौरान राज्यों और स्थानीय समुदायों द्वारा तय किए गए और स्थानीय कुशल आवश्यकताओं द्वारा मैपिंग के अनुसार एक आनंददायी कोर्स का संचालन, करने का सुझाव जिससे महत्वपूर्ण व्यावसायिक शिल्प, जैसे कि बर्दईगरी, बिजली का काम, धातुका काम, बागवानी, एवं मिट्टी के बर्तनों के निर्माण का प्रत्यक्ष अनुभव प्रदान किया जा सके।
 8. संवैधानिक मूल्य (समानता, स्वतंत्रता, न्याय एवं बन्धुत्व इत्यादि), भारतीयता, एवं बहु-भाषिकता को प्रोत्साहित

करना तथा जीवन कौशलों के विकास पर जोर देने का सुझाव दिया गया है।

9. विद्यालयी शिक्षा के लिए दिय गये सुझावों पर अमल करने के अनुसंधान में राष्ट्रीय पाठ्यचर्या की रूपरेखा (एनसीएफएसई) 2021 तक तैयार कर सभी क्षेत्रीय भाषाओं में उपलब्ध कराने का संकल्प किया गया है।
10. उपरोक्त सुझावों की पूर्ति के लिए मेधावी निष्ठावान युवाओं को शिक्षक बनने के लिए प्रेरणा तथा गुणवत्तायुक्त प्रशिक्षण देने की संकल्पना प्रस्तुत की गई है।

नीति के क्रियान्वयन में आने वाली चुनौतियाँ एवं समाधान

21वीं सदी की पहली राष्ट्रीय शिक्षा नीति 2020 ने एक बार फिर अपने नीतियों से आशा की एक किरण जगाई है। जरूरत है, इसके सुझावों पर पूर्ण मनोयोग एवं सामर्थ्य के साथ आने वाली चुनौतियों के पहचान की। उसके उपायों को ढूँढ़कर उसपर अमल करने की। जिससे इस नीति के सुझावों पर अमल किया जा सके।

1. विद्यालयी स्वरूपगत परिवर्तन से उत्पन्न चुनौतियाँ एवं समाधान

इस नीति के माध्यम से विद्यालयी शिक्षा के दायरे में पूर्व विद्यालयी शिक्षा को भी शामिल किया गया है जिसमें 3 वर्ष से लेकर 6 वर्ष तक के बालकों को समावेशित किया जाना है। जिनको लिए पर्याप्त भौतिक संसाधनों की व्यवस्था आवश्यक है। वर्तमान समय में जहां 6 से 18 वर्ष के विद्यार्थियों के लिए ही आवश्यक संसाधनों की कमी है वहाँ 3 से 18 वर्ष के बच्चों के लिए गुणवत्तायुक्त शिक्षा की गारंटी अपने आप में एक चुनौती है। लेकिन इस चुनौती का सामना केन्द्र एवं राज्य सरकारें आसानी से कर सकती हैं। जरूरत है दृढ़ इच्छाशक्ति की, अपने कल्याणकारी राज्य होने के दायित्व को निभाने की। भौतिक संसाधनों को जुटाने के लिए इस नीति में ही व्यक्त किये गये प्रावधान को तुरन्त अमल में लाने की। इतने बड़े राष्ट्र में जो विश्व का सबसे युवा देश है, में अवश्य ही सकल घरेलू उत्पाद की 6 प्रतिशत राशि शिक्षा पर खर्च की जानी चाहिए। इसमें देश की उत्पादक कम्पनियों, स्थानिक व्यावसायिक उद्योगों की भी मदद ली जा सकती है। इन व्यावसायिक एकमों को ऐसी शैक्षिक संस्थाओं (आंगनवाड़ी, बालवाड़ी, व्यावसायिक

विकास केन्द्र, पुस्तकालय, इत्यादि) के निर्माण में आर्थिक मदद करना चाहिए तथा साध ही चल रही संस्थाओं के संवर्धन की जिम्मेदारी भी लेनी चाहिए।

2. समावेशी शिक्षा को सुनिश्चित करने की चुनौती एवं समाधान

राष्ट्रीय शिक्षा नीति-2020 में समता मूलक एवं सर्वसमावेशी शिक्षा की अवधारणा को स्वीकार करते हुए लिखा गया है कि, “शिक्षा, सामाजिक न्याय और समानता प्राप्त करने का एकमात्र और सबसे प्रभावी साधन है। समतामूलक और समावेशी शिक्षा न सिर्फ स्वयं में एक आवश्यक लक्ष्य है, बल्कि समतामूलक और समावेशी समाज निर्माण के लिए भी अनिवार्य कदम है, जिसमें प्रत्येक नागरिक को सपने संजोने, विकास करने और राष्ट्र हित में योगदान करने का अवसर उपलब्ध हो। यह शिक्षा नीति ऐसे लक्ष्यों को लेकर आगे बढ़ती है जिससे भारत के किसी भी बच्चे के सीखने और आगे बढ़ने के अवसरों में उसकी जन्म या पृष्ठभूमि से संबंधित परिस्थितियां बाधक न बन पायें (पृ. सं38)। समावेशी शिक्षा की इस चुनौती को पार करने के लिए ‘समान स्कूल प्रणाली’, जिसकी अनुशांसा 1968 में कोठारी आयोग ने भी की है, को लागू किया जाय। ग्रामपंचायत, विधानसभा, एवं संसदीय क्षेत्र की तरह स्कूल की भी परिसीमा निश्चित की जाय तथा विद्यालय की परिसीमा में रहने वाले सभी बच्चों का अनिवार्य रूप से नामांकन उसी विद्यालय में किया जाय। भेदभाव के बिना शिक्षा को सर्वसमावेशी बनाया जाय। प्रत्येक स्कूलों में विशिष्ट प्रशिक्षण प्राप्त शिक्षकों की नियुक्ति हो, तथा दिव्यांग बालकों की जरूरतों को समझने, उपयुक्त कौशलों को सीखाने के लिए विद्यालय में कार्यरत शिक्षकों को आवश्यकता अनुसार अल्पकालिक अथवा दीर्घकालिक प्रशिक्षण प्रदान किया जाय।

3. शिक्षा की गुणवत्ता को बढ़ाने संबंधी चुनौती एवं समाधान

गुणवत्ता युक्त शिक्षा की व्यवस्था अपने आप में एक चुनौती है। शिक्षा की गुणवत्ता के चार मुख्य घटक हैं। जिसमें शिक्षक की योग्यता, सामाजिक भागीदारी, विद्यार्थियों की इच्छा एवं संसाधनों की उपलब्धता का समावेश होता है। समाज के सभी सदस्य विद्यालय के प्रति अपनी जिम्मेदारी निभाए। अभिभावक अपने बच्चों को स्कूल में पढ़ने भेजे, उसके प्रगति की चर्चा करें, विद्यालय के कार्यक्रमों में रुचि ले, शिक्षक अपने उत्तरदायित्वों का निर्वहन करें तो शिक्षा की व्यवस्था

को गुणवत्तायुक्त बनाया जा सकता है। संसाधनों की उपलब्धता शिक्षा की प्रक्रिया पर सबसे ज्यादा असर डालने वाली बात है। इन संसाधनों में मानवीय संसाधन (प्राचार्य, शिक्षक कर्मचारी, सेवक) तथा भौतिक संसाधन (वर्गखंड, विद्यालय परिसर, प्रयोगशाला, प्रार्थनासभा, सम्मेलन सभा, खेल का मैदान, चॉक, डस्टर, ब्लैकबोर्ड, डिजिटल बोर्ड, शौचालय की सुविधा एवं नजदीक में या क्लस्टर में शामिल विद्यालयों के लिए दवाखाना की उपलब्धता सरकार की ही जिम्मेदारी होनी चाहिए। वैसे की लोकतांत्रिक एवं कल्याणकारी राष्ट्र में शिक्षा, स्वास्थ्य, सड़क और सुरक्षा सरकार की जिम्मेदारी होती है। उपरोक्त संसाधनों की उपलब्धता शिक्षा में गुणवत्ता लायेगी तथा सार्वजनिक संस्थाओं की प्रमाणिकता बढ़ेगी जिससे शिक्षा के प्रति लोगों में भरोसा जागेगा। इसके लिए केन्द्र एवं राज्य सरकार के बजट में शिक्षा को प्राथमिकता दी जानी चाहिए। शिक्षा पर किये 6 प्रतिशत के बहु प्रतिक्षित खर्च को तत्काल अमल में लाने की जरूरत है।

4. बुनियादी साक्षरता और संख्याज्ञान के साथ-साथ सार्वजनिक, सार्वभौमिक शिक्षा के लक्ष्य की प्राप्ति संबंधी चुनौती एवं समाधान

शिक्षा को अनिवार्य एवं सार्वभौमिक बनाने के लिए संसाधनों की उपलब्धता के प्रति सरकार की जवाबदेही सुनिश्चित की जाय। संवैधानिक रूप से शिक्षा समवर्ती सूची का विषय है। जिसका अर्थ है गुणवत्तायुक्त शिक्षा प्रदान करने का दायित्व राज्य एवं केन्द्र सरकार दोनों का है। ऐसे में यह जरूरी है कि शिक्षा को अति आवश्यक सार्वजनिक सेवा के रूप में देखा जाय एवं ऐसे संवैधानिक प्रावधान किये जाय की केन्द्र एवं राज्य सरकार दोनों ही एक ठोस कार्य योजना बनाकर इस लक्ष्य की प्राप्ति करें। आदर्श स्थिति तो यह है कि जनगणना से प्राप्त आंकड़ों के आधार पर 3 से लेकर 18 वर्ष तक के विद्यार्थियों की सूची बने एवं प्रति विद्यार्थी खर्च को ध्यान में रखकर बजट का आवंटन हो एवं प्रि-प्राइमरी से लेकर 12वीं तक की शिक्षा का सम्पूर्ण खर्च सरकार उठाये। साथ ही बुनियादी साक्षरता और संख्याज्ञान को सर्वाधिक प्राथमिकता का क्षेत्र न सिर्फ घोषणा तक सीमित रहे बल्कि इसके लिए चरणबद्ध कार्ययोजना बना उसपर अमल किया जाय। इसके लिए संबंधित संस्थाओं की जवाबदारी सुनिश्चित की जाय।

सेवा की भावना से प्रेरित सार्वजनिक संस्थाओं के द्वारा विद्यालयों की स्थापना एवं प्रबंधन को बढ़ावा दिया जाय किन्तु जहाँ कार्य ट्रस्ट अथवा मण्डल के द्वारा संचालित हो तथा संस्थाओं के कर्मचारियों

(आचार्य, शिक्षक, एवं अन्य कर्मचारी) का वेतन सरकार के पैसे से हो जिससे किसी प्रकार के भ्रष्टाचार को बढ़ावा न मिले। इससे शिक्षा के प्रति लोगों की रुचि बढ़ेगी। प्रतिभाशाली लोग शिक्षक बनने की इच्छा रखेंगे। शोषण, वर्गीय विभेद तथा बिन जरूरी प्रतिस्पर्धा एवं परिणामस्वरूप प्राप्त होने वाले गलत कार्यों को रोका जा सकेगा।

5. पाठ्यक्रम में कोर, वैकल्पिक एवं व्यावसायिक विषयों के बीच अनुबंध स्थापन संबंधी चुनौती एवं समाधान

शिक्षा समवर्ती सूची का विषय है। जिसपर नीति एवं पाठ्यक्रम बनाने का अधिकार केन्द्र एवं विविध राज्य सरकारों का है। यही बात सार्वजनिक एवं प्राइवेट दोनों प्रकार की संस्थाओं पर लागू है। सभी संस्थाएं अपने बोर्ड एवं अभ्यासक्रम के चयन के लिए स्वतंत्र हैं। जिससे बिनजरूरी वर्गभेद, शोषण, एवं प्रतिस्पर्धा तथा परीक्षाकेन्द्री अध्ययन-अध्यापन की प्रक्रिया बढी है जो शिक्षा की गुणवत्ता को भारी नुकसान पहुंचा रही हैं। ऐसे में जरूरी है कि कुकुरमुत्ते की तरह पनपे एवं सपने दिखा कर अलग एवं विशिष्ट शिक्षा के नाम पर आर्थिक शोषण करने वाले विविध बोर्ड को समाप्त कर दिया जाय। मातृ केन्द्र स्तर पर एक नियामक संस्था एवं राज्य सरकार के शिक्षा बोर्ड ही कार्यरत रहें।

समग्र राष्ट्र की आवश्यकताओं को ध्यान में रखते हुए विषयों के बीच की खाई को दूर करने में संक्षम पाठ्यक्रम का निर्माण 2021 तक कर लेने का प्रावधान राष्ट्रीय शिक्षा नीति 2020 में उल्लिखित है। किन्तु यह कार्य अभी तक किया नहीं जा सका है, जिसे युद्धस्तर पर पूर्ण करने की आवश्यकता है। इस पाठ्यक्रम में कोर विषयों का पाठ्यक्रम (गणित, पर्यावरण, राष्ट्रभाषा, अंग्रेजी, नागरिकशास्त्र, विज्ञान) एवं वार्षिक कैलेंडर तैयार करने की आवश्यकता है जो पूरे देश में समान रूप से लागू हो तथा वैकल्पिक विषयो (मातृभाषा, इतिहास, भूगोल, कला, उद्योग / व्यवसाय) के पाठ्यक्रम जिस-तिस राज्य बार्ड की जिम्मेदारी हो को सुस्पष्ट कार्य योजना के साथ प्रस्तुत किया जाना चाहिए। इसमें व्यावसायिक विषयों को स्थानीय वातावरण एवं आवश्यकताओं को ध्यान में रखकर बनाया जाय तथा उन्हें अन्य विषयों के साथ अनुबंधित किया जाना चाहिए। इस प्रकार से तैयार पाठ्यक्रम में राष्ट्र, राज्य एवं स्थान विशेष, तीनों के हितों की रक्षा की जा सकेगी। साथ ही राष्ट्रीय भावना के विकास, शिक्षा के वार्षिक आयोजन एवं समान गुणवत्तायुक्त शिक्षा को भी सुनिश्चित किया जा सकेगा।

6. व्यावसायिक शिक्षा के प्रति जन मानस के नजरिये को सुधारने एवं शिक्षा का अभिन्न अंग बनाने की चुनौती एवं समाधान

भारत सरकार के सांख्यिकी एवं कार्यक्रम मन्त्रालय के एनएसएस के द्वारा(जुलाई 2020, पृ. 32) जारी 75वें चक्र के सर्वे में बताया गया है कि देश में 15 वर्ष से उपर के 95 % बच्चे सामान्य शिक्षा ग्रहण करते थे। मात्र 5% विद्यार्थी ही व्यावसायिक शिक्षा ले रहे थे। रोजगार परक शिक्षा को बढ़ावा देने के उद्देश्य से राष्ट्रीय शिक्षा नीति में व्यावसायिक शिक्षा पर जोर दिया गया है। व्यावसायिक शिक्षा की बात करते हुए 16 वें खंड के द्वितीय पैरा (16.2) में कहा गया है कि इस नीति का उद्देश्य व्यावसायिक शिक्षा से जुड़ी सामाजिक पदानुक्रम की स्थिति को दूर करना है(जैन एवं दीक्षित, 2021 पृ. सं.9) वर्तमान समय में जनमानस व्यावसायिक शिक्षा को दोयम दर्जे की शिक्षा मानता है। यह बात प्रचलन में है कि जो विद्यार्थी मुख्यधार के विषयों में अच्छा नहीं करता है वह तकनीकी के कौशल संबंधी रोजगार परक विषयों की ओर न चाहते हुए धकेल दिया जाता है। जनमानस की इस विचारधारा में परिवर्तन की जरूरत है। इसके लिए व्यावसायिक शिक्षा को अलग रखने के बजाय मुख्यधारा की शिक्षा का एक अंग बनाये जाने की जरूरत है। जिसके लिए विद्यार्थियों को विद्यालय से संबंधित स्थानीय उद्योगों में केन्द्र निवास के लिए भेजा जाय। तालीम की बारीकियों को सीखने के लिए अध्यापक की तरह कारीगरों को विद्यालय में बुलाया जाय, विद्यालय के शिक्षक सूची में उनका नाम शामिल किया जाय तथा उनके सम्मान एवं मानदेय का ध्यान रखा जाय। व्यावसायिक शिक्षा का प्रावधान अनिवार्यरूप से प्रत्येक संस्था में होना चाहिए चाहे वह सार्वजनिक संस्था हो अथवा प्राइवेट। इससे प्रत्येक बच्चे को अच्छी व्यावसायिक शिक्षा दी जा सकेगी तथा साथ ही व्यावसायिक शिक्षा के प्रति एक सकारात्मक वातावरण का निर्माण भी किया जा सकेगा।

7. प्रशिक्षित शिक्षकों की भारी कमी संबंधी चुनौती एवं समाधान

किसी भी शिक्षण नीति के कार्यान्वयन की प्राथमिक जवाबदारी शिक्षक की होती है। पूर्व विद्यालयी शिक्षा को विद्यालयी शिक्षा का अंग बनाने तथा माध्यमिक शिक्षा में 100 प्रतिशत नामांकन के संकल्प को देखते हुए स्पष्ट है इस उद्देश्य की पूर्ति के लिए बड़ी मात्रा में प्रशिक्षित शिक्षकों की आवश्यकता होगी। शिक्षक- प्रशिक्षण की गुणवत्ता में सुधार करने के लिए प्रवेश की प्रक्रिया से लेकर सेवाकालीन प्रशिक्षण

के क्रियाकलापों में रचनात्मक सुधार किये जाने की आवश्यकता है। समाज की आवश्यकता को ध्यान में रखते हुए जरूरी शिक्षकों की संख्या का सर्वे कर नये प्रशिक्षण केन्द्र खोल जाने चाहिए तथा जो शिक्षक प्रशिक्षण प्राप्त करे उसकी नियुक्ति पक्की होनी चाहिए तभी प्रतिभाशाली विद्यार्थियों को शिक्षक बनने की प्रति आकर्षित किया जा सकता है।

राष्ट्रीय शिक्षा नीति 2020 के अनुसार शिक्षक प्रशिक्षण कार्यक्रम में प्रवेश की प्रक्रिया का जिक्र करते हुए राष्ट्रीय स्तर पर प्रवेश परीक्षा के आयोजन की बात की गई है। इसमें शिक्षक अभियोग्यता, विषयज्ञान, अभिवृत्ति एवं स्थानीय भाषा में प्रवीणता की परीक्षा के आधार पर इस कार्यक्रम में प्रवेश की बात की गई है, जो स्वागत योग्य है। इसके अलावा इस प्रवेश परीक्षा में कुछ सुधार किये जानने की जरूरत है। जैसे-

1. सामाजिक जवाबदारी एवं व्यावसायिक शिक्षा संबंधि अभिवृत्ति को भी प्रवेश परीक्षा का भाग बनाया जाना चाहिए,
2. प्रवेश परीक्षा में उतने ही प्रवेशार्थी को उत्तीर्ण किया जाय जितने की नियुक्ति जिस-तिस वर्ष में की जा सके,
3. प्रशिक्षण प्राप्त लोगों को उनके जिले एवं मंडल में नियुक्ति दी जाय,
4. सार्वजनिक एवं प्रैक्टिस दोनो ही संस्थाओं में शिक्षकों की सेवा संबंधि सुविधाओं, वेतन एवं जवाबदारी समान रखी जाय तथा जिसका भुगतान सकारी मद से अवनिवार्यरूप से किया जाय।

सेवारत शिक्षकों के लिए उपयोगी कार्यक्रमों का आयोजन एवं उसमें भागीदारी के लिए प्रेरित किया जाना चाहिए। प्रशिक्षण के समय को उनकी विशेष सेवा माननी चाहिए तथा प्रशिक्षण में किये गये प्रदर्शन का क्रेडिट उनकी सेवापोथी में अंकित हो जो उनके प्रमोशन का आधार बने। इसके अलावा शिक्षकों को नवाचारों के लिए प्रोत्साहित किया जाना चाहिए। शिक्षक सम्मान पूर्वक अपना शैक्षिक कार्य करे इसके लिए जरूरी है कि उसे चुनाव एवं राष्ट्रीय आपदा के अलावा और किसी भी कार्य में न लगाया जाय।

8. मध्यान-भोजन योजना के दायरे को बढ़ने की चुनौती एवं समाधान

पूर्व विद्यालयी शिक्षा को विद्यालयी शिक्षा का अंग बनाने तथा सभी बालकों का विद्यालय में नामांकन सुनिश्चित करने के उद्देश्य को प्राप्त करना अपने आप में एक बड़ी चुनौति है। इसने अन्य करकों के साथ मध्यान भोजन योजना का गुणवत्तापूर्ण अमल अति आवश्यक है। मध्यान-भोजन योजना, शिक्षा के क्षेत्र में किया गया एक क्रांतिकारी पहल है जो शिक्षा के प्रचार-प्रसार के साथ ही सामाजिक सद्भावना एवं सामाजिक परिवर्तन का भी एक बड़ा साधन है। इसपर होने वाले खर्च को मानव संसाधन विकास, कौशल्ययुक्त नागरिक निर्माण एवं समाज के बीच सद्भाव बनाने के क्षेत्र में किया गये निवेश के रूप में देखे जाने की जरूरत है। परन्तु इस योजना में मिलने वाले भोजन एवं अमल की नीतियों में सुधार किये जाने की जरूरत है। यह योजना सभी विद्यालयों में लागू की जानी चाहिए। जिसमें गुणवत्तायुक्त भोजन एवं उसमें प्रत्येक बालक अनिवार्य रूप से शामिल करने के लिए अभिभावक को प्रोत्साहित किया जाना चाहिए। मध्यान-भोजन योजना की जिम्मेदारी सरकार एवं प्रतिष्ठित धार्मिक संस्थाएं मिलकर उठाये। क्योंकि यह समाज सेवा का काम है। बच्चों से बड़े भगवान साक्षात् कहाँ मिलेंगे। प्रत्येक मंदिर, मस्जिद, चर्च एवं गुरुद्वारा से अपेक्षा की जाय कि वे इस कार्य में बढ़चढ़ कर भागीदारी करें। एवं अपने क्षेत्र में आने वाले विद्यालयों में मध्यान-भोजन का प्रबंधन करें।

उपसंहार

उपरोक्त कुछ ऐसे सुझाव हैं जिनका पालन कर न केवल वर्तमान राष्ट्रीय शिक्षा नीति को क्रियान्वित किया जा सकता है वरन वास्तव में शिक्षा का भारतीयकरण भी संभव हो सकेगा। सपनों के भारत को आकार देने के लिए एक सार्थक कार्ययोजना, सरकार की दृढ इच्छाशक्ति, एवं शिक्षकों की निष्ठा अत्यन्त जरूरी है। शिक्षा संबंधि निवेश को राष्ट्रीय विकास में किये गये निवेश की तरह देखे जाना की जरूरत है जिसका फल देर से मिलेगा लेकिन स्थाई होगा। योग्य शिक्षक प्रशिक्षण, समाज के सभी वर्ग के विद्यार्थियों का शिक्षा में समावेश, उनके समग्र विकास को ध्यान में रखकर कार्य किये जाने की जरूरत है। शिक्षा का यह कार्य तभी सफल होगा जब शिक्षा से जुड़ा प्रत्येक व्यक्ति पूर्ण निष्ठा से अपने दायित्व का पालन करेगा।

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SOCIALLY RESPONSIBLE TECHNOLOGY: THE CASE OF THE METAVERSE IN INDIA

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ABSTRACT

The emergence of the Metaverse presents significant opportunities and challenges in the digital landscape. This paper outlines the importance of fostering a socially responsible Metaverse in India, emphasizing inclusivity, ethical practices, and sustainability, while also providing references for further exploration. Through an analysis of current trends, potential benefits, and challenges, this paper provides recommendations for stakeholders to promote a socially responsible Metaverse that aligns with the needs and values of Indian society. This paper also argues for a socially responsible approach to the Metaverse, emphasizing its potential to create inclusive, ethical, and sustainable virtual spaces.

Introduction

The Metaverse, often described as a collective virtual shared space, integrates augmented reality (AR), virtual reality (VR), and the internet. As the concept evolves, it has the potential to transform social interactions, education, entertainment, and commerce. In India, where digital penetration is rapidly increasing, the Metaverse presents an opportunity for innovation. However, it also raises concerns about equity, data privacy, and environmental sustainability.

As India embraces the Metaverse, the importance of socially responsible technology cannot be overstated. By prioritizing inclusivity, ethical practices, and sustainability, stakeholders can create a Metaverse that benefits all members of society. Collaborative efforts among technology developers, policymakers, and users will be essential to ensure that the Metaverse serves as a platform for positive social impact.

Socially responsible technology refers to systems and platforms designed to benefit society while minimizing harm. As technology permeates daily life, the ethical implications of its use become critical. The Metaverse, with its immersive experiences, holds the potential for both positive social impact and negative consequences. In India, a country with diverse socio-

economic backgrounds, ensuring equitable access to technology is crucial.

Inclusivity and Accessibility

Inclusivity is essential in creating a Metaverse that serves all segments of society. In India, millions of people face barriers to technology, including economic challenges and lack of digital literacy. A socially responsible Metaverse should prioritize accessibility features, allowing everyone to participate, regardless of their background.¹

Diverse Representation: Ensure that virtual spaces reflect diverse cultures, genders, and backgrounds. This means creating avatars, environments, and experiences that resonate with different user identities.

Accessibility Features: Design virtual environments that are accessible to individuals with disabilities. This includes features like voice navigation, text-to-speech, and customizable avatar controls to cater to various needs.

Ethical Practices in the Metaverse

The development of the Metaverse must consider

1 World Bank. (2021). Digital divide in India: Bridging the gap. (<https://www.worldbank.org/>)

ethical implications related to data privacy, user security, and digital identity. With rising concerns about data breaches and misuse, establishing robust data protection mechanisms is essential. In India, the Personal Data Protection Bill (PDPB) aims to provide a framework for data privacy, but its implementation in the Metaverse remains a challenge.

Data Privacy and Security

The protection of user data is paramount in fostering trust. Stakeholders must prioritize transparency in data collection practices and empower users with control over their information². Protecting user Data: Implement strong data protection measures to safeguard users' personal information. This includes transparent data collection practices and giving users control over their data.

Ethical Use of AI: Use artificial intelligence responsibly in the Metaverse, ensuring that algorithms do not perpetuate biases or invade privacy. Ethical AI can enhance user experiences while respecting individual rights. The environmental impact of technology is increasingly scrutinized. The energy consumption associated with virtual environments, especially in blockchain technology and NFTs, poses sustainability challenges. In India, where climate change remains a pressing issue, developing eco-friendly practices in the Metaverse is critical.

Eco-Friendly Practices

Developers should adopt sustainable technologies and practices to minimize the carbon footprint of the Metaverse. This includes using energy-efficient servers and promoting digital assets that have lower environmental impacts.³

Eco-Friendly Design: Developers should prioritize sustainable practices in creating virtual environments, such as using energy-efficient servers and minimizing

the carbon footprint associated with data storage and processing. Digital Assets and NFTs: Encourage responsible use of non-fungible tokens (NFTs) and digital assets. Promote digital ownership while considering the environmental impact of blockchain technologies used in these transactions.

Combating Misinformation

Content Moderation: Implement robust content moderation policies to combat misinformation and harmful content. This includes creating mechanisms for reporting and addressing toxic behavior or false information swiftly.

Promoting Critical Thinking: Encourage users to engage critically with information encountered in the Metaverse. This can be done through educational campaigns that promote media literacy and critical thinking skills.

Economic Opportunities

Fair Employment Practices: Ensure that virtual jobs and economic opportunities created in the Metaverse adhere to fair labor practices, promoting equitable pay and working conditions.

Support for Local Economies: Develop virtual marketplaces that allow small businesses and creators to thrive, providing them with platforms to reach a global audience while contributing to local economies.

Collaboration with Stakeholders

Industry Partnerships: Collaborate with other companies, non-profits, and governmental organizations to establish guidelines and best practices for a socially responsible Metaverse.

User Involvement: Engage users in the development process to understand their needs and perspectives, fostering a sense of community ownership and responsibility.

Mental Health Considerations

Well-Being Initiatives: Prioritize user mental health by creating spaces that promote well-being,

2 Suri, P. (2022). Navigating data privacy in the age of the Metaverse: Implications for India. *Journal of Information Technology & Politics*, 19(3), 301-316.

3 Dhar, S., & Ghosh, A. (2021). Sustainability in the digital world: Challenges and opportunities. *Journal of Sustainable Development*, 14(2), 45-58.

offering resources for mental health support, and incorporating features that encourage healthy online interactions.

Awareness Campaigns: Conduct campaigns within the Metaverse to raise awareness about mental health issues, encouraging users to seek help when needed.

Fostering Positive Communities

The Metaverse has the potential to cultivate positive social interactions and support community building. By promoting healthy online behavior and providing educational resources, stakeholders can leverage the Metaverse as a platform for social good.

Fostering Positive Communities: Create spaces that encourage positive social interactions and community building. This can be achieved through moderated environments and support for user-generated content that promotes kindness and collaboration.

Educational Initiatives

Educational institutions can use the Metaverse to provide interactive learning experiences. This can improve access to quality education, especially in rural areas of India, where educational resources are often limited.⁴

Educational Initiatives: Leverage the Metaverse as a platform for education and awareness. Initiatives could include workshops on social issues, financial literacy, or mental health resources, making the virtual space a hub for learning and growth. The development and implementation of the Metaverse in India come with several challenges that need to be addressed to ensure its successful integration into society. Here are some key challenges:

Digital Divide

Issue: India has a significant digital divide, with vast disparities in internet access and digital literacy across urban and rural areas. As of 2021, only about

50% of the Indian population had access to the internet, and access is even lower in rural regions.

Impact: This divide could lead to unequal participation in the Metaverse, where only those with high-speed internet and advanced digital literacy can engage effectively.

Infrastructure Limitations

Issue: The necessary infrastructure to support the Metaverse, including high-speed internet connectivity and advanced computing resources, is still underdeveloped in many parts of India.

Impact: Insufficient infrastructure can hinder the user experience in the Metaverse, leading to issues like lag, disconnections, and subpar virtual experiences.

Data Privacy and Security Concerns

Issue: Data privacy is a significant concern, especially with the absence of comprehensive data protection laws prior to the implementation of the Personal Data Protection Bill (PDPB). Despite the bill's introduction, concerns about data misuse and inadequate security measures persist.

Impact: Users may be hesitant to engage fully in the Metaverse due to fears of data breaches, identity theft, and lack of transparency in how their data is used.

Regulatory Challenges

Issue: The regulatory framework for virtual environments and digital assets like cryptocurrencies is still evolving. Unclear regulations may deter investment and innovation in the Metaverse space.

Impact: Companies may be reluctant to invest in Metaverse-related technologies without a clear understanding of the legal implications, leading to slower development.

Cultural and Social Acceptance

Issue: The concept of the Metaverse is relatively new in India, and cultural perceptions may affect its acceptance. Traditional views regarding technology

⁴ National Association of Software and Service Companies (NASSCOM). (2022). The future of education: The role of technology in transforming learning in India. (<https://www.nasscom.in/>)

and virtual interactions may create resistance among certain demographic groups.

Impact: Lack of awareness or acceptance can lead to underutilization of the Metaverse, limiting its potential benefits for society.

Cybersecurity Threats

Issue: The rise of the Metaverse increases the risk of cyber threats such as hacking, fraud, and online harassment. Cybersecurity measures must evolve to address these new risks.

Impact: High-profile security breaches could undermine user trust in the Metaverse, limiting participation and engagement.

Mental Health Implications

Issue: Increased engagement in virtual environments can lead to mental health challenges, including addiction, anxiety, and social isolation. The impact of these factors must be carefully monitored and addressed.

Impact: If not managed properly, these issues could result in negative social outcomes, affecting user well-being.

Economic Disparities

Issue: The Metaverse could exacerbate existing economic inequalities, as individuals and businesses with more resources may have better access to the benefits of virtual environments.

Impact: This could create a scenario where wealthier individuals and companies dominate the Metaverse, limiting opportunities for smaller players and marginalized communities.

Sustainability Concerns

Issue: The environmental impact of the Metaverse, particularly related to the energy consumption of servers and blockchain technology, raises concerns about sustainability.

Impact: As India faces significant challenges regarding climate change, addressing the carbon

footprint of the Metaverse becomes crucial to avoid contributing to environmental degradation.

Skill Gaps

Issue: There is a significant skill gap in the Indian workforce regarding emerging technologies necessary for the development and engagement in the Metaverse.

Impact: A lack of skilled professionals could slow down innovation and hinder the growth of the Metaverse ecosystem in India.

Digital Divide

Investment in Infrastructure: The government should invest in expanding internet access in rural and underserved areas, including the deployment of fiber optic networks and satellite internet services.

Digital Literacy Programs: Implement comprehensive digital literacy initiatives in schools and communities to ensure that all demographics can engage with digital platforms effectively. Partnering with NGOs and educational institutions can help reach diverse populations.

Infrastructure Limitations

Public-Private Partnerships: Encourage partnerships between the government and private companies to develop the necessary infrastructure for the Metaverse. This could include investments in data centers, high-speed internet, and advanced computing resources.

Localized Solutions: Promote the development of localized server farms to reduce latency and improve connectivity for users in different regions.

Data Privacy and Security Concerns

Comprehensive Data Protection Laws: Implement and enforce strong data protection regulations, building on the framework provided by the Personal Data Protection Bill (PDPB). Ensure that these laws are transparent and user-friendly.

User Education: Educate users about data privacy rights and how to protect their information online.

Creating awareness campaigns can empower users to take control of their data.

Regulatory Challenges

Clear Regulatory Frameworks: The government should establish clear regulations regarding digital assets, virtual transactions, and user safety in the Metaverse. This will provide legal clarity and encourage investment.

Consultative Approach: Involve stakeholders, including tech companies, civil society, and users, in the regulatory development process to ensure that the regulations are practical and effective.

Cultural and Social Acceptance

Awareness Campaigns: Conduct public awareness campaigns to educate the population about the benefits of the Metaverse and how it can enhance various aspects of life, such as education, healthcare, and entertainment.

Community Engagement: Involve community leaders and influencers in promoting positive narratives around the Metaverse, making it more relatable and acceptable to various demographics.

Cybersecurity Threats

Enhanced Cybersecurity Measures: Invest in advanced cybersecurity technologies and protocols to protect users and data within the Metaverse. This includes regular audits and vulnerability assessments.

User Training: Educate users about online safety practices, such as recognizing phishing attempts and securing their accounts with two-factor authentication.

Mental Health Implications

Mental Health Resources: Provide resources and support for users who may experience mental health challenges associated with prolonged use of virtual environments. This can include access to counseling services and online support groups.

Healthy Usage Guidelines: Develop guidelines for healthy engagement in the Metaverse, promoting balanced usage to prevent addiction and social isolation.

Economic Disparities

Support for Small Businesses: Create programs that support small businesses and entrepreneurs in the Metaverse, such as grants, training, and access to resources that help them compete effectively.

Incentives for Inclusivity: Encourage companies to adopt inclusive practices, such as creating accessible products and services that cater to diverse user needs.

Sustainability Concerns

Eco-Friendly Technologies: Promote the use of renewable energy sources for data centers and server farms supporting the Metaverse. Encourage tech companies to adopt sustainable practices in their operations.

Carbon Offset Initiatives: Support initiatives that focus on offsetting the carbon footprint associated with the Metaverse, such as reforestation projects and sustainable urban planning.

Skill Gaps

Skill Development Programs: Establish training programs focusing on emerging technologies, such as VR, AR, blockchain, and AI, to build a skilled workforce capable of supporting the Metaverse.

Collaboration with Educational Institutions: Partner with universities and technical institutes to develop curricula that prepare students for careers in the Metaverse and related fields.

India can adapt to the rapidly evolving landscape of the Metaverse through a combination of strategic initiatives, policies, and technological advancements. Here's how the country can position itself effectively to leverage the opportunities presented by the Metaverse:

Develop Robust Digital Infrastructure

Invest in Connectivity: Enhance broadband connectivity across urban and rural areas through public-private partnerships, focusing on expanding fiber optic networks and 5G infrastructure.

Improve Data Center Capacity: Encourage the

establishment of more data centers to support the increasing demand for cloud computing and storage services essential for Metaverse applications.

Promote Digital Literacy and Skills Development

Education Initiatives: Integrate digital literacy programs into school curricula to prepare students for a tech-savvy future. Focus on educating young people about virtual environments, coding, and digital citizenship.

Skill Development Programs: Launch training programs in emerging technologies such as AR, VR, blockchain, and AI. Collaborate with tech companies to offer internships and hands-on experience in these fields.

Encourage Innovation and Startups

Support for Tech Startups: Provide funding, mentorship, and incubation support for startups working on Metaverse-related technologies and applications. This could include grants, tax incentives, or government-backed loan schemes.

Innovation Hubs: Establish innovation centers and labs that focus on researching and developing Metaverse technologies, fostering collaboration between academia, industry, and government.

Create a Clear Regulatory Framework

Establish Regulations: Develop clear and comprehensive regulations governing virtual environments, data privacy, digital assets, and cybersecurity. This will help create a safe and trustworthy ecosystem for users and businesses.

Consult Stakeholders: Engage with various stakeholders, including tech companies, civil society, and users, to ensure that regulations are practical and effective while promoting innovation.

Foster a Culture of Inclusivity and Accessibility

Inclusive Design: Encourage tech developers to adopt inclusive design principles that cater to people

with disabilities and other marginalized groups, ensuring everyone can participate in the Metaverse.

Awareness Campaigns: Launch campaigns to raise awareness about the importance of inclusivity and accessibility in digital spaces, promoting diverse representation and participation.

Invest in Research and Development

Academic Partnerships: Collaborate with universities and research institutions to explore the potential applications and implications of the Metaverse, including its impact on society, economy, and culture.

Government Grants for R&D: Provide grants and funding for research projects focused on Metaverse technologies and their societal implications.

Enhance Cybersecurity Measures

Strengthen Cybersecurity Frameworks: Develop robust cybersecurity frameworks to protect users and businesses within the Metaverse from cyber threats and data breaches.

User Education on Cybersecurity: Implement educational initiatives that teach users about safe online practices, such as securing accounts and recognizing phishing attempts.

Promote Sustainable Practices

Green Technology Initiatives: Encourage the use of renewable energy sources for data centers and digital infrastructure supporting the Metaverse to minimize the carbon footprint.

Support Sustainable Innovations: Foster innovations that promote sustainability within the Metaverse, such as eco-friendly virtual experiences and resource-efficient technologies.

Encourage Cross-Sector Collaboration

Multi-Stakeholder Approach: Promote collaboration between government, industry, academia, and civil society to create a holistic approach to the development and deployment of the Metaverse.

Global Partnerships: Engage in partnerships with international organizations and countries leading in Metaverse development to share knowledge, best practices, and resources.

Monitor and Evaluate Progress

Regular Assessments: Establish metrics to evaluate the social, economic, and environmental impact of the Metaverse in India. Regular assessments will help stakeholders adapt to challenges and opportunities as they arise.

Feedback Mechanisms: Create channels for user feedback to continuously improve Metaverse offerings, ensuring they meet the needs and expectations of the community.

By adopting these strategies, India can effectively adapt to the challenges and opportunities presented by the Metaverse. A collaborative approach involving government, industry, and civil society will be critical to creating an inclusive, innovative, and sustainable Metaverse that benefits all citizens. Embracing this technological evolution can position India as a key player in the global digital economy while enhancing the quality of life for its diverse population.

Conclusion

While the Metaverse presents significant opportunities for innovation, economic growth, and social interaction in India, addressing these challenges is essential for its sustainable and equitable development. Stakeholders, including government, industry leaders, and civil society, must collaborate to create an inclusive framework that promotes accessibility, security, and social responsibility in the Metaverse. Addressing the challenges associated with the development and implementation of the Metaverse in India requires a multi-faceted approach involving government, industry, and civil society. Collaboration among government, industry, and civil society is essential to create a supportive ecosystem that benefits all stakeholders, ultimately enhancing India's position in the global digital landscape.

A socially responsible Metaverse can enhance user experience while addressing societal challenges. By prioritizing inclusivity, sustainability, and ethical practices, stakeholders can ensure that the Metaverse serves as a positive force for society, promoting collaboration and well-being in both virtual and real-world contexts. The development of a socially responsible Metaverse requires a collective effort from developers, businesses, and users, fostering an environment that upholds values of equity, respect, and responsibility.

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INDUSTRIAL DEVELOPMENT IN INDIA : LEGAL FRAMEWORK AND GOVERNMENT POLICIES

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ABSTRACT

India with abundance of natural wealth had attained excellence in handicrafts. There are very few streams of economic activity which attained traditional nature and could be included under the products produced under the factory system of 19th and 20th century. It is a well established fact that India was never industrially framed country prior to achievement of independence. It was an agricultural country where in handicrafts gained a prior position unmatched anywhere else in the world. For example silk manufacturing, utensil manufacturing, wood works, some products under pharmaceuticals etc. could be categorized as industrial activity. The proof of India being involved in production of certain products like textiles can be traced from the fact that the manufactured handicrafts and textile products were traded outside the country also.

Keywords : Government, Industry, Development, Industry.

Introduction

It has been an established fact that the British rulers in India went for the industrial policies which were more destructive for Indian industrial base and more purposeful for England. Though the British Government established Department of Commerce and Industry in 1905 but the activities pursued through this department recommended industrial activity in England. This department was to do in with the industrial policy and also act as an witness of industrial performance by the provincial governments. So the provincial governments in the country went for the industrial activities through this department. Thereafter, the current Government established board of Scientific and Industrial Research in 1940 but not much could come out of it. India was ardent to become independent and adopt industrialization as its policy. This is evident from the fact that prominent industrialists of India prepared Bombay Plan in 1944 focusing the importance of industrialization of the country.

With the Bombay plan the leading Indian industrialists had sided with Jawaharlal Nehru and his preferences for planning, with emphasis on large

scale industry for an extensive control over the private sector. In 1945, the government had declared an industrial policy but this policy could never see the light. The industrial policy drafted in 1945 was referred as the Industrial Policy of 1946 also but since the said policy was framed in alacrity so it could not satisfy the new leaders of independent country. Most probably this was the strong reason to frame well thought out industrial policy which could at least give a guidance to the industrial sector in the country at the initial stage of free India. Therefore, Industrial Policy of 1948 was drafted on 6th April by the Government of India. All the little efforts made by the British Government to germinate industry in the country took rear seat and new revolution in industry was sought by the planners.

Industrial Policy in India : Overview

To host the flag of industrialization in the country, and to accomplish the goal of economic growth erecting an effective industrial policy to meet the end was a pre-requisite. Consequently, Industrial Policy of 1948 came up to lead free India in the direction to industrial movement in the county.

(i) Industrial Policy 1948

On independence on August 15, 1947 it was imperative for India to draft new policy for industrial development, prioritize areas and clear hazes in the minds of private entrepreneurs regarding nationalization of the industries that were living. The Government of India announced its Industrial Policy Resolution on April 6, 1948 which included both private and public industries within its ambit. In pursuance of the same the industries were divided into four broad categories:

- (a) Exclusive State Monopoly- It entailed the manufacture of arms and ammunition, production and control of atomic energy and the ownership and management of railway transport.
- (b) State Monopoly for New Units- This category imbibed coal, iron and steel, aircraft manufacture, ship building, manufacture of telephone, telegraphs and wireless apparatus (excluding radio receiving sets) and mineral oils.
- (c) State Regulation- Industries of such basic importance like machine tools, chemicals, fertilizers, non-ferrous metals, rubber manufactures, cement, paper, newsprint, automobiles, electric engineering etc. which the Central Government deem necessary to regulate were included in this category.
- (d) Unregulated private enterprise- The industries in this section were free to the private sector, individual as well as cooperative.

(ii) Industrial Policy 1956

In April 1956, the parliament enacted this resolution with the objective of the social and economic policy in India according to this resolution was the establishment of a socialistic pattern of society. It bestowed the governmental machinery with more power. It sectioned industries into three categories. These categories were:

- (a) Schedule A – This schedule comprised of

industries which were to be an exclusive liability of the state.

- (b) Schedule B – Those which were to be progressively state-owned and in which the state would generally set up new enterprises, but the private enterprise would only to corroborate the endeavor of the state; and
- (c) Schedule C – The remaining industries and their ontogenesis in future would, in general be left to the initiative and enterprise of the private sector.

(iii) Industrial Policy 1977

The Government announced the Industrial Policy Statement 1977. So, it did something in aberration to the earlier policy of 1973. In this policy, the foreign investment in the areas which had no role to play in progress of country, was prohibited and this was a complete no to the foreign investment.

This statement is also recalled for a very vital provision. The statement stated that foreign companies that diluted their foreign equity up to 40 per cent under Foreign Exchange Regulation Act (FERA) 1973 were to be treated at par with the Indian companies. The Industry Minister was George Fernandes. Companies like Coca Cola and IBM did not adhere to the provisions and George threw the Coke and IBM out of India.

(iv) Industrial Policy 1980

The Industrial Policy Statement of 1980 promoted of competition in the domestic market, technological up gradation and modernized industries. Some of the socio-economic aims spelt out in the Statement were (i) optimum utilization of installed capacity; (ii) higher productivity and employment levels; (iv) removal of regional disparities; (v) consolidation of agricultural base; (vi) encouragement of export oriented industries and (vii) consumer protection against exorbitant prices and inferior quality.

(v) Industrial Policy 1991 and thereafter

The year 1991 endorsed a radical change in the

industrial policy governing industrial development in the country since decades. This land mark shift which is in the economic history of India in the form of Industrial Policy of 1991 actually was entirely a new face which was to enforce totally open economic system as compared to the earlier mixed system. The country decided to follow the lines of capitalism.

Analysis of Legal Framework

Legislations enacted by government regarding industrial policy play a vital role in the country's overall progress and economic development. These legislations are amended from time to time in accordance with the changing circumstances and environment. The most important act is the Companies Act, 1956 which relates to setting up and operation of companies in India. It empowers the Central Government to regulate the formation, financing, functioning and winding up of companies. It contains the mechanism regarding organisational, financial, managerial and all the relevant faces of a company.

1. Industrial Development Regulation Act

The Industries (Development and Regulation) Act provides the conceptual and legal framework for industrial development and industries in India. It is abbreviated as the IDR Act. The act was enacted in 1951 and has been amended many times. The licensing policy for industries is under this act.

2. Delayed Payment Act

To alleviate the problem of Delayed Payments, in small scale industries an Act was promulgated on 2nd April 1993. It made provisions for small scale industries to charge exemplary rate of interest on outstanding payments if the same are delayed beyond the period of time, stipulated or agreed. It is expected to relieve the Small Scale industries from shortage of working capital arising due to delayed payment against supplies made by them and will go a long way in alleviating the cash late flow problems and provide a bulwark against bullying tactics of the big industry.

3. The Factories Act

To ensure adequate safety measures and to promote the health and welfare of the workers employed in factories and to prevent haphazard growth of factories.

4. The Industrial Establishment Act

To regulate the conditions of recruitment, discharge, disciplinary action, holidays, etc. of workers employed in industrial undertakings and establishments.

5. The Minimum Wages Act

To determine the minimum wages in industry and trade where labour organisations are non-existent or ineffective.

6. The Payment of Wages Act

To ensure regular and prompt payment of wages and to prevent the exploitation of a wage earner by prohibiting arbitrary fines and deductions from his wages.

7. The Employees Provident Fund Act

To make provisions for the future of the industrial worker after he retires or for his dependents in the case of his early death.

8. Workmen's Compensation Act

To provide compensation for workmen in cases of industrial accidental / occupational diseases in the course of employment resulting in disablement or death. Coverage for persons employed in Factories, Mines, Plantations, the Railways and others mentioned in Schedule II of the Act.

9. Employment of Women The Contract Labour (Regulation & Abolition) Act, 1970

Not to be required to work beyond 9 hours between 6 A.M. and 7 P.M., with the exception of midwives and nurses in plantations.

10. The Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 - ISMW Act

Separate toilets and washing facilities to be provided in employment covered by the 3rd and 6th laws.

11. The Factories Act

In factories, women not to be engaged for cleaning, lubricating or adjusting any part of prime mover or transmission machinery; maternity leave upto 12 weeks with wages to be provided.

12. Equal Remuneration Act, 1976

Payment of equal remuneration to men and women workers for same or similar nature of work protected under the Act and also under the provisions at ISMW Act, mentioned above. No discrimination permissible in recruitment and service conditions except where employment of women is prohibited or restricted by or under any law.

13. The Shops and Establishments Act

To provide statutory obligation and rights to employees and employers in the unorganised sector of employment, i.e., shops and establishments.

14. The Trade Union Act

To confer a legal and corporate status on registered trade unions

15. Environment Protection Act, 1998

This is the umbrella Legislation having number of acts under it, The Water (Prevention & Control of Pollution) Act, 1981, as amended in 1978 and 1988 and The Air (Prevention & Control of Pollution) Act, 1981, as amended in 1987.

16. The Industrial Disputes Act

To provide a machinery for peaceful resolution of disputes and to promote harmonious relation between employers and workers.

17. Companies Act, 1951

Restrictions on the operations of managing agencies, which affected the operations of many British companies in India.

18. Corporate Tax policies, 1957 to 1991

Corporate tax rates on foreign companies (ie companies incorporated outside India) were about 15 to 20 percent above the rates for large Indian companies through the period 1956 to 1991.

19. Monopolies and Restrictive Trade Practices Act, 1969

All applications for a license from companies belonging to a list of big business houses and subsidiaries of foreign companies were to be referred to a MRTP Commission, which invited objections and held public hearings before granting a license.

20. Industrial Policy Statement, 1973

It specified industries where foreign firms would be allowed to operate; these were generally industries where products were not being produced in India or where the local sector was being dominated by a single (usually foreign) company; not allowed in the Appendix 1 industry if the industry was reserved for the government as per IPR, 1956.

21. Foreign Exchange Regulation Act, 1973

Foreign companies operating in India asked to reduce share in equity capital of their Indian companies to below 40 per cent, unless they were engaged in specified "core" activities.

22. Amendment to MRTP Act, 1985

Set lower limit of Rs 1 billion in assets for referring company to the MRTP Commission, limiting the applicability of the Act.

Constraints

Though the aim of industrialization has been to bring amelioration to the miserably poor millions, somehow

economic power and wealth have been concentrating in a few hands and the masses have, by and large, been left un-benefited. The industrial licensing policy which is only an adjunct to the industrial policy has given rise to many evils, economic, social and political. This breeds unrest among the poor, and the labourers employed in big industrial houses often resort to strikes and lock-outs, giving a serious blow to the productivity of the system. Finally, regional disparities and imbalances that should have been eliminated by now still persist. There exist in India a few pockets that have registered rapid economic development while a few areas find themselves utterly neglected.

Almost every plan has revealed that industrial production fell short of the target by a wide margin but, then, there are some inherent shortcomings in our planning system. It need not be emphasized that planning has widened the horizon of industrial sector and opened new vistas of industrial growth.

Conclusion

Prior to independence during the colonial period, both the industrial policies as well as economic policies were completely shaped by the British Government in favour of British interests. Immediately after independence, India came up with Industrial Policy of 1948 which adopted mixed economic system approach, where in public and private sectors were to operate together but the ground practicalities insisted to frame

another Industrial Policy within short period of time. The 1956 Industrial Policy Resolution gave effective space to the Centrally controlled industries, State controlled industries and Joint ventures for industrial development. The Policy Resolution introduced the proposals to liberalize the Industrial Policy by relaxations to MRTP and FERA Acts, re- defining the investment limits, de- licensing and exemption to same categories of industrial sector, incentives for export promotion, broad banding of industries, introduction of cottage industries and several other financial concessions. After 1956 Industrial Policy Resolution, came Industrial Policy of 1973, 1977, 1980, 1982-83 and 1990, with very minor changes. The Industrial Policy approach turned full circle with the advent of the Narsimha Rao government in 1991 in the form of New Industrial Policy of 1991. The country decided to follow the lines of capitalism. The watchword for the New Industrial Policy thus became liberalization, globalization and privatization and towards this end, the Government introduced three sets of reforms:- first, deregulation, delicensing, decontrol and debureaucratization of industrial licensing system; two, liberalization of foreign trade and currency transactions and third, institute several measures to facilitate foreign direct investment inflows. All these measures were launched in the year 1991 and since then, further liberalizations have been introduced every year.

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फोटोग्राफी का मनोवैज्ञानिक प्रभाव

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शोध सार

फोटोग्राफी एक बहुआयामी माध्यम के रूप में कार्य करती है जो न केवल क्षणों को कैद करती है बल्कि फोटोग्राफर और दर्शक दोनों में गहन मनोवैज्ञानिक प्रतिक्रियाएँ उत्पन्न करने की क्षमता भी रखती है। यह पेपर फोटोग्राफी के कार्य और प्रक्रिया में शामिल व्यक्तियों पर इसके मनोवैज्ञानिक प्रभावों के बीच जटिल अंतरसंबंध पर प्रकाश डालता है।

फोटोग्राफर के दृष्टिकोण से, फोटोग्राफी में संलग्न होना एक गहन आत्मनिरीक्षण यात्रा हो सकती है, जो मनोदशा, धारणा और अनुभूति को प्रभावित करती है। दृश्यों को फ्रेम करने, विषयों का चयन करने और प्रकाश में हेरफेर करने का कार्य फोटोग्राफर की भावनात्मक स्थिति और विश्वदृष्टिकोण को प्रतिबिंबित कर सकता है। फोटोग्राफी के माध्यम से, व्यक्ति अक्सर आत्म-अभिव्यक्ति, आत्मनिरीक्षण और यहां तक कि चिकित्सा का साधन ढूंढते हैं, क्योंकि वे मानव अनुभव की जटिलताओं को नेविगेट करते हैं।

इसके साथ ही, फोटोग्राफी उन लोगों पर महत्वपूर्ण प्रभाव डालती है जो कैप्चर की गई छवियों को देखते हैं। छवियों में भावनाओं को जगाने, यादें जगाने और वास्तविकता की धारणाओं को आकार देने की शक्ति होती है। वे अपरिचित दुनिया में खिड़कियों के रूप में काम कर सकते हैं, विभिन्न दर्शकों के बीच सहानुभूति, समझ और संबंध को बढ़ावा दे सकते हैं। हालाँकि, तस्वीरों में वास्तविकता को विकृत करने, रूढ़िवादिता को बनाए रखने और सामाजिक दृष्टिकोण को प्रभावित करने, छवि निर्माण और उपभोग में निहित नैतिक विचारों को उजागर करने की भी क्षमता होती है।

इसके अलावा, डिजिटल प्रौद्योगिकी और सोशल मीडिया प्लेटफॉर्मों के आगमन ने फोटोग्राफी के परिदृश्य को बदल दिया है, जिससे मनोवैज्ञानिक कल्याण पर इसकी पहुंच और प्रभाव बढ़ गया है। स्मार्टफोन की सर्वव्यापकता और ऑनलाइन प्लेटफॉर्मों के प्रसार ने फोटोग्राफी का लोकतंत्रीकरण कर दिया है, जिससे व्यक्ति

अपने अनुभवों को तुरंत दस्तावेज़ित करने और साझा करने में सक्षम हो गए हैं। फिर भी, इस डिजिटल युग ने गोपनीयता, प्रामाणिकता और व्यक्तिगत अनुभवों के व्यावसायीकरण के संबंध में चिंताएं भी पैदा की हैं।

फोटोग्राफी एक सशक्त माध्यम है जो फोटोग्राफर और दर्शक दोनों पर विभिन्न मनोवैज्ञानिक प्रभाव डाल सकता है। हालाँकि व्यापक शोध मौजूद है, इस विषय के हर पहलू को कवर करना इसकी अंतःविषय प्रकृति के कारण चुनौतीपूर्ण है, जिसमें मनोविज्ञान, समाजशास्त्र, कला और मीडिया अध्ययन शामिल हैं। हालाँकि, मैं मौजूदा शोध से कुछ प्रमुख अंतर्दृष्टि और निष्कर्षों की रूपरेखा तैयार कर सकता हूँ।

परिचय

आज के दृष्टि-संचालित समाज में, फोटोग्राफी एक सर्वव्यापी और शक्तिशाली माध्यम के रूप में खड़ी है जिसके माध्यम से व्यक्ति संवाद करते हैं, खुद को अभिव्यक्त करते हैं और अपने आसपास की दुनिया की व्याख्या करते हैं। दस्तावेज़ीकरण के लिए एक उपकरण के

रूप में अपनी भूमिका से परे, फोटोग्राफी में लेंस के पीछे फोटोग्राफर और कैप्चर की गई छवियों के साथ जुड़ने वाले दर्शकों दोनों में गहन मनोवैज्ञानिक प्रतिक्रियाएँ पैदा करने की उल्लेखनीय क्षमता होती है।

फोटोग्राफी का कार्य फिल्म या डिजिटल सेंसर पर प्रकाश कैप्चर करने की यांत्रिक प्रक्रिया से परे है; यह स्वाभाविक रूप से व्यक्तिपरक

प्रयास है जो फोटोग्राफर के अद्वितीय दृष्टिकोण, भावनाओं और अनुभवों को दर्शाता है। विषयों के जानबूझकर चयन, दृश्यों की फ्रेमिंग, और प्रकाश और संरचना के हेरफेर के माध्यम से, फोटोग्राफर अपनी छवियों को अर्थ और भावना की परतों से भर देते हैं, और उनकी आंतरिक दुनिया की झलक पेश करते हैं।

फोटोग्राफर के लिए, फोटोग्राफी में संलग्न होना एक गहन आत्मनिरीक्षण और परिवर्तनकारी यात्रा हो सकती है। यह आत्म-अभिव्यक्ति के साधन के रूप में कार्य करता है, जो व्यक्तियों को दृश्य कल्पना के माध्यम से अपने विचारों, भावनाओं और विश्वदृष्टि को व्यक्त करने में सक्षम बनाता है। चाहे रचनात्मक आउटलेट की तलाश करने वाले एक शौकिया के रूप में या जटिल विषयों की खोज करने वाले एक पेशेवर कलाकार के रूप में, फोटोग्राफर अक्सर समय में जमे हुए क्षणों को कैद करने के कार्य में सांवना, रचन और संतुष्टि पाते हैं।

इसके साथ ही, फोटोग्राफी का प्रभाव फोटोग्राफर के दृष्टिकोण की सीमा से परे फैलता है, जो छवियों के साथ बातचीत करने वाले दर्शकों के साथ गहराई से प्रतिध्वनित होता है। तस्वीरों में भावनाओं को जगाने, यादों को जगाने और चिंतन को प्रेरित करने, भाषाई और सांस्कृतिक बाधाओं को पार कर सार्वभौमिक सत्य और अनुभवों को संप्रेषित करने की अद्वितीय क्षमता होती है।

एक तस्वीर के लेंस के माध्यम से, दर्शकों को दूर देशों में ले जाया जाता है, अपरिचित चेहरों से परिचित कराया जाता है, और मानवीय स्थिति की कच्ची वास्तविकताओं से उनका सामना कराया जाता है। प्रत्येक छवि दूसरों के जीवंत अनुभवों में एक खिड़की के रूप में कार्य करती है, विभिन्न दर्शकों के बीच सहानुभूति, समझ और संबंध को बढ़ावा देती है।

हालाँकि, फोटोग्राफी के मनोवैज्ञानिक प्रभाव सौंदर्य प्रशंसा और भावनात्मक अनुनाद के क्षणों तक ही सीमित नहीं हैं। डिजिटल प्रौद्योगिकी और सोशल मीडिया प्लेटफार्मों के निरंतर प्रसार वाले युग में, फोटोग्राफिक इमेजरी की खपत रोजमर्रा की जिंदगी से अविभाज्य हो गई है।

स्मार्ट फोन की व्यापकता और सोशल मीडिया के उदय ने तस्वीरों के निर्माण और प्रसार को लोकतांत्रिक बना दिया है, जिससे व्यक्तियों को वैश्विक दर्शकों के साथ तुरंत अपने अनुभवों को दस्तावेजित करने और साझा करने का अधिकार मिला है। फिर भी, इस लोकतंत्रीकरण ने डिजिटल युग में गोपनीयता, प्रामाणिकता और व्यक्तिगत अनुभवों

के व्यावसायीकरण के संबंध में गंभीर नैतिक प्रश्न भी उठाए हैं।

कार्यप्रणाली

फोटोग्राफर और दर्शक दोनों पर फोटोग्राफी के मनोवैज्ञानिक प्रभावों की खोज के लिए एक व्यापक दृष्टिकोण की आवश्यकता होती है जो घटना की बहुमुखी प्रकृति को पकड़ने के लिए गुणात्मक और मात्रात्मक तरीकों को एकीकृत करता है। इस पद्धति में व्यक्तियों और फोटोग्राफिक इमेजरी के बीच बातचीत के अंतर्निहित व्यक्तिपरक अनुभवों, भावनात्मक प्रतिक्रियाओं और संज्ञानात्मक प्रक्रियाओं को स्पष्ट करने के उद्देश्य से कई प्रमुख घटक शामिल हैं।

1. गुणात्मक अनुसंधान

i. **साक्षात्कार:** अलग-अलग पृष्ठभूमि और विशेषज्ञता के स्तर के फोटोग्राफरों के साथ उनकी प्रेरणाओं, रचनात्मक प्रक्रियाओं और फोटोग्राफी से जुड़े भावनात्मक अनुभवों का पता लगाने के लिए अर्ध-संरचित साक्षात्कार आयोजित करना। ओपन-एंडेड प्रश्नों का उपयोग प्रतिभागियों को उनके काम के मनोवैज्ञानिक महत्व और उनके व्यक्तिगत विकास और कल्याण पर इसके प्रभाव को प्रतिबिंबित करने के लिए प्रोत्साहित करने के लिए किया जाएगा।

ii. **फोटोवॉइस:** प्रतिभागियों को फोटोग्राफी के माध्यम से अपने जीवन के अनुभवों, दृष्टिकोणों और भावनाओं को स्पष्ट रूप से व्यक्त करने के लिए सशक्त बनाने के लिए फोटोवॉइस पद्धति का उपयोग करना। प्रतिभागियों को उन छवियों को कैप्चर करने के लिए आमंत्रित किया जाएगा जो व्यक्तिगत रूप से उनके साथ प्रतिध्वनित होती हैं और उनकी तस्वीरों के पीछे की कहानियों को साझा करती हैं, जो दृश्य कल्पना के भीतर अंतर्निहित व्यक्तिपरक अर्थों और व्याख्याओं में मूल्यवान अंतर्दृष्टि प्रदान करती हैं।

iii. **डायरी अध्ययन:** रचनात्मक प्रक्रिया में संलग्न होने पर फोटोग्राफरों के दिन-प्रतिदिन के अनुभवों, विचारों और भावनाओं को पकड़ने के लिए डायरी अध्ययन को कार्यान्वित करना। प्रतिभागियों को समय के साथ फोटोग्राफी की मनोवैज्ञानिक गतिशीलता पर समृद्ध गुणात्मक डेटा प्रदान करते हुए, तस्वीरें खींचने और संपादित करने के दौरान उनके

विचारों, प्रेरणाओं और चुनौतियों का दस्तावेजीकरण करने के लिए कहा जाएगा।

2. मात्मात्मक अनुसंधान

- i. **सर्वेक्षण:** फोटोग्राफिक इमेजरी द्वारा प्राप्त भावनात्मक प्रतिक्रियाओं, संज्ञानात्मक धारणाओं और व्यवहार संबंधी इरादों का आकलन करने के लिए दर्शकों के विविध नमूने के लिए संरचित सर्वेक्षण का संचालन करना। सर्वेक्षण आइटम को भावनात्मक वैधता, उत्तेजना, सहानुभूति और दृश्य जुड़ाव जैसे चर को मापने के लिए डिज़ाइन किया जाएगा, जो विभिन्न संदर्भों और सामग्री श्रेणियों में फोटोग्राफी के मनोवैज्ञानिक प्रभावों पर मात्मात्मक डेटा प्रदान करेगा।
- ii. **प्रायोगिक अध्ययन:** विशिष्ट फोटोग्राफिक विशेषताओं (जैसे, रचना, विषय वस्तु, प्रकाश व्यवस्था) और दर्शकों की प्रतिक्रियाओं के बीच कारण संबंधों की जांच के लिए नियंत्रित प्रयोगों का संचालन करना। प्रतिभागियों को नियंत्रित परिस्थितियों में हेरफेर की गई फोटोग्राफिक उत्तेजनाओं से अवगत कराया जाएगा, और उनकी शारीरिक, भावनात्मक और संज्ञानात्मक प्रतिक्रियाओं को शारीरिक सेंसर, स्वरिपोर्ट उपायों और व्यवहार संबंधी टिप्पणियों का उपयोग करके मापा जाएगा।

3. नैतिक विचार

- i. **सूचित सहमति:** अध्ययन में शामिल सभी प्रतिभागियों से सूचित सहमति प्राप्त करना, अनुसंधान उद्देश्यों, प्रक्रियाओं और भागीदारी से जुड़े संभावित जोखिमों और लाभों के बारे में पारदर्शिता सुनिश्चित करना।
- ii. **गोपनीयता:** नैतिक दिशानिर्देशों और डेटा सुरक्षा नियमों के अनुसार सभी शोध डेटा को सुरक्षित रूप से संग्रहीत और गुमनाम करके प्रतिभागियों की गोपनीयता और गुमनामी की रक्षा करना।
- iii. **विविधता का सम्मान:** अनुसंधान प्रक्रिया के दौरान प्रतिभागियों के विविध दृष्टिकोण, सांस्कृतिक पृष्ठभूमि और जीवित अनुभवों को स्वीकार करना और उनका सम्मान करना, और समान प्रतिनिधित्व और भागीदारी सुनिश्चित करने के लिए समावेशी प्रथाओं को शामिल करना।

गुणात्मक और मात्मात्मक दृष्टिकोण को एकीकृत करने वाली बहुआयामी पद्धति को नियोजित करके, यह अध्ययन फोटोग्राफर और दर्शक दोनों पर फोटोग्राफी के मनोवैज्ञानिक प्रभावों की व्यापक समझ प्रदान करना चाहता है। कठोर डेटा संग्रह और विश्लेषण के माध्यम से, हमारा लक्ष्य दृश्य कल्पना द्वारा मध्यस्थता के रूप में मानव अनुभव और धारणा की सूक्ष्म बारीकियों को उजागर करना है, जिससे व्यक्तिगत पहचान, भावना और सामाजिक संबंध को आकार देने में फोटोग्राफी की परिवर्तनकारी शक्ति की गहरी समझ में योगदान मिलता है।

परिणाम और चर्चा

1. फोटोग्राफर परिप्रेक्ष्य

- i. **प्रेरणाएँ और भावनात्मक जुड़ाव:** फोटोग्राफरों के साथ साक्षात्कार में फोटोग्राफी के साथ उनके जुड़ाव को प्रेरित करने वाली प्रेरणाओं की एक विविध श्रृंखला पर प्रकाश डाला गया, जिसमें आत्म-अभिव्यक्ति, पहचान की खोज और दूसरों के साथ संबंध शामिल हैं। कई प्रतिभागियों ने फोटोग्राफी को रेचन, सशक्तिकरण और व्यक्तिगत विकास का स्रोत बताते हुए अपने विषयों और रचनात्मक प्रक्रिया के साथ एक गहरी भावनात्मक जुड़ाव का वर्णन किया।
- ii. **रचनात्मक प्रक्रिया और आत्म-प्रतिबिंब:** फोटोवॉइस कथाओं ने फोटोग्राफरों की रचनात्मक प्रक्रियाओं और स्वयं और दुनिया के बारे में उनकी धारणाओं को आकार देने में फोटोग्राफी की भूमिका की अंतरंग झलक पेश की। प्रतिभागियों ने अपनी तस्वीरों में अंतर्निहित सार्थक क्षणों, भावनाओं और आख्यानों को कैद करने और प्रतिबिंबित करने के माध्यम से आत्म-खोज और आत्मनिरीक्षण की गहरी भावना व्यक्त की।
- iii. **चुनौतियाँ और लचीलापन:** डायरी अध्ययन से फोटोग्राफरों के सामने आने वाली बहुमुखी चुनौतियों का पता चला, जिनमें रचनात्मक रुकावटें, आत्म-संदेह और बाहरी अपेक्षाओं को पूरा करने का दबाव शामिल है। इन बाधाओं के बावजूद, प्रतिभागियों ने विपरीत परिस्थितियों पर काबू पाने और फोटोग्राफी के प्रति अपने जुनून को फिर से जगाने के लिए प्रकृति, रिश्तों और व्यक्तिगत अनुभवों से प्रेरणा लेते हुए उल्लेखनीय लचीलापन और अनुकूली मुकाबला रणनीतियों का प्रदर्शन किया।

2. दर्शकों की प्रतिक्रियाएँ

- i. **भावनात्मक अनुनाद और सहानुभूति:** दर्शकों के साथ किए गए सर्वेक्षणों ने फोटोग्राफिक इमेजरी के गहरे भावनात्मक प्रभाव को रेखांकित किया, उत्तरदाताओं ने खुशी, उदासी, विस्मय और सहानुभूति सहित भावनात्मक प्रतिक्रियाओं की एक विस्तृत श्रृंखला की सूचना दी। मानवीय चेहरों और भावनात्मक दृश्यों को दर्शाने वाली छवियों ने सबसे मजबूत भावनात्मक प्रतिक्रियाएँ उत्पन्न कीं, विभिन्न दर्शकों के बीच जुड़ाव और साझा मानवता की भावना को बढ़ावा दिया।
- ii. **संज्ञानात्मक धारणाएँ और व्याख्याएँ:** प्रायोगिक अध्ययनों से फोटोग्राफिक विशेषताओं और दर्शकों की धारणाओं के बीच जटिल अंतरसंबंध का पता चला, जिसमें संरचना, प्रकाश व्यवस्था और विषय वस्तु जैसे कारक संज्ञानात्मक प्रसंस्करण और व्याख्या पर महत्वपूर्ण प्रभाव डालते हैं। प्रतिभागियों ने दृश्यात्मक प्रमुख छवियों के लिए बड़े हुए ध्यान और स्मृति प्रतिधारण का प्रदर्शन किया, जो दृश्य सौंदर्यशास्त्र और संज्ञानात्मक जुड़ाव के बीच एक सहजीवी संबंध का सुझाव देता है।
- iii. **नैतिक विचार और सामाजिक जिम्मेदारी:** दर्शकों की प्रतिक्रिया ने फोटोग्राफी में सहमति, प्रतिनिधित्व और प्रामाणिकता सहित नैतिक विचारों के महत्व को रेखांकित किया। प्रतिभागियों ने फोटोग्राफिक इमेजरी के निर्माण और प्रसार में पारदर्शिता और जवाबदेही की इच्छा व्यक्त की, नैतिक मानकों को बनाए रखने और दृश्य कहानी कहने में सामाजिक न्याय और समावेशिता को बढ़ावा देने की आवश्यकता पर बल दिया।

चर्चा

फोटोग्राफर और दर्शक दोनों पर फोटोग्राफी के मनोवैज्ञानिक प्रभावों की खोज फोटोग्राफरों और दर्शकों दोनों पर फोटोग्राफी के मनोवैज्ञानिक प्रभावों की खोज दृश्य कल्पना और मानव अनुभूति, भावना और व्यवहार के बीच जटिल परस्पर क्रिया में मूल्यवान अंतर्दृष्टि प्रदान करती है। इस अध्ययन के नतीजे आत्म-अभिव्यक्ति, कनेक्शन और सहानुभूति के माध्यम के रूप में फोटोग्राफी की परिवर्तनकारी क्षमता को रेखांकित करते हैं, जबकि फोटोग्राफिक इमेजरी के निर्माण

और उपभोग में निहित नैतिक विचारों और चुनौतियों पर भी प्रकाश डालते हैं।

1. फोटोग्राफर परिप्रेक्ष्य

इस अध्ययन के निष्कर्ष फोटोग्राफरों के लिए फोटोग्राफिक प्रक्रिया की गहरी व्यक्तिगत और आत्मनिरीक्षणत्मक प्रकृति पर प्रकाश डालते हैं। फोटोग्राफी आत्म-अभिव्यक्ति और अन्वेषण के लिए एक शक्तिशाली उपकरण के रूप में कार्य करती है, जो व्यक्तियों को दृश्य कहानी कहने के माध्यम से अपनी भावनाओं, दृष्टिकोणों और जीवित अनुभवों को व्यक्त करने में सक्षम बनाती है। फोटोग्राफरों द्वारा प्रदर्शित भावनात्मक जुड़ाव और लचीलापन रचना और व्यक्तिगत विकास के साधन के रूप में फोटोग्राफी की चिकित्सीय और परिवर्तनकारी क्षमता को रेखांकित करता है।

हालाँकि, अध्ययन फोटोग्राफरों के सामने आने वाली बहुमुखी चुनौतियों पर भी प्रकाश डालता है, जिनमें रचनात्मक रुकावटें, आत्म-संदेह और बाहरी दबाव शामिल हैं। ये चुनौतियाँ एक सहायक और रचनात्मक वातावरण विकसित करने के महत्व को रेखांकित करती हैं जो फोटोग्राफरों को उनकी कलात्मक दृष्टि का पता लगाने और प्रतिकूल परिस्थितियों पर काबू पाने के लिए सशक्त बनाती है।

2. दर्शकों की प्रतिक्रियाएँ

इस अध्ययन के नतीजे दर्शकों के बीच फोटोग्राफिक इमेजरी द्वारा उत्पन्न गहन भावनात्मक और संज्ञानात्मक प्रतिक्रियाओं पर प्रकाश डालते हैं। छवियों में खुशी और विस्मय से लेकर दुख और सहानुभूति तक भावनाओं की एक विस्तृत श्रृंखला को जगाने की शक्ति होती है, जो विभिन्न दर्शकों के बीच जुड़ाव और साझा मानवता की भावना को बढ़ावा देती है। दर्शकों की व्याख्याएँ असंख्य कारकों से प्रभावित होती हैं, जिनमें रचनात्मक तत्व, विषय वस्तु और व्यक्तिगत अनुभव शामिल हैं, जो दृश्य धारणा की व्यक्तिपरक प्रकृति को उजागर करते हैं।

इसके अलावा, अध्ययन फोटोग्राफिक इमेजरी की खपत में निहित नैतिक विचारों और सामाजिक जिम्मेदारी को रेखांकित करता है। दर्शक दृश्य कहानी कहने में पारदर्शिता, प्रामाणिकता और समावेशिता की इच्छा व्यक्त करते हैं, तस्वीरों के निर्माण और प्रसार में नैतिक मानकों को बनाए रखने और सामाजिक न्याय को बढ़ावा देने के महत्व पर जोर देते हैं।

3. निहितार्थ और भविष्य की दिशाएँ

इस अध्ययन के निष्कर्षों का समकालीन समाज में फोटोग्राफी और दृश्य संचार के अभ्यास पर महत्वपूर्ण प्रभाव है। फोटोग्राफी के मनोवैज्ञानिक प्रभावों की गहरी समझ को बढ़ावा देकर, चिकित्सक सहानुभूति को बढ़ावा देने, सामाजिक परिवर्तन को बढ़ावा देने और एक अधिक समावेशी और दयालु दुनिया की खेती करने के लिए दृश्य कल्पना की परिवर्तनकारी शक्ति का उपयोग कर सकते हैं।

भविष्य के अनुसंधान प्रयास विविध सांस्कृतिक संदर्भों और तकनीकी परिदृश्यों में फोटोग्राफी की मनोवैज्ञानिक गतिशीलता को और अधिक स्पष्ट करने के लिए नवीन पद्धतियों और अंतःविषय दृष्टिकोणों का पता लगा सकते हैं। इसके अतिरिक्त, फोटोग्राफी शिक्षा और

पेशेवर अभ्यास में नैतिक दिशानिर्देशों और सामाजिक न्याय सिद्धांतों को एकीकृत करने के प्रयास अधिक नैतिक और जिम्मेदार दृश्य संस्कृति को बढ़ावा देने में मदद कर सकते हैं।

कुल मिलाकर, इस अध्ययन के नतीजे व्यक्तिगत पहचान, भावना और सामाजिक संबंध को आकार देने में फोटोग्राफी की परिवर्तनकारी शक्ति को रेखांकित करते हैं। फोटोग्राफी में निहित मनोवैज्ञानिक गतिशीलता पर प्रकाश डालते हुए, यह शोध फोटोग्राफ़रों और दर्शकों के बीच समान रूप से अधिक जागरूकता, सहानुभूति और नैतिक जिम्मेदारी को बढ़ावा देने का प्रयास करता है, जिससे तेजी से परस्पर जुड़ी दुनिया में अधिक दयालु और समावेशी दृश्य संस्कृति का मार्ग प्रशस्त होता है।

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“NUTRITIONAL PROPERTIES OF DAIRY PRODUCTS”

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Introduction

Milk has been known as nature's most complete food for millennia, playing currently an important role in the diet of over 6 billion people in the world.

Milk and dairy products are nutrients good, supplying energy and high quality protein with a range of essential micro – nutrients (especially Calcium Magnesium, Potassium, Zinc and Phosphorus) in an easily absorbed form. Milk minerals are crucial for human health and development as well as in dairy processes as cheese making and for all traits involving salt protein interactions.

Dairy product is rich in nutrients that are essential for good bone health including calcium, Protein, Vitamin D, Potassium and Phosphorus.

The high level of calcium plays an important role in the development strength and density of bone for children and in the prevention of bone loss and osteoporotic fracture in elderly people.

In terms of the importance of milk and dairy products, changes in food choice determinates and consumption patterns, the analysis of energy and nutrients sources in a given population is crucial to assure the adequate nutritional quality of diets.

Properties of Dairy Products

Milk and dairy Products as sources of energy

Energy contribution from milk and dairy products amounted to 9.1%. The largest share in the energy supply was characterized by cheeses (including ripened melted and cottage cheeses) followed by milk (in particular, whole fat milk).

Milk and dairy products as sources of protein, Amino Acid, Carbohydrates, Total Fat, Fatty Acid and Cholesterol

Milk and dairy products provided 18.1% of the daily total protein supply.

The supply of branched – chain amino acids (Leucine, Isoleucine and Valine) from milk and its products developed at the level of 19.21%.

Dairy sources of carbohydrate total fat, fatty acid (SFA, MUFA, PUFA) and cholesterol are shown in milk and dairy products provided 11.3% of the total supply of total fat with a focus on SFA (18.4%). In the supply of cholesterol the share of milk and dairy products was 11.6% of which almost half were cheese (5.7%) The category of dairy products was responsible for the supply of carbohydrate in 5%. The most important ones were yoghurts milk drinks, and other dairy products (2.4%) and milk (2.3%).

Milk and Dairy products as sources of minerals and vitamins

Milk and dairy products are an important sources of calcium, accounting for almost 55% of the supply of this minerals. A large share was characterized by true products sub groups milk and cheese (each of these sub groups proved over 20% of the total supply of this minerals). The supply of phosphorus from the category of milk and its products amounted to almost 25% of which cheese accounted for more than 10%. The largest share of milk and its products in the supply of vitamin was recorded in the case of riboflavin and vitamin B12.

Review of Literature

Some experts in different disciplines have already selected the theme dairy as their research topic for M.Phil. as well as Ph.D degrees.

S. B. Sarang (1982) has studied dairy farming in Kolhapur District for his Ph.D degree. He studies spatial distribution pattern temporal growth, economics and working of milk producers in the study region.

Gholap T.N. (1987) has also studied distribution of livestock and fodder supply in Maharashtra for his Ph.D degree.

Khatakale A. B. (1995) has studied dairy farming in Solapur district for his M.Phil. degree.

Kolo P.A. (1987) has studied growth and economics significance of milk Co-operatives in Kolhapur district for his Ph.D degree.

Patel B.N. (1987) has studied the economic viability of dairy Co-operative in the command area of Koyana dairy of Karad.

Jamadar (1973) studied the impact of different factors on milk production in the area of Government Milk Scheme, Chiplun. He also studied the important characteristics of dairy operators related to the dairy activity.

Saprey (1960) studied different aspects of dairy including in Poona City.

Result

Milk has a unique combination of 9 essential nutrients: Protein, Calcium, Phosphorus, Vitamin A, D & B12, Riboflavin, Niacin and Pantothenic acid. Each of these nutrients is a key ingredient of milk and they all work together to help keep our bodies healthy. The dairy products provide many nutrients including Calcium, Phosphorus, Vitamin A, D, B12, Protein, Potassium, Zinc, Choline, Selenium. Improving bone health dairy foods are a good choice for maintaining strong bones due to their high protein, vitamin D and calcium content. The Calcium in milk is easily absorbed and used in the body which is why milk and dairy foods are reliable sources of calcium.

Conclusion

Including milk and diet is associated with better dietary quality. Most individuals who avoid milk do not consume recommended levels of calcium, potassium, vitamin D, and other nutrients.

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EXPLAINABLE ARTIFICIAL INTELLIGENCE (XAI) FOR HEALTHCARE: ENHANCING TRANSPARENCY AND TRUST

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ABSTRACT

Artificial Intelligence (AI) has developed as a transformative driven healthcare, promising progressed determination, treatment, and quiet care. In any case, the complexity and mistiness of AI models have raised concerns approximately their reliability and straightforwardness in basic restorative settings. This research paper investigates the role of Explainable Artificial Intelligence (XAI) in tending to these concerns. Also improving transparency and believe in AI-driven healthcare frameworks.

The paper starts by giving a comprehensive foundation on AI in healthcare and the centrality of clarify capacity in AI frameworks. It examines the challenges related with black-box AI models, emphasizing the requirement for interpretable arrangements in healthcare. Different XAI strategies, including Local Interpretable Model-Agnostic Explanations (LIME), Shapley Additive Explanations (SHAP), and rule-based frameworks, are displayed and assessed for their viability in making AI models interpretable.

Keywords: Artificial Intelligence (AI), Explainable Artificial Intelligence (XAI), Healthcare, Deep Learning.

Introduction

Artificial Intelligence, fuelled by machine learning and deep learning calculations, excels in preparing and translating this tremendous trove of information. AI frameworks can quickly analyse patient records, spot unpretentious designs in demonstrative pictures, and indeed foresee disease outbreaks by scrutinizing patterns in epidemiological information. By giving healthcare experts with actionable insights and expanding their decision-making capabilities, AI demonstrates to be a priceless instrument in optimizing patient care. AI's impact amplifies past information analysis—it's a driving force behind the rise of

personalized medication. Through the examination of hereditary and clinical information, AI calculations can recognize individualized treatment plans custom-made to a patient's special hereditary makeup and medical history. This groundbreaking approach not as it were improving treatment adequacy but moreover diminishes unfavourable impacts, checking a significant stride towards patient-centred care. Beyond clinical applications, AI is driving operational proficiency in healthcare institutions. Administrative tasks, such as charging, arrangement planning, and asset assignment, can be computerized through AI, liberating up healthcare experts to focus more on patient care.

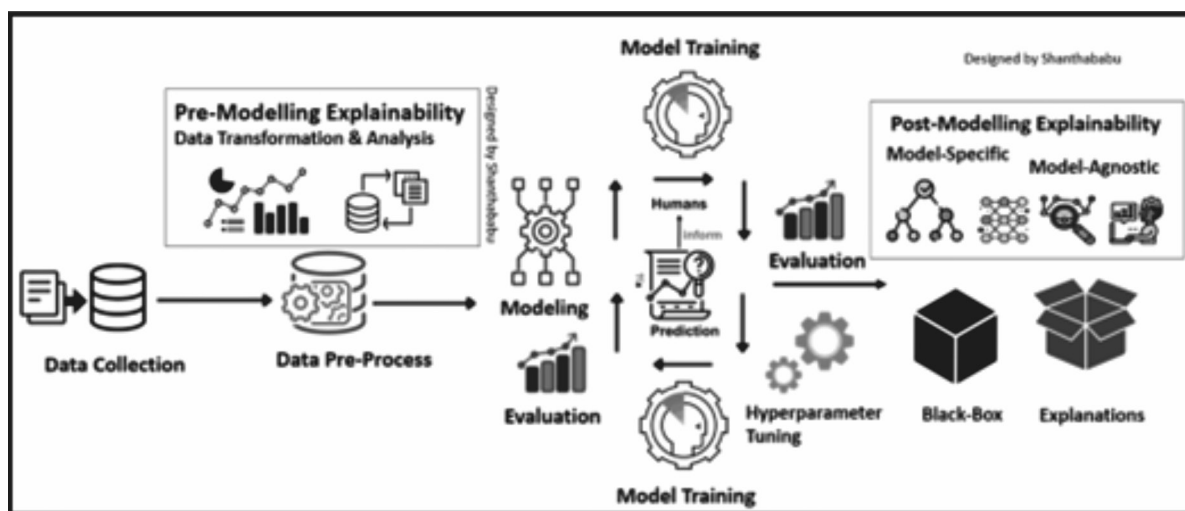


Figure-1. Big Picture of Explainable Artificial Intelligence [1]

Applications of XAI in Healthcare

Explainable Artificial Intelligence (XAI) has numerous applications in healthcare, where transparency and interpretability of AI models are crucial for ensuring patient safety, trust among healthcare professionals, and ethical compliance. Here are some key applications of XAI in healthcare:

I. Clinical Decision Support Systems (CDSS)

XAI can enhance CDSS by providing clear explanations for the recommendations or decisions made by AI algorithms. This helps healthcare professionals understand the reasoning behind AI-driven suggestions for diagnoses, treatment plans, and medication recommendations, leading to more informed clinical decisions.

II. Medical Imaging Interpretation

XAI can be integrated into medical image analysis to assist radiologists and clinicians in interpreting complex imaging data. It can highlight areas of interest, provide explanations for image-based diagnoses, and help identify potential anomalies in X-rays, MRIs, CT scans, and pathology slides.

III. Drug Discovery and Genomics

XAI can be applied to drug discovery by explaining the molecular mechanisms of diseases and the potential

targets for drug development. It aids in identifying genetic markers and biomarkers for personalized medicine, making it easier for researchers to understand how specific genes or molecules are associated with diseases.

IV. Patient Risk Assessment

XAI can be used to predict patient risk factors and outcomes, such as readmission risk, disease progression, or complications following surgery. By providing transparent risk assessments, XAI helps clinicians prioritize patient care and interventions more effectively.

V. Treatment Recommendation and Personalized Medicine

XAI-driven systems can explain why a particular treatment plan or medication is recommended for a specific patient. This personalization is based on the patient's medical history, genetic information, and other relevant data, increasing patient engagement and adherence.

VI. Interpretable Electronic Health Records (EHRs)

XAI can be used to interpret and extract valuable insights from electronic health records (EHRs). It can help healthcare providers understand patient trends, identify early warning signs, and optimize treatment

plans based on comprehensive and interpretable patient data.

VII. Ethical Compliance and Bias Mitigation

XAI can play a critical role in addressing ethical concerns in healthcare AI, such as bias in algorithms. By providing transparency into decision-making processes, it allows for the identification and mitigation of biases in AI models, ensuring fair and equitable healthcare outcomes.

VIII. Clinical Trials and Research

XAI can assist researchers in explaining the results of clinical trials and observational studies. It aids in identifying significant factors and variables contributing

to study outcomes, helping researchers make more informed conclusions and decisions.

IX. Patient Engagement and Education

XAI-powered applications can explain medical conditions, treatment options, and potential outcomes to patients in a clear and understandable manner. This promotes patient engagement, informed consent, and shared decision-making in healthcare.

X. Regulatory Compliance

XAI can assist healthcare organizations in complying with regulatory requirements related to transparency and accountability. It helps ensure that AI-driven systems adhere to privacy and ethical standards, making them compliant with healthcare regulations.

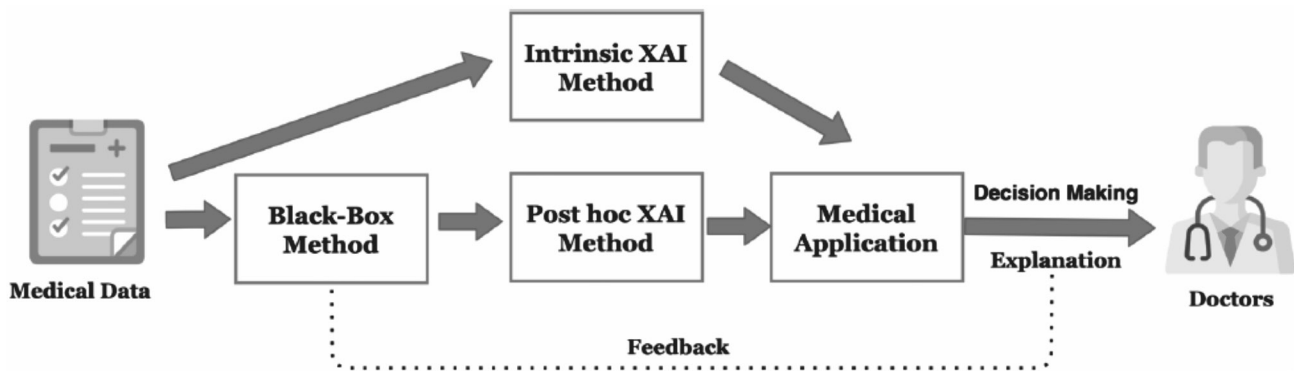


Figure-2. Pipeline of a medical XAI application [2]

2. Advancements in XAI techniques

Researchers and developers have been working to make AI models easier to understand and transparent in recent years, which has resulted in substantial advancements in Explainable Artificial Intelligence (XAI) methodologies. These developments are meant to solve the difficulty in comprehending and having faith in sophisticated AI systems. Here are some significant developments in XAI techniques:

I. Local Interpretable Model-Agnostic Explanations (LIME)

LIME is a method that concentrates on producing locally accurate explanations for intricate models. It creates interpretable surrogate models around certain

predictions, making it simpler to comprehend why an AI model made a specific decision.

II. Shapley Additive Explanations (SHAP)

SHAP values are used to describe the role played by each feature or variable in the prediction made by a model. They offer a coherent framework for comprehending the significance of features in black-box models, including neural networks.

III. Counterfactual Explanations

Alternative scenarios are created through counterfactual explanations to explain AI decisions. For instance, if an AI model approves a loan application, a counterfactual explanation could outline the

adjustments that would have caused the application to be rejected.

IV. Rule-Based Models

Rule-based models, also known as symbolic AI, use rules that can be understood by humans to describe AI decisions. To give clear decision reasoning, these models can be utilized in conjunction with intricate machine learning models [3].

V. Gradient-Based Methods

Methods such as Integrated Gradients and Smooth

Grad employ gradients to elucidate the contribution of each input feature towards the output of a model. This facilitates the process of feature attribution and enables visual explanations.

VI. Attention Mechanisms

Attention mechanisms, which were initially devised for natural language processing (NLP), have been modified to furnish elucidations for sequential data and image recognition assignments. These mechanisms [4] accentuate the specific segments of the input data that the model concentrates on while rendering predictions.

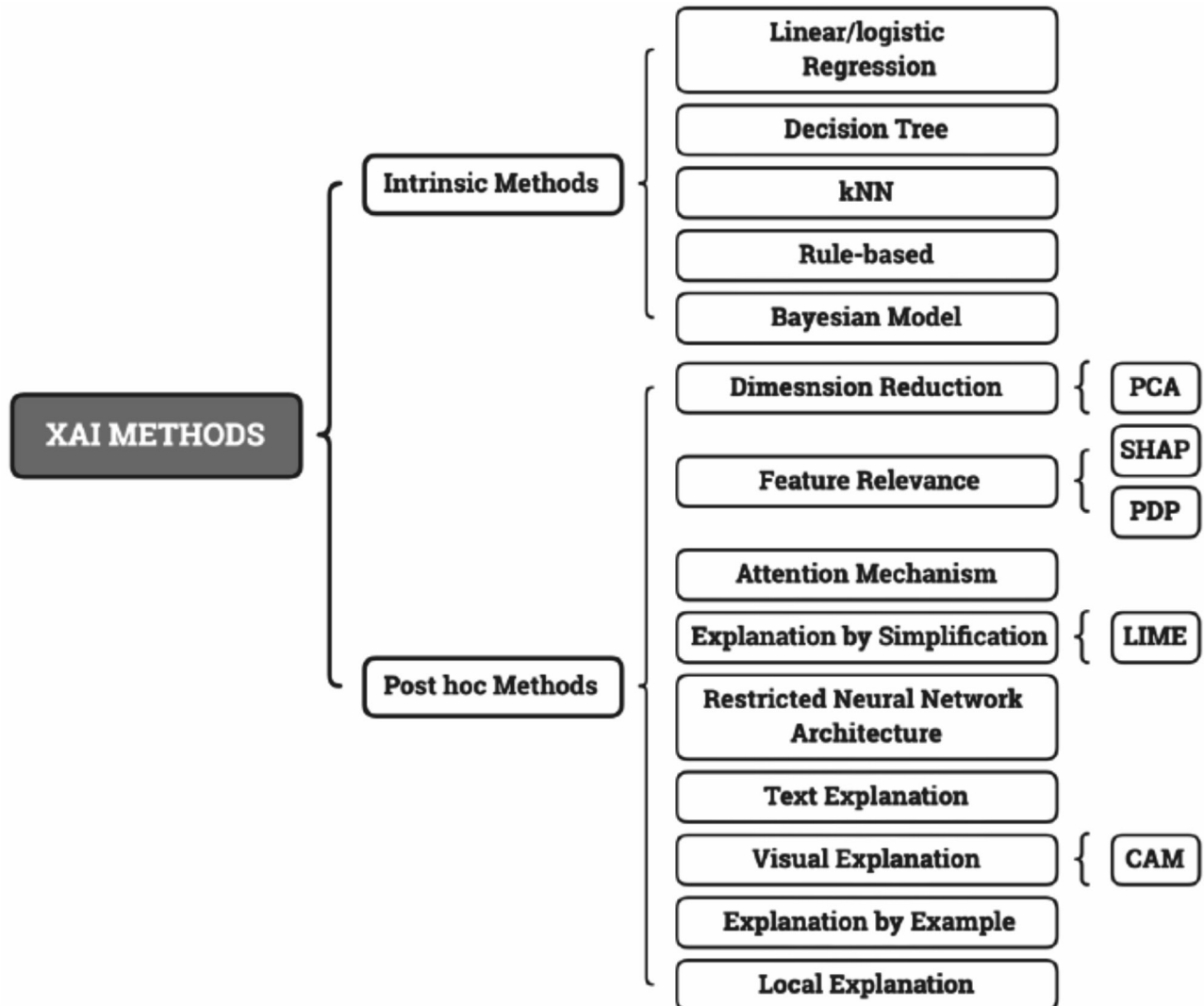


Figure-3. Taxonomy of XAI methods, post hoc XAI types, and some examples.[2]

VII. Interpretable Neural Networks

The scholars have devised neural network structures that are inherently interpretable. These networks frequently employ sparse activations or structured layers, which facilitate comprehension of the information flow within the model.

VIII. Visualization Tools

The progressions in visualization [5] methodologies have enabled users to perceive the functioning of AI models and the rationale behind their specific predictions. The utilization of tools such as activation maps, saliency maps, and feature visualization has facilitated users in acquiring a comprehensive understanding of the behaviour of the model.

IX. Natural Language Explanations

Advancements in the field of natural language generation have facilitated the ability of artificial intelligence models to furnish explications in a language that is comprehensible to humans. This capability is especially advantageous in domains such as healthcare and law, where lucid and straightforward explanations are of paramount importance.

X. Hybrid Models

The amalgamation of interpretable models with intricate machine learning models in a hybrid methodology presents a harmonious equilibrium between precision and lucidity. This facilitates lucid explications without compromising prognostic [6] potential.

XI. Standardization Efforts

Various organizations and researchers are currently engaged in the process of establishing standardized techniques for explainable Artificial Intelligence (XAI) to guarantee uniform and dependable explanations across diverse AI models and applications.

Challenges

Healthcare Explainable Artificial Intelligence (XAI) confronts a number of obstacles that must be overcome

in order for it to be successfully incorporated [7] into clinical practise.

Here are a few of the main difficulties:

I. Complexity of Healthcare Data

Medical photographs, clinical notes, and structured EHR data are just a few examples of the many different forms of data that are frequently complicated, diverse, and present in healthcare. It is a huge challenge [8] to create XAI systems that can manage and interpret findings from such a wide range of data sources.

II. Model Complexity

Due to their intricacy, deep learning models, which are increasingly employed in healthcare, are sometimes referred to as “black-box” models. It’s not easy to clinically meaningfully explain these models’ judgement calls.

III. Interoperability

EHR systems and data formats used by healthcare organisations vary widely. It is difficult to make sure that XAI systems can be connected with these various systems and offer coherent justifications.

IV. Privacy and Security

A fine line must be drawn between maintaining patient confidentiality and offering explanations. Techniques for XAI must be created to produce insightful explanations without disclosing private patient data [9].

V. Data Quality and Bias

It takes skill to maintain patient privacy while yet explaining things. It is necessary to develop XAI methods that can produce insightful explanations without divulging private patient data.

VI. Clinical Validation

To make sure that their explanations are correct and consistent with clinical knowledge, XAI systems need to be carefully verified in clinical settings. Clinical validation studies may need a lot of time and resources.

VII. User Acceptance

The explanations offered by AI systems must be trusted and understood by healthcare personnel. Clinical practitioners may be reluctant to depend on AI-driven suggestions without thorough and trustworthy justifications since user [10] acceptability of XAI in clinical practise is a substantial barrier.

VIII. Regulatory Compliance

It is essential to adhere to healthcare rules, such as those imposed by HIPAA in the US. These rules must be followed by XAI systems while processing patient data and offering explanations.

IX. Scalability

XAI solutions must be scalable to accommodate the volume of data and the requirement for real-time decision assistance as healthcare generates enormous volumes of data.

X. Education and Training

In order for healthcare practitioners to apply and understand XAI-driven suggestions and explanations effectively, they must get education and training in this area. The creation of educational resources and programmes is necessary [11] for this.

Future Directions

As AI and machine learning models are used to support medical decisions, diagnostics, and treatment recommendations, Explainable Artificial Intelligence (XAI) is becoming more and more significant in the healthcare industry. For these AI systems to earn the trust of medical personnel and patients, openness and interpretability are essential. The following are some potential paths for XAI in healthcare:

I. Model Transparency and Interpretability

The goal of research and development will remain to improve the readability and transparency of AI models. This covers methods like feature significance analysis, model visualisation, and the creation of more comprehensible, straightforward model designs.

II. Integration with Electronic Health Records (EHRs)

In order to give explanations and insights immediately into the clinical process, XAI technologies will be more seamlessly connected with electronic health records. Clinicians may find this useful for comprehending the logic underlying AI-driven suggestions.

III. Human-AI Collaboration

Future XAI systems will place a focus on expert AI and human cooperation. This can entail interactive user interfaces that [12] let physicians examine various scenarios and treatment alternatives while also asking the AI system for clarifications.

IV. Privacy-Preserving XAI

Healthcare data privacy is a major problem; hence it will be essential to use XAI approaches that can explain things without disclosing private patient data. One of the main study areas will be privacy-preserving XAI.

V. Interpretable Deep Learning

A major focus will be on creating methods to make deep learning models, which are sometimes referred to as “black-box models,” more understandable. This can entail employing strategies like attention mechanisms or deep network feature extraction.

VI. Domain-Specific XAI

Radiology, genetics, and drug discovery are just a few of the many subfields that make up the broad area of healthcare. To meet the unique requirements and difficulties of each area, XAI methodologies will need to be customised.

VII. Regulatory Guidelines

It's possible that regulatory [13] organisations will set standards and regulations for XAI systems within the health care sector, like the FDA in the US. These recommendations will have an impact on how XAI solutions are developed and implemented.

VIII. Education and Training

Healthcare workers will need to be educated on how to utilise AI systems correctly and understand their results as XAI becomes more common in the industry. Concepts from XAI will need to be included in training programmes.

IX. Bias and Fairness

In the healthcare industry, it is crucial to guarantee that XAI systems are impartial and generate fair results. The development of tools to identify and reduce bias in AI models will be the main focus of research.

X. Continuous Evaluation and Improvement

Healthcare XAI systems [14] will require ongoing evaluation and development. Clinicians' and patients' feedback will be crucial [15] for improving these systems and making them more reliable and effective.

Conclusion

In conclusion, Explainable Artificial Intelligence (XAI), that helps clinical decision-making, diagnostics, and therapy suggestions, shows huge potential for revolutionising healthcare [16]. To enable its successful integration into the world of healthcare, it provides a number of difficult challenges that must be fixed.

The potential of XAI to better healthcare processes and outcomes for patients is substantial. Health care professionals may better comprehend the reasoning behind AI-driven suggestions by using XAI's readily interpretable AI models, which promotes trust and cooperation between humans and computers. Additionally, XAI has the ability to find trends and conclusions [17] in enormous and complicated healthcare datasets, assisting in the early diagnosis of diseases, the personalization of procedures, and improving the quality of healthcare procedures.

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ISSUES & CHALLENGES WHICH CUSTOMERS FACE WITH REFERENCE TO E-PAYMENT SERVICES IN PRIVATE BANKING COMPANIES IN MUZAFFARNAGAR (UTTAR PRADESH)

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ABSTRACT

India is one of the fastest growing countries in the plastic money segment, there are 130 million cards in circulation, which is likely to increase at a very fast pace due to rampant consumerism. India's card market has been recording a growth rate of 30% in the last 5 years. Card payments form an integral part of e-payments in India because customers make many payments on their card-paying their bills, transferring funds and shopping. Ever since Debit cards entered India in 1998, they have been growing in number and today they consist of nearly 3/4th of the total number of cards in circulation. Credit cards have shown a relatively slower growth even though they entered the market one decade before debit cards. Only in the last 5 years has there been an impressive growth in the number of credit cards - by 74.3% between 2004 and 2008. It is expected to grow at a rate of about 60%, considering levels of employment and disposable income. Majority of credit card purchases come from expenses on jewelry, dining and shopping. Another recent innovation in the field of plastic money is co-branded debit cards, which combine many services into one card - where banks and other retail stores, airlines, telecom companies enter into business partnerships. This increases the utility of these cards and hence they are used not only in ATM's but also at Point of Sale (POS) terminals and while making payments on the net. [9] [10]

KEYWORDS: Indian economy, money, e-payment, private banks, internet banking, Muzaffar-Nagar (Uttar Pradesh)

Introduction

Online banking transaction in India was first started in 1980's. After that, most of the private commercial bank in India plays a vital role in Indian Banking system, through that the country moved towards an online banking system that is compatible with international standards. In India, online E-payment provides various services like internet banking, mobile banking, online banking, ATM services, debit card, and credit card services, tele-banking, etc. [1] [2] [4]

India stands in one of the top 5 economies in the

world, where in the banking sector has incredible potential to grow. The last decade saw customers are addicted to use of ATM, internet and mobile banking because its saves time. The Indian banking sector in FY 2022-23 held total assets of ₹138.38 lakh crores in the public sector and ₹83.39 lakh crores in the private sector. The assets of banks in India amounted to about 2.9 trillion U.S. dollars in financial year 2023. The performance of the banking sector in 2023 was nothing short of remarkable. Profits soared, witnessing an aggregate increase of 38.4%, with public sector banks

leading the charge by nearly tripling their net profits. Now banks are using the latest technologies like mobile devices & internet to carry banking transactions & to communicate with the masses. [3]

India's banking sector has the potential to become the 3rd largest banking industry in the world by 2025, according to a KPMG report. E-Payment Systems are more important to online business process innovations as companies search for ways to serve customers faster and at lesser price. If the claims and debts of the different customers i.e., individual person, firms, banks and non-banks are not composed (because of delay in payment or even bad debts), then the complete business process is disturbed. E-payment services are flourishing in banking, health care, retail, service industry, online markets and even government. Companies are encouraged by the need to transfer products and services more effectively with less cost & to provide a better quality of service to their customers. Under E-payment, money transfer is an e-transfer of information that equals to moving funds from one financial institution to another. E-payment systems are substitute for cash or credit payment methods by using several electronic technologies to pay for products and services in e-commerce. E-Payment system involves many security issues. [7]

Review of Literature

The review of literature reveals the various researches have been conducted so far related to population statistics and acceptance of e-banking therefore thoroughly banking literature has been reviewed.

Sournata, Mattila and Munnukka (2005), Al Sabbagh and Molla (2004) - opine that, internet banking, online banking, e-banking and m-banking are relative less popular among the Indian customer as they are not aware of technology. Due the advent of technology and digital India revolution has made sweep among Indian banks and shift and ease in customer mind-set characterized Indian banking system.

Selvam and Nanjappa (2011) in their research,

examined customers awareness and satisfaction about E-banking. It shows that customers are aware of E-banking compare to other groups.

The study also revealed that customer's whose income level above ₹ 10,000 per month is using E-banking transactions as compared to other less income groups. It was shown that it depend on the size of family. Education is the crucial factor for the acceptance of internet banking.

Ongkasuwan and Tantichattanon (2002) say that E-banking helps to banks save time, cost, increase customer services, allow bulk customization for E-business services, spread marketing & communication channels. It also stated that customer's ability to use the E-based banking services depend on various factors like level of internet experience, type of service provided, access & delivery time, attitude and perception.

Musiime (2011), Amin (2007) and Davis (1989) observed various factors in their research that affected the customer's choice in adoption of E-banking / new technology in banking services. These aspects incorporated perceived security, internet experience, trust, skills & time, exposure on marketing, reliability and demographic characteristics of the customer.

Laukkanen (2007) identified in their research that in spite of benefits and tailor made E-banking services offered by the banks, some customer still pay bills in through the bank branches because there are various factors that act as the walls on the customer's adoption of E-banking such as internet experience, education & age.

Vishal Goyal and Sonia Goyal, (2012), observed that perception among bank customer who are using e-banking technology and those who do not use e-banking. They found risk in transferring finances, emotional and security was more among the customer who do not use than those who use. Customers who do not wish to use e-banking had been afraid that their money could be tricked during transfer of money. Some customers use internet banking because of convenience during shopping and found safety measure. Also to state that internet banking is not much popular in India and

more customers not prefer to activate internet banking for their account.

According to Kaleem and Ahmed 2008, the main benefit of e-banking transaction is reducing the inconvenience, transaction time & cost taken in an operation, whereas, key concerns are chances of government entree & lack of information safety. Now banks started implementing more and more technological improvements and that impact on enhancement of its competence. Nowadays online banking is becoming more essential & integral part of banking services.

Background of the Study

The origin of electronic payment is related to the beginning of the internet. The internet started in 1969 with ARPANET, the military information was intended to be the communication network in the Vietnam War. But the main turning point was in 1989 when Tim Berners-Lee presented the solution of making information easier to access on the internet by using the “sites” or “pages”.

Online payment transaction was started to operate in the mid-half of the 90s. In 1994, Stanford Federal Credit Union was started – it was the first financial institution which offered e-banking services to all of its customers. The important players on the online-payment were Millicent (founded in 1995), Cyber Coin or electronic cash (in 1996). The most of the first online transactions were using for micro-payment and their common element was the attempt to adopt the electronic cash alternatives (such as, digital cash or tokens, e-money).

Need for the Study

Banking customers have been significantly affected in a positive manner by electronic banking. Customer can access his account with internet; it can save time & money for the individual customers. Now all transactions or tasks have been fully automated resulting in better efficiency, better time usage and enhanced control. E-banking has been of greater help

to the banking industry to reduce paper work, thereby helping them to move to paper less environment; less transaction cost & E-payment make corporate services economically feasible for the society.

Importance of the Study

E-payment is the electronic alternative to cash. E-payment is monetary value that is stored electronically, and which is used for making payment transactions. With the development in telecommunication, E-payment systems are rapidly replacing the traditional method of payment that involved personal contact between borrowers and lenders. E-payment systems involve online financial transactions that utilize some form of financial devices, such as e-cash, cheque & mobile banking etc. [5]

Businesses depend on efficient and quick access to banks for cash flow reviews, auditing and daily financial transactions. Online banking offers ease of access, secured transactions and 24/7hour banking options from small start-up firm to more established entities.

Scope of the Study

The study is limited only to private banking sector in Muzaffar-Nagar (Uttar Pradesh) with reference to issues & challenges of e-payment system. [6] [8]

Objectives of the Study

1. To study the issues and challenges in e-payment services in private banks
2. To study the problems faced by customer during e-payments

Research Methodology

This study has been carried out on time value of money: Issues & challenges with reference to e-payment services in private banking.

Sources of Data

For this study data collected mainly from the secondary sources.

Through personal interview, primary data was

collected from banks like ICICI, HDFC, YESB and AXIS.

Secondary data have been collected from various sources including newspapers, websites, articles etc.

Methods of Data Collection: Survey

Method - Research Design

The study is based mainly on primary data and supported by the secondary data. The primary data is collected from the customers with the help of questionnaire to evaluate the customers prospective. For this purpose, a structured questionnaire is prepared and used by the researcher regarding five parameters of the customers prospective.

Information regarding the respondents is classified into two major groupings:

Section-1 belongs to challenges in e-payment services in private banks provided by the respondent's bank.

Section-2 is about customers prospective of problems faced by customer during e-payments different criteria.

The customer's perspective section in addition to

this five point scale has been used as and when it was required in the study.

Sample Size

The study is exploratory in nature and it is based on the selected sample of the banks mainly from private sector banks. The banks include the scheduled commercial banks.

Limitations of the Study

1. The study is limited to area of Muzaffar-Nagar (Uttar Pradesh) only
2. Only customer perspective is studied by the researcher
3. Factors which affect the smooth and secure e-banking services are not covered
4. Limitations of primary data and sampling will remain with study

Analysis

Table 1: Mean averages - σ calculated S D & calculated Statistics of challenges in e-payment services towards creating customer satisfaction.

TABLE 1.1: CHALLENGES IN E- PAYMENT SERVICES

No.	Descriptive Statistics			Test Statistics	
	Factor	Mean	SD	Asymp. Sig.	Decision
epa1	challenges in e-payment services	4.213	0.847	0.4171	No Sig.Diff
Df=5	a. Kruskal Wallis Test	b. Grouping Variable: Sectorial Belonging			

Source: Primary data

NULL HYPOTHESIS - There is no significant (statistically) difference in preferences between set of respondents in Banking companies with respect to challenges in e-payment services towards creating customer satisfaction.

ALTERNATE HYPOTHESIS - There is a significant (statistically) difference in preferences between set of respondents in Banking companies with respect to challenges in e-payment services towards creating customer satisfaction.

$H_0 = \square$ ICICI = \square HDFC = \square YESB = \square AXIS

$H_1 \neq$ At least one of them differ (service providers differ significantly).

Alpha = 0.05 variation Significance level.

Table 2: Mean averages - σ calculated S D & calculated Statistics of challenges in problems faced by customer during e payments towards creating customer satisfaction.

NULL HYPOTHESIS - There is no significant

(statistically) difference in preferences between set of respondents in Banking companies with respect to problems faced by customer during e-payments.

ALTERNATE HYPOTHESIS - There is a significant (statistically) difference in preferences between set of respondents in Banking companies with respect to

problems faced by customer during e-payments.

$H_0 = \square \text{ ICICI} = \square \text{ HDFC} = \square \text{ YESB} = \square \text{ AXIS}$

$H_1 \neq$ At least one of them differ (service providers differ significantly).

Alpha = 0.05 variation Significance level.

TABLE 2.1 PROBLEMS FACED BY CUSTOMER DURING E PAYMENTS

No.	Descriptive Statistics			Test Statistics	
	Factor	Mean	SD	Asymp. Sig.	Decision
epa2	Problems faced by customer during e-payments	4.721	0.821	0.4571	No Sig.Diff
Df=5	a. Kruskal Wallis Test	b. Grouping Variable: Sectorial Belonging			

Source: Primary data

Summary of Findings (Conclusion)

Researcher has studied customers' acceptance of electronic banking services in Muzaffar-Nagar (U.P.).

The researcher has identified ten factors such as convenience of usage, accessibility, availability of features, bank management and image, security, privacy, design, content, speed, and fees & charges.

The results showed that out of these ten factors, factors such as accessibility, convenience of usage,

design and content are the major sources of satisfaction while privacy and security are the main sources of dissatisfaction.

Whereas, factors such as speed, service charges and bank management are dangerous to the success of the E-payment services.

Hence, the researcher is able to identify the satisfaction level of different customers in different scenarios with regards to E-payment services.

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WATER POLLUTION IN UTTER PRADESH: ITS IMPACT ON THE HUMAN HEALTH: CAUSES AND CURATIVE

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ABSTRACT

All activities carried out on the ground water have direct or indirect impact on the ground water, Water pollution in UP is a major problem. In recent years due to industrialization and urbanization in Utter Pradesh, this problem has become giant. Utter Pradesh being one of the most dominant industrial agriculture states of North India. Right to use water is a basic human right. Indian constitution do not make this right a exact right. Article 21 of the constitution of India provide that every person has the right to life. This Article personified in it, the right to pure water for drinking. Life of a human cannot be sustained with polluted water. Pollution free water is the only hope for the healthy life. The root cause of a number of diseases is the polluted water. There are a number of causes responsible for polluting the water. Polluted water doesn't come from a single source. Article 47 impose duty on the state to raise the level of nourishment and the standard of living including improvement of public health. It is the duty of the state to provide pure water to the community. It is also the duty of every citizen under article 51 (A) g to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have consideration for living creatures.

Introduction

Impure water is the main reason of a number of disease. Polluted water not only affects the life of present generation but it also affects the life of future generations because its result remains for long. Bhopal gas tragedy case can be named as an example. Bhopal Gas tragedy is the world's most horrible industrial tragedy. Study by official scientific agencies shows that ground water pollution has spread 42 meters deep and upto 4 km from the deserted factory. Nearly 41000 persons have consumed this impure water over the past 15 to 20 years and cancer, birth defects and disease related to skin, lungs, brain, kidneys and liver are several times more widespread in that society than anywhere besides in the country.

The use of water is multifold. The continued existence of human being is not possible without the water. Human being cannot live without the water. For a fit life pure and pollution free water is essential. If in

any area the water is polluted then people or the other living creature are compulsory to drink that polluted water because they have no other option nor can they live without it. In recent years, water pollution has become a serious problem across the country, mostly due to the presence of untreated effluents, chemicals and pesticides in it. There are many causes of water pollution. These causes can be removed or at least controlled with the awareness amongst the people and by the strong implementation of the legislative measures. But because of the activism of judiciary in India this right to clean and sufficient water is embodied in Article 21 of the Constitution of India. If the water is not clean or is polluted then Constitution of India also provides therapy which can be claimed under the law of torts and under Article 226 of the Constitution in the form of filing writ in the High Court of the respective State and under Article 32 writ can be filed in the Supreme Court.

Right to Access to Clean Water

Fresh water is the basic need of the living being. It is one of the main substances of the survival of living being. Water has multifunctional role in every day life. It is used for drinking, bathing, cleaning and irrigation etc. The main water bodies from where water can be use are lakes, rivers, oceans, ponds and ground water. State also provides water to the people. Right to access clean water is the basic human right of a human being. On July 28, 2010 UN General Assembly official announcement to make water and hygiene as right. Mr. Pablo Solon the Bolivian Representative to the UN, while tabling the announcement said that “Drinking water and sanitation are not only elements or principal components of other rights such as “the right to an sufficient standard of living. The right to drinking water and cleanliness are sovereign rights that should be recognized as such. In India, Government is the trustee of all natural resources which are meant for public use and enjoyment by nature and water is one of these natural resources. Constitution of India provides that water is reachable for all irrespective of cast and religion. Article 15 (2)(b).

Causes and Effects of Water Pollution

Pollution of water means analysis the water unhealthy for human use by brings changes in its natural feature. Water pollution can be defined in many ways. Usually, it means one or more substances have make up in water to such an stage that they cause harms for living beings. Pollutants in water include a wide range of chemicals, pathogens and physical state. Many of the chemical substance are poisonous. Pathogens can produce waterborne diseases. Change of water's chemical and physical properties such as acidity, basicity, electrical conductivity, temperature etc. Human communicable diseases are among the most severe effects of water effluence. In India, every year, around 52,000 million liters of wastewater (industrial and domestic) is generated in municipal areas. If the data of rural areas is also taken into account, the overall figure will be higher. A growing number of bodies of water in Utter pradesh are unfit for human use and

in the River Ganga holy to the country's 80 percent Hindu majority, is vanishing slowly due to unrestrained pollution. Water effluence is a major problem in UP. Only about 12% of the waste water generate is treated; the rest is discharged as it is into our water bodies. Due to this pollutant go into the groundwater, rivers and other water bodies. polluted water puts serious effect on human being. We can partition the causes of water pollution into two parts one is indirect and the second is direct.

Indirect cause

The waste material, when carried from a place to the water assets, is called indirect cause. Indirect sources of water pollution include stuff which goes into the water from soils and from the atmosphere through rainfall. Soils and ground waters contain the residue of human agricultural practices and also improperly disposed of industrial wastes. It is common for farmers to use fertilizers and other chemicals on their crops to help them grow. However, these chemicals and nutrients added to the soil can soak into the underground water supplies.

Direct Cause

Direct sources include effluent outfalls from factories, refineries, waste treatment plants etc. that emit fluids of varying quality directly into urban water supplies In this category we can include those pollutants which directly enter into the water recourse and pollute it. In the industrial areas, manufacturing effluents are the main source of water contamination either surface water or ground water. There, industrial wastes are directly discharged into the waterways. Industries discharge a variety of pollutants in their wastewater including heavy metals, resin pellets, organic toxins, oils, nutrients, and solids. Discharges can also have thermal effects, especially those from power stations and these reduce the available oxygen. City sewage is also the main cause of water pollution. Sewage is also known as wastewater which usually contains laundry waste, urine and faeces. Disposing these wastes is a big problem in the state today that is why the rivers and the

lakes are the ones that suffer by sewage water pollution can cause diarrhea. A large number of fish and other organism living under water have been death due to the highly contaminated water leading to an all diffuse stink in the vicinity of the Ghaggar. After the testing of its water it was found that against the normal biochemical oxygen demand (BOD) level of 2.8-3.0 mg per litre, it had 24 to 30 mg per litre.

Remedies in Case of Water Pollution

In case of water pollution the best remedy is to approach the court. It is a nuisance to pollute a pond, well or any water resource. Nuisance may be private or public. If the use or enjoyment of person's property or of some right over or in connection with it, is interfered by the illogical water pollution done by another then a suit for private nuisance can be claimed. In the public nuisance violator may be punished by a criminal sentence, a fine or both.²⁹ Section 268 of the Indian Penal Code, 1860 provides that a person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes injury, danger or annoyance to the public. Sections 133 to 144 of the Criminal Procedure Code provide the remedy in case public nuisance. Section 133 empowers the magistrate to pass an order for removal of a public nuisance within a fixed period of time. The measures to control the water pollution can be sought from the court by public interest litigation (PIL). The expression public interest litigation means a legal action initiated in a court for enforcement of public interest.³⁰ A Public Interest Litigation (PIL) or social interest litigation can be filed in any High Court or in the Supreme Court under Article 226 and 32 respectively. Public interest litigation can be filed in the Supreme Court only if a question concerning the enforcement of a fundamental right is involved and in the High Courts it can be filed whether or not a fundamental right is involved. It can be filed by any public spirit citizen for the enforcement of the constitutional and legal right of any person or group of persons who because of their socially or economically disadvantaged position are unable to approach court for relief.³¹ Article 32 of the Constitution of India is

a great safeguard to provide shield to the fundamental rights provided under Part IV of the constitution. It is a weapon to protect the right to access clean water. Although right to water is not explicitly a fundamental right under the constitution of India but according to the judicial approach this right is embodied in Article 21 of the constitution of India. The Kerala High Court in *Attakoya Thangal v. Union of India*, 1990 KLT 580, attributed right to clean water as a right to life in Article 21. In *S. K. Garg vs State of U.P.*, AIR 1999 All 41, the ambit of Article 21 was enlarged to include the "Right to Water". Court said that in our opinion the right to get water is part of the right to life guaranteed by Article 21 of the Constitutions but a large section of citizens of Allahabad are being deprived of this right. Without water the citizens of Allahabad are going through terrible agony and distress particularly in this hot season when the temperature goes up to 46 or 47 degree Celsius.

Conclusion and Suggestions

The present study finds that the right to access clean water is not specifically guaranteed either by the constitution of India or by any other Acts. Duty is imposed on the state to provide clean water and prevent and control the water pollution. The present study reveals that Water pollution is a major issue in India. The power of the Supreme Court under Article 32 is not only injunctive in ambit that is preventing the infringement of fundamental rights, but it is also remedial in scope and provides relief against a breach of the fundamental rights already committed.³⁹ This paper unravel that the waste water treatment plants in India are not adequate. Efforts are being made. To save aquatic life in the Ganga and to effectively treat waste water, two pilot projects have been initiated by WWF in the city.⁴⁰ The study stresses to establish sewage treatment plant in every urban settlement. Preferably the sanction to the urban settlement should be given only after the establishment of the sewage plant. In India there is lack of clean drinking water and sanitation. Level of ground water is reducing. There is need of an effective water policy. The first policy was adopted by

National Water Resources Council in 1987. This was revised and updated in April 2002. Government, NGO's and educated people should have done efforts to aware the people about the water pollution and its effects. The NGO Green Earth organized competitions Programme, poster making, slogan writing and an environment quiz for creating awareness about the environment, health

and sanitation at Brahm Sarovar of Kurukshetra.⁴² Such type of activities should be done on war footing. The study stresses to establish the separate environmental courts in each state to reduce the burden of the judiciary and to implement the recommendations of the 186th Report of India's Law Commission.

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EXPLORING THE ROLE OF WORK-LIFE BALANCE IN LINKING HAPPINESS AND JOB SATISFACTION: INITIAL FINDINGS

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ABSTRACT

Research is paying more attention to the beneficial traits that might assist people in balancing their personal and professional lives and experiencing higher levels of job satisfaction. More and more scientists are studying what makes people feel good about their jobs while still managing their personal lives well. This study looked about positive outlook of people means they see themselves, their lives, and the future in a good way.

It has been observed that when workers have a positive outlook, they tend to be happier at work. But what's interesting is that this link between a positive outlook and job happiness is mostly because of how well they balance their work and personal lives. So, having a positive attitude is like a handy skill that helps workers handle their work and personal responsibilities better, which makes them happier with their jobs. The study also talks about how using positive psychology methods could be useful in workplaces. This means that workplaces could use techniques from positive psychology to help their employees feel happier and more satisfied with their jobs.

Introduction

The majority of workers struggle to maintain their well-being and maintain productivity in both work and personal life (Baltes, Clark, & Chakrabarti, 2010; Linley, Harrington, & Garcea, 2010; Lunau, Bambra, Eikemo, van der Wel, & Dragano, 2014). It is not surprising that individual characteristics like optimism, life happiness, and self-worth have drawn more attention as they are linked to favorable results in both personal and professional life. Despite the strong and positive correlation between these three variables, the majority of research has concentrated on how each is connected to certain outcomes.

For instance, having high self-esteem, which is defined as one's perception and acceptance of oneself (Harter, 1993), has been linked to improved coping mechanisms, perseverance in the face of adversity, and a stronger sense of control over life's circumstances (Kernis, 2003; Tedeschi & Norman, 1985). An overall assessment of one's life as satisfying is known as life

satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). Positive coping strategies (Jones, Rapport, Hanks, Lichtenberg, & Telmet, 2003), an internal locus of control (Yeung & Chow, 2000), and improved mental and physical health (Siahpush, Spittal, & Singh, 2008) have all been linked to life satisfaction. In a comparable vein optimism—defined as people's general expectations that they will encounter more good than bad things in their future—has been linked to positive outcomes and good health by means of proactive and efficient coping with adversity (Rasmussen, Wrosch, Scheier, & Carver, 2006; Scheier & Carver, 2003).

However, a growing body of research indicates that optimism, life satisfaction, and self-worth are central to a single trait-like construct known as positive orientation (henceforth: positivity); that is, a fundamental tendency underpinning people's positive assessments of their lives, selves, and the future (Heikamp, Alessandri, Laguna, Petrovic, Caprara, & Trommsdorff, 2014). Studies demonstrating cross-cultural stability in

Western and Asian (i.e., Japanese) samples (Caprara, Alessandri, Trommsdorff, Heikamp, Yamaguchi, & Suzuki, 2012), genetic twin studies (Caprara et al., 2009), and longitudinal studies (Alessandri, Caprara, & Tisak, 2012a) have all provided evidence in favor of the structure of this construct. Additionally, according to Alessandri, Caprara, and Tisak (2012b), positivity has been linked to outcomes that are connected to interpersonal and personal adjustment, such as high positive affect and low negative affect, improved self-reported health, and perceived friendship quality. Positive orientation substantially predicted both in-role and extra-role performance (organizational citizenship behaviors) in a study related to the workplace (Alessandri, Vecchione, Tisak, Deiana, Caria, & Caprara, 2012).

The advantages of positivism are evident, but it is not well understood how positivity affects results connected to one's career. As it "may lead to more effective interventions and to successful strategies for employees to fully develop their potentials," academics have argued that the relationship between positivity and job-related outcomes is crucial (Alessandri, Borgogni, Schaufeli, Caprara, & Consiglio, 2015, p. 2). In order to fill the void in the literature, the present study offers a conceptual model that encapsulates the processes by which positivity converts into job satisfaction. Job satisfaction is characterized by an individual's feelings regarding their jobs and various aspects of their jobs, as well as the degree to which they are satisfied (or dissatisfied) with their work (Spector, 1997, p. 2). The correlation between job satisfaction and markers of physical and mental well-being is particularly significant (Farranger, Cass, & Cooper, 2005 for a meta-analysis).

Positivity as an Adaptive Personal Resource

Rather than indirectly through other similar but separate constructs like self-esteem, life satisfaction, and optimism, the positive orientation paradigm treats positivity directly as a one-dimensional construct (Caprara, Alessandri, Trommsdorff, et al., 2012). As per Alessandri et al. (2015), this framework indicates that "having a positive outlook towards oneself, life, and the future attests to a basic predisposition that exerts an

important biological function in making people prone to cope with life, despite adversities, failures, and loss". This argument is based on earlier cognitive theories, which claimed that depressed people have negative views of themselves, the world, and the future (Beck, 1967). In contrast, Caprara and colleagues (1990; 2010) defined a positive orientation as an adaptive propensity that underlies people's positive assessments of their lives, the future, and themselves.

This positive idea and two auxiliary theories are the foundation of the paradigm that is being given here. First is the theory of conservation of resources, which contends that improvements in other resources, such as positivity, are typically produced by personal resources, such as these, and that these gains ultimately result in increased well-being (Hobfoll, 1989, 2011). This supports the idea that happier people are better able to manage their obligations both at work and outside of it. As a result, optimism as an adaptive personal resource ought to increase work-life balance and, ultimately, job satisfaction. The model also incorporates the self-regulation of behavior theory, which holds that optimistic and self-assured people anticipate success in a variety of spheres of life (Carver & Scheier, 1998; Scheier & Carver, 2003). People who are optimistic and confident about their future success are more likely to succeed and put up a constant effort than those who lack these qualities. Furthermore, these people frequently employ very active, problem-focused coping mechanisms. When these aren't working, they fall back on adaptive, emotion-focused coping mechanisms like humor, acceptance, and positive reframing (Rasmussen, Wrosch, Scheier, & Carver, 2006). Less optimistic people, on the other hand, frequently have greater doubts, engage in avoidant behavior, and as a result, they may give up on their goals and feel like failures.

Work-Life Balance as a Mediator

The direct relationships between positivity and outcomes connected to one's job have been extensively studied by empirical research; however, the precise direct and indirect relationships between positivity and job satisfaction have received less attention. Reducing

conflicts between work and other aspects of one's life is the main goal of the work-life balance concept (Hayman, 2005; State Services Commission - New Zealand, 2005). In contrast, work-family balance refers to determining if resources from both the workplace and the home are sufficient to meet demands from both, allowing for effective engagement in both domains (Voydanoff, 2005). When work and family obligations are incompatible because of scarce resources like time and energy, this is referred to as work-family conflict (Greenhaus & Beutell, 1985). The term "work-life balance" is used in this study since it can also apply to single people without children, while the other two terms are limited to those with families by definition.

According to a number of studies, having a high sense of self-worth can help workers deal with stress and difficulties at work and prevent stress (Grandey & Cropanzano, 1999; Nikandrou, Panayotopoulou, & Apospori, 2008; Ruderman, Ohlott, Panzer, & King, 2002). Aryee, Srinivas, & Tan, 2005; Luthans, Avolio, Avey, & Norman, 2007; Allen, Johnson, Saboe, Cho, Dumani, & Evans, 2012; Aryee, Srinivas, & Sutton, 2000; Fisher, 2002) are just a few of the studies that have shown a positive correlation between life satisfaction and work-life balance. Regarding the direct relationship between work-life balance and job satisfaction, research indicates that conflict between personal and professional spheres is negatively associated with job satisfaction (Thomas & Ganster, 1995) and positively associated with workplace distress (Frone, Russell, & Cooper, 1992). According to studies by Amstad, Meier, Fasel, Elfering, & Semmer (2011) and Cortese, Colombo, & Ghislieri (2010), work-life interference also has a detrimental impact on job satisfaction and other outcomes.

Study Hypothesis

This work adds to the body of knowledge in two significant but mainly unexplored areas. It investigates whether work-life balance functions as a mediating factor in the indirect relationship between job satisfaction and positivity, as well as the empirical relationships among positivity, work-life balance, and

life satisfaction. We postulated that (1) there would be a positive correlation between positivity, work-life balance, and job satisfaction; and (2) work-life balance would mediate the relationship between positivity and job satisfaction. We did this by conceptualizing positivity as an adaptive personal resource that has a pervasive influence on other resources.

Research Method

The Process and Participants Emails were used to enlist 108 volunteers from a variety of accountancy and advertising firms.

Contacts were informed that each organization's members would raffle off three items in order to promote participation. An email address had to be submitted in order to participate in the raffle. An anonymous online survey measuring job satisfaction, happiness, and work-life balance was sent to each participant. Although participants might withdraw from the study at any moment, completing the online questionnaire verified their informed consent to take part. The study received approval (approval no.081/13) from the University Human Research Ethics Committee.

Employees from three distinct advertising firms ($n = 85$; 79%) and an accounting firm ($n = 23$; 21%) made up the sample. There were no discernible variations by workplace according to a preliminary multivariate analysis of variance, which used the workplace as the independent variable and job satisfaction, work-life balance, and positivity as the dependent variables. Consequently, in the subsequent analyses, the participants were regarded as a single sample. 40% of the sample as a whole was male, and 60% was female. With an age range of 22 to 48 (the majority of responses were between 28 and 32), the mean age was 31. Ninety-three percent of those surveyed were born in Israel, five percent in the former Soviet Union, and the remaining two percent in Europe and other nations. Ninety-eight percent of the participants identified as Jewish, with the other two percent identifying as Christians and followers of other religions. Across the board, 75% of the respondents classified as secular, 13% as traditional, 4% as religious-Zionist, and 8% as other.

Most respondents (51%) were married; 90% of them resided in central Israel; 60% rented an apartment with partners or roommates; 70% of them were childless at the moment (children ranged from 0 to 3). With a range of two months to thirty years, the mean number of years at the current position was five. Bachelor's degrees were held by the majority of respondents (60%) followed by degree diplomas (18%), master's degrees (15%), and other degrees (7%).

Data Analysis

Calculated correlations were used to investigate the connections among all the variables. To obtain estimates of the mediation model, structural equation analysis (SEM) was performed using the Amos software. Using bootstrap bias-corrected samples set at 5000 and bootstrap analysis with a confidence level of 0.95, the mediating impact was examined (Preacher & Hayes, 2004).

Limitations and Future Directions

This study has a number of limitations that should be noted. First, conclusions on causality are precluded by the study's cross-sectional methodology. Future research should look at work-life balance as a mechanism of treatment change using longitudinal data or treatments. Second, to improve validity, future research should gather information from respondents' employers, coworkers, and/or supervisors since the data were gathered using self-report measures. One potential constraint is that the information gathered from participants about their work-life equilibrium was self-reported, meaning that the experience of work-life balance was subjective. Future research should incorporate accounts from co workers, managers, and family members in addition to a sample of the employees' actual work hours. Another drawback is the

relatively limited sample size and the emphasis on work in a particular industry, even though a pre-study sample size estimation was carried out. Employees from other industries and a bigger sample size should be included in future research. In addition, the sample comprised respondents from the nation's urban center, which is distinguished from outlying or rural areas by a fast-paced lifestyle. More varied samples with more variation in socio-demographic traits should be used in future research. The model's invariance might be compared amongst several employee groups using multi group SEM analysis (Byrne, 2004). Furthermore, to further examine the external validity of results, future research should include workers with other nationalities and religious affiliations, as all respondents were Israelis, with the majority being Jewish. Lastly, the contribution of positivity to the connection between work-life balance and job satisfaction was the main emphasis of the current study. Future research should look into additional positive psychological factors including self-control, coping skills, creativity, innovation, integrity, and social support at work that might also have a role in this link.

Conclusion

According to this study, people may be able to harness their positive orientation and use it as a psychological mechanism to transfer that into increased job satisfaction through work-life balance. Positively oriented people seem to have more resources to manage the demands of both work and life, which could result in higher levels of job satisfaction. Future experimental investigations should test the model proposed here, as low job satisfaction and a poor work-life balance might affect employees' well-being in addition to their performance.

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A STUDY ON ANALYSIS OF DIGITAL MARKETING

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ABSTRACT

This study delves into the analysis of digital marketing, aiming to discern its effectiveness, impact, and areas of optimization. Through a comprehensive literature review, various digital marketing strategies, tools, and platforms are scrutinized, alongside existing case studies and research findings. Employing a mixed-method research design, data is collected from diverse sources including web analytics, social media insights, email marketing platforms, and customer surveys. The analysis encompasses an evaluation of different digital marketing channels, focusing on key metrics such as website traffic, conversion rates, engagement levels, and ROI. Trends in consumer behavior and digital marketing technologies are identified, offering comparisons against industry benchmarks and competitors. Ultimately, this study yields actionable recommendations for enhancing digital marketing strategies, underscores emerging trends, and outlines avenues for future research, thus contributing to the ongoing evolution of digital marketing practices.

Introduction for Digital Marketing

Digital marketing is the new method of marketing commodities using digital technology, mostly through internet. Digital marketing is built on the internet that can create and convert brand value from producer to the potential customer or consumers by various digital networks. The development of digital marketing has altered the method companies use technology for promotion, as digital podiums are progressively changed into advertising plans, now day's individuals use campaigns on mobile, computer/laptop and tablet instead of visiting physical market. Digital marketing elements like search engine optimization is also called as organic method of ranking the website, Goggle business or many other platforms, pay per click or SEM, content marketing, email marketing, social media, social-media optimization, show promotion besides e-commerce marketing are becoming more common in advertising technology.

Concept of Digital Marketing

It involves sum total of marketing work that usage of a Digital component and internet, Businesses leverages various digital ways like search engine, social medias,

e-mail, website in addition offline marketing such as SMS and MMS to attach with present and potential customers. Digital marketing is also stated as online or internet marketing. In simple taking business and reach your customer online.

Digital Marketing (DM) is the promotion of business organization or brand by means of various channels such like the Internet, mobile devices, TV Radio in addition to consuming different online advertising, podcasts, video and other such approaches to communicate message. Online promotion in specific plays a dynamic share in somewhat promotional plan and it is fetching the basis of numerous establishments complete promotional policies.

Need and Relevance of Study

The marketing is changing rapidly, the system of marketing moving towards digital. Company has to understand the new era of marketing system and make similar changes in the business operations. The study will help reader to understand the significance of having online web presence, and the importance of digital marketing. The study also help the reader to understand online buying behavior of Indian patrons.

Aims of the Study

1. To identify the tools and techniques of online marketing.
2. To analyze online buying behavior of Indian customers.
3. To determine the strategies used in digital marketing.
4. To understand the important terms used in digital marketing.
5. To study the types of advertisements.

Methodology

Data collection method

1. Primary data
2. Secondary data

Research Methodology

Research Design

Research configuration is a lot of systems and techniques that are used in assembly, flouting down and estimating the aspects indicated in the exploration issue. It is an edge work that has been made to determine answers to look into studies. It gives certain plan about how an inspection will happen which incorporates how info is collected, what tools are applied and how the tools are used in dissecting the gathered information.

Descriptive Research Design

The research is descriptive in nature hence it includes descriptive research design. The examination is enlightening in nature henceforth it incorporates unmistakable research plan. Elucidating examination configuration is utilized to think about the qualities of a populace that is being contemplated. This plan goes for receding tide besides stream matters or issues complete a process of info gathering and authorizes the specialist to show situation completely.

Trial Size

The trial size in this exploration comprises of 25 computerized marketing specialists.

Data Collection Method

Primary Data

It is direct information, it is gathered legitimately. The distinctive technique for assembly vital data is near to home meeting, survey, review and so into the open. As my project is clear study there is no vital data collected thusly. Primary data source of the study is interview and observation

Interview: interview has been made with office staff, where several random of questions has been asked related to digital marketing and the repose has been recorded.

Observation: observation has been made on digital marketing tools and techniques and strategies that they use to promote their business.

Secondary Data

Auxiliary data is collected from efficiently current springs in diverse suggestion brochures and annals. Secondary material aimed at the examination were collected from the periodicals, sites and diverse historical investigations. To meet goals, the investigation utilized subjective research. The clear investigation stood complete by audit of present writing that aided in approval and withdrawal of the significant factors and issues. Information was gathered from auxiliary bases. Auxiliary sources stood periodicals, sites, records, office officials, besides friends information.

In the examination I have gathered information from auxiliary sources

Analysis of the Study

Need Analysis of Digital Marketing

1. Global Presence

In digital marketing is not only makes any business to local region but also on global level. Company website allows the customers to find new markets and

trade. This advertising pattern target various age groups and demographic reasons The best example is amazon, Flipkart, Meesho market place allow to sell our products online and this be can be accessed by anyone from any part of the world.

2. Cost efficient

Likened to old-style marketing DM is cost effective, it will reach to a greater number of people with very less amount. For example, display of advertisement on social media is cheaper than print advertisement with a targeted customer reach. DM is supplementary effective than old-style marketing. small business organisations or small shop can do digital marketing without spending single rupee.

3. Trackable and measurable result

In digital marketing we can track and measure the result of our advertisement or website, such as how many people have seen, what are the activities they do in the website, their behaviour in website, how much time they stayed in the online, what are the demographical characteristics of particular audience these all things we can get from some of the digital marketing tools such as google analytics.

4. Data and results can be recorded

Google analytics we can be used to check the reach of campaigns done and store them for future decisions. It will help to keep in track customers and their activities and the future expectations. Usually it will help in segmenting and targeting the same particular set of people called remarketing.

5. Personalization

linking customer data base to website is most important, whenever customer visit the site, we can greet them with targeted propositions and remarket the product. This makes consumers to feel special about the particular brand.

Outcomes of the Study

Outcomes regarding consumers

1. India presently have online users of 214 million, among them 60% are males and remaining are females.
2. There are 112 million mobile handlers amongst them 70% are men and remaining 30% are women
3. Brand want to shape a cool attendance over digital podiums because the client will do investigation about the creation after sighted an ad or after receiving enthused.
4. companies are receiving more touch opinions to reach target group in a cost-effective way.

Outcomes Regarding Analysis of Digital Marketing

Meta title and description is displayed by Google pixel width but not by the length of characters.

URL structure always has to be mentioned with the primary keywords.

URL structure has to be with hyphen and include location if it is given with spaces it will take with percentage.

H1 has to be with one focused keyword, Google crewels will only crawl h1tag under header tags so it has to be focused more.

Google will never crawl images it will crawl the text behind it. Image optimization has two tags alt and title tag.

To display the name of the image when we place the cursor. We use title tag.

Conclusion

The actual conclusion of this experiment demonstrations that the ultimate destiny of promoting is in the pointers of progressive. Digital Marketing isn't just concerned around putting advertisements in entrances, it includes of incorporated managements & coordinated stations. Promoters essential to use these segments in a

successful manner to arrive at objective meetings and to manufacture a product. In this computerized period promoter isn't the concierge for a product, persons who are related over the advanced phases are supervisors. Products essential to manufacture their excellence over progressive stage, in light of the fact that customers have high fondness to electronic media than additional media's. Additional than that customers are profoundly information rescuers and electronic media is the key phase for dual way communication amongst products & customers. Advanced broadcasting is the finest phase to alteration ended an article to a product. Meanwhile it is savvier and it give tract of trace emphases to promoter. Products can prepare to attach with their impartial meeting in a feasible way finished progressive phases.

Progressive media isn't just for promise, products can shape their customers or they can grasp their present customers. Electronic phases assistance to shape the result of product appraisal in impartial meetings. The examination focused on the purchaser buying behavior proves that, Indian customers are deeply information seeker & they will do look into about an item beforehand setting off to a merchandizing plant. So products need to offer phases to customers to understand their item or to get a truthfully texture of that product. I sincerely accept that this venture tale will be all things considered valued for promoters to understand the electronic promoting and also to anticipate upcoming systems.

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A STUDY ON THE RISING TRENDS OF ONLINE BANKING IN INDIA DURING COVID-19

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ABSTRACT

Banking has changed from a traditional conventional prototype to a modern mobile bank. It allows customers to access their bank virtually through a mobile phone and use services anywhere and anytime with the push of a button. Mobile banking has provided innovative ways to perform services like balance enquiries, online money transfers, electronic payments and other services using a simple mobile phone. Advances in information technology have significantly enhanced banking services and products. The continuous development and improvements of the information and technology sector has led to several improvements in product and service design and their provision in the banking sector. The surge in mobile banking adoption is fueled by the array of services offered, allowing customers to pay bills, access mobile loans, and transfer funds swiftly. The emergence of mobile banking apps such as ICICI iMobile, HDFC Mobile Banking, and SBI YONO App has revolutionized banking worldwide, prompting a shift towards mobile banking. In India, authorities have promoted mobile wallets through collaborations with banks, facilitating wider acceptance of mobile banking. The Reserve Bank of India (RBI) has actively endorsed digital payments via mobile wallets during the COVID-19 pandemic. This study aims to explore the growth of mobile banking during the pandemic and assess how online banking platforms have facilitated financial transactions amidst the crisis.

Introduction

India was in the demonetization phase when the government started promoting free transactions. Recognizing the potential of the Internet and technology, the government launched the Digital India project, of India, which aimed to transform the country into an integrated economy using mobile phones and the Internet as two pillars of expanding government services (Kumar, P and Dr. Chaubey, D (2015)). Various mobile websites and applications were developed to provide cost-effective features to customers compared to the cost of office banking, which was 43 times higher. Indians found it difficult to get used to online platforms as most people were used to making cash payments and thought that doing the same through mobile banking was not safe, while others lacked awareness and knowledge. about the same. India is considered to be the fastest growing smartphone market in Asia.

After the advent of budget smartphones, customers are increasingly joining mobile banking platforms that offer a variety of services at the touch of a button.

Customers can check account balances, transfer funds between accounts and pay electronic bills without traveling to a traditional bank. Customers no longer have to worry about having cash because transactions are done electronically. Indian consumers gradually adapted to mobile banking as “the digital offering of mobile banking was the new normal” (KPMG). After digitization, customers were more likely to turn to banks that offered them mobile banking services. The launch of various M-banking applications proved revolutionary in various parts of the world and forced customers to switch banking partners. Online banking as a technology has improved today, responding to various needs of customers, the infrastructure and nature of banking is changing from

bricks to clicks (Priya, R; Vikas Gandhi, A; Shaikh, A 2018). The COVID-19 pandemic has devastated the world economy and financial markets. This will drastically affect the economic situation of India as fast as it develops. On March 25, India imposed one of the world's strictest restrictions ever, although the number of cases remained low. It was a good initiative by the central government because imposing a lockdown helped people stay indoors, making it easier to break the chain. India had a lot of trouble expanding its banking services due to the nationwide shutdown. Countless people lost cash, banks lost regular cash flow, and loan defaults increased. Despite the prevailing challenges, people are unable to make mandatory payments and routine transactions to secure their livelihood. But the chance of contracting COVID-19 by touching an object or surface contaminated with the virus is high. Physical handling of cash can further accelerate the spread of the virus. Therefore, the need of the hour would be to shift to online payments and use of mobile wallet. The Government of India has extended its support to mobile wallets through partner prototypes. with various banks and IT companies to increase its adoption and acceptance among users. The launch of 3G and 4G services in India led to collaboration between various telecom companies and banks to improve mobile phone services. It is predicted that COVID-19 will increase the use of M-banking for two reasons. First, mobile banking would promote a social distancing policy that would allow people to do business safely from home, and since most services are offered on online platforms, customers would have no choice but to familiarize themselves with the possibilities of mobile banking. (V, G; and Manu, M; (2020)).

The development of the internet and technology and the existence of fintech companies have been a blessing to the world and made our lives much easier during the pandemic. More than 500 million people now use smartphones in India (Goyal, V; Pandey, USA; Batra, S (2012)). The mobile banking sector is increasing in countries like India, one fifth (19.1%) of the total population consists of the younger generation, with a projected increase to 34.33 percent by 2020.

(Statista) The majority of young people are familiar with digital technology and depend on it in many areas of work and professional life. They support a competitive mobile banking platform available 24/7. Several studies have also shown that India is the second largest country in the world in terms of internet base with 350 million internet users, of which more than 50% are mobile users (Iyengar, 2017). If you consider the combination of two factors - the large unbanked population and the prevalence of smartphones - there is a catalyst for mobile banking to take off (Dr. Deshwal, P 2015). movable technology has transformed the global banking structure and financial industry by providing accessibility, convenience and affordability to customers. Contactless payment is the only way forward and payment methods like UPI, IMPS, RTGS, mobile wallets and online banking effectively reduce human interaction. The COVID-19 epidemic has caused a 5 percent increase in the use of mobile banking in just three months - from January to March - and is expected to continue to grow in a large proportion (Statista). The global digital banking system has grown up to 85% (Forbes). Due to the large number of internet users and the emergence of the fintech industry, the Indian government is able to promote Digital India. The approach of mobile banking services with innovative technology ensures higher security and promises to satisfy the needs of customers without endangering their health and safety. Especially in times similar to the COVID-19 situation, mobile banking can be used as a way to replace physical banking transactions, providing customers with the convenience of meeting their needs. So it is possible to study how customers use mobile payments during difficult times like COVID-19.

Review of Literature

Deshwal, (2015) discussed how mobile phones provided huge financial services in India and its contribution to economic growth at a lower cost. To increase the spread of mobile banking, the cooperation of different organizations is necessary, from major users to small end users and from large cities to rural areas.

Goyal, Pandey and Batra, (2012) concluded in

their research that to ensure successful adoption and widespread acceptance of online payments, it is mandatory to remove various barriers in terms of security and privacy. They also discussed that despite the failure of many solutions aimed at expanding secure transactions, many efforts are being made to develop potential technological innovations that can address customer security concerns and complaints.

Sreelakshmi and Prathap, (2020) suggested in their study that various health and information campaigns about the dangers of Covid-19 would be useful to promote mobile banking and prevent health problems. It also discusses the importance of reiterating the need to promote clients' self-efficacy to use services through online literacy and promotional programs.

Priya, Gandhi and Shaikh (2018) pointed out in their study that mobile banking should be seen as an efficient, smooth, faster and convenient way of doing banking transactions. . It was also discussed that if customers could complete transactions without errors, their understanding of privacy and security would be renewed and they would be encouraged to move to mobile banking.

Ramayah, Muhamad and Noor (2003) argued in their article that one of the key factors that determined customer willingness to adopt new technologies was accessibility. He noted that awareness and guidance on the benefits of mobile banking would facilitate their adoption. It also found that certain factors, such as the increased size of web pages, made it difficult for customers to access them on smaller screens.

Laukkanen and Kiviniemi (2010) defined mobile banking in their research work as an interactive platform where the customer uses devices such as smartphones and personal digital assistants to connect with the bank. They also point out that mobile banking has huge market potential as it provides 24/7 connectivity to customers, allowing them to make payments from almost anywhere at any time.

Singh and Srivastava (2017) suggested in their research that to increase the adoption of mobile banking, various parties such as device manufacturers and

service providers need to expand the security features of mobile phones. They believe that clearly and clearly explaining mobile banking services through online presentations and user guides would increase customer awareness of mobile banking. Therefore, we strive to promote and extend technical support to customers to make them feel comfortable.

Patil, Dwivedi and Rana (2017) argued that many developing countries still lack facilities such as digital literacy and internet services, making it difficult to promote digital financial services (DFS) and rural India continues to lag behind urban cities because despite various efforts by the government

Deb and Agrawal (2017) discuss in their study that Govt. can play an important role in improving facilitating conditions by improving hardware sophistication and cellular networks. The study also suggested that the Indian authorities should work to build FC companies and trust. Overcoming such reluctance and barriers to market access by the Indian government/politicians will enable the country to ensure optimal adoption of such technologically advanced.

Tandon, Mandal and Saha (2003) described m-commerce as mobile business. They found that network and service technologies are the main protocols of the new technology. Operators and manufacturers agreed that data transfer speed, user interfaces and high costs of data services are important to consumers, but data security issues were the biggest obstacle to the adoption of m-banking.

Grewal (2012) showed in his study that compared to other countries in the world, mobile internet and service costs were very low in India. The survey also showed that people are willing to pay for unlimited mobile data plans and the Indian authorities have taken various initiatives to enhance the growth of mobile banking in India

Gupta, Manrai and Goel (2019) pointed out in their research that payment banks represent interesting and new research areas, especially the main challenges to be faced in the implementation of this technology-based FI (Financial Inclusion) security service. Their study

structured and tested an integrated model to explain the decision to adopt payment banking services.

Gupta and Xia (2018) identified the development and importance of Fintech in Asia in their research. This technological revolution allows us to introduce a banking system that better serves customers, reduces their risks and risks for society. The government has the most important role here in evaluating the movement of these startups, which will further open up the landscape of the banking sector in the coming future.

Priya, Gandhi and Shaikh (2018) in their research, they focused on analyzing the utility, ease of use, risk factors, business confidence and reliability that a customer experiences when switching from traditional banking. They asserted that user satisfaction is extremely important and has a strong impact on m-banking adoption.

Kumar, Mathur, & Lal (2013) talk more about delivering the financial literacy among the people and gain the confidence in order to so that companies increase their customer base. Indian societal belief system is very different from the western world, here capitalist need to understand the relevance

Zhang, Lu, & Kizildag (2018) After an initial overview of related work, we examine specific prior work on Banking “on-the-go” their paper aims to analyse the factors that affect the acceptance and involvement of the customer who use the mobile banking. Customers are majorly concerned about the fraudulent activities, reliability in the transacting platform and especially the privacy of their personal data. Therefore, for the banking companies and the new payment banks they have to be more user centric so that wide range of people opt for the mobile banking services.

Singh, Srivastava, & Sinha (2017) focused on the preference of North Indian, acceptance of mobile wallets by them. The research finding tells us that those set of population have accept mobile wallet as good platform for transaction as it is user friendly approach, secure, convenient and reliable. The important aspect which their study tells us that is gender, it is key variable in the preference and usage of mobile banking services as

males use more services compared to females.

V & Manu (2020) found that in India there is huge demand for GooglePay and due to this pandemic, it has shown a significant rise in its usability and reliability. COVID has disrupted the lives, social reach and also have affected the economy in short term.

Tam & Oliveira (2017) focused on extensive study of m-banking by measuring individual performance level. They have developed models which help the new researcher and practitioners to synthesise their study. Their investigation helped us a lot to give a clear picture on mobile banking. They also focused on the customer centric approach so that they have higher profits.

Sivathanu (2018) explained that the India has shown unbelievable growth in mobile banking UPI transactions. They examined numerous technological factors that what makes customer adopt the mobile banking during the hard times such as demonetisation. Their study tells us that the new integrations in mobile banking services have brought a shift from traditional way of transaction to mobile banking.

Dubey, Sonar, & Mohanty (2020) focused on paperless transaction how people manage to pay their bills as cash transactions may carry some contamination. Internet of Things and Artificial Intelligence has made the mobile banking easier. Contactless payment has indirectly helped us to follow some social distancing measures. They conclude by stating that advancement in mobile banking has been comfortable to avail all services at their door step.

Iyengar, Upadhyaya, Vaishya, & Jain (2020) explored the effects of Smart technology during all other economic regressions but COVID-19 is a global pandemic. COVID-19 transmission is very easy compared to other problems, smart phone companies and technology companies have a good opportunity to cater to large amount of consumer at same time staying at same place.

Kumar and Chaubey (2017) looked at the post-demonetisation role and the role of banks in the transition from offline to online. They gave a broader perspective on cash and non-cash transactions. More

secure debit cards with advanced authentication methods, Aadhar enabled payment system, UPI, mobile wallet, point of sale (POS), IMPS, all these services have been successfully integrated under M-Bank. They conclude that digitization will always help India in the long run.

Sundar (2020) explained that electronic invoicing, e-transfer and e-banking services ensured the delivery of customer service without delay. This has improved the reliability, safety and security of customers and made them adopt mobile banking services like Paytm and GooglePay.

Naskar (2019) elaborated insight into the digital economy of India. India is a developing country where people are more inclined to adopt new things easily. Digital India has been a good step to promote economic welfare and prosperity of the country by eliminating money laundering, black money and fake currency.

Raj and Bahl (2020) analyzed the entire Indian economy, which exploded due to COVID-19. When measuring the financial market, you can see a loss of income, an increase in unemployment, a decline in all industries. The paper specifically discusses the impact of COVID-19 on India's economy, supply chain, unemployment, financial markets, banking and currency. Emerging digital businesses are playing a key role in facilitating seamless operations between retailers and customers with minimal disruption.

Jain, Sarupria, & Kothari (2020) explained that some digital technologies and payment enablers have significantly increased operations like Big basket, Grofers, 1MG, Netmeds, Pharomeasy, Medlife, Jio services, Ed-Techs etc. The use of services like NEFT, IMPS and UPI drives the operations and the operations are not completely closed and also follow social distancing norms

Kumar, Dhingra, Batra and Purohit (2020) found that ease of use of technology, usefulness in difficult times and belief in personalization of online stores are very important. Ease of use improves as new and advanced technology enters the market, but according

to their research, trust is the most important factor in mobile banking in India.

V and Babu (2019) focused on the rapidly growing mobile banking technology in India as of January 2018. The main factors affecting the growth of mobile banking are security, network failure, need for improvement and standardization of mobile devices. They also found that many mobile devices do not support the implementation of advanced technology, so companies must have mobile devices.

Gujrati (2017) he focused his research on the fact that the Digital India program is the root cause of a paperless economy. To promote this goal, the government introduced initiatives like demonetization and started promoting the online payment system which also helped the small retailer to enter the system

Lakshmi, Gupta and Ranjan (2019) found that UPI payments are a major selling point for all payment service providers, mobile PIN security has improved over the years and ease of transactions for customers.

Research Gap

Although mobile banking has been a prominent mode of transaction since demonetisation, it has become a very important mode of transaction during the pandemic as people are not comfortable handling cash payments due to the fear of the spread of the Covid-19 virus. The purpose of the study is to find out what changes in transaction habits have occurred and how significantly these online transactions have contributed during the period of COVID-19. Many studies have investigated the factors influencing the adoption of m-banking, paradigm shifts. in banking, mobile banking adoption on the way - in banking, Indian youth consumer analysis of mobile adoption, impact of COVID-19 on traditional banking, FinTech, RegTech and contactless payments through the lens of the COVID-19 era, but they are not enough studied M-banking companies like Paytm or for example SBI (public sector) and HDFC, ICICI (private sector) initiatives.

Scope of the Study

The study is limited to mobile banking customers in India during Covid-19. The study is limited to the period March 2020 to September 2020 and its impact on mobile banking services.

Research Objectives

1. To study the impact of Covid-19 on mobile banking
2. To understand the transition from brick-and-mortar banking to mobile banking during Covid-19
3. To study how m-banking can promote social distancing.

Research Question

How effectively has mobile banking grown during COVID-19?

Research Motivation

It is a matter of motivation to find the results of this study because of now understanding how Covid-19 has changed banking and its infrastructure. The entire study gave us insights into how customers have embraced mobile banking to follow social distancing norms and make mandatory payments without holding back for fear of a deadly virus.

Methods of Data Collection

Secondary data collection was conducted.

Sources of Data

Secondary data was collected from relevant online articles of live mint, financial time, RBI reports, magazines, newspapers etc. to review the literature and understand the theoretical background of mobile banking in India both before and during Covid-19.

Study duration study duration is the time required to complete data collection, or it considers the time from the start of the protocol or study to the end of data collection. The duration of the study was from July 2020 to September 2020.

Data Analysis

Impact of Demonetization on Mobile Banking
Demonetization is considered to be the biggest catalyst for mobile banking in India. On 8 November 2016, the Government of India announced the demonetisation of all 500 and 1000 rupee notes, which meant that the 500 and 1000 rupee notes could no longer be used as legal tender. There was a limit on cash withdrawal and people were only allowed to withdraw 20,000 rupees a week from their accounts. The common people faced many difficulties because there was no liquidity in the economy due to which people could not use physical cash for transactions. They had to stand in long queues to withdraw the new RS 2000 note from banks. The sudden shortage of cash has made it difficult for the arbitrator to survive and this time the Indian government thought that it is the right time to strengthen the mobile banking sector in India so that it can deal with the acute problem of cash shortage.

It is believed that one of the aims of demonetisation was to promote digital payments. This was indeed a good move by the Government of India as in the first few months of the demonetisation phase (till August 2016-17), digital payments showed a high velocity in terms of transactions compared to year-to-date transactions. in the previous respective year. It can be observed that the number of digital payments has increased from nearly 624 million transactions in 2015-2016 to around 1100 transactions after demonetisation. In a country like India, where survival was on basic cash, it took a lot of time to adapt to digital payment systems, hence the slow growth of digital payments during the demonetization phase. De-netting was an exclusive move to promote the growth of digital payments to make India a cashless economy.

The volume of mobile banking jumped from 524 million transactions to 1.048 million transactions in the period (November-August 2016-2017). Transaction value of ₹ banking transactions grew from ₹ 2,700 crore in September 2015 ₹104,300 crore in 2016 and ₹186,200 crore in 2017 (The Hindu Business Line)The collaboration of new technologies with traditional banks

has proved successful. for financial systems. Mobile wallets like Paytm have leveraged demonetisation to make it easier for customers to make small payments like hailing a taxi, booking movie tickets, paying electricity bills etc. Demonetization initiatives encouraged the use of digital payments through mobile banking and also provided wealth. of payments. opportunities for new companies like Paytm, Mobikwik etc.

It is quite evident from the above graph that though mobile banking was introduced in India much before demonetisation, its growth has been very stagnant. The pre-demonetisation period shows that the growth in mobile transactions was minimal in every financial year. The growth in mobile transactions was minimal - from 19 million in FY13 to FY14. But after the launch of Digital India 2015, with the support of integrated technologies and the Internet, mobile wallets gradually began to recover and predicted an increase in the number of events more than the corresponding year. After demonetisation in 2016, mobile wallets like Paytm and Phone Pe gained momentum and mobile transactions increased since then. Paytm became the best cash option in the country during times like demonetisation. Many merchants, greengrocers and gas banks have started accepting payments through mobile wallets like Paytm, Phone Pe etc. Paytm has seen 435 percent growth in traffic, 200 percent in app downloads and 250 percent overall. number and value of transactions.

The Effect of COVID-19 on Online Banking

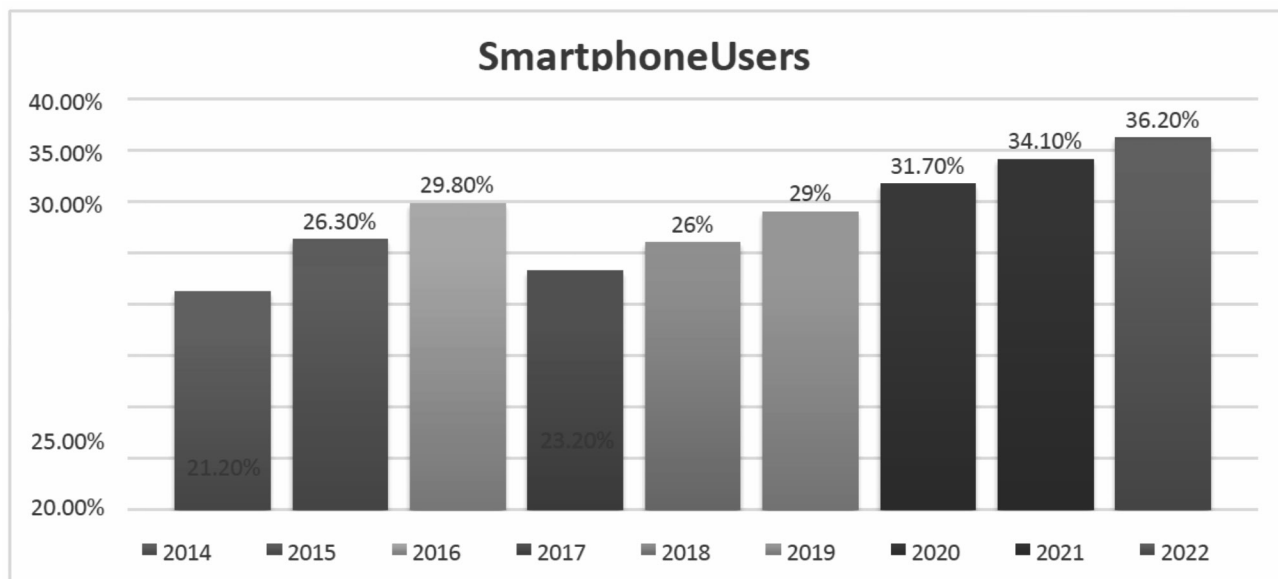
M-banking will become the new normal for many industries and businesses after COVID-19. Like the crisis of 2008, it is very challenging for many countries, we have to embrace the digital change and renew the way of doing business with the new M-banking application served by the emerging Fintech company. Banks must create trust, create a digital and safe environment for digital banks, make customers aware of its beneficial use. According to the indication, there were very less physical transactions, because it was not safe to withdraw money and even banks could not. accept deposits. According to the RBI report, ATMs

were more than 91 percent of full capacity, which means that 91 percent of ATMs had to be filled with cash. Slowdown in deposit growth increased to 7.98 percent. According to the RBI, 15.5 lakh percent of the debt of the market was affected, retail and wholesale affected more than 19 sectors. The five most affected sectors were ports and services, aviation, construction, mining and mineral production, and corporate retail. All sectors are affecting banking very fast. We live in a digital world and India is a developing country, here banks had a great advantage to promote mobile banking, although internet infrastructure for online banking in India has been there for a long time, but most of the customers agreed that the bank deals with them. Banks now support customers and guide them personally according to their needs. Many people who have been reluctant to switch to a mobile banking app are now considering switching as an easy option. Niraj Mittal says Q1 2020 will see 29% more transactions than Q1 2019 as companies and retailers have higher issuance rates from bank accounts to mobile wallets. Developing countries like India will benefit greatly as more fintech companies invest in banks and the internet infrastructure and technology banks are able to serve customers with better service and more secure transactions. In this new normal period, we live in a new online environment where everything is at our fingertips. We see a much faster and more reliable transaction model. The number of mobile banking users has grown significantly since the shutdown as mobile apps like Paytm, Yono (SBI), PayZapp and more have been personalized and more user-friendly.

The transaction volume of M banks was 14,402.70 million in January 2020 and 16,188 million in June. (Source: RBI aggregates all 354 RBI-recognized public and private banks in India) This figure shows an increase of 7,801.31 lakh before and during COVID, ie. June 2020. The PWC report predicts that the overall conversion of offline customers to online will grow faster. Money is obtained 100% through payment gateways, and companies like Razor pay and Paypal offer to connect small shops to increase transaction volumes, because all daily operations are done online

only with the help of m-banks. It also helps create a stronger payment infrastructure that is more secure and reliable for transfer and payment transactions. UPI, IMPS and BBPS have shown more than 50% growth in transactions. M-banking has made our life easier to fulfill daily needs and instant money transfer for MSME in just five minutes.

India has the second largest internet user base. It can be illustrated from the above graph that since 2015, the number of users using mobile internet will increase by 16% in 2015-16 and so on in the following years. This graph also shows us user ratings.



According to the MCKinsey report, the number of mobile internet users will increase by 40 percent. It can be said that more and more internet users are using internet and mobile internet to access various services like m-banking, social media, utilities and many others. Reports in the Economics Times suggest that although the internet is becoming more expensive, people are definitely opting for it. Their basic needs today. They estimate that there will be 835 million internet subscribers by the end of 2023. The use of mobile internet is growing by 152% per year. The government promoting Jan DhanYojana is a massive financial inclusion program that has doubled the number of bank accounts since 2011 and around 80% of banks are opened through smartphones and mobile internet. (Source: Statista) India has a huge population and many smart companies. Smartphones have provided a wide range of mobile banking applications and facilitate other digital services such as education,

healthcare, daily financial management accounting and more. Digital services covering different areas of smartphones were very friendly and rapidly increased their coverage. According to a report by the Economics Times magazine, digital banking services have played a very important role in the fight against COVID 19. According to research, both rural and urban spend the same amount of their budget on smartphones and services (25-26%)... The largest digital literacy programs in the world are run by an Indian organization that has made people adapt to new technology. Programs like PradhanMantriGrameen Digital SakshartaAbhiyan (PGMDISHA) and E-Kranti have been widely promoted under the umbrella of Digital India, which offers M-banking, digital agriculture, healthcare, education, passport and many other services. . smartphones. This effort has increased the number of smartphones in India since the launch of the Digital India program. According to the Gadget 360 NDTV report (Studio,

2020), the smartphone market has grown by 15% since 2018. techARCH says that in December 2019, nearly 77 percent of Indians owned a smartphone and used all wireless services. Top brands account for 25-41% of the market and offer a range of smartphones from budget phones to luxury phone brands. Good quality, budget friendly and new features attract many custom

Conclusion

In conclusion, mobile banking has revolutionized India's banking landscape, evolving from a limited functionality in the early 2000s to becoming a cornerstone of the industry today. With increasing smartphone and internet penetration, coupled with

the convenience and security it offers, mobile banking has effectively met customer needs and garnered satisfaction. Its potential for further growth is evident, particularly among the younger population, with initiatives like PGMDISHA and Digital India driving adoption. The COVID-19 pandemic underscored its importance, facilitating social distancing measures and ensuring continuous banking services. Furthermore, it has accelerated the shift towards digital platforms, with significant increases in transactions. As India's banking infrastructure adapts to this digital paradigm, it becomes more resilient to future crises while also reducing overhead costs for banks.

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STUDY ON INDIA'S CURRENCY REVOLUTION: E-RUPEE

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ABSTRACT

The digital revolution has permeated every aspect of modern society, including financial transactions. India, with its ambitious digitalization drive, is poised to revolutionize its currency landscape with the introduction of the E-Rupee. This study investigates the implications, challenges, and opportunities surrounding the adoption of the E-Rupee as a central bank digital currency (CBDC). Through a comprehensive analysis of existing literature, policy documents, and expert opinions, this study aims to shed light on the potential impact of the E-Rupee on India's economy, financial ecosystem, and societal dynamics. Additionally, it explores the technological infrastructure, regulatory framework, and implementation strategies necessary to facilitate the successful rollout of the E-Rupee. By examining case studies from other countries and drawing parallels with India's unique socio-economic context, this study offers insights and recommendations to policymakers, financial institutions, and stakeholders involved in India's currency revolution.

Introduction

The digitalization of financial services has become a global phenomenon, driven by advancements in technology and changing consumer preferences. Central banks around the world are increasingly exploring the possibility of issuing digital currencies as a means to enhance financial inclusion, efficiency, and security. India, with its ambitious digital agenda and robust tech ecosystem, is at the forefront of this transformative trend. One of the most significant developments in this regard is the proposed introduction of the E-Rupee, a digital version of the Indian rupee issued by the Reserve Bank of India (RBI).

The concept of the E-Rupee represents a paradigm shift in India's currency landscape, offering numerous potential benefits as well as posing unique challenges. By digitizing the rupee, the Indian government aims to streamline transactions, reduce costs, combat illicit activities, and promote financial inclusion. Moreover, the E-Rupee has the potential to catalyze innovation in payment systems, spur economic growth, and enhance India's position in the global fintech ecosystem.

However, the adoption of the E-Rupee also raises complex issues related to privacy, cyber security, monetary policy, and financial stability. The design,

implementation, and regulation of the E-Rupee require careful consideration to mitigate risks and maximize benefits. Furthermore, the transition from physical to digital currency necessitates significant investments in technological infrastructure, capacity building, and consumer education.

This study seeks to explore the multifaceted dimensions of India's currency revolution through the lens of the E-Rupee. By examining the drivers, challenges, and implications of this transformative initiative, we aim to provide insights and recommendations to policymakers, regulators, and stakeholders involved in shaping India's digital future. Through a rigorous analysis of relevant literature, empirical evidence, and expert opinions, we endeavor to contribute to the ongoing discourse on digital currencies and their role in advancing financial inclusion, innovation, and sustainable development.

In the subsequent sections, we will delve into the historical context of India's currency evolution, the rationale behind the introduction of the E-Rupee, the potential benefits and risks associated with digital currencies, and the policy considerations for ensuring a smooth transition to a digital economy. Additionally, we will examine international experiences with CBDCs,

technological considerations, regulatory challenges, and implications for various stakeholders. Finally, we will offer recommendations for effectively harnessing the transformative potential of the E-Rupee while addressing its inherent complexities and uncertainties.

Literature Review

1. Central Bank Digital Currency: E-Rupee The Future of India – Scope & Challenges (Dr. Sunil Patel & Dr. Himanshu Barot, 2023)

The CBDC had the potential bring positive shift in the economic and financial system. It will give a direct boost to the financial inclusion to majority of those, who currently lives in the reality of partial banking services. But the other side of the story is that e-Rupee is not much stronger in terms of privacy security of the users. Government surveillance need to be extended for its implementation cause from the very beginning, otherwise chances of potential risk will always sustain. But in the wider terms, E-Rupees potential as a game changer can't be ignored.

2. Monetary Policy Implications of Central Bank Digital Currency with special reference to India, (Debesh Bhowmik, 2022)

According to the conclusion compiled by the authors in their research paper, E-Rupee will be having too many challenges for it as a digital currency of Indian economy. The financial inclusion of India is far behind than other developed economies of the world and therefore there are chances that this shift towards digital currency will not be suited for India in the initial stage of its introduction. India is having some structural banking issues like huge burden of Non-Performing Assets (NPAs) before it to be sorted out first, secondly the low profit scenario and rural-urban banking divide could possibly destabilize the growth of India's maiden Digital currency. Although, many things had been improved in India with respect to financial infrastructure. Today internet, banking and UPI is in the reach of every household, which is a good indicator

for planning the inaugural of digital currency for India. In such a scenario, the Reserve Bank of India need to play a crucial role here, to balance out things in an adequate way, and keep a strong vigil to avoid any such financial & banking crises.

3. Central Bank Digital Currency in India: the case for digital rupee (Peterson K. Ozili, March 2023)

The Indian audience had a deep curiosity and interest for Central Bank Digital Currency. Although the future of CBDC is very vibrant, but we can't ignore the potential risk associated with it. According to the conclusions shown in the given research paper, it is not going easy for India to have smooth CBDC led digital currency transition. India need to ensure a monetary and digital evolution at a large scale for making CBDC a future reality.

Methodology

The methodology section of a study on India's currency revolution focusing on e-rupee would outline the approach used to gather data, analyze information, and draw conclusions. Here's a potential methodology for such a study:

1. Literature Review

Begin by conducting a comprehensive review of existing literature on digital currencies, central bank digital currencies (CBDCs), and specifically, initiatives related to e-rupee or digital payments in India. This review will provide a foundation for understanding the context, challenges, and opportunities surrounding the topic.

2. Case Studies

Conduct case studies on pilot projects or initiatives related to e-rupee or digital payments in India. Analyze these case studies to identify key success factors, challenges, and lessons learned which can provide valuable insights into the potential impact of e-rupee on the Indian economy and society.

3. Qualitative Analysis

Employ qualitative methods to explore stakeholders' perceptions, attitudes, and experiences with e-rupee and digital payments. This could involve thematic analysis of interview transcripts, content analysis of policy documents, or discourse analysis of public discourse on the topic.

Result

Provide an overview of the current status of e-rupee adoption in India, including key initiatives, pilot projects, and regulatory developments. Highlight trends in e-rupee usage, transaction volumes, and user demographics.

Analyze the economic impact of e-rupee adoption, including its effects on financial inclusion, digital payments infrastructure, and economic growth. Assess the potential for e-rupee to reduce transaction costs, increase efficiency, and promote formalization of the economy.

Evaluate the implications of e-rupee for financial stability, including risks related to cyber security, fraud, and systemic vulnerabilities. Examine measures taken to mitigate these risks and ensure the resilience of the financial system.

Discuss the implications of e-rupee adoption for monetary policy, including its effects on money supply, interest rates, and exchange rate dynamics. Consider how central banks, including the Reserve Bank of India (RBI), may adjust their policy frameworks in response to e-rupee.

Assess the regulatory framework governing e-rupee adoption, including compliance requirements,

consumer protection measures, and privacy safeguards. Evaluate the effectiveness of existing regulations in fostering innovation while managing risks.

Explore users' perceptions, attitudes, and behavior regarding e-rupee adoption. Discuss factors influencing adoption decisions, such as convenience, trust, and familiarity with digital payment technologies.

Compare India's experience with e-rupee adoption to similar initiatives in other countries or regions. Identify lessons learned, best practices, and areas for improvement based on international experiences.

Highlight challenges encountered during the e-rupee adoption process, such as technological barriers, regulatory complexity, and cultural resistance. Discuss opportunities for overcoming these challenges and maximizing the benefits of e-rupee for Indian society and economy.

Provide insights into the future trajectory of e-rupee adoption in India, including potential growth scenarios, policy directions, and emerging trends. Discuss the role of e-rupee in shaping India's digital economy and its integration into the global financial system.

Conclusion

The adoption of e-rupee represents a pivotal moment in India's currency revolution, with far-reaching implications for the nation's economic development, financial stability, and societal transformation. By embracing digital currency innovation while addressing associated challenges, India can position itself at the forefront of the global digital economy, unlocking new opportunities for growth, inclusion, and prosperity.

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In compiling a list of references for a study on India's currency revolution focusing on e-rupee, it's essential to include a diverse range of sources that support the findings and conclusions of the research. Here's a sample list of references:

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News Articles: Reputable news sources covering developments in digital finance, fintech innovations, and regulatory updates in India.
9. Expert Interviews:
Interviews conducted with policymakers, central bank officials, industry experts, and academics involved in digital currency initiatives in India.
10. Industry Reports and Insights:
Reports from reputable research firms, such as PricewaterhouseCoopers, Deloitte, and McKinsey, providing analysis on digital payment trends, fintech innovations, and regulatory developments.
When citing these references, ensure proper formatting according to the chosen citation style (e.g., APA, MLA, Chicago). Additionally, verify the credibility and reliability of each source to maintain the integrity of the research.

BONSAI: AS REFLECTION OF NATURE BEAUTY & AESTHETIC VALUE

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ABSTRACT

*Bonsai is the ancient art of cultivating and shaping miniature tree in a Container. It originated in China in 1133 AD. The Art of Miniaturization is an Organic Architecture, thus a combination of art and science. The combination of elements of philosophy, painting, sculpting, architecture, design, and gardening is what makes it a unique discipline. While working on living plants, the creator of this unique art is lead by the elementary rules of aesthetics, the skill of connecting various forms, board, colors and space. **The Art of Miniature Landscapes is also dependant on the knowledge of nature:** abilities to perceive the change of nature and the diversity of different forms met in nature. In the European art of Landscape Miniaturization two tendencies are met; the first relates to traditional Japanese art, the second is a link of the traditional Japanese and European Organic Art. Bonsai is the Japanese and East Asian art of growing and training miniature trees in containers, developed from the traditional Chinese art form of pénjing (盆景) Penjing and bonsai differ in that the former attempts to display “wilder.” more naturalistic scenes, often representing landscapes, including elements such as water, rocks or figurines, on the other hand, bonsai typically focuses on a single tree or a group of trees of the same species, with a higher level of aesthetic refinement. Similar versions of the art exist in other cultures, including the miniature living landscapes of Vietnamese the Tang dynasty, when penjing was at its height, the art was first introduced in China.*

Keywords: Bonsai , Landscape Miniaturization, Design theory, Knowledge, Nature, Aesthetic Value, Reflection, Beauty

Introduction

Bonsai is the art of cultivating and shaping miniature trees or shrubs in containers. The word “bonsai” is of Japanese origin and translates to “planted in a container.” This traditional Japanese art form has its roots in ancient Chinese horticultural practices, which were later adopted and refined by the Japanese.

The goal of bonsai is to create a small, realistic representation of a full-sized tree, capturing its natural beauty in a confined space. Bonsai trees are grown in small pots and meticulously pruned and shaped to create a balanced and aesthetically pleasing appearance. Techniques such as wiring, pruning, and root reduction are used to control the tree's size and shape.

Bonsai enthusiasts often spend years developing and refining their trees, and the art requires patience, skill, and a deep understanding of horticulture. There are various styles and types of bonsai, each with its own guidelines for shaping and care. Popular species for bonsai include juniper, pine, maple, and ficus, among others.

Bonsai is not limited to Japan, and it has gained popularity worldwide. Many cultures have developed their own variations of this art form, incorporating local flora and styles. Bonsai can be a rewarding hobby for those who enjoy gardening, art, and the meditative aspects of tending to these miniature trees.

The introduction of up-to-date achievements in this

area should begin by introducing the most significant terms. the Art of Landscape Miniaturization issue still not being fully understandable, it is continuing to become more significant, accounting the active. participation of artistic entourage in the creation process of organic and conceptual art.

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Reflection of nature's Beauty

Bonsai is not only a tree in a pot

It is also reflection of strive to form and essence perfection. This art is based on tree picture that grows freely in nature. Bonsai differs from the natural trees The Japanese introduced a division which helped to easily get ones. bearings within this form of art. The plants have been divided based on genus, species. size, origin, final composition place and style. represented by the trunk. This last division depends on the tree trunk line. (or several trunks) and branch composition. Hence one can say that style in bonsai stands for form one gives to a tree to depict its natural. sort. It also depends mainly on the plant. This last division depends on the tree trunk line. (or several trunks) and branch composition. Hence one can say that style in bonsai stands for form one gives to a tree to depict its natural. sort. It also depends mainly on the plant.

Aesthetic value

Bonsai, the ancient Japanese art of cultivating miniature trees, holds significant aesthetic value for several reasons:

1. Proportion and Scale

Bonsai trees are carefully pruned and shaped to mimic the appearance of mature, full-sized trees in nature, but in a much smaller scale. This reduction in size allows for a unique and captivating aesthetic, emphasizing the intricate details of the tree's structure.

2. Balance and Harmony

Bonsai trees are designed to achieve a harmonious balance between various elements, such as the trunk, branches, foliage, and the container in which they are planted. The overall design aims to create a sense of natural beauty and tranquility.

3. Seasonal Changes

Bonsai trees, like their full-sized counterparts, undergo seasonal changes. The careful consideration of these changes adds an extra layer of aesthetic appeal. For example, the changing colors of leaves in autumn or the blooming of miniature flowers during certain seasons can enhance the visual interest of a bonsai.

4. Symbolism and Storytelling

Bonsai trees often carry symbolic meaning or tell a story. The shape, style, and arrangement of the tree can convey different themes, such as strength, resilience, or the passage of time. This adds a narrative dimension to the aesthetics of bonsai.

5. Patina of Age

A well-crafted bonsai reflects the passage of time through the appearance of aged bark, weathered branches, and a sense of history. This patina of age contributes to the appreciation of the tree's beauty and the respect for the patience and skill of the bonsai artist.

6. Cultural and Philosophical Significance

Bonsai is deeply rooted in Japanese culture and

aesthetics. It reflects principles of simplicity, balance, and the appreciation of nature's beauty. These cultural and philosophical dimensions add to the overall aesthetic value of bonsai.

7. Artistic Expression

Bonsai is a form of artistic expression where the creator's vision and skill are crucial. The artistry involved in shaping the tree over time and the personal touch of the artist contribute to the uniqueness and aesthetic appeal of each bonsai creation.

In summary, the aesthetic value of bonsai lies in its ability to capture the essence of nature in a small and carefully crafted form, its symbolic and narrative elements, and the cultural and philosophical dimensions that contribute to its overall beauty.

Miniaturization

This is the basic characteristic that most bonsais have. They are nurtured to become a miniature replica of the larger trees found in nature. That is why they are grown in small plastic containers or pots. Bonsais still grow to look mature although they remain small

Methodology

Here are key aspects of the bonsai methodology:

1. Selection of Tree Species

Choose a tree species that is suitable for bonsai cultivation. Common species include pine, juniper, maple, elm, and ficus. Consider factors such as climate, local conditions, and the specific requirements of the chosen species.

2. Container Selection

Bonsai containers, or pots, come in various shapes, sizes, and materials. The choice of container should complement the tree's style and size. The pot also plays a role in the overall aesthetics of the bonsai.

3. Pruning and Training

Regular pruning is essential for shaping the tree and maintaining its miniature size. Training techniques

include wiring branches to achieve desired shapes and guiding the tree's growth. These practices help create the illusion of an ancient, naturally shaped tree.

4. Repotting

Bonsai trees need to be repotted periodically to refresh the soil, trim roots, and prevent the tree from becoming root-bound. Repotting also allows for adjustments in the tree's position within the pot.

5. Watering and Feeding

Proper watering is crucial for bonsai health. The frequency and amount of water depend on factors like the tree species, size, and environmental conditions. Fertilization is also important to provide nutrients for healthy growth.

6. Positioning and Display

Bonsai trees should be displayed in a way that highlights their aesthetic qualities. The choice of stand, accent plants, and positioning in relation to light sources all contribute to the overall presentation.

7. Aesthetic Principles

Bonsai design adheres to various aesthetic principles, including balance, proportion, harmony, and simplicity. Different traditional styles, such as formal upright, informal upright, slanting, cascade, and semi-cascade, guide the overall design of the tree.

8. Patience and Continual Care

Bonsai is a long-term commitment, requiring patience and ongoing care. Trees can take many years to develop into mature, aesthetically pleasing bonsai specimens. Regular observation, adjustment, and maintenance are crucial for success.

9. Cultural and Philosophical Aspects

Bonsai is deeply rooted in Japanese culture and philosophy. Practitioners often appreciate the meditative and contemplative aspects of caring for bonsai, as well as the connection to nature and the passing of time.

The bonsai methodology is a blend of horticulture,

artistry, and mindfulness, offering practitioners a unique and rewarding way to engage with nature in a small, controlled setting.

Result

Bonsai is a traditional Japanese art form that involves cultivating small trees or shrubs in containers, shaping them to mimic the appearance of full-sized trees.

The result of bonsai cultivation is a miniature, aesthetically pleasing representation of a mature tree in nature. The outcome of bonsai can vary widely depending on factors such as the type of tree, the style of bonsai, the skill of the cultivator, and the amount of time dedicated to its care.

Successful bonsai cultivation can yield a beautiful and harmonious representation of nature, showcasing the delicate balance between the tree, its container, and the overall design.

Bonsai trees are admired for their artistic qualities, the sense of age and maturity they convey, and the meticulous attention to detail in their shaping and maintenance.

Ultimately, the result of bonsai is not just the physical tree but also the experience and satisfaction gained by the cultivator in nurturing a living work of art over time. It's a practice that requires patience, creativity, and a deep appreciation for the beauty of nature in miniature form.



BONSAI

Discussion

Certainly! Bonsai is a fascinating and ancient horticultural art form that originated in China over a thousand years ago and was later adopted by the Japanese. The word “bonsai” itself comes from the Japanese words “bon” (meaning tray or pot) and “sai” (meaning planting). It involves cultivating small trees and shrubs in containers, carefully shaping and pruning them to create miniature, aesthetically pleasing replicas of full-sized trees.

Here are some aspects of bonsai that can be discussed:

1. Artistic Expression

Bonsai is often considered a form of living art. The way a bonsai tree is shaped, the choice of pot, and the overall composition convey a sense of harmony and balance. Artists use principles such as balance, asymmetry, and proportion to create visually appealing miniature landscapes.

2. Cultural Significance

Bonsai has deep cultural roots, particularly in Japanese and Chinese traditions. It is associated with patience, discipline, and a connection to nature. The practice of bonsai has influenced philosophy, art, and even meditation practices.

3. Horticultural Techniques

Growing a healthy and aesthetically pleasing bonsai involves a range of horticultural skills. Pruning, wiring, repotting, and understanding the specific needs of each tree species are crucial aspects. Bonsai enthusiasts often spend years or even decades refining their techniques.

4. Tree Species

Different tree species are suitable for bonsai, and each has its own unique characteristics and challenges. Some common choices include pine, juniper, maple, and ficus. The choice of tree can significantly impact the style and appearance of the bonsai.

5. Bonsai Styles

There are several traditional bonsai styles, each with its own set of rules and aesthetics. These styles include formal upright, informal upright, cascade, semi-cascade, and windswept, among others. Each style aims to capture a specific natural growth pattern.

6. Bonsai Community

Bonsai enthusiasts often form a close-knit community. They share knowledge, experiences, and even attend exhibitions and workshops together. The exchange of ideas and techniques is an essential part of the bonsai culture.

7. Challenges and Rewards

Growing and maintaining a bonsai tree can be a challenging but rewarding experience. It requires patience, attention to detail, and a deep understanding of the specific needs of each tree. The satisfaction of seeing a well-crafted bonsai tree evolve over time is one of the unique rewards of this art form.

Conclusion

Bonsai treated as a living sculpture can be a model of trees in nature: from single ones to dense forests located around fields or in Lallandes

The art of miniaturization is a special discipline of knowledge, combining in itself elements of philosophy, painting, sculpture, architecture and gardening. The artist performing such work on a living plant is led by the basic rules of aesthetics: feeling of beauty, simplicity, asymmetry and suggestibility.

The artist must also show great feeling of balance and connecting many forms, texture, colors and space. The art of miniature landscapes is also dependent on the knowledge of nature: abilities to perceive the change of nature and the diversity of different forms met in nature. This art should be examined from different far eastern designing philosophy, environment psychology, natural aesthetics. European designing rules and aesthetic values. The basics of Bonsai art is the eastern perspective of the world. The Asian way of life.

REFERENCES

Creating and maintaining a bonsai involves a combination of horticultural knowledge, artistic skill, and patience. Here are some key references that can guide you in the art of bonsai:

1. Books

“The Complete Book of Bonsai” by Harry Tomlinson: This comprehensive guide covers the basics of bonsai cultivation, including selecting suitable species, styling techniques, and care tips.

“Bonsai Techniques I & II” by John Yoshio Naka: Written by one of the pioneering figures in American bonsai, these books delve into the techniques of shaping and maintaining bonsai.

2. Websites

- i. **Bonsai Empire:** An online resource offering articles, tutorials, and an online course for beginners to advanced bonsai enthusiasts.
- ii. **Bonsai4me:** Provides in-depth articles on various aspects of bonsai, from styling to pest control.

3. Forums and Communities

- i. **Bonsai Nut:** An active bonsai forum where enthusiasts discuss their experiences, seek advice, and share their bonsai journeys.
- ii. **Reddit Bonsai:** The bonsai subreddit is a place to ask questions, share photos, and engage with a global community of bonsai enthusiasts.

4. Video Tutorials

- i. **Bonsai Mirai:** An online platform offering video courses, tutorials, and live streams led by renowned bonsai artist Ryan Neil.
- ii. **Graham Potter’s Bonsai:** Graham Potter shares his expertise through a variety of videos covering different aspects of bonsai.

5. Local Bonsai Clubs

- i. Joining a local bonsai club can provide valuable hands-on experience, mentorship, and the opportunity to participate in workshops or exhibitions.

Magazines

- i. Magazines like “Bonsai Focus” and “International BONSAI” often feature articles, case studies, and interviews with bonsai artists.

NAVIGATING CONSUMER PERCEPTIONS AND BEHAVIORS TOWARDS ORGANIC FOOD CHOICES

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ABSTRACT

People all over the world are changing the way they eat. They're choosing food that doesn't have artificial chemicals, fertilizers, or pesticides. This kind of food is called organic food. It's good for both the environment and health. Studying how customers feel about organic food could help the organic food industries in India and worldwide. However because organic farming doesn't produce as much as regular farming, organic food can be more expensive. Many people don't buy organic food because of this. It's important to teach people about the benefits of organic food and to encourage farmers to grow it. This study was inspired by previous research and aims to understand more about why people choose or don't choose organic food. Many studies have shown that people's preferences, knowledge, and satisfaction with organic food are important. After reviewing existing research, the researcher saw a need to explore this topic further.

Keywords: organic food, eco friendly market, sustain organic food products,

Introduction

Farmers have practiced organic agriculture for centuries; it involves no use of synthetic fertilisers, pesticides, growth regulators, or additions for livestock feed. The fundamental principles that set organic agriculture apart from conventional farming methods include its use of natural inputs, adherence to sustainability principles, and environmentally friendly farming practices like crop rotation, intercropping, mulching, and soil structure and fertility enhancement. An integrated production management approach that supports and increases the health of the agro-ecosystem, including biodiversity, biological cycles, and soil biological activity. It places a strong emphasis on using natural inputs and avoiding artificial pesticides and fertilisers. Organic farming is becoming more and more popular worldwide, with about every country implementing it at this point. The rapidly shifting agricultural landscape from chemical-based to organic and environmentally friendly farming systems is a serious concern on both a national and international scale, according to the United States Department of

Agriculture (USDA). The most recent assessment indicates that there are 6,50,000 organic growers and 5.2 million hectares of organic land in India. Globally speaking, India is home to the greatest concentration of organic farmers.

An organic agricultural technique that eschews the use of synthetic pesticides and fertilisers produces food that is classified as organic. Customers who are now aware of the health risks are supporting this shift in the direction of organic farming, which is raising demand for organic food. In order to break into the Indian market for organic products, marketers must concentrate on removing the two main obstacles to buying organic products: availability and pricing (Laheri and Arya, 2015). Globally, customers are becoming more and more interested in organic food products. The knowledge of health and environmental issues among consumers is the reason for this phenomenon. Health, accessibility, and education are three demographic criteria that have a beneficial impact on consumers' attitudes towards purchasing organic food. Food that is organically produced generally receives higher

customer satisfaction than food that is not (Paul and Rana 2012). The Indian organic products market is still in its infancy, and many consumers are ignorant of the advantages that these products and the environment we live in offer.

Objectives of the Study

The actual goals of the current study are as follows:

1. To examine a range of widely-researched topics regarding how consumers see organic food items by reading scholarly research articles.
2. To analyse of the global and Indian organic food markets and food products.

Research Design

To comprehend and meet the demand for organic food items, producers (farmers) and retailers (business owners) must have a thorough awareness of consumers' perceptions and purchasing attitudes. The world's perspective of buying and consuming organic products has long been a source of concern, despite the fast rising demand for organic food products. A thorough review of consumer impressions of organic food items is the main goal and concern of the current study, which has been conducting numerous investigations on organic products over the previous several years. To conduct a thorough literature assessment, data were collected from a range of research publications that were published in reputable journals and electronic databases pertaining to the global and Indian organic markets. A thorough assessment of the literature was subsequently carried out to look into how customers felt about organic food items. Through the journals, experts from all around the world showcase their excellent work, which ultimately aids in conducting their research in a way that is desired. Furthermore, an effort was made to track down references mentioned in different papers and publications about organic food items.

Global and Indian Scenarios for the Organic Food Market

The National Programme on Organic Production

report from 2012 states that the market for organic products is growing impressively quickly, reaching 47% in the EU, 28% in the USA, and 28% in Canada. Singapore's and Italy's markets are both expanding steadily. There is a tremendous need for many more goods in addition to the amounts of the current commodities, even though a significant portion of this demand is met by these nations' local producers. Developing nations like India will have possibilities to investigate as a result of this supply and demand imbalance. Additionally, India's organic food market is still in its infancy. There is now a higher domestic demand for organic food due to rising disposable income and growing health consciousness. According to Manaloor et al. (2016), there is a significant premium on marketing organic products to wealthy, health-conscious local consumers as well as export markets. The last several years have seen an unexpected expansion in the organic food sector. Nevertheless, 43.16 million hectares, or roughly 1%, of all agricultural land worldwide is still certified organic. This amounts to nearly four times the 11 million hectares of organic agricultural land that were under organic cultivation in 1999 (Lernoud and Willer 2016). The organic food industry continues to face challenges even if the increase in rich countries' consumption is driving up domestic demand in developing nations. Numerous reasons have been put forth as to why organic food production could not flourish domestically in poor nations. Several factors included high cost, accessibility, brand confidence, knowledge about organic foods, etc. (Huang and Sangkumchaliang 2012).

Europe and the United States of America are big markets for organic food items. Asia is not far behind, with India holding a significant position. Indian farmers are not unfamiliar with the notion of organic food items. Though India is among the top 10 countries in the world for the number of farmers practicing organic farming, there isn't much domestic consumption going on (Balaji and Injodey, 2017).

The yearly growth of the organic food market has been increasing daily on a global scale, reaching 23% in 2010. There was a 59.1 billion US dollar organic food

market overall. The United States gained the largest area of land for organic apples in 2001 (17672 acres). Based on Yadav et al. (2010), the top producing nations for organic fruits in Europe are Italy, Germany, France, Switzerland, and Austria.

Attitudes of Consumers About Organic Food Products

Five aspects influence consumers' attitudes about eating organic food: food safety, cost, environmental friendliness, nutrition, and sensory qualities. Food consumption trends are always evolving due to environmental and health concerns. Ten criteria, including labels, health and environmental concerns, brand advertising, safety, accessibility, price, freshness, and store location, were found to be influential in the decision to purchase organic food by Pandurangarao et al. (2017). Hence, important elements that are identified as major contributors include safety, the environment, and health.

Consumers' eating habits are evolving quickly in the modern environment. Organic products are on the edge of becoming a niche market. The production and availability of organic products on the market have grown over the past several years, which have had a major positive impact on the economy. Due to its superior health and lower chemical risk, many individuals are beginning to choose organic food over conventional food. Customers' attitudes and perceptions regarding the purchase of organic food products are significantly influenced by this type of purchasing

activity. Additionally, a thorough analysis of previous studies has highlighted the challenges, concerns, and main causes.

The primary factors influencing the decision to purchase organic food include age, gender, income, education level, and the presence of children in the home (Magnusson et al., 2001; Wier et al., 2003). The primary drivers behind consumers' consumption of organic food were determined by Hughner et al. (2007). Concerns about nutrition and health, better flavor, environmental responsibility, food safety, distrust of conventional food, animal welfare, freshness, curiosity, or just being trendy are the main causes.

Conclusion and Recommendations

It has been discovered that health, safety, flavor, and environmental concerns are the main variables influencing consumers' attitudes and preferences when it comes to buying organic products. This information is based on an understanding of consumer behaviour and decision making towards items cultivated organically. Examining the study also showed those consumers' tastes and decisions about what organic food goods to buy might be influenced by the market's availability. Therefore, this paper offers crucial evidence indicating that there will be an increase in demand for food products cultivated organically in the near future. As a result, producers, merchants, consumers, and the government itself should concentrate on the organic niche market.

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PHYSICAL EDUCATION AND SOCIOLOGY ALWAYS GO PARALLEL

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Introduction

Sociology and physical education and sports are had much similar characteristic similar interrelation between both. With the help of studying sociology sports and physical Education reach their goals easily and effectively. Cooperation, values and ethics, healthy competition, fair play are the sign of good Civilization. We will learn the values of these points with the help of sociology. And one who practically faces these concepts in sports he will become as a perfect person in society. Any of the physical activity or Sport that exists in society has its influence group of society. Therefore, physical education and sports cannot its influence on individuals.

It is the subject of sociology that helps us in understanding socialization. On the one hand socialization can also be explained as process of acquiring social values and living together on the other hand physical education and sports also deals with learning of social values and collective performance. There four sociology having a great importance in the field of physical education and sports. Main and important benefit from sports is that keeps a person are sportsmen social. Being social is very important in human life. It will definitely bring a person towards perfection. In same case having or acquiring social values in life one sportsman can definitely get success in his event. It helps him as motivator in individual events and A Life lesson in group games also. Sum of following things will witnesses how sociology is important in the field of physical education and sports.

1. Cooperation and competition

We can see competition and cooperation in sports

in every stage. But society is full of these two things and also cooperation and competition are two important characteristics of socialization that exists in society. Sociology gives importance to both aspects and in sports both exists together. Sociology teaches us that how cooperation is important as competition in society. Sports also require good and healthy relationship between competition and cooperation. Sociology makes aware about their importance in society and field of sports and every aspect of life. A healthy competition and cooperation will bring us towards perfection. In same manner in Sports healthy competition with opposition and good cooperation with teammates will bring towards main motto of sports and physical education.

2. Social control and self discipline

In the field of sports many times spectators go out of the control and this may lead to heavy mass casualties. Many times in European football league such uncontrolled situation has existed. The discipline of sociology develops the collective sense of discipline and social control. Crucial matches or tournaments require this collect to sense of discipline and social control. Therefore for a successful finishing of crucial tournaments factors under sociology like social control and self discipline in highly required.

3. Sports ethics

Having basic knowledge of sociology helps to develop social values in individuals or groups which directly or indirectly and enhances sports ethics in a sportsman. Main object of sociology is to know about being social is how much importance in life. A sports

man is a social being he applies the learned social values. In sports he always shows good sportsman spirit. Fair play, respect is highly required and sociology plays great role on it.

4. Role playing

This is the main aspect in process of socialization. Every social being is entirely comes under this aspect. In sports role-play is the key point in group games. One who knows the role in the team and in same time in the competition he played the role perfectly team will definitely move towards success. Realization and understanding the responsibilities by an individual makes the society healthy and more progressive. In this view in the field of physical education and sports role playing learned through socialization is very important.

5. Sports as a social phenomena

In this point, sociology views on sports as social phenomena. Sports influences on individual. Our society is importantly analyzed through various aspects of social life. Sociology mainly deals with into individuals and groups which also directly engaged in field of sports. Sociology will help to a person or sports person, coach, sports administrator in understanding every aspect of these social phenomena. And it also helps in better understanding of sports in the society.

6. Sports will attain educated

It is not possible for any sports man to develop good cooperation and sportsmanship without understanding social values. Hence Sociology plays important role in making sports more educated and valuable for the society. Knowing about sociology makes sports and games more educated and valuable for the sports persons or society. Sociology will make the field of sports and physical education as more educated to sports persons are a sports lover.

7. Group dynamics

Modern sociology effects on team members more will be the group dynamics to work in a same

team or group of putting all effort collectively to gain good performance as a team or group required group dynamics. Sociology has given much importance on this aspect of socialization and this also shows the importance of sociology in the field of physical education and sports. From the history man is a group animal and to get perfection in sports and physical Education socialization is much needed thing.

8. Individual as a social being

Sociology helps individual to become valuable member of society. It enables a man to be good social being and understand the importance of social values and ethics in the field of physical education and sports. Sociology helps to sports persons to understand what kind of behavior is acceptable to society and what kind of is not acceptable this helps him to become a good and complete sportsperson.

9. Make better standard of sports

Through social factors like good character, discipline, self control, loyalty, nationalism, respect each other, etc standards of sports increases. The process of socialization assists in developing good sports ethics in Sociology. In society unfair attitude, and doping cases, negative remarks, unusual behavior reduces throw socialization. And this is no doubt increasing the standard of sports not only that field in all sectors. Social values really mean a lot in everyone's life.

10. Competent Sports

This aspect is most needed thing in now days. Nowadays we see competitive sports event but not quality sports events or sports personalities. Social values, ethics, status developed through socialization helps in providing us quality Sports for the development of physical education and sports. Sociology definitely assists in providing quality sports to society in every field. Maintaining quality is the key development. In this manner through sociology sports and physical Education will get quality.

11. Mutual dependence of Sociology and sports

Physical education and sports are more strengthen the social values learnt by others. Sports give more practical experience to the process of socialization. In sports one gets enough opportunities to implement and understand social values. Learns under sociology. Physical education and sports no doubt enhance the process of socialization.

12. Performance will increase

Healthy social relation with team members and others and good Cooperative behaviour will build confidence and motivation in players. Group dynamics is considered as an important factor for good performance of any team. Team cannot neglect the importance of social values for good performance and achievements. Sociological aspects plays important role in gaining high performance by any team are group.

Conclusion

As we know anciently man is group or social animal because of his physical, natural and emotional demands. So man feels secure as social. Sports and physical education are such activities get man towards perfection physical and mentally. As we discussed above points we know the importance of sociology in field of sports. One who had theoretical knowledge about social aspects he will succeed in sports field. Sports and games teach us real life lessons with practical experience. This makes physically and mentally strong. Competition, cooperation, Fair play, honesty, accepting results whatever is and following common rules are the key factors for everyone in any field. Sports everyday deals with this factors and makes good practices on this. So sociology is and sports are undividable costumes.

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WHY AND HOW ARE INSECTS ATTRACTED TO LIGHT?

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Although we are aware that artificial light attracts moths and other insects, the mechanism underlying this phenomenon remains unknown. Now, a group of scientists claims to have figured out the fundamental navigational nightmare that draws insects to that pinpoint of light in the dark and drives them insane.



Many insects and bugs respond to light, as well. Bugs that move toward the light, like moths, are positively phototactic. On the other hand, bugs that run away from the light, such as cockroaches, are negatively

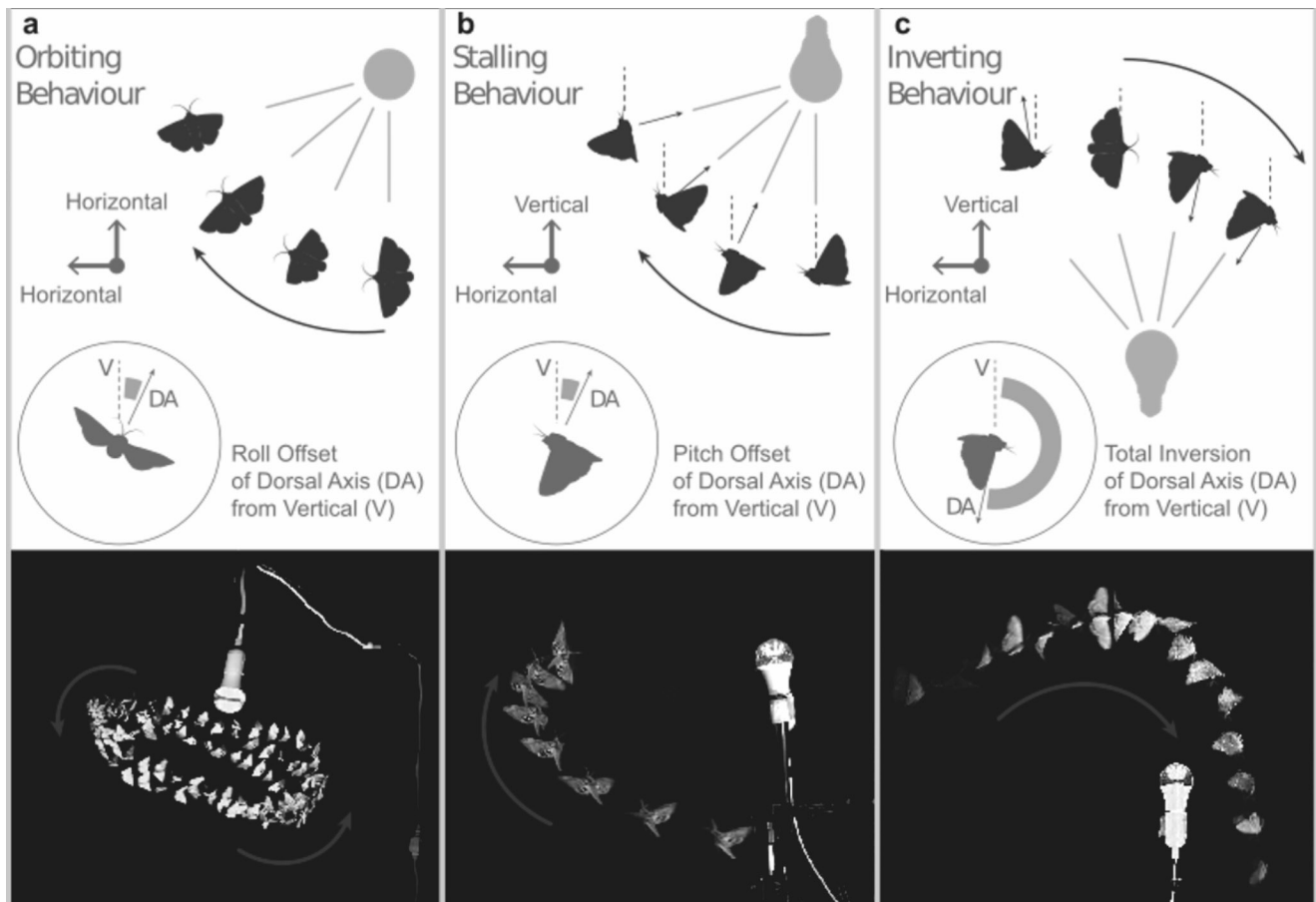
phototactic. In the wild, light signals an escape from potential danger for insects. When an insect sees light, it can tell them that a path is not blocked by a predator or obstacles. Moths use lights to navigate at night, so they're drawn by bright lights and are famous for it.

Turning their backs to the light

To examine this question in detail, we and our colleagues captured high-speed videos of insects around different light sources to precisely determine flight paths and body postures, both in the lab at Imperial College London and at two field sites in Costa Rica, CIEE and the Estación Biológica. Rather, a broad swath of insects consistently pointed their backs toward the lights. This is a known behavior called the dorsal light response. In nature, assuming that more light comes down from the sky than up from the ground, this response helps keep insects in the proper orientation to fly. When their backs orient to a nearby light, the resulting bank loops them around the light, circling but rarely colliding.

When insects flew directly under a light, they often arched upward as it passed behind them, keeping their backs to the bulb until, eventually flying straight up, they stalled and fell out of the air. And even more compelling, when flying directly over a light, insects tended to flip upside down, again turning their backs to the light but then abruptly crashing.

The first is the "orbital action (left)" that continues to circle the light source against the light from the side, and the second is the "stall action (left)" that suddenly rises and loses speed when the light source is overhead. Center), the third is 'reversal action (right)' that swoops toward the ground after passing over the light source.



The team employed high-resolution motion capture in the laboratory and stereo-videography in the field to reconstruct the 3D kinematics of insect flights around artificial lights. They tracked the flights of dragonflies, butterflies, and moths flying around light bulbs in the lab and forests of Costa Rica.

They noticed that at times the insects would tilt upward into a stall, while at other times pass above the bulb flip upside down, and nosedive.

Entomologists have already known that insects could fly level in the daytime due to directional instincts and are able to keep their backs pointed toward sunlight. However, the new study reveals that they lose this ability in the presence of artificial light in the darkness. Scientists have already warned that Insects around the world are rapidly declining due to rising artificial light. While Habitat loss, pesticide use, invasive species, and climate change have all contributed to the decline in insect numbers, critical for the balance of nature,

“artificial light at night is another important, but often overlooked, bringer of the insect apocalypse.”

Indeed, in the new study, there were two intriguing exceptions to the rule. Unlike all the other species tested in the lab experiments, oleander hawk moths and *Drosophila* fruit flies flew normally in the presence of light. Oleander hawk moths are frequently caught in traps in the field that use light to attract insects, however, so it might be that certain species can suppress or increase their orientation behavior depending on the circumstances, Fabian says. “We’d like to pick apart some of these exceptions in future research.”

Which light attracts insects?

Bright white or bluish lights (mercury vapor, white incandescent and white fluorescent) are the most attractive to insects. Yellowish, pinkish, or orange (sodium vapor, halogen, dichroic yellow) are the least attractive to most insects.

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AN OPTIMAL SOLUTION OF FUZZY TRANSPORTATION PROBLEM BY USING A NEW FINDING METHOD “NOVEL METHOD”

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ABSTRACT

The Fuzzy Transportation Problem (FTP) is a significant issue in logistics and operations research, where uncertainties are inherent due to imprecise inputs or dynamic environments. This paper proposes a novel method for solving the FTP, aiming to optimize transportation routes while considering fuzzy parameters. The method integrates fuzzy logic and optimization techniques to handle uncertainty and achieve an optimal solution. Unlike traditional approaches, which often rely on deterministic values, our method embraces the inherent vagueness in transportation parameters, such as demand, supply, and costs.

To address the FTP, we introduce a new finding method that leverages fuzzy set theory to represent imprecise data accurately. The proposed method utilizes a hybrid approach, combining fuzzy logic with optimization algorithms, to efficiently navigate through the solution space and identify the most suitable transportation routes. By incorporating fuzzy reasoning, the method captures the inherent ambiguity in transportation parameters, enabling decision-makers to make informed choices even in uncertain environments.

To evaluate the effectiveness of the proposed method, we conducted extensive experiments on benchmark transportation problems with fuzzy parameters. The results demonstrate that our approach outperforms traditional methods in terms of solution quality and robustness against uncertainties. Moreover, sensitivity analysis reveals insights into the impact of fuzziness on transportation decisions, highlighting the importance of considering uncertainty in real-world logistics scenarios.

Introduction

The Transportation Problem (TP) is a classic optimization challenge in logistics, focusing on finding the most efficient way to transport goods from suppliers to demand points while minimizing costs. However, real-world transportation scenarios often involve uncertainties in parameters such as demand, supply, and costs, which are inherently imprecise due to factors like fluctuating market conditions and unreliable transportation routes. To address these uncertainties, researchers have extended the classical TP to incorporate fuzzy logic, resulting in the Fuzzy Transportation Problem (FTP)1.

In this paper, we propose a novel method for solving

the FTP, which integrates fuzzy logic with advanced optimization techniques to achieve an optimal solution. Our approach aims to provide decision-makers with robust and flexible solutions that account for the inherent vagueness in transportation parameters, enabling more informed and reliable transportation planning in uncertain environments.

Statement of the Problem

The FTP involves determining the optimal transportation routes for goods while considering fuzzy parameters such as demand, supply, and transportation costs. Unlike the classical TP, where parameters are assumed to be precise, the FTP deals with imprecise or

fuzzy data, reflecting the uncertainties inherent in real-world transportation scenarios.

The main challenge in solving the FTP lies in effectively handling fuzzy parameters to identify optimal transportation solutions. Traditional methods often struggle to capture the complexity introduced by fuzziness, leading to suboptimal or unreliable results. Therefore, there is a need for a novel approach that can navigate through the uncertainty inherent in transportation parameters and provide robust and efficient solutions to the FTP2.

In this paper, we propose a new finding method specifically tailored for solving the FTP. By leveraging fuzzy set theory and advanced optimization algorithms, our method aims to address the challenges posed by fuzzy parameters in transportation problems, ultimately offering decision-makers a reliable and efficient tool for transportation planning in dynamic and uncertain environments.

Limitations of Study

While our proposed novel method for solving the Fuzzy Transportation Problem (FTP) shows promising results, it's essential to acknowledge some limitations that warrant further research and consideration:

1. **Computational Complexity:** The complexity of solving the FTP increases significantly when dealing with large-scale problems or highly fuzzy parameters4. Our method may face computational challenges in such scenarios, requiring efficient algorithms or parallel computing techniques to handle the computational load effectively.
2. **Sensitivity to Parameter Tuning:** The performance of our method may be sensitive to the selection of parameters or tuning of fuzzy logic components. Achieving optimal results may depend on fine-tuning parameters, which can be time-consuming and may require domain expertise
3. **Limited Real-world Validation:** While we conduct experiments on benchmark

transportation problems with fuzzy parameters, real-world validation of our method is limited. Further validation on real-world transportation data sets is needed to assess the method's applicability and performance in practical scenarios.

4. **Scalability:** The scalability of our method to accommodate varying problem sizes and complexities is another aspect that requires attention3. As the size of the transportation network increases, the efficiency and effectiveness of the method may diminish, posing scalability challenges.
5. **Assumptions and Simplifications:** Like any modeling approach, our method makes certain assumptions and simplifications to represent the FTP. These assumptions may not always hold true in real-world scenarios, potentially affecting the method's accuracy and reliability.
6. **Generalizability:** While our method demonstrates effectiveness in solving the FTP, its generalizability to other fuzzy optimization problems or domains outside transportation may be limited. Further research is needed to explore the method's applicability and adaptability to different problem contexts.

Addressing these limitations will be crucial for advancing the applicability and robustness of our proposed method for solving the Fuzzy Transportation Problem and other related optimization challenges in logistics and operations research5.

Methodology

Our methodology for solving the Fuzzy Transportation Problem (FTP) using the proposed novel method combines fuzzy logic with optimization techniques to achieve an optimal solution. The methodology involves several key steps outlined below:

Problem Formulation

1. **Define the transportation network:** Identify the suppliers, demand points, and

transportation routes between them.

2. **Specify the fuzzy parameters:** Determine the fuzzy sets representing uncertain parameters such as demand, supply, and transportation costs.
3. **Formulate the objective function:** Define the objective function to minimize transportation costs while meeting demand requirements under fuzzy conditions.
4. **Fuzzy Logic Representation:** Utilize fuzzy set theory: Represent fuzzy parameters using linguistic variables and fuzzy sets⁶.
5. **Define membership functions:** Specify membership functions to quantify the degree of membership of elements in fuzzy sets.
6. **Apply fuzzy inference:** Employ fuzzy inference rules to reason with fuzzy data and make decisions based on fuzzy logic principles.
7. **Optimization Approach:** Select optimization algorithm: Choose an appropriate optimization algorithm capable of handling fuzzy parameters and solving large-scale optimization problems.
8. **Incorporate fuzzy logic into optimization:** Integrate fuzzy reasoning with the optimization algorithm to navigate through the solution space while considering fuzzy constraints and objectives.
9. **Implement solution refinement techniques:** Apply solution refinement techniques such as local search or metaheuristic algorithms to improve the quality of solutions and enhance convergence.
10. **Solution Evaluation:** Assess solution quality: Evaluate the quality of the obtained solution in terms of transportation costs, demand satisfaction, and other relevant performance metrics.
11. **Conduct sensitivity analysis:** Perform sensitivity analysis to examine the robustness of the solution to changes in fuzzy parameters

and assess the impact of uncertainty on transportation decisions.

12. **Compare with existing methods:** Compare the performance of the proposed novel method with other existing approaches for solving the FTP, including traditional deterministic methods and other fuzzy optimization techniques.
13. **Experimental Validation:** Conduct experiments: Test the proposed method on benchmark transportation problems with fuzzy parameters to validate its effectiveness and performance.
14. **Analyze results:** Analyze the experimental results to assess the method's ability to provide optimal solutions under fuzzy conditions and its computational efficiency compared to existing methods.
15. **Interpret findings:** Interpret the findings to gain insights into the behavior of the proposed method and its applicability to real-world transportation scenarios.

By following this methodology, we aim to develop a robust and efficient solution for solving the FTP, addressing the challenges posed by fuzzy parameters and enabling more informed and reliable transportation planning in uncertain environments.

Results

Experimental Setup

Describe the experimental setup, including the benchmark transportation problems used for testing the proposed novel method. Specify the parameters and settings used in the experiments, such as the number of suppliers and demand points, transportation costs, and fuzzy membership functions.

Performance Metrics

Define the performance metrics used to evaluate the proposed method, such as total transportation costs, demand satisfaction rate, solution convergence time, and sensitivity to parameter variations.

Comparative Analysis

Present the experimental results comparing the performance of the proposed novel method with existing approaches for solving the Fuzzy Transportation Problem. Discuss how the proposed method outperforms or compares favorably with traditional methods and other fuzzy optimization techniques in terms of solution quality, computational efficiency, and robustness.

Sensitivity Analysis

Conduct sensitivity analysis to examine the impact of fuzzy parameters on transportation decisions and assess the robustness of the proposed method to variations in parameter settings.

Discuss how the proposed method adapts to changes in fuzzy parameters and maintains optimal transportation solutions under different uncertainty levels⁷.

Scalability Evaluation

Evaluate the scalability of the proposed method by testing its performance on transportation problems of varying sizes and complexities. Discuss how the method handles large-scale instances of the Fuzzy Transportation Problem and identify any scalability limitations or computational bottlenecks.

Case Studies and Real-world Applications

Present case studies or practical examples illustrating the application of the proposed method to real-world transportation planning scenarios. Discuss how the method addresses the challenges of uncertainty and variability in transportation parameters and facilitates more informed and reliable decision-making in logistics and supply chain management.

Interpretation and Discussion

Interpret the experimental results and discuss the implications for the field of fuzzy optimization and transportation planning. Analyze the strengths and limitations of the proposed method based on the

experimental findings and identify opportunities for further research and improvement.

By presenting the results of experimental evaluations and comparative analyses, we aim to demonstrate the effectiveness and practical relevance of the proposed novel method for solving the Fuzzy Transportation Problem and advancing the field of logistics and operations research⁸.

Discussion

Performance Evaluation

Interpret the experimental results and discuss the performance of the proposed novel method in solving the Fuzzy Transportation Problem. Highlight any improvements or advantages over existing approaches, such as better solution quality, faster convergence, or enhanced robustness to fuzzy parameters.

Robustness and Sensitivity

Discuss the robustness of the proposed method to variations in fuzzy parameters and uncertainty levels. Analyze the sensitivity of the method to parameter settings and fuzzy membership functions and identify strategies for improving robustness and adaptability.

Computational Efficiency

Evaluate the computational efficiency of the proposed method and discuss its scalability to large-scale transportation problems. Identify any computational bottlenecks or performance limitations and propose potential optimizations or algorithmic enhancements.

Practical Implications

Discuss the practical implications of the proposed method for transportation planning and decision-making in real-world scenarios. Highlight how the method can help decision-makers navigate uncertainties and make informed choices in dynamic and uncertain environments.

Comparison with Existing Approaches

Compare the proposed method with existing

approaches for solving the Fuzzy Transportation Problem, including traditional methods and other fuzzy optimization techniques. Discuss the strengths and limitations of each approach and identify areas where the proposed method excels or offers unique advantages.

Limitations and Future Directions

Acknowledge any limitations or challenges encountered in the development and implementation of the proposed method. Discuss potential avenues for future research and improvement, such as refining algorithmic techniques, addressing scalability issues, or exploring hybrid approaches.

Concluding Remarks

Summarize the key findings and contributions of the study in addressing the Fuzzy Transportation Problem using the proposed novel method. Reiterate the significance of the proposed method for advancing the field of fuzzy optimization and transportation planning. Offer final thoughts on the potential impact of the proposed method on logistics, supply chain management, and related fields. By engaging in a comprehensive discussion, we aim to provide insights into the effectiveness, applicability, and potential implications of the proposed novel method for solving the Fuzzy Transportation Problem and contributing to advancements in logistics and operations research.

Conclusion

In this study, we have proposed a novel method for addressing the Fuzzy Transportation Problem (FTP), which is characterized by uncertain parameters such as demand, supply, and transportation costs. By integrating fuzzy logic with advanced optimization techniques, our method offers decision-makers a robust and efficient solution for transportation planning in dynamic and uncertain environments.

Through a comprehensive approach, we have demonstrated the effectiveness and practical relevance of our proposed method:

Accurate Representation of Fuzzy Parameters:

Our method effectively handles fuzzy parameters by utilizing fuzzy set theory and reasoning, enabling more realistic modeling of transportation uncertainties.

Efficient Optimization: By integrating fuzzy logic with optimization algorithms, our method navigates through the solution space efficiently, identifying optimal transportation routes while considering fuzzy constraints and objectives.

1. Robustness to Uncertainty: Through sensitivity analysis and experimental validation, we have shown the robustness of our method to variations in fuzzy parameters and uncertainty levels, providing decision-makers with reliable solutions even in uncertain conditions.

2. Practical Applications: The proposed method has practical implications for transportation planning in real-world scenarios, offering decision-makers valuable insights into optimal transportation routes and costs under fuzzy conditions.

While our study has made significant strides in addressing the FTP using the proposed novel method, there are opportunities for further research and improvement. Future work could focus on refining algorithmic techniques, enhancing scalability, and exploring hybrid approaches to further enhance the method's effectiveness and applicability.

In conclusion, our proposed method offers a promising solution for optimizing transportation routes under fuzzy conditions, contributing to advancements in logistics, operations research, and supply chain management. By embracing uncertainty through fuzzy logic, we enable more informed and reliable decision-making, ultimately improving efficiency and resilience in transportation systems.

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WATER POLLUTION IN UTTER PRADESH: ITS IMPACT ON THE HUMAN HEALTH: CAUSES AND CURATIVE

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ABSTRACT

All activities carried out on the ground water have direct or indirect impact on the ground water, Water pollution in UP is a major problem. In recent years due to industrialization and urbanization in Utter Pradesh, this problem has become giant. Utter Pradesh being one of the most dominant industrial agriculture states of North India. Right to use water is a basic human right. Indian constitution do not make this right a exact right. Article 21 of the constitution of India provide that every person has the right to life. This Article personified in it, the right to pure water for drinking. Life of a human cannot be sustained with polluted water. Pollution free water is the only hope for the healthy life. The root cause of a number of diseases is the polluted water. There are a number of causes responsible for polluting the water. Polluted water doesn't come from a single source. Article 47 impose duty on the state to raise the level of nourishment and the standard of living including improvement of public health. It is the duty of the state to provide pure water to the community. It is also the duty of every citizen under article 51 (A) g to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have consideration for living creatures.

Introduction

Impure water is the main reason of a number of disease. Polluted water not only affects the life of present generation but it also affects the life of future generations because its result remains for long. Bhopal gas tragedy case can be named as an example. Bhopal Gas tragedy is the world's most horrible industrial tragedy. Study by official scientific agencies shows that ground water pollution has spread 42 meters deep and upto 4 km from the deserted factory. Nearly 41000 persons have consumed this impure water over the past 15 to 20 years and cancer, birth defects and disease related to skin, lungs, brain, kidneys and liver are several times more widespread in that society than anywhere besides in the country.

The use of water is multifold. The continued existence of human being is not possible without the water. Human being cannot live without the water. For a fit life pure and pollution free water is essential. If in

any area the water is polluted then people or the other living creature are compulsory to drink that polluted water because they have no other option nor can they live without it. In recent years, water pollution has become a serious problem across the country, mostly due to the presence of untreated effluents, chemicals and pesticides in it. There are many causes of water pollution. These causes can be removed or at least controlled with the awareness amongst the people and by the strong implementation of the legislative measures. But because of the activism of judiciary in India this right to clean and sufficient water is embodied in Article 21 of the Constitution of India. If the water is not clean or is polluted then Constitution of India also provides therapy which can be claimed under the law of torts and under Article 226 of the Constitution in the form of filing writ in the High Court of the respective State and under Article 32 writ can be filed in the Supreme Court.

Right to Access to Clean Water

Fresh water is the basic need of the living being. It is one of the main substances of the survival of living being. Water has multifunctional role in every day life. It is used for drinking, bathing, cleaning and irrigation etc. The main water bodies from where water can be use are lakes, rivers, oceans, ponds and ground water. State also provides water to the people. Right to access clean water is the basic human right of a human being. On July 28, 2010 UN General Assembly official announcement to make water and hygiene as right. Mr. Pablo Solon the Bolivian Representative to the UN, while tabling the announcement said that "Drinking water and sanitation are not only elements or principal components of other rights such as "the right to an sufficient standard of living. The right to drinking water and cleanliness are sovereign rights that should be recognized as such. In India, Government is the trustee of all natural resources which are meant for public use and enjoyment by nature and water is one of these natural resources. Constitution of India provides that water is reachable for all irrespective of cast and religion. Article 15 (2)(b).

Cause and Effects of Water Pollution

Pollution of water means analysis the water unhealthy for human use by brings changes in its natural feature. Water pollution can be defined in many ways. Usually, it means one or more substances have make up in water to such an stage that they cause harms for living beings. Pollutants in water include a wide range of chemicals, pathogens and physical state. Many of the chemical substance are poisonous. Pathogens can produce waterborne diseases. Change of water's chemical and physical properties such as acidity, basicity, electrical conductivity, temperature etc. Human communicable diseases are among the most severe effects of water effluence. In India, every year, around 52,000 million liters of wastewater (industrial and domestic) is generated in municipal areas. If the data of rural areas is also taken into account, the overall figure will be higher. A growing number of bodies of water in Utter pradesh are unfit for human use and

in the River Ganga holy to the country's 80 percent Hindu majority, is vanishing slowly due to unrestrained pollution. Water effluence is a major problem in UP. Only about 12% of the waste water generate is treated; the rest is discharged as it is into our water bodies. Due to this pollutant go into the groundwater, rivers and other water bodies. polluted water puts serious effect on human being. We can partition the causes of water pollution into two parts one is indirect and the second is direct.

Indirect cause

The waste material, when carried from a place to the water assets, is called indirect cause. Indirect sources of water pollution include stuff which goes into the water from soils and from the atmosphere through rainfall. Soils and ground waters contain the residue of human agricultural practices and also improperly disposed of industrial wastes. It is common for farmers to use fertilizers and other chemicals on their crops to help them grow. However, these chemicals and nutrients added to the soil can soak into the underground water supplies.

Direct Cause

Direct sources include effluent outfalls from factories, refineries, waste treatment plants etc. that emit fluids of varying quality directly into urban water supplies In this category we can include those pollutants which directly enter into the water recourse and pollute it. In the industrial areas, manufacturing effluents are the main source of water contamination either surface water or ground water. There, industrial wastes are directly discharged into the waterways. Industries discharge a variety of pollutants in their wastewater including heavy metals, resin pellets, organic toxins, oils, nutrients, and solids. Discharges can also have thermal effects, especially those from power stations and these reduce the available oxygen. City sewage is also the main cause of water pollution. Sewage is also known as wastewater which usually contains laundry waste, urine and faeces. Disposing these wastes is a big problem in the state today that is why the rivers and the

lakes are the ones that suffer by sewage water pollution can cause diarrhea. A large number of fish and other organism living under water have been death due to the highly contaminated water leading to an all diffuse stink in the vicinity of the Ghaggar. After the testing of its water it was found that against the normal biochemical oxygen demand (BOD) level of 2.8-3.0 mg per litre, it had 24 to 30 mg per litre.

Remedies in Case of Water Pollution

In case of water pollution the best remedy is to approach the court. It is a nuisance to pollute a pond, well or any water resource. Nuisance may be private or public. If the use or enjoyment of person's property or of some right over or in connection with it, is interfered by the illogical water pollution done by another then a suit for private nuisance can be claimed. In the public nuisance violator may be punished by a criminal sentence, a fine or both.²⁹ Section 268 of the Indian Penal Code, 1860 provides that a person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes injury, danger or annoyance to the public. Sections 133 to 144 of the Criminal Procedure Code provide the remedy in case public nuisance. Section 133 empowers the magistrate to pass an order for removal of a public nuisance within a fixed period of time. The measures to control the water pollution can be sought from the court by public interest litigation (PIL). The expression public interest litigation means a legal action initiated in a court for enforcement of public interest.³⁰ A Public Interest Litigation (PIL) or social interest litigation can be filed in any High Court or in the Supreme Court under Article 226 and 32 respectively. Public interest litigation can be filed in the Supreme Court only if a question concerning the enforcement of a fundamental right is involved and in the High Courts it can be filed whether or not a fundamental right is involved. It can be filed by any public spirit citizen for the enforcement of the constitutional and legal right of any person or group of persons who because of their socially or economically disadvantaged position are unable to approach court for relief.³¹ Article 32 of the Constitution of India is

a great safeguard to provide shield to the fundamental rights provided under Part IV of the constitution. It is a weapon to protect the right to access clean water. Although right to water is not explicitly a fundamental right under the constitution of India but according to the judicial approach this right is embodied in Article 21 of the constitution of India. The Kerala High Court in *Attakoya Thangal v. Union of India*, 1990 KLT 580, attributed right to clean water as a right to life in Article 21. In *S. K. Garg vs State of U.P.*, AIR 1999 All 41, the ambit of Article 21 was enlarged to include the "Right to Water". Court said that in our opinion the right to get water is part of the right to life guaranteed by Article 21 of the Constitutions but a large section of citizens of Allahabad are being deprived of this right. Without water the citizens of Allahabad are going through terrible agony and distress particularly in this hot season when the temperature goes up to 46 or 47 degree Celsius.

Conclusion and Suggestions

The present study finds that the right to access clean water is not specifically guaranteed either by the constitution of India or by any other Acts. Duty is imposed on the state to provide clean water and prevent and control the water pollution. The present study reveals that Water pollution is a major issue in India. The power of the Supreme Court under Article 32 is not only injunctive in ambit that is preventing the infringement of fundamental rights, but it is also remedial in scope and provides relief against a breach of the fundamental rights already committed.³⁹ This paper unravel that the waste water treatment plants in India are not adequate. Efforts are being made. To save aquatic life in the Ganga and to effectively treat waste water, two pilot projects have been initiated by WWF in the city.⁴⁰ The study stresses to establish sewage treatment plant in every urban settlement. Preferably the sanction to the urban settlement should be given only after the establishment of the sewage plant. In India there is lack of clean drinking water and sanitation. Level of ground water is reducing. There is need of an effective water policy. The first policy was adopted by

National Water Resources Council in 1987. This was revised and updated in April 2002. Government, NGO's and educated people should have done efforts to aware the people about the water pollution and its effects. The NGO Green Earth organized competitions Programme, poster making, slogan writing and an environment quiz for creating awareness about the environment, health

and sanitation at Brahm Sarovar of Kurukshetra.⁴² Such type of activities should be done on war footing. The study stresses to establish the separate environmental courts in each state to reduce the burden of the judiciary and to implement the recommendations of the 186th Report of India's Law Commission.

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A STUDY ON THE USAGE OF SPOILED MILK

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ABSTRACT

Spoiled milk may have a place in your next culinary pursuit. Not to mention, using spoiled milk in recipes is a great way to reduce food waste. Spoiled milk usually refers to pasteurized milk that has gone bad, while sour milk may refer to raw milk that has begun to ferment. Drinking spoiled milk can cause digestive distress, such as vomiting, abdominal cramping, and diarrhoea.

Spoiled milk can replace buttermilk or sour cream in baked goods. It can also be used to tenderize meats or added to soups, casseroles, or salad dressings. You can likewise use it in certain cosmetic applications to soften your skin. Every time milk goes bad, we often think to make paneer with it. When you accidentally left the milk out for too long or maybe added a wrong ingredient to your milk, and now it has gone bad. With clumps of milk left behind in the saucepan, all we can think of is making paneer. And honestly, it's one of the best ways to make use of curdled milk. However, it's not the only one! Curdled milk has long been used in all sorts of recipes. Many people even spoil their milk on purpose and create something completely new out of it.

This research explains what spoiled milk is, whether it's safe to drink, and ways you can use it.



Introduction

Spoiled milk is the result of an overgrowth of bacteria that compromises the quality, flavour, and texture of milk. Since the late 1800s, the vast majority of commercially produced milk is pasteurized. The pasteurization process kills many of the most harmful strains of bacteria known to cause foodborne illness. However, pasteurization doesn't eliminate all types of bacteria. Plus, once you open a carton of milk, it's exposed to additional bacteria from the environment.

Over time, these small bacterial communities can multiply and eventually cause your milk to spoil. Most people are immediately turned off by the foul smell and taste of spoiled milk, which makes the decision about drinking it a relatively easy one.

However, even if you can get past the unpleasant taste, drinking spoiled milk isn't a good idea. It can cause food poisoning that may result in uncomfortable digestive symptoms, such as stomach pain, nausea, vomiting, and diarrhea. Spoiled milk can replace

buttermilk or sour cream in baked goods. It can also be used to tenderize meats or added to soups, casseroles, or salad dressings. You can likewise use it in certain cosmetic applications to soften your skin.

You don't need to worry if you accidentally ingest a small sip of spoiled milk, but avoid drinking it in large — or even moderate — quantities.



There are some signs to deduct spoilage in milk

1. When milk begins to spoil, it develops an unpleasant, rancid odor. The scent is hard to miss and gets stronger with time.
2. The taste also begins to change, as the natural sweetness of fresh milk is quickly replaced by a somewhat acidic or sour flavor.
3. With enough time, the texture and colour of milk that has spoiled will change as well. It may begin to develop a slimy, chunky texture and dingy, yellow colour.
4. The rate at which milk spoils depends on many factors, including the number of spoilage bacteria present, temperature at which the milk has been stored, and light exposure
5. If you're unsure whether your milk has spoiled, start by sniffing it. If it doesn't smell off, try a

small sip before pouring a full glass or adding it to your cereal.

Can Still be Useful in the Kitchen

Though you shouldn't drink spoiled milk, it's far from useless.

If your milk is very old and has started to curdle, become slimy, or grow mold, it's best to throw it out. Yet, if it's just a little off and slightly acidic, there are several ways to use it.

Try using slightly spoiled milk in one of the following culinary applications:

1. **Baked goods.** Substitute spoiled milk for regular milk, buttermilk, yogurt, or sour cream in recipes like biscuits, pancakes, scones, and cornbread.
2. **Soups and stews.** A splash of spoiled milk can

help thicken and add richness to soups, stews, and casseroles.

3. **Salad dressing.** Use sour milk to make creamy dressings like ranch, Caesar, or blue cheese.
4. **Cheesemaking.** Use sour milk to make homemade cottage or farmer's cheese.
5. **Tenderize.** Use sour milk to marinate and tenderize meat or fish. You can also soak uncooked, whole grains in it to soften them.

Additionally, you can add spoiled milk to homemade face masks or a bath to soften your skin. Still, you may want to mix it with essential oils or other fragrant ingredients if you find the smell overbearing.

Every time milk goes bad, we often think to make paneer with it. when you accidentally left the milk out for too long or maybe added a wrong ingredient to your milk, and now it has gone bad. With clumps of milk left behind in the saucepan, all we can think of is making paneer. And honestly, it's one of the best ways to make use of curdled milk. However, it's not the only one! Curdled milk has long been used in all sorts of recipes. Many people even spoil their milk on purpose and create something completely new out of it.

Review Literature

Mahindra Pal and Vijay J Jadhav (2013) proposed similar view and reported that spoilage is responsible for alteration of texture, flavour along with nutritive value of dairy products making it unsafe for consumption.

Sania Tariq (2021) **Facial** Soured milk contains probiotics and enzymes which pasteurized milk does not. These probiotics and enzymes make this excellent for beauty usage. The facial is usually called a Lactic Acid Facial. Milk contains lactic acid. It is said to be perfect to lighten skin tone. Just like curd, massaging the face with soured milk will make skin firm and smooth. Also benefits in lightening skin tone by removing tan.

Bath Instead of throwing away the soured milk, pour soured milk into your bath water to enjoy the milk bath. If you feel the smell is stronger, mix a few drops of your favoured essential oils. When you add soured milk

for bathing, makes skin healthier and smoother. Thus, try nourishing the whole skin of the body by taking a milk bath.

Dry skin You should never believe that the soured and spoiled condition of the milk damages your skin more. If you think so, you are misguided. You should Massage or apply soured milk on your dry skin to control or heal the condition. It's providing moisturize the skin and cure the dryness.

Face pack presence of probiotics and enzymes in the soured milk is very helpful in improving your skin. This face pack is a paradise for those who have extremely dry skin. Mix a spoon of sour milk 1 spoon of honey and 1 banana. Apply this on dry skin and leave for 5-10 minutes. It will add moisture and leaves skin soft and plump.

For infection and Rashes While sour milk is known to be packed with lactic acid. Sour milk is approved to be having soothing properties. Then, you just have to apply it on the irritated and infected area of the skin which will help heal the condition such as rashes and other infections.

Pedicure While your feet are tired of the hectic day, you could have to treat it by

Dipping in a warm water tub. Then now, you dip your feet in a tub of soured milk mixed with water which would cure the dry and cracked condition of the feet. This would moisturize

If the milk is extremist pasteurized, it will stink. Due to it doesn't contains the enzymes and bacteria which are needed for the above mentioned uses. Therefore do not use it.

So the next time when the milk gets sour, rather of throwing it out make the most out of it.

Ghodekar et al. (1974). Khoa available in market was infected by microorganisms owing to gap of processing and selling, primary bioburden on used utensils and incorrect handling operation and improper storage settings.

(Srinivasan and Anandakrishnan 1964). Similarly, spoilage of milk and its products may lead to change in

flavour and texture. Alike, mouldiness as well as a bitter flavour can be developed in milk product.

(D K Sandrou and I S Arvanitoyannis 2000). milk spoilage can be described as deterioration of flavour, texture and colour of it leading to unsuitability of it for human consumption. Number of microorganisms can grow in milk as it is potentially nutritious growth medium.

(Yadav et al. 1993). Additionally, storage time and place also affect quality of milk and milk products. As well, microbial contamination might due to use of khoa that is stored for longer duration to make sweets.

(Melisa Anderson et al. 2011). Erroneous process of pasteurization and adulteration in the milk that is pasteurized and handling procedures with unsanitary situations are responsible for milk spoilage

(Janstova B and Drack ova 2006). Furthermore, authors claimed that milk is superior source for microbial growth and spoilage microorganisms coming from the milk maid, utensils or animal hair, water and from soil. In addition, grass, feed, soil, and devices that are used for milking are responsible for bacterial contamination of milk in its raw form

(S Sarkar 2015). Since considerable numbers of outbreaks through epidemics have been reported due to consumption of raw milk, such uptake should not be entertained.

(Ghodekar D R et al. 1974). Numerous microflorae

are involved in spoilage of milk and milk related items. Bhat et al. (1948) supported this view and stated that pathogenic microflora viz. Salmonella typhi, E. coli etc. can persist for longer period in khoa. Likewise, wastage of dairy products resulted due to staphylococci and other food spoiling organisms exposing customers to substantial health risk

Conclusion

Spoiled milk is the result of an overgrowth of bacteria that causes changes in taste, smell, and texture. Drinking it may make you sick, but cooking with it won't, as long as it's just a little off. Using your slightly spoiled milk in innovative ways can also help you reduce food waste. The next time you notice that the milk in your fridge is starting to go bad, don't throw it out right away. Instead, try using it in pancakes, biscuits, or as a thickener for soups and stews.

But there is a clear line between sour milk that is still safe for consumption and spoiled milk that is way past its expiration date or was not properly refrigerated. The best way to assess in which category that bit of leftover milk in your fridge falls is to follow your nose and taste buds. If the milk does not have any off-putting smell or taste, you can still use it. **If milk has gone a little sour, it is still safe for consumption.** However, you need to ask yourself whether you find it appetizing enough to use it. Sour milk is not to be used for pouring over breakfast cereal but, instead, for baking.

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WATER POLLUTION BY SUGAR MILLS AND DISTILLERY SPENT WASH

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ABSTRACT

India is a global agriculture power house. It being a developing country establishing a large number of industries such as sugar distillery, steel, paper, textile etc. that play an important role in progress of the nation. These industries along with their product produce wastewater, which causes various environmental hazards. However, wastewater characteristics are different from industry to industry. A no. of industries are established in India and distilleries are one of them. These industries produce waste water called spent wash which is in general practice discharge into local water bodies without any treatment. This practice causes water and soil pollution. The spent wash is acidic and loaded with organic and inorganic salts. Being plant origin, the spent wash contains considerable amount of plant nutrients and organic matter. Spent wash is some acidic effluent rich in organic carbon, K, Ca, Mg and S, considerable amount of N, P, traces of micronutrients viz Fe, Mn, Zn and Cu and traces of sugar are also observed. Presence of appreciable amount of plant growth promoters viz gibberellic acid (GA) and indole acetic acid (IAA) have also been detected which further enhance the nutrient value of spent wash. Though the spent wash generally does not contain any toxic metals, but is characterized by high biological oxygen demand and chemical oxygen demand levels which are the main cause of water pollution. The solution of the problem is discharge of waste water into water bodies after proper biological and chemical treatment by the industries. The present paper investigates about all aspects of water and soil pollution caused by distillery spent wash.

Keywords: Distillery spent wash, water pollution, Biological oxygen demand

Introduction

Pollution is the introduction of contaminants into natural environment that cause adverse change. Pollution occurs through different medium, however water and air are two major resources, which get polluted in one way or other. Most of water from natural sources get polluted due to wastewater emerging from chemical industries. India being a developing country establishing a large number of industries such as sugar, distillery, steel, paper, textile etc. that play important role in progress of the nation. These industries along with their product produce wastewater, which causes various environmental problems. However, wastewater characteristics are different from industry to industry. One such major chemical industry is distillery. India is a major producer of sugar in the world and these industries offer employment potential and contributes

substantially to economic development. There are about 579 sugar mills and 285 distilleries in India. Apart from sugar and alcohol these industries generate many by product and waste material (Sindhu et al., 2007). Molasses, one of the important by product, is the chief source for the production of alcohol in distillery by fermentation method.

This molasses contains 7-8 % glucose, which is converted into alcohol by fermentation process. First molasses is diluted by adding water to adjust the total dissolved solids up to 7- 8%. Then yeast is added in diluted molasses solution and fermentation process takes place. As process go up glucose is converted into ethyl alcohol and carbon dioxide. This carbon dioxide is removed as a gaseous form, which is collected separately. After sufficient conversion of glucose into ethyl alcohol this solution is now called as a beer solution. This beer

solution then passed through distillation column. Based on temperature difference ethyl alcohol is separated from the beer solution and condensed into liquid form. The wastewater from distillery column is called spent wash liquor (Lekshmi, 2013). About 40 billion litres of waste water annually discharged by the distilleries (Chindankumar et al., 2009).

Generation of spent wash

Sugarcane → Sugar mills → sugar
↓ → Bagasse
Molasses → distillery → alcohol
↓
Spent wash

This waste water is discharge directly into water bodies which cause water pollution. Different environmental regulatory bodies worldwide have already set norms for the waste discharge from industries. In India, for instance, distillery industry had been told to achieve zero discharge of spent wash by December 2005 according to charter of Central

Pollution Control Board, the apex of pollution control authority (CPCB, 2003).

Characteristics of distillery spent wash

Distillery spent wash is of purely plant origin and contains large quantites of soluable organic matter and plant nutrients. It does contain any toxic material or compound (Baskar et al., 2003). The spent wash is acidic and loaded with organic and inorganic salts. Being plant origin, the spent wash contains considerable amount of plant nutrients and organic matter (Sindhu et al., 2007). It is of foul smelling, dark in colour (Hati et al., 2005) and an acidic effluent rich in organic carbon, K, Ca, Mg and S, considerable amount of N, P, traces of micronutrients viz Fe, Mn, Zn and Cu and traces of sugar are also observed (Saliha et al., 2005). Presence of appreciable amount of plant growth promoters viz gibberellic acid (GA) and indole acetic acid (IAA) have also been detected which further enhance the nutrient value of spent wash (Santiago and Bolan, 2006). The only problem with spent wash is its high BOD and COD content that deteriorate water as this waste water is discharge into water bodies.

Table: characteristics of spent wash

Parameter	Value	BIS value
Colour	Reddish brown	None
Total solids	60000-70000 mg/l	2100 mg/l
Total solids	60000-70000 mg/l	2100 mg/l
Total dissolved solids	12000-14000 mg/l	2100 mg/l
pH	3-5	5.5-9
Dissolved oxygen	Nil	4-6
Biochemical oxygen demand	30000-40000 mg/l	30 mg/l
Chemical oxygen demand	75000-80000 mg/l	250 mg/l

Source: Pandey et al., 2007

Pollution potential of spent wash

The distillery spent wash in general practice discharge into local water bodies which cause pollution in water, underground water and soil (Kumar et al., 1994). It also effects the aquatic life of these water bodies. A similar experiment was carried out by Singh, 2008 on

freshwater fish sp. Viz Cyprimuscarpio var. Communis and investigate bio-toxicity of spent wash. When this polluted water is used for irrigation purpose it directly or indirectly affect the growth and productivity of plants like pea, wheat (Pandey et al., 2009), rice (Sindhu et al., 2007), Lady's finger (Pandey et al., 2009), legumes (Baskar et al., 2003) and others.

Solution to the problem

The distillery waste water, however, does not contain any toxic material but due to the high BOD and COD content, it causes pollution. The solution of the problem is the discharge of waste water after proper treatment. The treatment type of spent wash includes biological, chemical and thermal. The chemical treatments are suitable for less quantity of spent wash but distilleries produce spent wash in huge amounts. Further, the thermal treatments are costly and with this treatment, there is a probability of pollution too. So biological treatments are eco-friendly, safe and cheap. Three type of biological treatments are available, aerobic, anaerobic and composting. It has been observed that almost all distilleries have adopted anaerobic digestion as industry standard practice for the first stage treatment of raw spent wash. This will reduce the BOD and COD content of spent wash (Lakshmi, 2013). If land with suitable topography, soil characteristics, and drainage is available, distillery spent wash can be put to good use as both a source of irrigation water and plant nutrients. In most of the areas, water scarcity has forced the farmers to use this spent wash as a substitute of irrigation water (Mittal and Tawari, 2008). Irrigation with distillery wastewater seems to be an attractive agriculture practice, augmenting crops yield and providing a plausible solution for the land disposal of the spent wash. The spent wash contained N, P, K, Ca, Mg and S and thus valued as a fertilizer when applied to soil through irrigation with water (Samuel, 1986). Application of distillery spent wash should be done after proper dilution (1:10 to 1:50) with irrigation water

or by preplant application (40-60 days before planting) (Baskar et al., 2003).

Because of high concentration of organic load, distillery spent wash is a potential source of renewable energy. Due to high organic contents, the wastewater can be subjected for the production of biogas, bio-composting and potash recovery (Singh, 2008).

Conclusion

One of the most important environmental problem faced by the world is management of wastes. Distilleries industries in India pose a very serious threat to environment because of large amount of wastewater they generate which contain significant amount of recalcitrant compounds. The waste water produced by the distilleries constitutes a high organic and dissolved solid content, which results in environmental problems if remains untreated. Therefore, it is necessary to discharge this waste material after proper treatment so that environment pollution can be reduced. In high concentrations of spent wash inhibitory factors were present which adversely affect the growth of the plant. Physicochemical characteristics of soil are also affected adversely due to irrigation with higher concentration of spent wash. Besides conventional, biological and chemical treatments by the distilleries, the spent wash should be properly diluted with water before discharge on land and use for irrigation purposes as fertilizer. The utilization of distillery spent wash in agriculture would save cost on fertilizer, better crop productivity and facilitate reduction in pollution load on aquatic system.

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