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Analysing the Effectiveness of Learning Outcomes in Internship Setting

Vijay Dahiya¹, Kavya S²

Abstract

Internships have emerged as one of the most prominent and effective experiential learning opportunities for students in recent years. The significance of internships is not only limited to the immediate benefits to individual students but also encompasses broader societal and economic implications. By assessing the effectiveness of internship experiences in cultivating these desirable attributes, educators, employers, and policymakers can better align educational curricula and pedagogical approaches with the evolving demands of the labour market, thereby enhancing students' employability and ensuring the long-term vitality of the workforce.

This study investigates the relationship between internship satisfaction and perceived benefits among interns, focusing on skill development, professional growth, and overall program effectiveness. Utilizing a sample size of 100 respondents, the research employs descriptive statistics, correlational analysis, and multivariate tests to examine key metrics and their interrelations. The findings indicate that interns generally express positive sentiments towards their internship experiences, with mean satisfaction ratings reflecting a high level of contentment. Strong correlations exist between overall satisfaction and various perceived benefits, including skill acquisition, professional growth, and preparedness for future careers. Effective supervision, quality feedback, and networking opportunities are key to successful internships. Aligning educational curricula with practical experiences is vital for relevance and better preparation for careers. This study provides insights for enhancing internship programs to boost students' professional success.

Keywords: Internships, Skill Development, Professional Growth, Program Effectiveness, Career Preparedness

Objectives of the study

1. Assessing the extent to which interns perceive an acquisition of new skills, knowledge, and competencies during their internship experiences.
2. Identifying key factors contributing to the effectiveness of internship programs in facilitating learning outcomes, such as supervision quality, feedback mechanisms, etc.

3. Evaluating interns' satisfaction and perceived benefits of their internship experience.

Introduction

Internships are a vital component of experiential learning, offering students practical experience that complements their academic studies. In a competitive job market, employers prioritize graduates who demonstrate not only theoretical knowledge but also practical skills, adaptability, and professional readiness. This study evaluates the effectiveness of internships in cultivating these attributes by examining interns' satisfaction, skill development, and overall program effectiveness.

The purpose of this research is to provide insights that can guide educators, employers, and policymakers in enhancing internship programs. By aligning educational curricula with the needs of the labour market, we can improve student employability and ensure a skilled and adaptable workforce.

Using data from 100 survey respondents, this study explores how satisfied interns are with their experiences, the extent of new skill development, and the impact of supervision and feedback quality. It also assesses the value of networking opportunities provided during internships. Our findings highlight the key factors contributing to successful internships and offer recommendations for optimising these programs to benefit students and employers alike.

Literature Review

Internships are pivotal in higher education, providing students with experiential learning opportunities that bridge the gap between academic theory and professional practice (Kolb, 1984). According to Kolb's experiential learning theory, learning occurs through a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation, highlighting the importance of hands-on learning experiences in fostering deep understanding and skill development.

Research on internship pedagogy and practice underscores the significance of structured, well-supervised internship programs in facilitating student learning and development

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(Rojewski, 1991). Rojewski emphasizes the importance of integrating classroom learning with workplace experiences and providing students with opportunities for mentorship and professional networking. Studies have also identified factors influencing internship effectiveness, such as program structure, supervisor support, and the nature of tasks assigned to interns (Gault et al., 2010).

Empirical studies have documented a wide range of learning outcomes associated with internship experiences, including the acquisition of technical skills, communication skills, problem-solving abilities, and teamwork skills (Rivera, 2016). Rivera highlights the transformative nature of internships, noting their role in enhancing students' confidence, adaptability, and self-efficacy. Moreover, internships have been shown to have a positive impact on academic achievement, post-graduation employment rates, and career advancement (Hegewisch et al., 2019).

In recent years, there has been increasing attention to issues of diversity, equity, and inclusion in internship programs (Smith & Campbell, 2020). Smith and Campbell examine disparities in internship access and opportunities based on factors such as race, ethnicity, socioeconomic status, and gender. They emphasize the importance of creating inclusive internship environments that support the diverse needs and experiences of all students.

Methodological considerations in internship research include challenges related to sample selection, data collection, and measurement of learning outcomes (Merriam & Tisdell, 2016). Merriam and Tisdell discuss various research designs and approaches used in internship studies, highlighting the need for rigorous methods to ensure the validity and reliability of findings.

The study by Fokiya Akhtar Tarannum Parker (2023), contributes to the existing literature by employing Kirkpatrick's framework to assess internship outcomes within the context of the College of Communication and Media Sciences. Focusing on the "reaction" and "learning" constructs, the study analyzes 64 student reports from a

semester-long online internship in various UAE organizations during COVID-19. By highlighting the strengths and areas of improvement in aligning academic instruction with real-world applications, the study offers valuable insights into the efficacy of internship programs in preparing students for the workforce amidst challenging circumstances.

The literature on internship experiences and learning outcomes provides valuable insights into the benefits, challenges, and complexities of internships in higher education. By building upon existing research and addressing gaps in knowledge, this study aims to contribute to the ongoing discourse on experiential learning and its role in student development and success.

Methodology

The study adopts an analytical, cross-sectional, and quantitative approach. Analytical techniques like correlation and regression analysis are employed to explore relationships between variables. Data is collected at a single point in time, offering a snapshot of interns' experiences. Quantitative data from a structured survey questionnaire is analyzed using statistical methods. Primary data is collected directly from interns through survey questionnaires. This firsthand information allows for tailored data collection, ensuring relevance and specificity to the research objectives. The survey method is utilized, involving administering a structured questionnaire to interns. Surveys serve as standardized tools for gathering data on attitudes, behaviours, and experiences.

Results

Through descriptive statistics analysis, we explore interns' perceptions and experiences during their internship programs. By examining key metrics such as satisfaction levels, perceived skill development, and program effectiveness, we aim to gain insights into the overall effectiveness of internship programs and identify areas for improvement.

Figure 1 Mean Clustered Column Chart

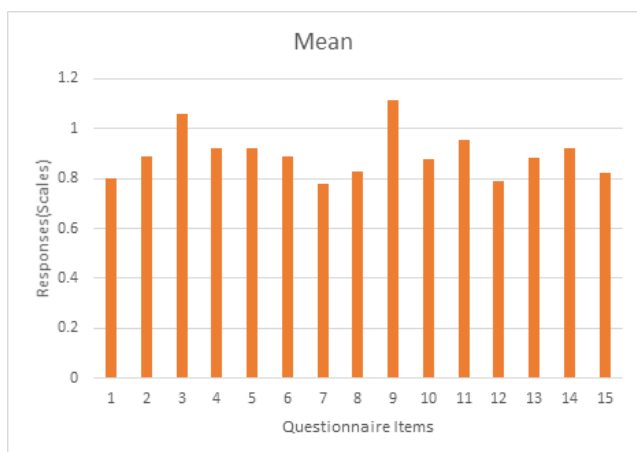


Figure 2 Standard Deviation Clustered Column Chart

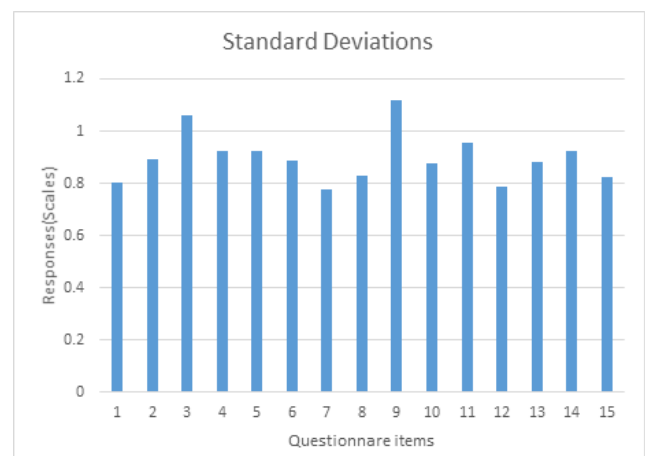


Table 1 Statistics

| | How satisfied are you with your overall internship experience? | To what extent do you feel your internship contributed to the development of new skills? | How relevant do you feel your classroom learning was to your internship tasks? | How effective was the supervision you received during your internship? | How would you rate the quality of feedback provided by your supervisor or mentor? | How much do you feel your internship contributed to your professional growth and development? | How do you perceive the learning outcomes of your internship experience? | How prepared do you feel for your future career as a result of your internship experience? | How valuable were the networking opportunities provided during your internship? | To what extent have your internship experiences helped you develop problem solving skills? | How would you rate your experience collaborating with colleagues or team members during your internship? | How confident do you feel in applying the knowledge and skills gained during your internship to real-world situations? | How would you rate your improvement in professional communication skills as a result of your internship experience? | How effective were you in managing your time and staying organized during your internship? | How would you rate your overall learning experience during your internship? |
|----------------|--|--|--|--|---|---|--|--|---|--|--|--|---|--|---|
| N | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean | 3.77 | 3.88 | 2.84 | 3.8 | 3.83 | 4.04 | 4.02 | 3.59 | 3.69 | 3.83 | 3.82 | 3.94 | 3.9 | 3.66 | 4.01 |
| Median | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Mode | 4 | 4 | 2* | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Std. Deviation | 0.802 | 0.891 | 1.061 | 0.921 | 0.922 | 0.887 | 0.778 | 0.83 | 1.116 | 0.877 | 0.957 | 0.789 | 0.882 | 0.924 | 0.823 |
| Range | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

* multiple modes exist. The smallest value is shown

The descriptive statistics analysis of interns’ perceptions and experiences during their internship programs reveals generally positive trends, with areas for potential enhancement identified. Interns generally express satisfaction with their overall internship experience, as indicated by a mean rating of 3.77 with a standard deviation of 0.802, though there is some variability in responses. Notably, interns perceive significant benefits in terms of skill development (mean = 3.88, SD = 0.891) and professional growth (mean = 4.04, SD = 0.897), suggesting a fruitful experience overall. However, there is room for improvement in aligning classroom learning with internship tasks, as indicated by a lower mean rating of 2.84 (SD = 1.061), with varying perceptions among interns. In terms of skill acquisition, interns generally perceive positive outcomes, with mean ratings above 3.5 for various aspects, albeit with some variability (SD ranging from 0.779 to 0.924). The effectiveness of internship programs is influenced by factors such as supervision (mean = 3.80, SD = 0.921), feedback quality (mean = 3.83, SD = 0.922), and networking opportunities (mean = 3.69, SD = 1.116). While these factors contribute significantly to interns’ learning outcomes and overall satisfaction, there is notable variability in perceptions among interns regarding their effectiveness.

Correlational Analysis

A correlational analysis was conducted to explore the relationship between interns’ satisfaction with their internship experience and perceived benefits. The correlational analysis revealed strong positive associations between interns’ satisfaction with their internship experience and various perceived benefits. Higher satisfaction correlates with greater perceived skill development, professional growth, learning outcomes, preparedness for future careers, and other aspects of the internship. Additionally, networking opportunities, problem-solving skills development, collaboration experience, and improvement in professional communication skills also show positive associations with overall satisfaction and perceived benefits.

Multivariate Tests

In the multivariate tests, we assess the overall significance of differences among groups in interns’ perceptions of skill acquisition, program effectiveness, and satisfaction levels.

Table 3. Multivariate Tests

| Effect | | Value | F | Hypothesis df | Error df | Sig. |
|-----------|--------------------|--------|----------------------|---------------|----------|-------|
| Intercept | Pillai’s Trace | .981 | 462.627 ^b | 10.000 | 90.000 | <.001 |
| | Wilks’ Lambda | .019 | 462.627 ^b | 10.000 | 90.000 | <.001 |
| | Hotelling’s Trace | 51.403 | 462.627 ^b | 10.000 | 90.000 | <.001 |
| | Roy’s Largest Root | 51.403 | 462.627 ^b | 10.000 | 90.000 | <.001 |

- a. Design: Intercept
- b. Exact statistic

The multivariate tests yielded significant findings regarding interns’ perceptions of skill acquisition, program effectiveness, and satisfaction levels ($p < .001$). This indicates notable variations among groups in terms of the combined dependent variables, suggesting differing levels of acquisition of new skills, knowledge, and competencies across various internship experiences.

The Pillai’s Trace statistic, a measure of overall significance, yielded a high value of 0.981, indicating strong evidence against the null hypothesis. Similarly, Wilks’ Lambda,

Hotelling’s Trace, and Roy’s Largest Root, all demonstrated substantial evidence against the null hypothesis, with values of 0.019, 51.403, and 51.403 respectively.

These findings suggest that interns perceive differing levels of skill acquisition, program effectiveness, and overall satisfaction across different internship groups, such as departments or supervision levels. The significant differences among groups underscore the importance of considering various factors that contribute to interns’ experiences and outcomes during their internship programs.

Table 4. One Sample Test

| One-Sample Test | | | | | | | | | |
|--|--------|----|-------------|-------------|-----------------|----------------|---|-------|--|
| | t | df | One-Sided p | Two-Sided p | Mean Difference | Test Value = 3 | 95% Confidence Interval of the Difference | | |
| | | | | | | | Lower | Upper | |
| To what extent do you feel your internship contributed to the development of new skills? | 9.879 | 99 | <.001 | <.001 | 0.88 | | 0.7 | 1.06 | |
| How much do you feel your internship contributed to your professional growth and development? | 11.729 | 99 | <.001 | <.001 | 1.04 | | 0.86 | 1.22 | |
| How do you perceive the learning outcomes of your internship experience? | 13.107 | 99 | <.001 | <.001 | 1.02 | | 0.87 | 1.17 | |
| How valuable were the networking opportunities provided during your internship? | 6.181 | 99 | <.001 | <.001 | 0.69 | | 0.47 | 0.91 | |
| How would you rate your experience collaborating with colleagues or team members during your internship? | 8.564 | 99 | <.001 | <.001 | 0.82 | | 0.63 | 1.01 | |
| To what extent do you feel your internship experience helped you develop problem-solving skills? | 9.466 | 99 | <.001 | <.001 | 0.83 | | 0.66 | 1 | |
| How prepared do you feel for your future career as a result of your internship experience? | 7.109 | 99 | <.001 | <.001 | 0.59 | | 0.43 | 0.75 | |
| How effective were you in managing your time and staying organized during your internship? | 7.146 | 99 | <.001 | <.001 | 0.66 | | 0.48 | 0.84 | |
| How would you rate your improvement in professional communication skills as a result of your internship experience? | 10.205 | 99 | <.001 | <.001 | 0.9 | | 0.73 | 1.07 | |
| How confident do you feel in applying the knowledge and skills gained during your internship to real-world situations? | 11.913 | 99 | <.001 | <.001 | 0.94 | | 0.78 | 1.1 | |

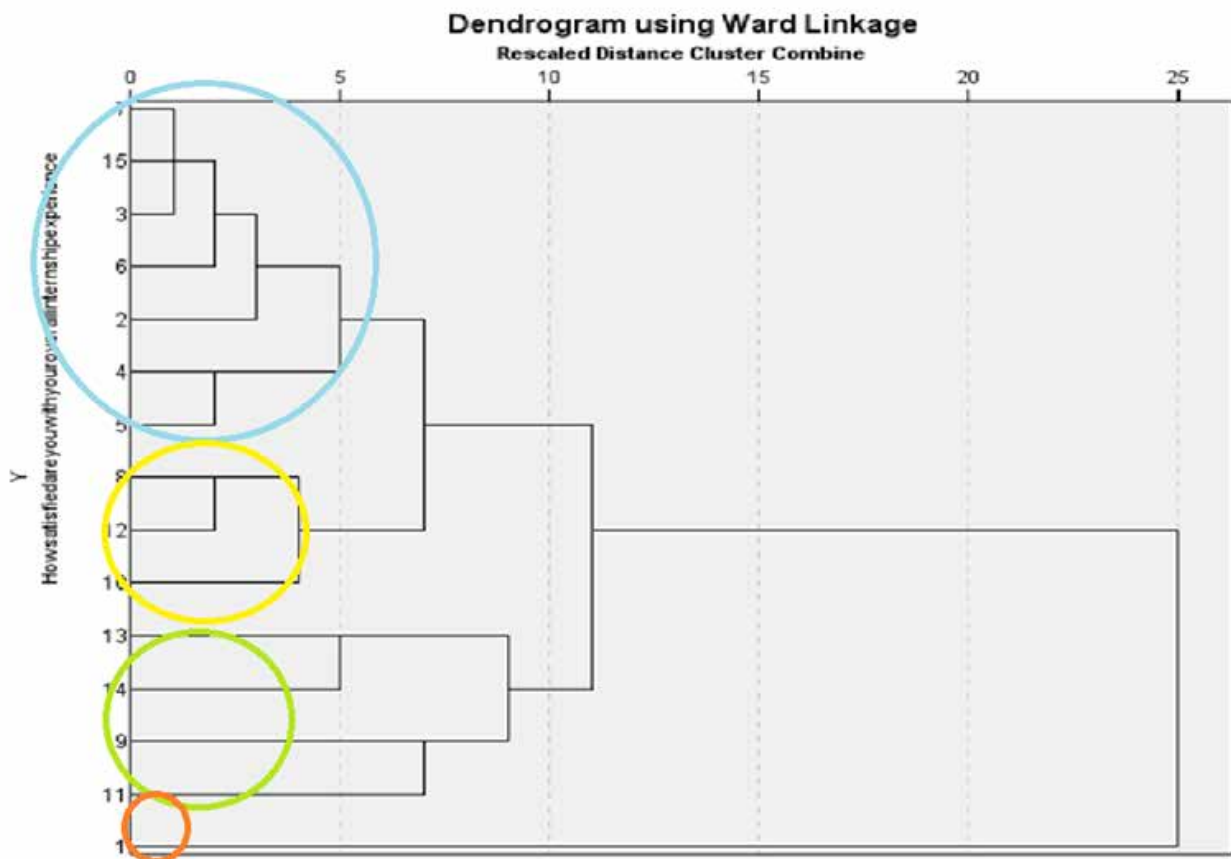
One Sample T-test

The one-sample t-tests revealed that interns' perceptions significantly exceeded neutrality ($p < .001$) across various aspects of their internship experiences, including satisfaction, skill development, and program effectiveness. Mean differences were consistently positive, indicating that

interns perceived their experiences more positively than the neutral reference value of 3.

Cluster Analysis: Cluster analysis identified distinct groups of interns based on their perceptions and experiences during the internship programs. Three clusters emerged, each representing different aspects of the internship experience:

Figure 3. Cluster analysis with interpreted clusters



Cluster 1: Focused on overall internship experience, learning outcomes, relevance of classroom learning, skill development, supervision effectiveness, feedback quality, and professional growth.

Cluster 2: Associated with career preparation, confidence in applying gained skills, and problem-solving skills development.

Cluster 3: Linked to networking opportunities, collaboration experience, preparedness for future careers, and development of professional communication skills.

Item 1, which seems to be the only item in its cluster, may represent a unique aspect of the internship program. This could be an overarching factor that influences the interns' overall perception of the program, such as the organization's reputation, program structure, or cultural fit.

Multiple Linear Regression Analysis

Table 4. Coefficients

| Model | | Coefficients | | | | |
|-------|--|-----------------------------|------------|---------------------------|--------|------|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| | | B | Std. Error | Beta | T | Sig. |
| 1 | (Constant) | .263 | .363 | | .725 | .470 |
| | How satisfied are you with your overall internship experience? | .033 | .077 | .034 | .429 | .669 |
| | To what extent do you feel your internship contributed to the development of new skills? | .270 | .083 | .308 | 3.246 | .002 |
| | How relevant do you feel your classroom learning was to your internship tasks? | .025 | .048 | .034 | .530 | .598 |
| | How effective was the supervision you received during your internship? | .132 | .072 | .157 | 1.828 | .071 |
| | How would you rate the quality of feedback provided by your supervisor or mentor? | .080 | .078 | .095 | 1.021 | .310 |
| | How much do you feel your internship contributed to your professional growth and development? | .273 | .081 | .311 | 3.351 | .001 |
| | How prepared do you feel for your future career as a result of your internship experience? | -.154 | .088 | -.164 | -1.754 | .083 |
| | How valuable were the networking opportunities provided during your internship? | .045 | .055 | .065 | .825 | .412 |
| | To what extent do you feel your internship experience helped you develop problem-solving skills? | .002 | .075 | .002 | .027 | .979 |
| | How would you rate your experience collaborating with colleagues or team members during your internship? | .002 | .055 | .002 | .030 | .976 |
| | How confident do you feel in applying the knowledge and skills gained during your internship to real-world situations? | .243 | .085 | .246 | 2.874 | .005 |
| | How would you rate your improvement in professional communication skills as a result of your internship experience? | .050 | .066 | .057 | .758 | .450 |
| | How effective were you in managing your time and staying organized during your internship? | -.049 | .061 | -.058 | -.802 | .425 |

a. Dependent Variable: How do you perceive the learning outcomes of your internship experience?

The multiple linear regression analysis identified significant predictors of interns' perceived learning outcomes. Variables such as perceived contribution to new skill development, professional growth, and confidence in applying gained knowledge and skills demonstrated statistically significant associations with perceived learning outcomes. Other variables, including satisfaction with the internship experience, supervision effectiveness, and networking opportunities, did not show significant associations.

Independent-Samples T-test

The independent-samples t-test compared mean scores between two groups of interns, revealing no statistically

significant difference in perceived learning outcomes between interns who completed multiple internships and those who completed only one internship. While there was a slight difference favouring interns who completed only one internship, this difference was not statistically significant.

ANOVA

How do you perceive the learning outcomes of your internship experience?

Table 5. Independent-Samples test

| | | Independent Samples Test | | t-test for Equality of Means (t) | | | | | | | |
|---|-----------------------------|---|---------------------|----------------------------------|-------|----------------------------|----------------------------|-----------------|------------------|---|---|
| | | Levene's Test for Equality of Variances (F) | Significance (Sig.) | t | df | Significance (One-Sided p) | Significance (Two-Sided p) | Mean Difference | Error Difference | 95% Confidence Interval of the Difference (Lower) | 95% Confidence Interval of the Difference (Upper) |
| How do you perceive the learning outcomes of you internship | Equal variances assumed | 1.022 | 0.315 | -1.263 | 98 | 0.105 | 0.21 | -0.199 | 0.158 | -0.512 | 0.114 |
| | Equal variances not assumed | | | -1.236 | 79.24 | 0.11 | 0.22 | -0.199 | 0.161 | -0.52 | 0.122 |

Table 6. ANOVA

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|-------|------|
| Between Groups | 2.099 | 3 | .700 | 1.161 | .329 |
| Within Groups | 57.861 | 96 | .603 | | |
| Total | 59.960 | 99 | | | |

ANOVA explored differences in interns' perceptions of learning outcomes across multiple groups based on internship duration. The analysis found no statistically significant difference in learning outcomes among different duration categories, suggesting that internship duration does not significantly impact interns' perceptions of learning outcomes.

Alignment with Theory: These findings align with theories such as social learning theory, contingency theory, and expectancy theory. Social learning theory suggests that interns learn and develop skills through observation and modelling, highlighting the importance of workplace experiences in skill development. Contingency theory emphasizes the role of effective organizational practices, such as supervision and feedback, in enhancing employee performance and satisfaction. Expectancy theory posits that positive experiences and perceived benefits contribute to individuals' motivation and satisfaction, underscoring the importance of designing internship programs that prioritize supportive supervision, feedback mechanisms, and meaningful networking opportunities.

Conclusion

The analysis delves deeply into interns' viewpoints on their internship experiences, offering valuable insights into skill acquisition, program efficacy, and overall satisfaction. Through meticulous alignment with research objectives, these findings provide nuanced conclusions, enhancing comprehension of internship dynamics and their educational implications. Interns universally recognize the importance of internships, evident in high mean ratings across skill enrichment, professional growth, and learning proficiency domains. Such immersive workplace experiences align closely with social learning theory, contributing significantly to skill acquisition and vocational maturation. Critical factors for program effectiveness, including supervision efficacy, feedback quality, and networking prospects, emerge prominently. Positive feedback mechanisms and supportive supervision are noted for enhancing interns' performance and satisfaction, resonating with contingency theory principles. Moreover, interns express overall satisfaction with their experiences, correlating positively with skill elevation, professional growth, and networking opportunities. This alignment between positive experiences, perceived benefits, and satisfaction reflects expectancy theory principles. In sum, internship programs wield a significant influence on interns' skill development, professional growth, and satisfaction. By prioritizing effective supervision, robust feedback mechanisms, and networking opportunities, these programs can optimize interns' learning experiences, preparing them

effectively for future career endeavours while nurturing holistic development.

References

1. Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.
2. Rojewski, J. W. (1991). Promoting experiential learning through internships. *New Directions for Experiential Learning*, 1991(50), 5-14.
3. Gault, J., Redington, J., & Schlager, T. (2010). Undergraduate business internships and career success: Are they related? *Journal of Marketing Education*, 32(1), 26-39.
4. Rivera, L. A. (2016). *Pedigree: How elite students get elite jobs*. Princeton University Press.
5. Hegewisch, A., Williams-Baron, E., & Cheatham, M. (2019). Internships: A pathway to decent work for youth. *Journal of Education and Work*, 32(4), 325-342.
6. Smith, K. J., & Campbell, C. M. (2020). Equity and diversity in internship programs. *Journal of Diversity in Higher Education*, 13(1), 45-59.
7. Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.
8. Parker, F. A. T. (2023). Assessing internship outcomes: A case study in the College of Communication and Media Sciences. *Journal of Experiential Learning*.
9. Ahmed Al Kuwaiti & Arun V. Subbarayalu. (2020, June 28). Factors Influencing Interns' Satisfaction with the Internship Training Programme Offered at Saudi Medical Schools. *Saudi Journal of Medical and Pharmaceutical Sciences*, 6(6), 308-315. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7328831/>
10. Griffin, J. E. Jr., Lorenz, G. F., & Mitchell, D. (2010). A study of outcomes-oriented student reflection during internship: The integrated, coordinated, and reflection-based model of learning and experiential education. *The Journal of Cooperative Education & Internships*, 44*(1), 42-50. Retrieved from http://www.ceiainc.org/journal.asp?PageID=230&Document_ID=4179Gautam, P. K. (2017).
11. Satisfaction from Internship Program and Changing Attitude: A Perceptual Survey from Hotel Management Students. *Journal of Education and Research*, 7(2), 112-123. https://www.researchgate.net/publication/339919084_Satisfaction_from_Internship_Program_and_Changing_Attitude_A_Perceptual_Survey_from_Hotel_Management_Students



Enterprises and Carbon Neutrality

Dr. Bhoomika Saroha¹, Dr. Meenakshi²

Abstract

Businesses hold immense potential to combat climate change. This study explores how entrepreneurship can drive the shift to a carbon-neutral future. We analyse how businesses can leverage innovation to create clean solutions, implement sustainable practices, and minimize environmental footprints. By examining global trends, we unlock their potential as a driving force for a greener future. It highlights the challenges faced by green ventures and explores initiatives that empower them to become key players in helping achieve carbon neutrality. The study concludes by emphasizing the need for enterprises to embrace their responsibility towards achieving sustainability in practices while also urging policymakers to create supportive measure for these green ventures to achieve a more sustainable and positive future.

Keywords: Entrepreneurship, Carbon neutrality, Sustainable innovation, Green ventures

Objectives of the Study

To analyse the entrepreneurial role of enterprises in the arena of carbon neutrality.

To assess current global landscapes of governmental policies and regulations aimed at promoting carbon neutrality.

To investigate the potential barriers faced by entrepreneurs in adopting carbon-neutral practices and identifying strategies to overcome them.

Introduction

Businesses are key players in the race to carbon neutrality, but their influence is a double-edged sword. They can be champions of sustainability, developing clean technologies and fostering resource efficiency. Imagine a world powered by renewable energy breakthroughs or businesses prioritizing waste reduction.

However, the pursuit of profit can lead businesses down an unsustainable path. This can include resource-intensive production, planned obsolescence, and excessive packaging. Businesses may also create unnecessary consumer demands and lack transparency in their operations.

This study explores the power of entrepreneurship in the fight against climate change. We explore how businesses can leverage their influence and innovative spirit to become driving forces for a carbon-neutral future. By analysing global trends and emerging technologies, we aim to unlock the full potential of businesses as agents of positive change and a sustainable world.

Research Method

This study uses a mixed-methods approach, combining qualitative thematic analysis and quantitative statistical analysis of secondary data from diverse sources. Qualitative analysis identifies recurring themes, while quantitative methods quantify trends and relationships within the data. The research also includes comparative analysis to compare different aspects of entrepreneurial ecosystems and investment opportunities. This methodology aims to provide insights and recommendations for stakeholders to foster innovation and economic development in the target region or industry sector.

Research

Entrepreneurs as Climate Champions: Driving Innovation for a Carbon-Neutral Future

Businesses hold immense potential to lead the charge towards a carbon-neutral future. Their entrepreneurial spirit can be harnessed to develop innovative solutions across all aspects of their operations. This could involve implementing energy-efficient technologies, optimizing supply chains for reduced emissions, or even creating entirely new low-carbon products and services. This resonates particularly in Europe and Asia pacific, where stricter environmental regulations are driving businesses to innovate. A report by S&P Global Commodity Insights highlights this trend, showcasing the evolving global compliance landscape and its impact on emission targets. For example European countries have set ambitious targets for increasing their reliance on renewable energy sources driving investments in clean energy infrastructure.

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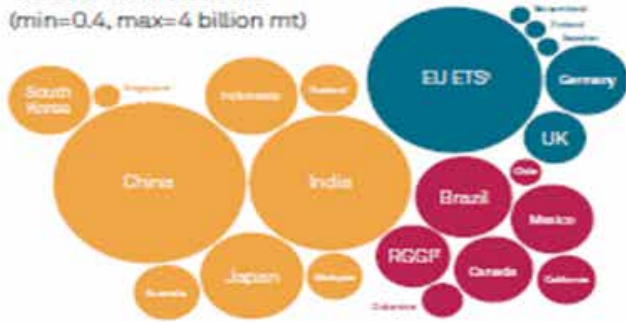
Global compliance carbon landscape

As nations across the globe sharpen their focus on the net-zero transition, the role of carbon prices can be crucial. The unfolding of new mechanisms to account for carbon costs shifts away from the traditional carbon tax or a cap and trade system, giving emerging economies a more egalitarian platform to design systems, in line with their developmental goals.



■ Asia Pacific
 ■ Europe, Middle East and Africa
 ■ Americas

Total emissions*
(min=0.4, max=4 billion mt)



Price
(\$/mtCO₂e – Sep 29, min=0, max=133)



Carbon market status and voluntary credits allowed for compliance

| Country | Carbon market status | Voluntary offsets allowed for compliance |
|-----------------------|--|--|
| Australia | Functional carbon market since 2012 | No international/VCM offsets |
| New Zealand | Functional ETS since 2008 | No offsets |
| South Korea | Functional ETS since 2015 | KOC up to 5% allowed |
| Japan | Functional carbon tax since 2012, ETS to start 2025-29 | J-Credits |
| Malaysia | ETS estimated to start by 2028 | International VCM credit trading only |
| Indonesia | Functional ETS since 2023 (Coal sector only) | No offsets |
| India E | TS to start 2026 | No offsets |
| China | ETS since 2021 (Power sector only) | CCER up to 5% allowed |
| Thailand | Voluntary ETS since 2013 | TVER credits to be allowed |
| Singapore | Carbon tax | Verra, GS & GCC offsets up to 5% allowed |
| EU ETS* | Functional ETS since 2005 | No offsets |
| Switzerland | Functional ETS since 2008, linked with EU ETS | No offsets |
| UK | Functional ETS since 2021 | No offsets |
| Sweden | Carbon tax since 1991 | No offsets |
| Finland | Carbon tax: 77 Eur/mt transport fuels, 63 Eur/mt heating fuels in 2022 | No offsets |
| Germany | Functional ETS since 2021 | No offsets |
| US- RGGI* | Functional ETS since 2009 | Offsets 3.30% allowed |
| US- California | Functional ETS since 2013 | Offsets below 5% allowed |
| Canada | Mix of ETS, carbon tax | Offsets allowed |
| Mexico | Functional ETS from 2023 (Industry, Power) | Offset up to 10% to be allowed |
| Brazil | Voluntary ETS since 2013 | Offsets to be allowed |
| Colombia | Carbon tax, offset scheme, ETS under planning | Offsets allowed |
| Chile | Carbon tax, ETS under planning | Offsets to be allowed |

*27 EU states and Iceland, Liechtenstein, and Norway. *Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and Virginia. *Total emissions are as per latest data available from IEA, ICAP or individual countries ranging from 2019-2022. Australia, New Zealand, South Korea, EU ETS, California, RGGI are Platts prices; the rest are market sources. China ETS price is sourced from SZZE.

Empowering Green Ventures: Bridging the Gap for Sustainable Solutions

However, innovative green ventures often face financial hurdles. The World Economic Forum acknowledges this challenge through its UpLink initiative, which connects green entrepreneurs with investors and mentors. Green enterprises typically have longer development cycles and higher upfront costs compared to traditional businesses. By providing financial and mentorship opportunities, UpLink and similar initiatives empower green entrepreneurs to overcome these hurdles and accelerate the transition towards a carbon-neutral future. By fostering a supportive environment for these innovative businesses, we unlock their full potential in combating climate change.

Analysis

The study analysed the entrepreneurial role of enterprises in achieving carbon neutrality. Businesses played a pivotal role in driving sustainability by developing clean technologies and promoting resource efficiency. However, profit-driven practices led to unsustainable outcomes such as resource-intensive production and excessive packaging.

Entrepreneurs emerged as climate champions, leveraging their innovative spirit to implement energy-efficient technologies, optimize supply chains, and create low-carbon products. Europe and Asia Pacific stood out as regions where stricter environmental regulations drove business innovation in this direction.

Despite their potential, green ventures faced financial challenges due to longer development cycles and higher upfront costs. Initiatives like the World Economic Forum's UpLink bridged this gap by connecting green entrepreneurs with investors and mentors, empowering them to overcome hurdles and accelerate the transition to carbon neutrality.

Conclusion

In conclusion, businesses play a critical role in the pursuit of carbon neutrality. Their entrepreneurial spirit can drive innovation, leading to the development of clean technologies, optimized supply chains, and low-carbon products. However, profit-driven practices must be balanced with sustainability considerations to avoid unintended negative consequences.

Entrepreneurs have emerged as climate champions, leveraging their creativity and expertise to combat climate change. By implementing energy-efficient measures,

optimizing operations, and creating sustainable products, businesses can contribute significantly to a carbon-neutral future.

Financial support and mentorship are crucial for green ventures to overcome challenges and accelerate their impact. Initiatives like the World Economic Forum's UpLink play a vital role in bridging the gap between green entrepreneurs and investors, fostering a supportive ecosystem for sustainable innovation.

As we move forward, it is imperative that businesses embrace their responsibility and leverage their entrepreneurial spirit to drive positive change. By aligning their pursuit of profit with sustainability goals, enterprises can become powerful agents in the fight against climate change and create a more sustainable and prosperous world.

Implications for Businesses and Policymakers

- Businesses must prioritise sustainability and align their operations with carbon neutrality goals.
- Governments and policymakers should create supportive initiatives to foster the growth of green ventures.
- Financial institutions should play a role in providing funding and investment opportunities for sustainable businesses.

References

1. S&P Global (2022) "Global Compliance Carbon Landscape"
2. https://commodityinsights.spglobal.com/q4-asia-ET-compliancecarbonlandscape-asset-download.html?utm_campaign=2023-q4-asia-ET-compliancecarbonlandscape&utm_source=google&utm_medium=cpc&gclid=CjwKCAjwzN-vBhAkEiwAYiO7oMPQZdu-YC4gFQNmysWRoXk42nQ9h1KKuDh4Qhho6GaQ_XOYyQGvxoCH2gQAvD_BwE
3. World Economic Forum (2024) <https://www.weforum.org/agenda/2024/01/unlocking-impact-innovation-and-an-entrepreneur-revolution/>.
4. UNEP (2018) Business Unusual: The Shift to "Carbon Neutral"
5. <https://www.unep.org/news-and-stories/story/business-unusual-shift-carbon-neutral>



Indian Perspective on Emerging EV Market in India

Dr Anita Sharma

Abstract

The automotive industry is undergoing a significant transformation with the increasing adoption of Electric Vehicles (EVs). These vehicles are considered a pivotal shift in the industry since they promise a cleaner, greener, and more sustainable mode of transportation—the study aimed to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The study examined the factors that discourage consumers from purchasing EVs, find out Opportunities for policy improvements and recommendations for policymakers and provide suggestions for meeting the challenges

Keywords: Electric Vehicles (EVs), Government, Policy, incentives

Introduction

The automotive industry is undergoing a significant transformation with the increasing adoption of Electric Vehicles (EVs). These vehicles are considered a pivotal shift in the industry since they promise a cleaner, greener, and more sustainable mode of transportation—the study aimed to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The study examined the factors that discourage consumers from purchasing EVs, find out Opportunities for policy improvements and recommendations for policymakers and provide suggestions for meeting the challenges

Objectives of the Study

The main aim of this project report is to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The specific objectives of the report include the following:

- To analyse the challenges faced in Indian EV market
- To find out Opportunities for policy improvements and recommendations for policymakers
- To provide suggestions for meeting the challenges

Challenges faced in the Indian EV market

- Limited charging infrastructure emerges as the primary reason for not considering an Electric Vehicle purchase. This highlights the critical importance of developing a robust charging infrastructure network to solve this issue and help increase demand of products.
- High initial cost is also a primary reason for not considering an Electric Vehicle purchase. This suggests that affordability remains a significant barrier for potential EV buyers, indicating the need for pricing strategies, incentives, and subsidies to make EVs more accessible.
- Lack of awareness is cited among people a reason for not considering an Electric Vehicle purchase. This underscores the importance of education, outreach, and awareness campaigns to inform consumers about the benefits, features, and availability of electric vehicles.
- High maintenance and repair costs are mentioned discourage the customers for not considering an Electric Vehicle purchase. This suggests concerns about the long-term ownership costs and reliability of EVs compared to traditional internal combustion engine vehicles.
- Range anxiety, which refers to concerns about the limited driving range of EVs and the availability of charging stations as a factor for not considering an Electric Vehicle purchase. This highlights the need for improvements in battery technology, vehicle range, and charging infrastructure to alleviate range anxiety and increase consumer confidence in EVs.

Opportunities for policy improvements and recommendations for policymakers

Opportunities for policy improvements and recommendations for policymakers in promoting Electric Vehicle (EV) adoption in India can be identified across various areas. Some of them are as follows

Enhanced Fiscal Incentives:

Increase fiscal incentives for EV buyers: To further stimulate demand, policymakers can consider enhancing fiscal incentives such as subsidies, tax exemptions, and rebates for EV purchasers. Targeted incentives based on vehicle type, battery capacity, and affordability criteria can help maximize the impact on relinquishment.

Introduce scrappage incentives: Implement incentives for scrapping old, polluting vehicles and replacing them with EVs to accelerate the transition to cleaner transportation and improve air quality.

Infrastructure Development:

Accelerate charging infrastructure deployment: Increase investment in the development of public and private charging infrastructure, particularly in urban areas, along highways, and in commercial hubs. Provide incentives and support for setting up charging stations, including fast chargers, and prioritize the establishment of charging infrastructure in underserved regions.

Standardize charging protocols: Develop and enforce standardized charging protocols and interoperability standards to ensure compatibility and ease of use for EV owners. Streamlining permitting and licensing processes for setting up charging stations can also facilitate infrastructure deployment.

Research and Development Support:

Foster innovation and localization: Provide uninterrupted support for research and development (R&D) activities in the EV sector, with a focus on battery technology, electric drivetrains, and charging infrastructure. Encourage collaboration between industry, academia, and research institutions to accelerate technology development, improve efficiency, and reduce costs.

Create innovation hubs and testbeds: Establish innovation hubs and testbeds for EV technology development, prototyping, and testing. Provide funding, infrastructure, and regulatory support to encourage startups, entrepreneurs, and innovators to develop and commercialize EV-related technologies.

Policy Alignment and Coordination:

Harmonize policies across states: Ensure consistency and alignment of EV-related policies and incentives across states to avoid fragmentation and create a conducive regulatory environment for industry stakeholders. Facilitate knowledge sharing, collaboration, and coordination between central and state governments to leverage best practices and lessons learned.

Review and update policy frameworks: Conduct regular reviews and evaluations of existing policies to assess their effectiveness, identify gaps, and address emerging challenges. Update policy frameworks based on evolving

market dynamics, technological advancements, and feedback from stakeholders to ensure relevance and impact.

Consumer Awareness and Education:

Launch awareness campaigns: Invest in public awareness campaigns to educate consumers about the benefits of EVs, dispel myths, and address misconceptions. Promote EV adoption through targeted marketing, incentives for early adopters, and engagement with community organizations, schools, and workplaces.

Provide consumer education and support: Offer resources, guides, and incentives to help consumers make informed decisions about EVs, including information on vehicle options, charging infrastructure, incentives, and cost savings. Facilitate test drives, demo events, and workshops to familiarize consumers with EV technology and address concerns.

Incentives for Industry Growth:

Support domestic manufacturing: Provide incentives, subsidies, and tax breaks to encourage domestic manufacturing and assembly of EVs, components, and charging infrastructure equipment. Foster a favourable investment climate, promote skill development, and reduce regulatory barriers to attract investment and spur job creation in the EV ecosystem.

Promote innovation clusters: Establish innovation clusters and industrial parks focused on electric mobility, with incentives for companies to locate and collaborate within these clusters. Encourage the development of supply chain ecosystems, innovation networks, and manufacturing clusters to drive competitiveness and innovation in the EV sector.

By implementing these recommendations and leveraging opportunities for policy improvements, policymakers can accelerate the adoption of electric vehicles in India, promote sustainable transportation, and contribute to the country's economic growth, environmental sustainability, and energy security.

Suggestions for meeting the challenges

1. Increase Fiscal Support:

- **More Subsidies and Tax Breaks:** Offer bigger discounts and tax cuts for buying EVs, especially cheaper models.
- **Scrappage Incentives:** Give money to people who trade in old cars for new EVs.

2. Improve Charging Infrastructure:

- **Build More Charging Stations:** Quickly set up more charging stations in cities, on highways, and in rural areas. Encourage private companies to invest in this infrastructure.
- **Standardize Charging:** Make sure all charging stations use the same system so any EV can use them easily.

3. Support Research and Development:

- **Encourage Innovation:** Support ongoing research in better batteries, motors, and charging methods. Promote partnerships between companies and universities.
- **Create Innovation Centers:** Set up special areas where startups and researchers can develop new EV technologies.

4. Refine Government Policies:

- **Regular Updates:** Continuously review and improve government policies to keep up with market changes and consumer needs.
- **Promote Local Manufacturing:** Support making EV parts in India to reduce reliance on imports and create jobs.

5. Increase Consumer Awareness:

- **Launch Awareness Campaigns:** Run campaigns to inform people about the benefits of EVs and available incentives.
- **Provide Clear Information:** Make information about charging stations, costs, and incentives easily accessible through websites and apps.

By following these suggestions, India can overcome current challenges and speed up the adoption of electric vehicles

Conclusion

There is an increasing awareness and interest in electric vehicles (EVs) among Indian consumers, indicating a positive trend towards sustainable transportation. High initial costs, limited driving range, insufficient charging infrastructure, and unclear government incentives remain significant barriers to the widespread adoption of EVs in India. Policies such as the FAME II scheme, GST reductions, and state-level incentives

have had positive effects, but further refinement is needed to address practical implementation issues and regional disparities. The current charging infrastructure is inadequate, necessitating accelerated deployment and standardization of charging stations to support the growing EV market. Enhanced fiscal incentives, such as increased subsidies, tax exemptions, and scrappage incentives, are critical to making EVs more affordable and appealing to a broader audience. Continuous support for research and development in battery technology, electric drivetrains, and charging solutions is essential to drive innovation and improve the performance and affordability of EVs. Regular assessment and refinement of government policies are required to align with market dynamics, ensure efficient disbursement of incentives, and promote domestic manufacturing. Comprehensive awareness campaigns and transparent information dissemination are vital to educate consumers about the benefits, available incentives, and advancements in EV technology. Despite the challenges, the transition to electric mobility in India is promising, with coordinated efforts from government, industry stakeholders, and consumers necessary to realize its full potential.

Bibliography

- <https://www.mordorintelligence.com/industry-reports/india-electric-vehicle-market>
- <https://www.india-briefing.com/news/indias-prospects-as-an-ev-hub-consumer-market-and-production-capacity-30157.html/#:~:text=The%20major%20players%20in%20the,MG%20ZS%2C%20and%20Mahindra%20XUV400.>
- <https://www.counterpointresearch.com/insights/global-electric-vehicle-market-share/#>



Exploring the Dynamics of Cognitive AI

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Abstract

This paper provides an overview of cognitive Artificial Intelligence (AI), a field that enriches machines with human-like cognition. It explores the distinctions between cognitive AI, conventional AI, and Artificial General Intelligence (AGI). The paper delves into cognitive theories such as Personality Systems Interaction (PSI) theory, Maslow's hierarchy of needs, Kuhl's theory of motivation and personality, and Michael Bratman's theory of intentions, highlighting their relevance to AI and human behavior. The study also covers essential AI techniques, including Artificial Neural Networks (ANN), Hidden Markov Models (HMM), and metaheuristic algorithms, discussing their applications across various industries. Ethical aspects of bias in Machine Learning (ML) are addressed, emphasizing on data pre-processing. The paper concludes with a glimpse into the future prospects of cognitive AI, discussing its potential in healthcare, finance, customer service, and more. This overview encapsulates the paper's exploration of cognitive AI and its implications for bridging the gap between human and artificial intelligence.

Keywords: Artificial Intelligence, ANN, Cognition, HMM, Metaheuristic

Introduction

In the vast expanse of technological innovation, Artificial Intelligence (AI) has developed as a beacon of human ingenuity, reshaping our world in ways that once resided solely within the realm of science fiction. Today, AI is omnipresent, from our smartphones and self-driving cars to healthcare systems and online shopping recommendations. At its core, AI leverages advanced algorithms and data-driven approaches to enable machines to analyze, learn, adapt, and make decisions, often with a degree of autonomy and efficiency. The inception of AI can be traced back to 1956, where McCarthy and Minsky, along with their team, convened to explore the possibility of creating machines with human-like intelligence. Over time, AI has evolved from symbolic AI to connectionism and finally to the deep learning era we find ourselves in today.

In recent years, the intricate relationship between

consciousness, the mind, and information has been the subject of intense scrutiny, with various models proposed, some of which are rooted in the enigmatic domain of quantum phenomena. These models have led to advanced insights, addressing significant questions ranging from the nature of consciousness to the mind-body connection and the interplay between predisposition and upbringing.

They have also shed light on areas as diverse as music-based therapy for neuro-rehabilitation, attitude assessment with wide-ranging applications, health equilibrium, mental aggressiveness, religious phenomena, and extra-sensory events. Over centuries, humanity has grappled with profound questions regarding the universe, life, and consciousness. In our modern era, replete with information-driven communication, these questions remain largely unanswered when approached within the confines of individual disciplines such as philosophy, neurosciences, and biology without the integration of information science. The Cognitive-Sentient Exploration of Reality (CSER) emerges as an innovative paradigm, uniting introspection and motivation at the delicate junction of certainty and uncertainty. With its roots in ancient civilizations, this convergence of intellectual currents has shaped traditional philosophy and continues to influence scientific exploration, education, medicine, and creative domains [1].

The introduction of cognitive AI marked the shift from AI as a conceptual framework to the fusion of machine learning with human-like cognitive abilities. It thus seeks to endow machines with the ability to comprehend, reason, and make context-driven decisions akin to human cognition.

Difference between AI, Cognitive AI and AGI

To appreciate its unique place in the AI spectrum, it's essential to delineate Cognitive AI from both conventional AI and AGI (Artificial General Intelligence). Conventional AI is a broad category encompassing systems designed for specific tasks bounded by rules. In contrast, AGI embodies the aspiration of creating machines that possess human-like general intelligence, capable of flexibly performing a wide range of tasks such as diagnosis, and multilingual translation. Yet, it's crucial to acknowledge that AGI remains an ongoing

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quest, with early-stage developments. Cognitive AI, situated as a subdomain within the AI landscape, occupies a middle ground. What defines cognitive AI are its cognitive abilities, which include natural language understanding, context comprehension, and the capacity to draw inferences, much like virtual assistants Siri or Alexa. In essence, cognitive AI functions as a vital bridge between the specialized proficiency of conventional AI and the comprehensive potential of AGI, delivering a unique amalgamation of cognitive prowess within the AI domain [2].

Cognitive Theories Exploring Human Behaviour

As we navigate the intricate realm of cognitive artificial intelligence, we find ourselves traversing a diverse and multifaceted landscape of theories that unveil the enigmatic intricacies of human motivation and behavior. In this academic discourse, we undertake a thorough investigation of four distinct theories. Each theory provides a unique perspective for examining the intricate workings of the human mind and their profound implications for the realm of artificial intelligence. These theories provide us with profound insight into the intricate interplay of computational and psychological mechanisms that govern our decision-making processes, impel our actions, and fundamentally shape our individual and collective conduct.

a. PSI (Personality Systems Interaction) Theory

This theory, rooted in the intricate landscape of cognitive artificial intelligence, unfolds as a comprehensive model elucidating the intricacies of motivation, decision-making, and cognitive-social behavior in both human and artificial systems. PSI theory, integrated into the MicroPsi architecture, is a comprehensive model for understanding human motivation and behavior. It explores the hierarchy of human motivation, from basic needs to complex desires, guiding human actions. Reinforcement learning is central, shaping behavior through feedback. Adaptive decision-making is a key aspect, allowing responses to changing situations and varying needs. It extends to social behavior, considering personal and social motivations. Implemented as a computational model, Psi theory enables AI systems to mimic human decision-making, enhancing their responsiveness to dynamic environments [3-5].

b. Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs, developed in 1943, is a foundational psychological theory. It arranges human needs into a pyramid structure with five levels, from basic survival needs like air and food at the bottom to the pursuit of personal growth and self-actualization at the top. While individuals typically prioritize lower-level needs first, it's essential to recognize that cultural and individual differences can influence this hierarchy. Nonetheless, the theory continues to be a fundamental concept in psychology, offering insights into human motivation and well-being [6].

c. Kuhl's Theory of Motivation and Personality

Kuhl's Theory of Motivation and Personality, developed by psychologist Joachim Kuhl, explores the interplay of different psychological systems and their effects on motivation and personality. The theory introduces two distinct processing modes: "harmonious" and "contradictory." In the harmonious mode, individuals experience coherence, flexible thinking, and positive emotions, while the contradictory mode is marked by inner conflicts, rigidity, and negative emotions. Adaptive functioning involves switching between these modes, using each as needed. Personality development is linked to this adaptability, with adaptive individuals having more balanced personalities. Emotional regulation plays a role, with positive emotions tied to the harmonious mode and negative emotions to the contradictory mode. Kuhl's theory emphasizes cognitive flexibility and its role in personal growth and well-being, finding applications in psychology, counseling, and self-development [7].

d. Michael Bratman's Theory of Intentions

Michael Bratman's Theory of Intentions, Plans, and Practical Reason provides a comprehensive framework for understanding human intentional action, planning, and practical reasoning. It distinguishes various levels of intention, with "settled" intentions representing firm commitments to future actions. Intentions are closely tied to plans, which outline the steps required to achieve goals. Practical reasoning is the cognitive process through which individuals make choices based on their intentions and beliefs about rationality and desirability. The theory emphasizes means-end rationality, self-governance, and the importance of self-knowledge and self-control in goal pursuit. Bratman's theory sheds light on how humans engage in purposeful, goal-oriented behavior and is applicable to philosophy, psychology, ethics, and decision theory, offering insights into human agency and rationality [8-9].

AI Techniques for Cognitive Intelligence

a Artificial Neural Network

In 1943, the inaugural ANN was introduced by the collaborative efforts of neurophysiologist McCulloch and logician Pitts, marking the inception of a computational model inspired by the intricacies of the human brain. These artificial neural networks are intricately constructed systems composed of interconnected artificial neurons, each possessing adjustable parameters designed to generate predetermined outcomes.

Diverse ANNs exist, differentiated by the configurations of network and methodologies of training, sharing a fundamental architecture of neurons that aggregate inputs to produce singular outputs. Within the domain of cognitive radios (CRs), several prominent ANN categories come to the forefront [10]:

- Multi-layer Linear Perceptron Networks (MLPN): MLPNs feature layers of neurons, with each layer constituting previous layer's output's linear combination. The training of MLPNs is facilitated by diverse methodologies, including backpropagation (BP) and genetic algorithms (GAs), selected based on network dimensions and specific application requirements. Hybrid strategies combining GA pre-training with BP refinement are also a prevalent approach [10].
- Nonlinear Perceptron Networks (NPN): NPNs introduce a layer of nonlinearity into the network, enabling tailored adaptation to match specific sample datasets. The inherent flexibility of NPNs is balanced by the need for congruence between network configurations and the data they represent. Training these networks through BP may involve protracted convergence times [10].
- Radial Basis Function Networks (RBFN): RBFNs incorporate a radial nonlinear function, frequently Gaussian, within their hidden layer to establish a distance-based criterion relative to a central point. This construction strategy mitigates the common issue of networks converging into local minima. Training RBFNs typically employs gradient descent as the preferred method [10].

The application of ANNs to CRs capitalizes on their intrinsic adaptability, permitting dynamic "learning" of system patterns, attributes, and complexities. This adaptability extends to the handling of intricate, nonlinear, and multifaceted attributes, often requiring only minimal examples to navigate. As a result, ANNs prove invaluable not only in stimulus recognition and classification but also in guiding and enhancing the adaptation process [11-12].

b. The Hidden Markov Model (HMM)

Introduced in 1960s, the HMM stands as a mathematically elegant and tractable statistical framework, uniquely equipped to model and analyze dynamic behaviors within complex, stochastic phenomena. HMMs find their primary application in the representation of systems characterized as Markov processes. Such systems encompass both observable and unobservable states, where sequences of observation symbols emerge through state transitions, with the concealed states. These state transitions are capable of generating sequences of observation symbols, which may either be discrete or continuous [13].

A concise representation of an HMM is encapsulated by the notation shown in eq. 1:

$$\lambda = (A, B, \pi(1)) \quad (1)$$

incorporating the state transition probability matrix A, which possesses a dimension of $N \times N$, the observation symbol

probability matrix B with dimensions of $K \times N$, and the initial state probability vector $\pi(1)$ with a dimension of $N \times 1$. N signifies the number of states within the model, whereas K denotes the count of distinct observation symbols linked to each state [13].

Within the realm of practical applications, HMMs are associated with three fundamental problems:

- Evaluation or Recognition Problem: This problem entails the computation of the probability associated with a specific observation sequence when provided with the model parameters represented by λ . The forward-backward algorithm stands as the principal method for resolving this challenge [13].
- Decoding Problem: When armed with both model parameters λ and an observed sequence, the principal objective becomes the identification of the sequence of hidden states that best elucidates the observation sequence. In this context, the Viterbi algorithm emerges as the preferred solution [13].
- Training or Learning Problem: The "Training or Learning Problem" in HMMs revolves around estimating the most probable set of state transitions and observation symbol probabilities when presented with an observation sequence. This problem is a subset of the broader expectation-maximization paradigm and is typically resolved using the Baum-Welch algorithm. In the context of CRs, the application of HMMs involves tailoring models to clarify and categorize observed symbols or patterns. These models are invaluable for identifying sequences with similar patterns, enhancing the cognitive engine's ability to recognize, classify, and become more aware of incoming stimuli. Furthermore, HMMs' capacity to replicate training sequences empowers predictive applications and facilitates the creation of new models [13].

Utilization of HMM:

- The application of HMMs involves the development of custom-tailored models designed to elucidate and categorize observed symbols or patterns. These models serve as powerful tools for discerning sequences characterized by analogous patterns, driven by the selection of the model best-suited to explain the observed sequences. Consequently, HMMs assume a significant role within the cognitive engine's observation process, contributing to the recognition, classification, and heightened awareness of received stimuli. Furthermore, HMMs' intrinsic capability to replicate training sequences empowers predictive applications, while their potential for facilitating learning is exemplified through the creation of new models [13].

c. Metaheuristic Algorithms

Table 1: Characteristics of Metaheuristic Algorithms

| Decision Process | Key Benefits | Drawbacks |
|--------------------------------|---|--|
| Classical Techniques | Offers globally optimal answers to a range of convex optimization issues: Analysis of convergence qualities is thorough [15]. | Could produce less-than-ideal (undesirable) answers for dysfunctional functions; In addition to being computationally demanding, branch-and-bound, clustering, and multi-start approaches that improve performance require access to global information. |
| Genetic Algorithms | Well-investigated for wireless applications [16]. | Convergence has not been fully investigated: Efficiency depends on proper parameter selection. |
| Simulated Annealing | Asymptotically converges to a globally optimal solution with probability 1; Easy to implement [17]. | Convergence rate may be slow; Only converges to a global optimal as time approaches infinity for a finite search space. |
| Tabu Search | Simple to implement [18]. | Effectiveness depends on choosing the right parameters |
| Ant Colony Optimization | Able to quickly adjust to changes in reality [19-20]. | Not as effective as simulated annealing in local search. |

Explicit relationships between the parameters of an AI system and its preferred metrics for performance evaluation are typically unavailable. Consequently, conventional search algorithms based on mathematical relations are ill-suited for identifying optimal parameters that align with specific performance metrics. Instead, the utilization of metaheuristic algorithms [14] becomes essential when tackling computationally challenging problems, enabling a comprehensive exploration of the solution space and the acquisition of the necessary relationships. While the term “metaheuristic” likely first appeared in 1986, its roots trace back to earlier research on stochastic optimization methods during the 1950s [15]. This discourse introduces a curated selection of metaheuristic algorithms for consideration, as presented in table 1.

Rule-Based Systems (RBS)

In a RBS, rules are derived from specific application areas, facilitating decision-making. This approach encodes human expert knowledge into automated systems. RBS, with its foundation dating back to DENDRAL in 1964, comprises essential components: the rule base and the inference engine (IE). The IE operates through forward chaining or backward chaining [21-22].

In the context of CRs, RBS offers simplicity. It rapidly deduces actions for input, though it relies on a well-defined rule base. Challenges arise when a domain is not entirely understood. Strategies to mitigate this include assigning certainty values to rules, employing statistical tools like Bayesian analysis, or combining RBS with a case-based system. Notably, RBR-CEs have been designed for CR, providing effective performance with reduced complexity. Deriving rule databases systematically through automated experiments is another approach, allowing optimal

configurations for specific conditions and requirements [23-25].

Case-Based System (CBS)

The CBS in AI has its roots in Schank’s dynamic memory models from the 1980s. It utilizes prior similar cases to guide problem-solving and derive solutions. CBS involves selecting the most relevant cases, narrowing them down to a single case, and adapting it to the current context, often seen as an optimization challenge. Initial case retrieval, based on similarity, jumpstarts the optimization process, reducing the computational effort and time needed for parameter optimization. CBS is characterized by problem-solving in partially understood domains, providing unique explanations, and mimicking human reasoning processes. However, CBS performance relies on the correctness of prior case solutions, making it susceptible to propagated mistakes from inaccuracies in past cases. In complex domains, creating and examining a large database can be laborious. In such cases, incorporation of different techniques, like rule-based systems (RBS), can enhance performance and expedite the case database [26].

In a CR context, CBS helps the system determine actions based on the current environment and radio objectives, using cases in a database. CBS learns new cases for novel situations, updates the case database, and generates new actions. Recent advances in CBR for CR design include Reed et al.’s CBR-based Cognitive Engine (CBR-CE) for IEEE 802.22 WRAN applications, Khedr and Shatila’s CE using CBR and fuzzy logic for WiMAX channel type identification, and Le et al.’s CE architecture incorporating CBR [27-28].

A comparison between the different cognitive AI techniques discussed is presented in table 2.

Table 2: Comparison between different Cognitive AI Techniques

| Algorithm | Strengths | Limitations | Options |
|----------------------------------|--|---|--|
| Artificial neural network | Able to explain a wide range of tasks ANN is conceptually simple to scale. Excellent for categorization. Able to spot novel patterns. | Depending on the size of the network, training could be slow. Over training is possible. There is no need to connect application to theory. | Able to employ different learning strategies throughout the training stage (i.e. GA) Can be combined with RBS. |
| Metaheuristic algorithms | Excellent for understanding relationships between parameter values and parameter optimization. Able to employ different learning strategies throughout the training stage (i.e. GA) | It is challenging to design a rule space when learning or optimisation is not limited by parameter values. | Capable of being combined with RBS. The process of searching might also benefit from learning. |
| Hidden Markov model | Able to simulate complex statistical procedures. Suitable for categorization. Simple to scale. | Requires good training sequence. Computationally complex | CBS and RBS can assist HMM in determining the observation period for a particular application and overcoming challenges with novel conditions by drawing on prior knowledge. |
| Rule-based system | Simple implementation. Capacity to deal with unforeseen circumstances. Capacity to formulate rules with just relevant features included. | Tedious rule derivation process. Perfect domain knowledge is necessary, but it is not always available. | Can be used in conjunction with OBS and CBS to handle unknown domains more effectively. |
| Case-based system | Similar to how humans think. Capable of operating in a complex, high-variability environment. Enables quick knowledge acquisition and learning even in the lack of domain expertise. | Depends only on prior cases. Large case memory is necessary. May contain unrelated motifs. | Can be used in conjunction with RBS and OBS to create a more capable system for solving problems that isn't just dependent on experience. |

Ethical Biases of Cognitive AI

Ethical concerns related to biases within machine learning systems have garnered significant attention in recent times. The core challenge underlying this issue is the presence of biases within the datasets used to train these systems, leading to algorithmic discrimination and the production of unfair or skewed decision-making processes. Often, this bias can be traced back to historical inequities embedded in the training data.

In response to this concern, substantial efforts have been directed at mitigating algorithmic discrimination, broadly classified into two categories: in-processing techniques and post-processing techniques. In-processing techniques involve the modification of learning algorithms during training to eliminate discrimination, whereas post-processing techniques aim to correct the outcomes of pre-trained classifiers to achieve fairness.

Nonetheless, as this discourse highlights, the crux of (un)ethical machine behavior is fundamentally rooted in the initial selection of data features for machine learning system training. The choice of what data and features are included significantly shapes the ethical behavior of the system. This

text advocates that pre-processing techniques, involving the careful exclusion of undesirable inputs from the training dataset, are an underemphasized aspect of ethical machine learning.

Furthermore, it subtly suggests that the scope should extend beyond the mere avoidance of unfairness associated with protected attributes such as gender, age, or ethnicity. Instead, it emphasizes a comprehensive approach to selecting and filtering data inputs to ensure ethical behavior from the outset. This approach aims to prevent biases and discrimination at their source, rather than merely addressing their consequences in the outputs of machine learning models [29].

Conclusion and Future Scope

In the ever-evolving landscape of Artificial Intelligence, Cognitive AI emerges as a pivotal intersection between human-like cognition and machine capabilities, offering a compelling vision for the future of AI. This synthesis of advanced algorithms and cognitive abilities propels AI into a realm where machines, akin to humans, can understand context, reason, and make informed decisions.

Our profound exploration of this transformative field has unveiled a plethora of cognitive theories and AI techniques that not only illuminate the intricate workings of the human mind but also hold the potential to reshape the technological landscape.

Cognitive AI, situated at the crossroads of psychology and computer science, reflects a future where AI systems are not mere tools but cognitive companions, capable of understanding human emotions, motivations, and intentions. As this field matures, we anticipate an era where Cognitive AI will augment human decision-making, offering valuable insights and support in fields as diverse as healthcare, education, and customer service. It holds the promise of enhancing our daily lives, from personalized healthcare recommendations to advanced educational tools.

However, alongside these transformative prospects, it's imperative to address the pressing ethical concern of bias. Bias in machine learning systems is a critical issue, and this calls for stringent measures in data pre-processing and algorithm design. Ensuring fairness, not just in protected attributes but in a comprehensive selection and filtration of data inputs, will be essential to achieving ethically sound Cognitive AI systems.

As we gaze into the future, Cognitive AI stands as a monumental milestone, bridging the chasm between conventional AI and the ambitious dream of Artificial General Intelligence. It aligns with human cognition and extends the frontiers of machine capabilities, promising a future where AI doesn't merely perform tasks but comprehends and decides, enriching human lives and industries across the board.

In the coming years, we can anticipate the proliferation of Cognitive AI across various sectors, including healthcare, finance, and autonomous systems. Healthcare providers will harness Cognitive AI to improve diagnostics, while financial institutions will employ it for risk assessment and fraud detection. Autonomous systems, from self-driving cars to smart homes, will rely on Cognitive AI for enhanced decision-making and situational awareness.

In conclusion, the future of Cognitive AI is marked by a profound transformation in human-machine interaction, where AI systems are not just tools but partners in decision-making, fostering a deeper understanding of human behavior and motivations. The evolution of Cognitive AI holds the promise of a more ethically aware, intelligent, and integrated technological future.

References

- Gaiseanu, F. (2019). Language patterns and cognitive-sentient reality: Certainty/uncertainty in cognitive-sentient exploration of reality. In *Media models to foster collective human coherence in the PSYCHecology* (pp. 49-72). IGI Global.
- Cichocki, A., & Kuleshov, A. P. (2021). Future trends for human-ai collaboration: A comprehensive taxonomy of AI/AGI Using Multiple Intelligences and Learning Styles. *Computational Intelligence and Neuroscience, 2021*, 1-21.
- Dörner, D.: *Bauplan für eine Seele*. Reinbeck (1999).
- The Dörner, D., Bartl, C., Detje, F., Gerdes, J., Halcour, D.: *Die Mechanik des Seelenwagens. Handlungsregulation*. Verlag Hans Huber, Bern (2002)
- Bach, J. (2009). *PSI—An architecture of motivated cognition*. Oxford University Press, *Oxford*.
- Maslow, A. H., Frager, R., Fadiman, J., McReynolds, C., & Cox, R. (1987). *Motivation and personality* (3rd). *New York*.
- Kuhl, J. (2001). *Motivation und persönlichkeit: Interaktionen psychischer systeme*. Hogrefe.
- Bach, J. (2017, September). Motivated, emotional agents in the MicroPsi Framework. In *Proceedings of the European Cognitive Science Conference 2007*. Taylor & Francis.
- Bratman, M. (1987). *Intention, plans, and practical reason*, Harvard Un. *Cambridge, MA*.
- Haykin, S. (1998). *Neural networks: a comprehensive foundation*. Prentice Hall PTR.
- Fehske, A., Gaedert, J., & Reed, J. H. (2005, November). A new approach to signal classification using spectral correlation and neural networks. In *First IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks, 2005. DySPAN 2005*. (pp. 144-150). IEEE.
- Cattoni, A. F., Ottonello, M., Raffetto, M., & Regazzoni, C. S. (2007, August). Neural networks mode classification based on frequency distribution features. In *2007 2nd International Conference on Cognitive Radio Oriented Wireless Networks and Communications* (pp. 251-257). IEEE.
- Rabiner, L. R. (1989). A tutorial on hidden Markov models and selected applications in speech recognition. *Proceedings of the IEEE, 77*(2), 257-286.
- Blum, C., & Roli, A. (2003). Metaheuristics in combinatorial optimization: Overview and conceptual comparison. *ACM computing surveys (CSUR), 35*(3), 268-308.
- Glover, F. (1986). Future paths for integer programming and links to artificial intelligence. *Computers & operations research, 13*(5), 533-549.
- Robbins, H., & Monro, S. (1951). A stochastic approximation method. *The annals of mathematical statistics, 400-407*.

17. DE, G. (1989). Genetic algorithms in search. *Optimization, and Machine Learning, Addison Wesley.*
18. Kirkpatrick, S., Gelatt Jr, C. D., & Vecchi, M. P. (1983). Optimization by simulated annealing. *Science, 220*(4598), 671-680.
19. Glover, F. W. and Laguna, M. Tabu Search. Boston, MA: Kluwer
20. Dorigo, M., & Blum, C. (2005). Ant colony optimization theory: A survey. *Theoretical computer science, 344*(2-3), 243-278.
21. J. Paine, Expert systems. [Online]. Available: <http://www.j-paine.org/students/lectures/lect3/lect3.html>
22. J. H. Reed et al., "Development of a cognitive engine and analysis of WRAN cognitive radio algorithms—Phase II," *Wireless @ Virginia Tech, Virginia Polytech. Inst. State Univ., Blacksburg, VA*
23. Zhao, Y., Gaeddert, J., Morales, L., Bae, K., Um, J. S., & Reed, J. H. (2007, August). Development of radio environment map enabled case-and knowledge-based learning algorithms for IEEE 802.22 WRAN cognitive engines. In *2007 2nd International Conference on Cognitive Radio Oriented Wireless Networks and Communications* (pp. 44-49). IEEE.
24. Clancy, C., Hecker, J., Stuntebeck, E., & O'Shea, T. (2007). Applications of machine learning to cognitive radio networks. *IEEE Wireless Communications, 14*(4), 47-52.
25. Weingart, T., Sicker, D. C., & Grunwald, D. (2007). A statistical method for reconfiguration of cognitive radios. *IEEE Wireless Communications, 14*(4), 34-40.
26. Kolodner, J. L., & Leake, D. (1996). A tutorial introduction to case-based reasoning. Cambridge, MA: MIT Press.
27. J. H. Reed et al., "Development of a cognitive engine and analysis of WRAN cognitive radio algorithms—Phase III," *Wireless @ Virginia Tech, Virginia Polytech. Inst. State Univ., Blacksburg, VA.*
28. He, A., Gaeddert, J., Bae, K. K., Newman, T. R., Reed, J. H., Morales, L., & Park, C. H. (2009). Development of a case-based reasoning cognitive engine for IEEE 802.22 wran applications. *ACM SIGMOBILE Mobile Computing and Communications Review, 13*(2), 37-48.
29. Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2016). Machine bias. *ProPublica*, May 23, 2016.



Role of CBSE, NIOS and CIET in Providing Curriculum and Pedagogical Support to Teachers within School

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Introduction

In the dynamic landscape of education, the role of educational boards and institutions in providing comprehensive support to teachers is crucial. The Central Board of Secondary Education (CBSE), the National Institute of Open Schooling (NIOS), and the Central Institute of Educational Technology (CIET) play pivotal roles in shaping the curriculum and pedagogical practices in schools across India. This essay explores the significant contributions of these institutions in empowering teachers through curriculum development and pedagogical support.

Central Board of Secondary Education (CBSE)

CBSE is the national board of education in India, responsible for designing the curriculum and prescribing textbooks for schools affiliated with it. CBSE plays a vital role in ensuring that the curriculum is aligned with national educational goals, and it regularly updates its guidelines to incorporate contemporary educational practices. The board conducts workshops, training sessions, and webinars to familiarize teachers with the latest pedagogical techniques. Additionally, CBSE provides resource materials, sample question papers, and other support materials to assist teachers in effective curriculum transactions.

National Institute of Open Schooling (NIOS)

NIOS caters to a diverse range of learners, including those who have dropped out of the formal education system. In doing so, it develops flexible and inclusive curricula that can be adapted to various learning styles. NIOS extends its support to teachers by providing training programs that focus on personalized and learner-centric teaching methodologies. Through its open and distance learning programs, NIOS enables teachers to access resources and

engage in professional development, fostering a culture of continuous learning within the teaching community.

Central Institute of Educational Technology (CIET)

CIET, a constituent unit of the National Council of Educational Research and Training (NCERT), plays a crucial role in the development of educational technology and multimedia resources. CIET supports teachers by creating audio-visual materials, digital content, and interactive learning modules that enhance the pedagogical process. It conducts training programs for teachers to integrate technology seamlessly into their teaching methods, keeping them abreast of advancements in educational technology.

Keywords

Curriculum development, Pedagogical support, Teacher training, ICT integration

Role of CBSE in Providing Curriculum and Pedagogical support to teachers within School

Orientation Programs

CBSE conducts orientation programs for newly appointed teachers. These programs serve as an introduction to the board's curriculum, examination patterns, and teaching methodologies. The orientation aims to familiarize teachers with the expectations and standards set by CBSE, ensuring a smooth transition into the education system.

Subject-Specific Workshops

CBSE organizes workshops focused on specific subjects, addressing the nuances of teaching various disciplines. These workshops delve into subject-specific pedagogies, assessment strategies, and content updates. Subject experts

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and experienced educators often lead these sessions, providing valuable insights and guidance to teachers.

Pedagogical Workshops

Workshops on pedagogy are crucial for teachers to adopt effective teaching methodologies. CBSE conducts workshops that explore innovative teaching practices, student engagement strategies, and interactive learning approaches. These sessions empower teachers to create dynamic and student-centric classrooms.

Assessment and Evaluation Training

Given the significance of fair and effective assessment, CBSE conducts training programs on assessment and evaluation practices. Teachers are guided on designing assessments that align with the board's guidelines, ensuring a standardized and comprehensive evaluation process. This includes understanding and implementing Continuous and Comprehensive Evaluation (CCE) principles.

Inclusive Education Training

CBSE recognizes the importance of inclusive education. Training programs are conducted to equip teachers with the knowledge and skills needed to address the diverse needs of learners. These programs focus on creating inclusive classrooms, adapting teaching methods for students with special needs, and fostering a supportive learning environment.

Information and Communication Technology (ICT) Integration Workshops:

With the increasing role of technology in education, CBSE organizes workshops on ICT integration in teaching. These programs guide teachers on effectively using digital tools, online resources, and interactive technologies to enhance the learning experience. Emphasis is placed on creating a balance between traditional teaching methods and modern technological approaches.

Capacity Building Programs for School Leaders

CBSE extends its training programs to school leaders, including principals and coordinators. These programs focus on leadership skills, school management, and strategic planning. Empowering school leaders contributes to creating a positive and conducive learning environment within the institution.

Online Training Modules

Recognizing the need for flexibility, CBSE provides online training modules for teachers. These modules cover a variety of topics and allow teachers to engage in professional development at their own pace. Online training ensures

accessibility and accommodates the busy schedules of educators.

Collaborative Workshops and Conferences

CBSE often collaborates with educational institutions, organizations, and experts to conduct collaborative workshops and conferences. These events bring together educators from various schools, providing a platform for sharing experiences, exchanging ideas, and collectively addressing challenges in education.

Professional Learning Communities (PLCs)

CBSE encourages the formation of Professional Learning Communities (PLCs) among teachers. These communities facilitate ongoing peer-to-peer learning, collaboration, and the sharing of best practices. Teachers can engage in collaborative problem-solving and stay connected with developments in their respective fields.

Role of NIOS in Providing Curriculum and Pedagogical support to teachers within School

Flexible and Inclusive Curriculum

Training Programs for Personalized Teaching:

NIOS conducts training programs for teachers that focus on personalized and learner-centric teaching methodologies. These programs empower educators to understand the individual learning styles of students and tailor their teaching approaches accordingly, creating a more personalized and effective learning experience.

Open and Distance Learning Support

NIOS specializes in open and distance learning, providing resources and support to teachers engaged in these modes of education. Teachers receive guidance on effectively using distance learning materials, conducting virtual classrooms, and implementing strategies to enhance student engagement in non-traditional learning settings.

Professional Development Opportunities

- NIOS actively invests in the professional development of teachers. The institute organizes workshops, seminars, and training sessions to keep educators abreast of the latest pedagogical trends, teaching methodologies, and advancements in education. This commitment to ongoing professional development contributes to a continuously evolving and well-informed teaching community.

Innovative Pedagogical Practices:

NIOS encourages teachers to explore and implement innovative pedagogical practices. The institute supports educators in adopting creative and interactive teaching methods, promoting critical thinking and problem-solving skills among students. This emphasis on innovation contributes to the overall improvement of teaching and learning within schools.

Role of CIET in Providing Curriculum and Pedagogical support to teachers within School

Development of Educational Technology Resources

CIET specializes in the development of educational technology resources. The institute creates audio-visual materials, digital content, and interactive learning modules that complement the curriculum. These resources serve as valuable tools for teachers to enhance their instructional methods and make learning more engaging for students.

Integration of Technology in Teaching

CIET plays a pivotal role in promoting the effective integration of technology in teaching practices. The institute conducts training programs and workshops to familiarize teachers with the latest educational technologies. This includes guidance on using multimedia resources, digital platforms, and interactive tools to create dynamic and technology-enhanced learning experiences.

Teacher Training in Educational Technology

CIET offers specific training programs for teachers to enhance their proficiency in using educational technology. These programs cover topics such as digital content creation, online assessment tools, and leveraging technology for interactive and collaborative learning. The goal is to empower teachers to harness the full potential of technology in their classrooms.

Creation of Digital Learning Resources

Recognizing the importance of digital learning, CIET actively engages in the creation of digital resources. This includes e-books, online lessons, and multimedia content that align with the curriculum. Teachers can leverage these resources to supplement their traditional teaching methods, providing students with a more varied and enriched learning experience.

Pedagogical Support through Technology

CIET's focus extends beyond just the provision of technology resources; it also provides pedagogical support through these tools. The institute guides teachers on effective ways to incorporate digital resources into their lesson plans, encouraging interactive and student-centered learning. This support enhances the overall quality of teaching within schools.

Research Questions:

Below mentioned set of questions were explored from school teachers to know their perception in respect to Role of CBSE, NIOS and CIET in Providing Curriculum and Pedagogical support to them.

Question 1:

In your opinion, does CBSE foster a culture of continuous learning among educators by conducting workshops, seminars, and online courses?

Question 2:

Do you perceive NIOS as a valuable institution for providing flexible and inclusive curricula, catering to diverse learning needs?

Question 3:

In your view, does CBSE actively contribute to the professional growth of teachers by offering resource materials and guidelines for effective teaching?

Question 4:

Based on your perception, is CIET instrumental in enhancing the quality of education by developing educational technology resources for teachers?

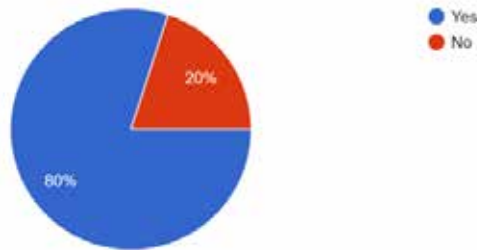
Question 5:

Do you believe NIOS plays a crucial role in creating an inclusive educational environment by providing support for open and distance learning?

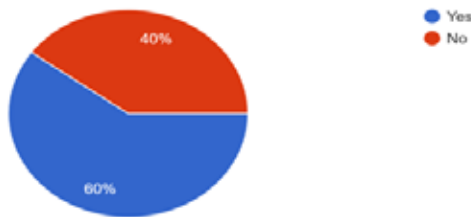
Research Methodology

In this paper, Google Forms were used to gather data efficiency from 37 school teachers. Online survey was circulated through mail and whatsapp to around 500 different teachers and then there was response from 39. Two forms were filled incomplete so discarded. Google form is used for analysis and graphical representation was generated with forms analysis.

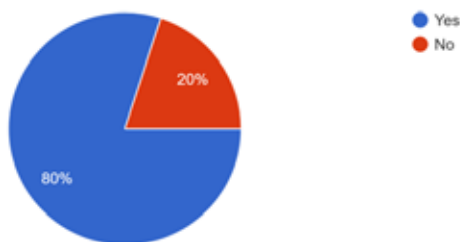
Question 1: In your opinion, does CBSE foster a culture of continuous learning among educators by conducting workshops, seminars, and online courses?
5 responses



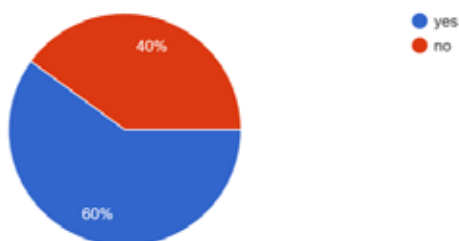
Question 2: Do you perceive NIOS as a valuable institution for providing flexible and inclusive curricula, catering to diverse learning needs?
5 responses



Question 3: In your view, does CBSE actively contribute to the professional growth of teachers by offering resource materials and guidelines for effective teaching?
5 responses



Question 5: Do you believe NIOS plays a crucial role in creating an inclusive educational environment by providing support for open and distance learning?
5 responses



Result and Findings

Q1: In your opinion, does CBSE foster a culture of continuous learning among educators by conducting workshops, seminars, and online courses?

Based on the data provided, it is evident that a significant majority, comprising 80% of respondents, believes that the

Central Board of Secondary Education (CBSE) actively fosters a culture of continuous learning among educators. This positive perception is likely rooted in the acknowledgment of CBSE's efforts in organizing workshops, seminars, and online courses, which contribute to the professional development of teachers. However, a noteworthy 20% of respondents hold the opinion that CBSE may not be as successful in cultivating a culture of continuous learning. These respondents may perceive potential gaps or challenges in the mechanisms through which CBSE conducts training

and development initiatives for educators. The varied responses suggest a diverse range of opinions regarding CBSE's effectiveness in promoting ongoing learning opportunities within the teaching community.

Q2: Do you perceive NIOS as a valuable institution for providing flexible and inclusive curricula, catering to diverse learning needs?

The majority of respondents (60%) perceive the National Institute of Open Schooling (NIOS) as a valuable institution that provides flexible and inclusive curricula, addressing the diverse learning needs of students. However, a significant minority (40%) holds the opinion that NIOS may not be as effective in catering to these varied educational requirements. The divergent responses indicate differing perspectives on NIOS's success in creating an educational environment that accommodates diverse learning styles and needs.

Q3: In your view, does CBSE actively contribute to the professional growth of teachers by offering resource materials and guidelines for effective teaching?

The overwhelming majority of respondents (80%) perceive that the Central Board of Secondary Education (CBSE) actively contributes to the professional growth of teachers by providing resource materials and guidelines for effective teaching. This suggests a positive outlook on CBSE's role in supporting educators through the provision of valuable resources. However, a notable 20% of respondents hold the opinion that CBSE may not be as impactful in contributing to the professional development of teachers. These varying responses highlight diverse perspectives on the effectiveness of CBSE's initiatives in supporting teacher growth.

Q4: Based on your perception, is CIET instrumental in enhancing the quality of education by developing educational technology resources for teachers?

A significant majority, comprising 80% of respondents, perceives that the Central Institute of Educational Technology (CIET) plays a crucial role in enhancing the quality of education. This positive perception is attributed to CIET's role in developing educational technology resources for teachers. These respondents likely acknowledge the importance of technology in education and view CIET as an instrumental entity in providing resources that contribute to the overall improvement of educational quality. However, 20% of respondents hold the opinion that CIET may not be as impactful in this regard, suggesting diverse perspectives on the institute's role in educational enhancement.

Q5: Do you believe NIOS plays a crucial role in creating an inclusive educational environment by providing support for open and distance learning?

A majority of respondents, comprising 60%, believe that the National Institute of Open Schooling (NIOS) plays a crucial role in creating an inclusive educational environment through its support for open and distance learning. This positive perception suggests that a significant portion of respondents recognizes the value of NIOS in catering to diverse learning needs and providing accessibility through alternative learning methods. However, 40% of respondents hold the belief that NIOS may not be as crucial in creating an inclusive environment, reflecting diverse opinions on the institute's effectiveness in this aspect.

Conclusion

The collaborative efforts of CBSE, NIOS, and CIET contribute significantly to the evolution of the Indian education system. CBSE, through its standardized curriculum and robust pedagogical support, establishes a foundation for uniform and quality education across affiliated schools. The positive perception of CBSE's role in fostering continuous learning and providing resources underscores its pivotal position in the professional development of teachers and the overall improvement of the educational experience.

NIOS emerges as a beacon for inclusivity and flexibility in education, offering diverse learning paths, particularly in open and distance learning. The majority's recognition of NIOS as a valuable institution catering to various learning needs demonstrates its crucial role in creating an accessible and diverse educational environment. On the other hand, CIET's focus on technology integration aligns with the demands of the 21st century, with a majority acknowledging its instrumental role in enhancing education through innovative resources. While these institutions collectively contribute to a dynamic and inclusive education system, diverse opinions shed light on areas for refinement, emphasizing the ongoing need for adaptability and improvement in the educational landscape.

Reference

1. <https://educational-system.blogspot.com/2013/02/role-of-ncert-in-promoting-quality-of.html>
2. <https://ciet.ncert.gov.in/about>
3. <https://ebooks.inflibnet.ac.in/ae01/chapter/role-of-ciet-in-development-of-educational-technology/>
4. <https://www.jetir.org/papers/JETIR1907J88.pdf>



Revitalizing the Indian Knowledge System: Harmonizing Ancient Wisdom with Modern Practices for Sustainable Development

Dr. Preeti Malik*

Abstract

The Indian Knowledge System (IKS) holds a reservoir of ancient wisdom that addresses a wide range of intellectual, philosophical, and practical aspects of life. This wisdom spans areas such as environmental sustainability, holistic healthcare, ethical governance, and education. As the global community seeks solutions to pressing challenges—climate change, resource depletion, health crises, and social inequalities—the relevance of IKS has surged. This paper explores how the integration of ancient Indian knowledge with contemporary practices can contribute to sustainable development. Case studies from different sectors illustrate the potential of this synergy to solve modern-day problems while promoting environmental stewardship, social equity, and economic resilience.

Keywords: Ancient Wisdom, Holistic Development, Indian Knowledge System (IKS), Innovation, Sustainability, traditional practices

Introduction

The Indian Knowledge System, steeped in ancient texts such as the *Vedas*, *Upanishads*, *Sutras*, and *Agamas*, presents a deep understanding of the interdependence between nature, society, and individuals. Concepts like *Dharma* (righteousness), *Prakriti* (nature), and *Swaasthya* (holistic well-being) provide comprehensive frameworks for sustainable living, environmental care, and personal health. As the world grapples with challenges posed by rapid industrialization and urbanization, revisiting IKS is not just an academic exercise but a necessity for achieving sustainable development goals (SDGs).

The modern sustainability paradigm calls for the responsible use of natural resources, social inclusion, and economic equity—principles that resonate with

IKS. This paper discusses the ongoing and potential applications of IKS across sectors like agriculture, healthcare, architecture, and education, along with real-life case studies where traditional Indian wisdom has been successfully integrated into contemporary practice.

Relevance of IKS in Sustainable Development

In the modern era, sustainability is not only about conserving resources but also about ensuring social and economic balance. The principles embedded in IKS offer valuable insights into achieving these objectives:

Environmental Sustainability: IKS promotes the concept of harmony with nature. The *Vrikshayurveda* (the science of plants) contains comprehensive guidelines for agriculture, including organic farming and crop rotation, which enhance soil fertility and reduce dependency on chemical fertilizers.

Healthcare: Ayurveda and Yoga offer holistic healthcare systems aimed at balancing the body, mind, and spirit. They emphasize preventive care, which reduces the burden on healthcare systems. Practices like *Panchakarma* (detoxification) and the use of natural herbs for immunity are gaining renewed attention, especially in the post-pandemic world.

Economic and Social Sustainability: Ancient Indian ethical systems, as found in texts like the *Mahabharata* and *Arthashastra*, underscore social equity, responsible leadership, and inclusive growth. These principles can be integrated into modern corporate governance and public policy frameworks to address issues like inequality and poverty.

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Real-World Success Stories: Case Studies of IKS in Action

Case Study 1

Ralegan Siddhi - A Model for Sustainable Rural Development

Background: Ralegan Siddhi, a village in Maharashtra, was transformed into a model of sustainable development through the application of ancient Indian water management techniques and community-driven governance.

Key Initiatives

Water Conservation: The village adopted traditional techniques such as *Johads* (rainwater harvesting structures) and check dams to conserve water, reviving its water table.

Organic Farming: Inspired by traditional agricultural methods, Ralegan Siddhi embraced organic farming, leading to increased crop yields and improved soil health.

Community Governance: Drawing from the Gandhian concept of *Gram Swaraj* (self-governance), the village developed a model of decentralized governance that promoted inclusive decision-making and community ownership of resources.

Impact

A significant improvement in water availability, leading to year-round farming and improved livelihoods.

Enhanced food security due to the adoption of sustainable farming practices.

Social cohesion and reduction in alcohol consumption, promoting overall well-being.

Case Study 2

Timbaktu Collective – Reviving Traditional Agriculture

Background: Timbaktu, a village in Andhra Pradesh, faced severe drought and environmental degradation due to unsustainable farming practices. The Timbaktu Collective, an NGO, spearheaded efforts to revitalize traditional farming techniques based on IKS.

Key Initiatives

Agroforestry: The initiative revived ancient agroforestry practices that involve planting trees alongside crops. This improved biodiversity and reduced the risk of soil erosion.

Seed Sovereignty: Farmers were encouraged to preserve and exchange indigenous seeds, reducing their dependency on hybrid and genetically modified seeds, which often require chemical fertilizers and pesticides.

Natural Resource Management: Traditional water conservation methods like percolation tanks and contour

trenches were introduced to capture rainwater and recharge groundwater.

Impact

Increased agricultural productivity without the use of chemical inputs.

Restoration of ecological balance in the region, with improved soil fertility and biodiversity.

Economic empowerment of smallholder farmers through sustainable agricultural practices.

Case Study 3

Jaipur Foot – A Blend of Traditional Craftsmanship and Modern Technology

Background: The Jaipur Foot, an artificial limb developed by the Bhagwan Mahaveer Viklang Sahayata Samiti (BMVSS), is a powerful example of integrating traditional Indian craftsmanship with modern medical technology to provide affordable, durable prosthetics.

Key Initiatives

The design of the Jaipur Foot is inspired by traditional Indian concepts of mobility and adaptability, allowing users to squat, sit cross-legged, and walk barefoot—activities common in rural India.

Traditional materials and crafting techniques are combined with modern technologies to produce prosthetics at a fraction of the cost of conventional artificial limbs.

The focus on social equity aligns with Indian values of *seva* (selfless service), as the organization provides these prosthetics free of charge to those in need.

Impact

Over 1.8 million people across 27 countries have benefited from the Jaipur Foot, enabling them to lead more independent lives.

The initiative promotes the economic rehabilitation of individuals with disabilities, providing them with enhanced mobility to participate in daily activities and the workforce.

Opportunities for Integrating Indian Knowledge System (IKS): India's Role and Examples

Global Acceptance: The rising global interest in sustainable living has positioned the Indian Knowledge System (IKS) as a valuable asset in addressing modern challenges. Practices rooted in Ayurveda, Yoga, and traditional Indian agriculture are gaining international recognition for their ability to complement modern methodologies.

Ayurveda: Ayurveda, India's ancient system of natural healing, is increasingly being accepted as a complementary and alternative form of medicine worldwide. Global wellness trends such as the emphasis on natural healing, organic treatments, and preventive healthcare resonate deeply with Ayurvedic principles.

Example: Ayurveda tourism is flourishing in states like Kerala, where international visitors seek authentic Ayurvedic treatments for ailments ranging from chronic pain to mental health disorders. Wellness centers such as **Somatheeram Ayurveda Village** have become popular for offering authentic Ayurvedic treatments. Furthermore, products from brands like **Patanjali** and **Himalaya** are being exported, reflecting the growing global demand for herbal medicine, skin care, and immunity-boosting supplements rooted in Ayurveda.

Yoga: Yoga, which originated in ancient India, has now become a global phenomenon. The holistic nature of Yoga, which connects the mind, body, and spirit, aligns well with modern health and wellness trends, particularly for stress relief, fitness, and mental health.

Example: The United Nations declared June 21 as **International Yoga Day** in 2014, further signifying global acceptance. Yoga has seen exponential growth worldwide, with countries like the United States, Germany, and Japan adopting it as part of their fitness and wellness regimes. Large-scale events, such as the **International Yoga Festival in Rishikesh**, draw participants from over 50 countries, promoting global health diplomacy through the Indian wellness tradition.

Traditional Agricultural Practices: Indian agricultural techniques such as **organic farming**, **permaculture**, and **natural water conservation systems** are being increasingly valued for their eco-friendly and sustainable nature. These methods contrast sharply with modern chemical-based farming that has led to soil degradation and loss of biodiversity.

Example: In states like **Sikkim**, the government has promoted organic farming on a large scale, making it the first fully organic state in India. Sikkim's organic farming model has been recognized globally, with the **UN Food and Agriculture Organization (FAO)** honoring the state with the **Future Policy Award** for its efforts in sustainable agriculture. This success has attracted international interest, with countries looking to Sikkim as a case study in achieving sustainable farming practices.

Policy Support: The Indian government has placed a renewed emphasis on the Indian Knowledge System, integrating it into national policies and frameworks. This creates a solid platform for blending traditional knowledge with modern education and developmental strategies.

National Education Policy (NEP) 2020: NEP 2020 is a significant initiative by the Indian government that aims to overhaul the education system by integrating Indian traditions, knowledge systems, and values into the curriculum. One of its core objectives is to emphasize the Indian Knowledge System, which includes subjects like Ayurveda, Yoga, and ancient Indian sciences, into mainstream education.

Example: The **Indian Institute of Technology (IITs)** and other universities are setting up centers for the study and research of IKS. Institutes like **IIT Kharagpur** have launched courses and research projects on Vedic mathematics, ancient Indian architecture, and traditional healthcare systems. This policy support not only provides students with the opportunity to study IKS but also paves the way for further research and global collaboration in these fields.

Promotion of Ayurveda and Yoga: The **Ministry of AYUSH** (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy) has played a pivotal role in promoting IKS-based healthcare practices. The ministry focuses on promoting holistic healthcare and preventive treatment by combining traditional systems with modern healthcare services.

Example: Government-backed initiatives like the **National Ayurveda Day** and **Yoga Day** celebrations encourage the global recognition of these traditions. The **Ayushman Bharat** health program also incorporates aspects of Ayurvedic treatment to make holistic healthcare more accessible. The collaboration of the **WHO** with India to establish the **Global Centre for Traditional Medicine** in Gujarat further exemplifies global acceptance and India's leadership in promoting traditional healthcare systems.

Rural Development and Agriculture: Policies promoting sustainable rural development have drawn from traditional agricultural practices. The **Paramparagat Krishi Vikas Yojana (PKVY)** encourages farmers to adopt organic and traditional farming methods, which in turn helps in achieving sustainable agriculture and enhancing soil fertility.

Example: This scheme has empowered farmers across various states, from Rajasthan to Odisha, by providing financial incentives and training for organic farming, thereby reducing reliance on chemical fertilizers and pesticides.

Innovation: By combining traditional knowledge with modern technology, India has the opportunity to lead in creating innovative solutions for sectors like healthcare, renewable energy, and water management.

Healthcare: There is immense potential in integrating traditional healthcare systems like Ayurveda and Yoga with modern medical practices. Advances in biotechnology, data analytics, and artificial intelligence (AI) can further enhance the efficacy of traditional treatments.

Example: In Kerala, **Amrita Institute of Medical Sciences** is researching the combination of AI and Ayurveda to provide personalized health solutions. AI-powered diagnostics can analyze individual *prakriti* (body constitution) in Ayurvedic terms, making treatments more effective and targeted. Moreover, using biotechnological methods to study Ayurvedic herbs has the potential to standardize and validate treatments on a global scale.

Renewable Energy: Traditional Indian practices of building energy-efficient structures (*Vastu Shastra*) and utilizing natural resources align with modern renewable energy technologies. By merging ancient architectural wisdom with contemporary innovations in solar power, wind energy, and green construction, new models of sustainable housing and urban planning can be created.

Example: Auroville, an experimental township in Tamil Nadu, has implemented a blend of traditional Indian architectural practices and cutting-edge renewable energy solutions. This eco-village uses solar energy, wind energy, and rainwater harvesting while adhering to Vastu principles, making it an internationally recognized model for sustainable living.

Water Management: Traditional Indian water management systems, such as **stepwells**, **baolis**, and **tankas**, have proved effective in water conservation for centuries. These practices can be enhanced through modern technologies like Geographic Information Systems (GIS) and IoT-based water management systems to address the current water crisis.

Example: The city of **Jodhpur** has rejuvenated traditional water structures like stepwells, blending them with modern water management techniques to address droughts. In another instance, the **Water Resource Department** in Rajasthan is using GIS and satellite data to identify ancient water channels and integrate them with modern infrastructure, significantly enhancing water conservation efforts in desert regions.

Challenges in Integrating Indian Knowledge System (IKS): Standardization, Commercialization, and Research

Standardization: The Indian Knowledge System (IKS) is inherently diverse, shaped by thousands of years of regional variations in geography, culture, and climate. Many of its practices are region-specific, leading to a wide variation in their application and efficacy across India. While this diversity adds to its richness, it also poses significant challenges in creating a unified framework to apply these practices consistently.

Regional Variations: The regional specificity of IKS practices—such as agricultural methods, medicinal practices, and architectural designs—can make it difficult to scale them nationally or globally. For example, agricultural practices in Tamil Nadu, like **Siddha medicine-based farming**, are different from those in Punjab, where **organic wheat farming** is prominent. Similarly, the traditional use of **herbal treatments in Ayurveda** may vary in both content and application between Kerala and Rajasthan.

Example: Ayurveda, as practiced in Kerala, involves unique therapeutic approaches like *Panchakarma*, which may differ in intensity and methodology from Ayurvedic practices in northern India. When these treatments are introduced globally, there needs to be a standard way of administering therapies, so that efficacy and safety can be ensured consistently across regions.

Need for Standardized Methodologies: Standardization is crucial to measure the impact of IKS practices on a national and international scale. For example, in **organic farming**, methods such as **natural pest control** using region-specific plants need to be standardized for wider applicability. Similarly, variations in Yoga techniques, dietary recommendations in Ayurveda, or water conservation

methods need uniform guidelines that can be evaluated scientifically.

Challenges in Standardization:

Lack of Uniform Metrics: Different regions and practitioners use distinct metrics to gauge success, making comparisons difficult.

Cultural and Contextual Sensitivity: IKS practices are deeply rooted in cultural and local contexts. While standardizing them for modern use, there's a risk of diluting these traditions or losing their context-specific effectiveness.

Current Efforts: The **Ministry of AYUSH** has initiated steps to standardize Ayurvedic practices by introducing guidelines on treatment procedures, but more needs to be done across other sectors like agriculture, architecture, and water management.

Commercialization: With the rising global demand for IKS-based solutions in healthcare, agriculture, and lifestyle, the commercialization of these traditional practices has seen significant growth. While commercialization can help scale and promote IKS globally, it comes with risks—mainly the potential for exploitation, dilution of authenticity, and unsustainable practices driven by profit motives.

Ethical Commercialization: There is a fine balance between promoting IKS for global use and ensuring that it is done in an ethical, sustainable, and culturally respectful manner. Commercialization often leads to the risk of commodifying sacred or community-held knowledge, stripping it of its context and original purpose.

Example: Ayurveda has become a booming industry, with Ayurvedic beauty products, supplements, and treatments becoming widely available. Brands like **Dabur**, **Patanjali**, and **Himalaya** have successfully marketed Ayurvedic products globally. However, there is a growing concern that many of these products are being mass-produced, sometimes with synthetic additives, which can lead to a dilution of the core principles of Ayurveda.

Loss of Authenticity: The commercialization of **Yoga** is another pertinent example. Traditional forms of Yoga focus on spiritual, mental, and physical well-being. However, the widespread popularity of “**Yoga for fitness**” or “**Yoga for weight loss**” in Western markets often strips the practice of its spiritual depth. While this has expanded Yoga's global appeal, it has also raised concerns about the loss of authenticity.

Example: In the West, **Hot Yoga** or **Power Yoga** classes often focus solely on the physical aspects, neglecting the meditative and spiritual elements that are central to traditional Yoga. This shift has prompted initiatives by the Indian government to promote authentic Yoga practices through certifications and guidelines.

Fair Trade and Cultural Appropriation: Another challenge lies in ensuring that the communities who are the original custodians of this knowledge benefit from its commercialization. In some cases, traditional knowledge is patented or repackaged by large corporations without any

benefits trickling down to the communities that developed and preserved these practices for centuries.

Example: The **Neem and Turmeric patent controversies** are classic cases of how international corporations attempted to patent traditional Indian knowledge, leading to protests and legal action. Ethical commercialization would involve mechanisms like **geographical indications (GI)**, which have been applied to **Darjeeling tea**, ensuring that communities of origin are credited and financially rewarded.

Research and Validation: For IKS to be successfully integrated into global practices, it must be backed by rigorous scientific research and validation. This ensures that IKS practices meet the standards of modern scientific scrutiny, making them more acceptable and effective in contemporary contexts.

Need for Empirical Research: Many IKS practices, though effective, lack systematic empirical research that meets modern scientific standards. For instance, while Ayurvedic remedies have been used for millennia, many of these treatments need comprehensive clinical trials and research to validate their effectiveness and ensure safety.

Example: Research into **Ashwagandha**, an herb widely used in Ayurveda, has gained scientific attention recently. Clinical trials have been conducted to validate its benefits, such as reducing stress and improving cognitive function. However, many other Ayurvedic herbs and therapies still need such rigorous validation to be accepted globally as scientifically sound.

Collaboration Between Traditional Knowledge and Modern Science: Integrating traditional knowledge with modern scientific techniques can enhance the credibility and applicability of IKS. For example, **phytochemistry** can help identify the active compounds in Ayurvedic herbs, while **biotechnology** can enhance the sustainability of traditional agricultural practices.

Example: In **Sikkim**, traditional agricultural knowledge about crop rotation and organic farming is being integrated with modern **agroecological** research to maximize crop yields while maintaining environmental sustainability. Similarly, institutes like the **Council of Scientific and Industrial Research (CSIR)** and the **Indian Council of Medical Research (ICMR)** have initiated projects to study the efficacy of Ayurvedic treatments using scientific methods.

Validation and Regulation: Systematic research and validation will also ensure that IKS-based products are safe for global consumers. There are concerns about the safety and efficacy of certain Ayurvedic products, especially when mass-produced without standardized manufacturing processes.

Example: The **Ministry of AYUSH** has set up pharmacopoeia standards for Ayurvedic, Siddha, and Unani medicines, ensuring that products meet specific quality benchmarks. However, more work is needed to ensure these standards are enforced globally, especially in countries where there is a growing market for Ayurvedic products.

Funding and Institutional Support: Expanding research into IKS requires substantial funding and institutional

backing. India has several research institutes dedicated to IKS, such as the **Central Council for Research in Ayurvedic Sciences (CCRAS)**, but there is a need for greater collaboration between these institutes and mainstream scientific research bodies both in India and abroad.

Conclusion

The revitalization of the Indian Knowledge System holds immense promise for contributing to global sustainability efforts. By integrating ancient wisdom with modern practices, we can address critical issues such as environmental degradation, health crises, and social inequities. The case studies of Ralegan Siddhi, Timbaktu Collective, and Jaipur Foot illustrate the transformative potential of this integration across various sectors. Going forward, the challenge lies in adapting these age-old principles to contemporary realities, fostering innovation, and ensuring that traditional knowledge is preserved, respected, and effectively utilized.

The future of sustainable development lies not only in technological advancements but also in embracing holistic, ethical approaches rooted in wisdom that has stood the test of time.

References

1. Agarwal, A. (2021). *Sustainable Agriculture through Indian Knowledge Systems*. Journal of Environmental Sustainability.
2. Bhagwan Mahaveer Viklang Sahayata Samiti (BMVSS). (2022). *The Jaipur Foot: A Story of Humanitarian Innovation*.
3. Dudgeon, P., Bray, A., Darlaston-Jones, D., & Walker, R. (2020). Aboriginal participatory action research: an indigenous research methodology strengthening decolonization and social and emotional wellbeing.
4. Hazare, A. (2006). *Ralegan Siddhi: A Case Study in Sustainable Rural Development*.
5. Ministry of Education (2020). *National Education Policy 2020*. Government of India.
6. Latulippe, N., & Klenk, N. (2020). Making room and moving over: knowledge co-production, Indigenous knowledge sovereignty and the politics of global environmental change decision-making. *Current opinion in environmental sustainability*, 42, 7-14.
7. The Timbaktu Collective. (2019). *Reviving Traditional Agriculture for Ecological Balance*.
8. Thompson, K. L., Lantz, T. C., & Ban, N. C. (2020). A review of Indigenous knowledge and participation in environmental monitoring. *Ecology & Society*, 25(2).
9. Zidny, R., Sjöström, J., & Eilks, I. (2020). A multi-perspective reflection on how indigenous knowledge and related ideas can improve science education for sustainability. *Science & Education*, 29(1), 145-185.



Revolutionizing Accounting: Financial Reporting Transformation with Automation and AI

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Abstract

The fundamental component of corporate transparency and accountability, financial reporting is experiencing a paradigm shift driven by technology. Automation is changing the way financial data is maintained, analysed, and reported since it can improve accuracy, speed operations, and offer real-time insights. Moreover, automation makes it easier to create a thorough audit trail that records each step of the financial reporting process. In addition to supporting internal audits, this transparency raises the trust of external stakeholders in the integrity and accuracy of financial reports. In the competitive and dynamic landscape of financial reporting, the paper seeks to examine and contrast two different case studies in the dynamic field of financial reporting in order to determine how automation has revolutionised accounting procedures. The paper attempts to exhibit how financial reporting is changing and how businesses must use automation processes in accounting and financial reporting to stay accurate, efficient, and flexible. comparison approach to examine the distinctive circumstances of two organisations that are confronting distinct challenges in their financial reporting operations. The methodology looks closely at these businesses' automation arrangements in order to examine the objectives they established, the difficulties they faced, and the specific solutions implemented. Hence, the paper includes an in-depth review of the results obtained and their subsequent impact on their financial reporting and accounting context.

Keywords: Accounting, Automation, Financial reporting

Introduction

“Accounting through financial reporting” is the process of creating and presenting financial statements, which serve as a means of recording, summarising, and sharing financial data about an organisation. An essential component of accounting is financial reporting, which gives important information to stakeholders—including creditors, investors, managers, and regulatory bodies—so they can make well-informed decisions.

Objectives of the Study

To understand the basic know-how of accounting through financial reporting.

To examine the role and significance of technology or automation in financial reporting.

To determine the benefits, challenges and future trends in automation in accounting and financial reporting.

To examine a comparative study of two tech solutions company w.r.t their significant challenges faced, goals and automated solutions implemented, using automations.

Overview of Accounting and Financial Reporting

1.2.1. Overview of Accounting:

Accounting is the systematic process of recording, summarizing, analyzing, and reporting financial transactions of a business or organization. The primary purpose of accounting is to provide accurate and timely information about the financial performance and position of a company, enabling stakeholders to make informed decisions.

1.2.2. Key Components of Accounting:

- **Bookkeeping:** The recording of financial transactions, including sales, purchases, income, and expenses, in accounting ledgers.
- **Financial Statements:** These are reports that summarize the financial activities and position of a business. Key financial statements include the income statement, balance sheet, and cash flow statement.
- **Double-Entry System:** A fundamental accounting principle where every transaction has equal and opposite effects on at least two accounts.
- **Financial Analysis:** The examination of financial statements and other financial reports to assess the financial health and performance of a business.

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- **Budgeting:** The process of creating a detailed plan for the future financial activities of an entity

1.2.3. Overview of Financial Reporting:

Financial reporting is the process of communicating financial information about a business or organization to external stakeholders, including investors, creditors, regulators, and the public. It involves the preparation and presentation of financial statements and other relevant information to provide a comprehensive view of the entity's financial performance and position.

1.2.4. Key Components of Financial Reporting:

- **Financial Statements:** These include the income statement, balance sheet, cash flow statement, and statement of changes in equity. They provide a snapshot of the financial health and performance of a company.
- **Management Discussion and Analysis (MD&A):** A section in financial reports where management provides insights into the company's financial condition, results of operations, and future plans.
- **Footnotes and Disclosures:** Additional information that accompanies financial statements, providing details about accounting policies, risk factors, and other relevant information.
- **Auditor's Report:** An independent auditor's assessment of the fairness and reliability of the financial statements.
- **Annual Reports:** Comprehensive reports that often include financial statements, management commentary, and other information about the company's operations, strategy, and performance
- **Regulatory Framework:** Financial reporting is subject to regulatory frameworks and accounting standards that vary by jurisdiction. Internationally, the International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (GAAP) in the United States are widely used.

1.2.5. Technology and Automation in Accounting and Financial Reporting:

Advancements in technology have led to the automation of many accounting and financial reporting processes. Software applications and enterprise resource planning (ERP) systems help streamline data entry, reconciliation, and reporting, reducing the likelihood of errors and improving efficiency.

Accounting is the broader discipline that encompasses the systematic recording and analysis of financial transactions, while financial reporting specifically focuses on the communication of financial information to external stakeholders through various reports and statements. Both play crucial roles in ensuring transparency, accountability, and informed decision-making within organizations.

1.3. Evolution of Automation in Finance

The evolution of automation in finance has been a transformative journey, marked by technological advancements, changing business needs, and a continuous

quest for efficiency, accuracy, and speed. The key stages in the evolution of automation in finance involves:

1. Manual Accounting (Pre-Computer Era):

- Historically, financial processes were entirely manual, involving paper-based ledgers, manual calculations, and handwritten financial reports.
- This era was characterized by a high risk of errors, time-consuming processes, and limited scalability.

2. Introduction of Computers (1960s-1980s):

- The advent of computers brought significant improvements to finance processes.
- Early financial software focused on automating basic calculations and data storage.
- The transition to digital systems marked a reduction in manual errors and increased data processing speed.

3. Spreadsheet Revolution (1980s-1990s):

- The introduction of spreadsheet software, such as Microsoft Excel, revolutionized financial modeling and analysis.
- Finance professionals could now perform complex calculations, create dynamic financial models, and automate repetitive tasks.

4. Enterprise Resource Planning (ERP) Systems (1990s-2000s):

- ERP systems like SAP and Oracle emerged, integrating various business processes, including finance, human resources, and supply chain management.
- These systems aimed to streamline operations, provide a single source of truth for data, and enhance cross-functional collaboration.

5. Automation of Transactional Processes (2000s-2010s):

- Finance departments began automating routine, transactional processes such as invoicing, accounts payable, and payroll.
- Robotic Process Automation (RPA) tools were introduced to mimic repetitive tasks, reducing manual intervention.

6. Cloud Computing and SaaS (2010s-Now):

- Cloud-based financial solutions became popular, offering flexibility, scalability, and accessibility.
- Software as a Service (SaaS) models allowed organizations to access and manage financial

applications over the internet, reducing the need for on-premises infrastructure.

7. *Advanced Analytics and Artificial Intelligence (AI) (2010s-Now):*

- Advanced analytics tools and AI technologies have been integrated into finance systems.
- Predictive analytics, machine learning, and AI-driven insights enhance decision-making processes.
- Chatbots and virtual assistants are being used for customer service and basic financial inquiries.

8. *Blockchain and Smart Contracts (2010s-Now):*

- Blockchain technology is being explored for its potential to enhance transparency and security in financial transactions.
- Smart contracts automate and self-execute predefined contractual conditions, reducing the need for intermediaries.

9. *Integrated Financial Management Systems (Present):*

- Integrated financial management systems offer end-to-end solutions, combining accounting, financial reporting, and analytics in a unified platform.
- These systems provide real-time visibility into financial data, enhance collaboration, and support compliance with evolving regulations.

10. *Continuous Evolution (Future):*

- The evolution of automation in finance is an ongoing process. Future developments may include increased adoption of AI for advanced analytics, enhanced cybersecurity measures, and further integration of emerging technologies like quantum computing.

Common Benefits, Challenges and Risks of Automation

1.4.1. *Benefits of Automation:*

1. **Efficiency Improvement:**

Automation significantly enhances the speed and efficiency of tasks, reducing the time required for manual work.

2. **Cost Reduction:**

Automated processes often lead to cost savings by reducing labor costs, minimizing errors, and optimizing resource utilization.

3. **Accuracy and Consistency:**

Automation reduces the likelihood of human errors, ensuring a high level of accuracy and consistency in tasks and processes.

4. **Increased Productivity:**

With repetitive tasks automated, employees can focus on more complex and value-added activities, increasing overall productivity.

5. **24/7 Operations:**

Automated systems can operate continuously, providing round-the-clock services and processes without the need for breaks or shifts.

6. **Improved Safety:**

In industries with hazardous conditions, automation can help improve safety by minimizing human exposure to dangerous environments.

7. **Scalability:**

Automated systems can easily scale to handle increased workloads without a proportional increase in resources.

8. **Data Analysis and Insights:**

Automation facilitates the processing and analysis of large datasets, extracting valuable insights and supporting data-driven decision-making.

9. **Conservation of Resources:**

Automated systems often consume fewer resources, such as paper, energy, and materials, contributing to environmental sustainability.

10. **Enhanced Customer Experience:**

Automation in customer service and support can lead to faster response times, improved service quality, and better customer satisfaction.

1.4.2. *Challenges of Automation:*

1. **Initial Implementation Costs:**

Implementing automation systems can involve significant upfront costs for software, hardware, training, and integration.

2. **Resistance to Change:**

Employees may resist automation due to fear of job displacement or uncertainty about adapting to new technologies.

3. **Complexity of Integration:**

Integrating automation into existing systems can be complex and may require extensive modifications to ensure seamless operation.

4. **Technical Issues and Downtime:**

Automated systems are susceptible to technical issues, glitches, and downtime, disrupting operations and requiring maintenance.

5. Security Concerns:

Automation introduces new cybersecurity challenges, such as the risk of data breaches and unauthorized access to automated systems.

6. Dependency on Technology:

Over-reliance on automation may pose a risk if systems fail, leading to a lack of redundancy and manual fallback options.

7. Lack of Flexibility:

Some automated systems may lack flexibility to adapt to rapidly changing circumstances or unforeseen situations.

8. Job Displacement and Skills Gap:

Automation can lead to the displacement of certain jobs, creating a need for upskilling and reskilling of the workforce.

1.4.3. Risks of Automation:

1. Unemployment Concerns:

The widespread adoption of automation raises concerns about job displacement, particularly for tasks that can be easily automated.

2. Ethical Considerations:

Ethical issues may arise, such as the impact of automation on societal well-being, privacy concerns, and the ethical use of AI.

1. Loss of Human Touch:

Automation may result in a loss of the human touch in certain industries, impacting customer relationships and experiences.

4. Overreliance on Technology:

Overreliance on automation may lead to a lack of human oversight, reducing the ability to intervene and make critical decisions.

5. Bias in Algorithms:

Automated systems driven by artificial intelligence may inherit biases present in training data, leading to unfair outcomes or discriminatory practices.

6. Regulatory and Compliance Challenges:

The rapid evolution of automation technologies may outpace regulatory frameworks, posing challenges for compliance and oversight.

7. Economic Inequality:

Automation can contribute to economic inequality if the benefits are not distributed equitably, exacerbating social and economic disparities.

8. Environmental Impact:

The manufacturing and disposal of automation technologies may have environmental consequences, contributing to electronic waste and resource depletion.

Future trends in Automation in Accounting and Financial Reporting

While the specific future trends in automation in accounting and financial reporting will depend on technological advancements, industry dynamics, and regulatory changes, one can derive potential insights from the two case studies of XYZ Corporation and ABC Tech Solutions. Following are some trends that might shape the future of automation in accounting and financial reporting:

1. Advanced Data Analytics and AI Integration:

Building on the use of machine learning and data analytics, the future may see increased integration of advanced AI technologies. This could include predictive analytics for financial forecasting, anomaly detection, and natural language processing for automated data interpretation.

2. Blockchain for Enhanced Security and Transparency:

Blockchain technology, as seen in the case of ABC Tech Solutions, might gain prominence for its ability to provide enhanced security and transparency in financial transactions. Smart contracts and distributed ledger technology could automate and streamline various financial processes, reducing the need for intermediaries.

3. Continuous Integration of ERP Systems:

The trend of continuous integration of Enterprise Resource Planning (ERP) systems may persist, with a focus on seamless connectivity between various business processes. This integration facilitates real-time data flow and ensures consistency in financial reporting.

4. Human-Machine Collaboration:

The future may witness increased collaboration between human professionals and automated systems. Automation tools can handle routine and repetitive tasks, allowing finance professionals to focus on strategic decision-making, analysis, and interpretation of complex financial data.

5. Regulatory Technology (RegTech):

Automation in regulatory compliance, known as RegTech, is likely to advance. Automated tools can assist in tracking and ensuring compliance with evolving financial regulations, reducing the risk of non-compliance and associated penalties.

6. Cloud-Based Financial Management:

The use of cloud-based financial management solutions, as demonstrated in both case studies, is expected to grow. Cloud computing provides flexibility, scalability, and accessibility, allowing organizations to access financial data and reports from anywhere, anytime.

7. Enhanced User Experience with AI-driven Interfaces:

The integration of artificial intelligence in user interfaces may lead to more intuitive and user-friendly financial management systems. AI-driven virtual assistants or chatbots could assist users in navigating financial data and generating reports.

8. Cybersecurity Measures for Automated Systems:

As automation becomes more prevalent, there will be an increased focus on cybersecurity measures to protect automated financial systems from potential threats. This includes implementing robust encryption, access controls, and monitoring mechanisms.

9. Integration of Sustainability Reporting:

With a growing emphasis on corporate social responsibility, future automation trends may include the integration of sustainability reporting into financial systems. Automated tools could assist in tracking and reporting on environmental, social, and governance (ESG) metrics.

10. Customization and Personalization:

Automation solutions may become more customizable and personalized to meet the specific needs of organizations. This could involve tailoring automated workflows, reports, and analytics to align with unique business requirements.

Specific Challenges:

XYZ Corporation faced several challenges with their manual financial reporting processes:

- **Data Inconsistencies:** Due to manual data entry, there were frequent errors and inconsistencies in the financial data, leading to inaccuracies in financial reports.
- **Time-Consuming:** The manual process was time-consuming, requiring significant effort to gather, consolidate, and validate financial data from different sources.
- **Lack of Real-time Reporting:** The company struggled to provide real-time financial information to stakeholders, impacting decision-making processes.
- **Compliance Risks:** Manual processes increased the risk of non-compliance with regulatory requirements due to potential errors in financial reports.

Goals for Automation:

- XYZ Corporation aimed to address these challenges and achieve the following goals through automation:
- **Accuracy:** Improve the accuracy of financial reporting by reducing errors associated with manual data entry.
- **Efficiency:** Streamline the financial reporting process to save time and resources, allowing the finance team to focus on analysis and decision support.
- **Real-time Reporting:** Implement a system that enables real-time financial reporting, providing timely information to stakeholders.
- **Compliance:** Enhance compliance with regulatory standards by reducing the risk of errors in financial reports.

Automation Solutions Implemented:

To achieve their goals, XYZ Corporation implemented an integrated financial management software system. The system automated the collection, consolidation, and reporting of financial data.

Key features of the automation solution included:

- **Data Integration:** The software integrated with various data sources within the organization, reducing the need for manual data entry.
- **Workflow Automation:** Automated workflows streamlined the financial reporting process, from data collection to report generation.
- **Real-time Updates:** The system provided real-time updates, allowing stakeholders to access the latest financial information whenever needed.
- **Data Validation:** Built-in validation checks minimized errors in financial data, improving the overall accuracy of financial reports.

Case Study-1: XYZ Corporation

Company Background:

XYZ Corporation is a mid-sized manufacturing company with operations in multiple countries. Before implementing automation in their financial reporting processes, the company relied heavily on manual methods for data collection, consolidation, and reporting.

Financial Reporting Processes Before Automation:

Before automation, XYZ Corporation’s financial reporting processes involved a labor-intensive and time-consuming approach. The company collected financial data from various departments and subsidiaries through manual data entry, spreadsheets, and emails. This manual process often led to errors, inconsistencies, and delays in financial reporting.

Results and Impacts:

After implementing the automation solution, XYZ Corporation experienced significant improvements in their financial reporting processes:

- **Increased Accuracy:** The automation reduced errors associated with manual data entry, improving the accuracy of financial reports.
- **Time Savings:** Automation led to a significant reduction in the time required for financial reporting, allowing the finance team to focus on more strategic tasks.
- **Real-time Reporting:** Stakeholders gained access to real-time financial information, enabling quicker and more informed decision-making.
- **Improved Compliance:** The automated system helped XYZ Corporation enhance compliance with regulatory standards by minimizing the risk of errors in financial reports.

In conclusion, the automation of financial reporting processes at XYZ Corporation had a transformative impact, addressing specific challenges, achieving goals, and enhancing the overall efficiency and accuracy of their accounting and financial reporting activities.

Case Study-2: ABC Tech Solutions

Company Background:

ABC Tech Solutions is a rapidly growing technology company specializing in software development and IT services. With a global presence, they operate in a dynamic industry with constant changes in project scopes and revenue streams. Before automation, ABC Tech Solutions managed its financial reporting through a combination of manual data entry, legacy systems, and Excel spreadsheets.

Financial Reporting Processes Before Automation:

ABC Tech Solutions faced challenges with their existing financial reporting processes:

- **Dynamic Revenue Recognition:** The nature of their business meant that revenue recognition was complex, often involving multiple projects with different timelines and payment structures.
- **Data Silos:** Financial data was scattered across different departments and systems, making it challenging to consolidate information accurately.
- **Ad-hoc Reporting:** The finance team had to frequently create ad-hoc reports to accommodate varying stakeholder requests, leading to time-intensive and error-prone processes.
- **Scalability Issues:** As the company expanded globally, the manual processes struggled to scale, resulting in delays in reporting and analysis.

Specific Challenges:

Unique to ABC Tech Solutions, the challenges included handling project-based revenue recognition intricacies, ensuring data integrity across various systems, and adapting to the fast-paced nature of the technology industry.

Goals for Automation:

ABC Tech Solutions aimed to address these challenges and achieve the following goals through automation:

- **Accurate Revenue Recognition:** Implement a system that could handle the complexity of project-based revenue recognition accurately and in compliance with accounting standards.
- **Integrated Data:** Streamline data integration from various departments and systems to ensure a single source of truth for financial reporting.
- **Adaptive Reporting:** Develop a reporting system that could adapt to the dynamic nature of the technology industry, providing insights into project profitability in real-time.
- **Scalability:** Implement a solution that could scale with the company's growth, accommodating the increasing volume and complexity of financial data.

Automation Solutions Implemented:

ABC Tech Solutions decided to implement a cloud-based, integrated financial management system tailored to the technology industry.

Key features of the automation solution included:

- **Project-Based Accounting:** The system was designed to handle project-based revenue recognition, automatically adapting to different project timelines and billing structures.
- **Data Integration Platform:** A centralized data integration platform connected various systems and departments, ensuring consistency and accuracy in financial data.
- **Customizable Dashboards:** The automation solution provided customizable dashboards, allowing stakeholders to access real-time project financials and performance metrics.
- **Machine Learning for Forecasting:** The system utilized machine learning algorithms to improve forecasting accuracy, considering historical project data and industry trends.

Results and Impacts:

After implementing the automation solution, ABC Tech Solutions experienced several positive outcomes:

- **Improved Accuracy in Revenue Recognition:** The system significantly enhanced the accuracy of revenue recognition, ensuring compliance with accounting standards and accommodating the complexities of project-based revenue.

- **Efficient Data Management:** The centralized data integration platform reduced data silos, providing a unified and accurate view of financial information across the organization.
- **Real-time Project Insights:** Customizable dashboards enabled stakeholders to access real-time project financials, improving decision-making and project management.
- **Scalability:** The automation solution proved scalable, accommodating the company’s growth and the increasing complexity of financial data.

Hence, the unique context of ABC Tech Solutions, with its dynamic project-based revenue and fast-paced industry, drove the need for specialized automation. The implementation had a profound impact on their financial reporting processes, improving accuracy, efficiency, and adaptability to the demands of their industry.

Comparison: Based on their Financial Reporting Automation Initiatives

| S.no. | Basis of difference | XYZ Corporation | ABC Tech Solutions |
|-------|----------------------------------|---|--|
| 1. | Processes before Automation | Manual data entry, spreadsheet-based consolidation, and email communication for financial reporting. | Combination of manual data entry, legacy systems, and Excel spreadsheets with a focus on project-based revenue recognition. |
| 2. | Challenges | Faced challenges related to data inaccuracies, time-consuming processes, and compliance risks. | Dealt with complex revenue recognition in a dynamic industry, data silos, ad-hoc reporting, and scalability issues. |
| 3. | Goals for Automation | Improve accuracy, efficiency, achieve real-time reporting, and enhance compliance. | Address project-based revenue recognition complexity, integrate data sources, adapt to industry dynamics, and scale with growth. |
| 4. | Automation Solutions Implemented | Integrated financial management software automating data collection, consolidation, and reporting, with a focus on data integration, workflow automation, real-time updates, and data validation. | Cloud-based financial management system specialized for technology industry needs, addressing project-based accounting, data integration, customizable dashboards, and machine learning for forecasting. |
| 5. | Results and Impacts | Achieved increased accuracy, time savings, real-time reporting, and improved compliance. | Experienced improved accuracy in revenue recognition, efficient data management, real-time project insights, and scalability. |

As a result, both businesses were able to effectively use automation to solve their unique problems, which increased accuracy and productivity.

XYZ Corporation focused on conventional financial reporting methods, striving for accuracy, efficiency, and compliance, whereas ABC Tech Solutions adapted their solution to the special issues of project-based income in the dynamic technology business.

For general financial reporting requirements, XYZ Corporation’s focus on real-time reporting and data validation is essential.

The complexity of their sector is in line with ABC Tech Solutions’ expertise in project-based revenue recognition and the use of machine learning to forecasting.

Conclusion

Each solution’s efficacy is contingent upon the company’s unique difficulties and circumstances. The broad financial reporting needs of organisations can benefit greatly from XYZ Corporation’s solution, but firms in dynamic industries

that deal with complex project-based income must choose the specialised approach offered by ABC Tech Solutions. Which approach is “better” depends on the company’s requirements and priorities.

References

1. Ahmad, A., Abusaimh, H., Rababah, A., Alqsass, M., Al-Olima, N., & Hamdan, M. (2024). Assessment of effects in advances of accounting technologies on quality financial reports in Jordanian public sector. *Uncertain Supply Chain Management*, 12(1), 133-142.
2. Ashok, M. L., & MS, D. (2019). Emerging trends in accounting: an analysis of impact of robotics in accounting, reporting and auditing of business and financial information. *International Journal of Business Analytics and Intelligence*, 7(2).
3. Claudia, M., Gani, L., & Yuniasih, R. (2021). Comparative Study of the Financial Reporting Act: A Case Study of Indonesia. *Journal of Accounting and Investment Vol*, 22(2).

4. Cooper, L. A., Holderness Jr, D. K., Sorensen, T. L., & Wood, D. A. (2019). Robotic process automation in public accounting. *Accounting Horizons*, 33(4), 15-35.
5. Estep, C., Griffith, E. E., & MacKenzie, N. L. (2023). How do financial executives respond to the use of artificial intelligence in financial reporting and auditing?. *Review of Accounting Studies*, 1-34.
6. Faccia, A., Al Naqbi, M. Y. K., & Lootah, S. A. (2019, August). Integrated cloud financial accounting cycle: how artificial intelligence, blockchain, and XBRL will change the accounting, fiscal and auditing practices. In *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing* (pp. 31-37).
7. Gupta, A., & Panday, K. K. Automation in Accounting and Financial Reporting Process: A Study on Digital Lending.
8. Hartmann, B., Marton, J., & Söderström, R. (2018). The improbability of fraud in accounting for derivatives: A case study on the boundaries of financial reporting compliance. *European Accounting Review*, 27(5), 845-873.
9. Hasan, A. R. (2021). Artificial Intelligence (AI) in accounting & auditing: A Literature review. *Open Journal of Business and Management*, 10(1), 440-465.
10. Jayesh, G. S., Novaliendry, D., Gupta, S. K., Sharma, A. K., & Hazela, B. (2022). A Comprehensive Analysis of Technologies for Accounting and Finance in Manufacturing Firms. *ECS Transactions*, 107(1), 2715.
11. Khaled AlKoheji, A., & Al-Sartawi, A. (2022, May). Artificial Intelligence and Its Impact on Accounting Systems. In *European, Asian, Middle Eastern, North African Conference on Management & Information Systems* (pp. 647-655). Cham: Springer International Publishing.
12. Kommunuri, J. (2022). Artificial intelligence and the changing landscape of accounting: a viewpoint. *Pacific Accounting Review*, 34(4), 585-594.
13. Kureljusic, M., & Karger, E. (2023). Forecasting in financial accounting with artificial intelligence—A systematic literature review and future research agenda. *Journal of Applied Accounting Research*.
14. Lin, P., & Hazelbaker, T. (2019). Meeting the challenge of artificial intelligence: what CPAs need to know. *The CPA Journal*, 89(6), 48-52.
15. Losbichler, H., & Lehner, O. M. (2021). Limits of artificial intelligence in controlling and the ways forward: a call for future accounting research. *Journal of Applied Accounting Research*, 22(2), 365-382.
16. Malviya, B. K., & Lal, P. (2021). The changing face of accounting: Prospects and issues in the application of artificial intelligence. *International Journal of Accounting, Business and Finance*, 1(1), 1-7.
17. Ng, C., & Alarcon, J. (2020). *Artificial intelligence in accounting: Practical applications*. Routledge.
18. Oneshko, S., Nazarenko, A., Koval, O., Yaremko, I., & Pysarchuk, O. (2023). Accounting and financial reporting in the it sphere of Ukraine: opportunities of artificial intelligence. *Financial and Credit Activity: Problems of Theory and Practice. 2023. Vol. 5, № 52. P. 79-96. DOI: 10.55643/fcaptop. 5.52. 2023.4151*.
19. Oneshko, S., Nazarenko, A., Koval, O., Yaremko, I., & Pysarchuk, O. (2023). Accounting and financial reporting in the it sphere of Ukraine: opportunities of artificial intelligence. *Financial and Credit Activity: Problems of Theory and Practice. 2023. Vol. 5, № 52. P. 79-96. DOI: 10.55643/fcaptop. 5.52. 2023.4151*.
20. Petkov, R. (2020). Artificial intelligence (AI) and the accounting function—A revisit and a new perspective for developing framework. *Journal of emerging technologies in accounting*, 17(1), 99-105.
21. Rane, N. (2023). Role and Challenges of ChatGPT and Similar Generative Artificial Intelligence in Finance and Accounting. Available at SSRN 4603206.
22. Smith, S. S. (2018). Digitization and financial reporting—how technology innovation may drive the shift toward continuous accounting. *Accounting and Finance Research*, 7(3), 240-250.
23. Spilnyk, I., Brukhanskyi, R., & Yaroshchuk, O. (2020, September). Accounting and Financial Reporting System in the Digital Economy. In 2020 10th International Conference on Advanced Computer Information Technologies (ACIT) (pp. 581-584). IEEE.
24. Sreseli, N. Use of Artificial Intelligence for Accounting and Financial Reporting Purposes: A Review of the Key Issues.
25. Türegün, N. (2019). Impact of technology in financial reporting: The case of Amazon Go. *Journal of Corporate Accounting & Finance*, 30(3), 90-95.
26. Yi, Z., Cao, X., Chen, Z., & Li, S. (2023). Artificial Intelligence in Accounting and Finance: Challenges and Opportunities. *IEEE Access*, 11, 129100-129123.
27. Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. (2020). The impact of artificial intelligence and blockchain on the accounting profession. *Ieee Access*, 8, 110461-110477.



Antecedent Effect of Government Support, Brand Image and User Innovativeness on Attitude Towards Adoption of Fintech Services

Dr Priyanka Anand¹, Dr.Manjari Agarwal²

Abstract

Purpose –The main objective of this paper is to find out association of Government Support (GI), Brand Image (BI) and User Innovativeness (UI) on Attitude Towards Adoption of Fintech Services by customers of cooperative banks of Delhi, India.

Design/methodology/approach –Present study is a descriptive study for which primary data was collected by circulating well-designed questionnaire through online mode. In the questionnaire questions were based on five-point likert scale for both dependent or independent variables. Purposive sampling technique was opted from a sample of 682 respondents. The validity and reliability of constructs were verified with the help of CFA analysis technique using AMOS- analysis of moments structures. Goodness of fit of the model and regression among variables were verified by using SEM- structural equation modeling approach.

Findings –The results showed that the Government support, Brand Image and User Innovativeness had a considerable connection with the Attitude towards adoption of fintech services provided by banks.

Practical implications –This empirical research seeks to establish a fundamental success factor as well as an additional driver for FinTech establishments. The findings would help mobile service businesses and banks to understand the economy of scope in providing services at a low cost while offering optimal social benefits. The research will help financial institutions to gain insight into how to provide finance services via using updated technology in order to manage cross-border operations for low-income consumers in remote areas.

Originality/value – The results of the study clearly indicated a robust connection amongst Government support (GS), Brand Image (BI) and User Innovativeness (UI) with Attitude towards adoption of fintech services. Based on the findings of the study it is utmost essential on the part of policy makers to come up with economic reforms and technological reforms for ensuring robust financial growth.

Keywords: Government Support, Brand Image, User Innovativeness, Attitude Towards Adoption of Fintech Services

Introduction

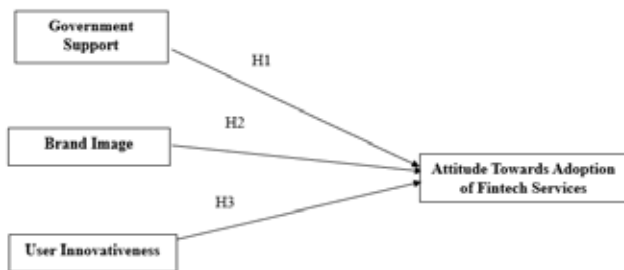
Fintech services means use of digital technology in the field of finance. The area of digital technology is very wide that includes block chain technologies, cloud computing, big data sources, and intelligent investment consulting etc. (Gholami, 2021; Paulus, Jordanow&Millemann, 2022). According to recent survey on the data, global Fintech investments and number of global Fintech companies have been increased more than 12 times than before. Many Fintech companies provide services like banks provide to their customers. They are more concerned for giving customers with a best user experience like mobile banking, portable banking apps, online payment system, robo-advisors, block chain technologies, peer-to-peer advancing podiums to cryptocurrencies, cloud computing etc. These technologies are helpful in reshaping traditional banking, increasing efficiency and accessibility in the financial sector. The main aim of using Fintech services in banking sector is to improve banking efficiency and the experience users in these services (Zavolokina et. al., 2016; Patil, Dwivedi & Rana, 2017). Now it has become important for researchers world-wide to study the factors that influence Fintech adoption by bank users with the purpose to provide them better fintech services and maintain healthy contact of banks with its users (Priem et. al. 2012; Priem, R. L., & Swink, M., 2012). Keeping in view the importance of fintech services, present study is being performed with the active customers/ users of fintech services provided by cooperative banks of Delhi. The users who are residing in Delhi were considered for this study. The three important factors that influence attitude towards adoption of fintech services were taken in account. These factors are Government Support (GS), Brand Image (BI) and User Innovativeness (UI). The authors tried to establish an association between Government Support, Brand Image and User Innovativeness with Attitude

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Towards Adoption of Fintech Services. On the basis of research objectives following hypothesized model was proposed and tested.

Figure 1: Hypothesized Model



Objective of the Study

The objective of present research article is concerned with to observe the extent of association between Government support (GS), Brand Image (BI), User Innovativeness (UI) and Attitude towards adoption of Fintech Services provided by banks.

Literature Review

Government Support & Fintech adoption

Government support is being considered as one of the key factors of Fintech adoption (Yee-Loong Chong et. al.,2010; Papavasiliou, 2019).The reason behind faith on government support is that it has good credibility. it has power to make Fintech services more adequate to potential consumers. Numerous research supported the need for government assistance and came to the conclusion that the adoption process has a strong positive correlation. Government support facilitates proper application of technology in financial innovation which in turn enhances the integrity and loyalty of products or services. Many previous researchers have found positive influence of government support on technological adoption which provides valid ground for the government to develop relevant policies use of technology in financial innovation (Kiwanuka, A., 2015; Marakarkandy et. al.,2017). Government assistance is evident in the current study and is linked to structural advancement, enactment of legislation, and regulatory frameworks that can promote the Fintech services sector.The aforementioned hypothesis has been established in order to study the connection between the level of government support and attitudes toward adoption.

H1: There is a considerable relationship between government support and attitudes towards adoption of fintech services.

Brand Image& Fintech adoption

Basically, this paper says that brand image is an intangible thing that has an economic value. It shows how different it is from other abstract and unique ideas, so it gives us a full

picture of how it affects people. Service providers' brand has a big impact on how reliable their services are, and it helps people reach their goals (Saleem & Rashid, 2011; Park, Kim& Ohm, 2015). Sang et al. (2010) concluded that One of the main reasons people choose to use GAIS (Government administrative information system) is because it gives them a better reputation with their peers.Lots of research on Fintech has shown that brands have a big impact on how users feel about quality, value, and overall satisfaction (Shapiro et. al., 2019; Riyadh et. al., 2010). When we receive technical services, Users must provide a lot of personal information further good sign image can increase the user's confidence because it effectively reduces risk (Semuel&Lianto, 2014). According to psychology based on results of research demonstrate that a well-crafted product image can lead to increased user confidence. (Lee & Chung, 2009). That's why there is a product image guarantee of products and services, which allows users to clearly define their service orientation help companies and users build strong relationships, improve user awareness and achievement, ultimately influencing customer acceptance and faith (Siamagka et. al., 2015). Based on the research, we've come up with the following ideas:

H2: Brand Image has a strong correlation with fintech adoption.

User Innovativeness & Fintech Adoption

This study defines user innovativeness as the degree of early adoption of a particular innovation; i.e., the willingness of users to experiment with novel products, processes, or services. People who are highly innovative can tolerate the high level of uncertainty and to use the innovation with more enthusiasm. In other words, they have a lower propensity to notice less averse to risks and more open to technological advancement (Leicht, Chtourou& Youssef, 2018).Adeiza et al.stated thatHumans have an inherent ability to innovate, which indicates how interested users are in a given field (Adeiza, Azizi & Marissa, 2017). Basis the previous research, the following hypothesis is proposed:

H3: There is a considerable relationship between User Innovativeness and attitudes towards adoption of fintech services.

Research Methodology

Research Instrument

An internet-disseminated, well-designed questionnaire (Table 2) was employed to gather the primary information needed for the research. For all types of variables including dependent and independent nature, five-point likert scales were used.The sampling techniques used for the study was purposive technique applicable on the sample of 682 participants. The participants for this study were active customers of cooperative banks residing in city Delhi. Region of Delhi is chosen as per the convenience of the researcher. Further this is the place where dynamic people

belong to different states live. To analyse the reliability of the collected data, a pilot-study was conducted on 80 customers. Cronbach's alpha (CA) was found to be greater than 0.7, indicating the data were trustworthy. Around 810 well-structured online questionnaires were circulated to customers. These questionnaires were circulated with the help of employees of the banks. Only 714 correct and beneficial responses were received from these surveys that were sent. All the records with missing information were deleted and 682 responses in total were entered into SPSS for 20 more examinations. Nearly 682 respondents made up the sample size, and 13 questions with at least 10 answers were incorporated in the poll as recommended by Kline (2011). Many customers from various financial brackets,

professions, age groups, and genders were included in the sample. In the sample, men made up 57.91 percent of respondents, while women made up 42.08 percent. The majority of respondents (38.85%) were between the ages of 30 and 40, while the minority (less than 8.06%) were over the age of 55. Majority of the participants were from university degree in terms of education. Detailed Table 1 displays the demographic breakdowns of the various participants.

Sample Size: The sampling techniques used for the study was purposive technique applicable on the sample of 682 participants. The participants for this study were active customers of cooperative banks residing in city Delhi. Region of Delhi is chosen as per the convenience of the researcher.

Table 1. Demographic Profiles

| Demographic characteristics (DC) | Sample Size (N) | Proportion% |
|---------------------------------------|-----------------|-------------|
| Education | | |
| 12th | 120 | 17.59% |
| Graduate (G) | 252 | 41.34% |
| PG, Postgraduate | 198 | 29.0% |
| Other | 112 | 16.41% |
| Gender | | |
| Male (M) | 395 | 57.91% |
| Female (F) | 287 | 42.08% |
| Age | | |
| 20 years -30 years | 186 | 27.27% |
| 30 years -40 years | 265 | 38.85% |
| 40 years -50 years | 176 | 25.80% |
| Above 50 years | 55 | 8.06% |
| Income p.a (Individual/Family) | | |
| 3 -8 lakh | 269 | 39.44% |
| 8-13 lakh | 195 | 28.59% |
| 13-18 lakh | 164 | 24.04% |
| Above 18 lakhs | 54 | 7.91% |
| Marital Status (MS) | | |
| Married | 469 | 68.76% |
| Unmarried | 213 | 31.23% |
| Nature of Employment | | |
| Self- Employed (Business) | 68 | 9.97% |
| Service | 382 | 56.01% |
| Student | 88 | 12.90% |
| Profession | 144 | 21.11% |

Source: Authors Own

Table 2 Measurement Scale and Constructs

| Construct | Measurement Scale | Source |
|--------------------------------|---|-----------------------|
| Attitude Towards adoption (AT) | AT 1: I am confident in using Fintech services AT 2: I gain enjoyable experience while using fintech facilities AT 3: I am interested in using Fintech facilities | (Grabner et al.) |
| Government Support (GS) | GS 1: The support of the government improves the usage of Fintech services GS 2: There exists a favourable legislation for the usage of Fintech services GS 3: There exists an active infrastructural support towards fintech services. | (Marakarkandy et al.) |
| User Innovativeness (UI) | UI 1: Whenever there is any new product in the market, I look forward to try it UI 2: Amongst all my friends, I am the first to make use of a new tech product | (Zhang et al.) |
| Brand Image (BI) | BI 1: I think I'm more comfortable with brands that I know and trust. BI 2: The bank is well-known for being reliable and trustworthy. | (Ruparelia et al.) |

Source: Authors Own

Data Collection Method

For this primary research an internet-disseminated, well-designed questionnaire was employed to gather the information needed. For all types of variables including dependent and independent nature, five-point likert scales were used. However, some secondary data from both published and unpublished records have also been used to showcase the references. The participants for this study were active customers of cooperative banks residing in city Delhi.

Tools for Data Analysis

The confirmatory factor analysis method has been employed to determine the relationship between variables that are dependent on each other and those that are independent of each other. This method has been implemented both in AMOS and in SPSS Version 20.0.

Construct Validity & Discriminant Validity Analysis from CFA

In order to measure construct reliability and validate the results, we built a confirmatory CFA model using AMOS (amplitude of moment structures version 20) and ran a regression analysis to see if there was an association between endogenous and exogenous variables. In total, we wrote 712 responses for SPSS, including things like outlier removal, screening, and cleaning. We also got rid of 30 responses. We were able to look at individual factors' reliability and validity in Table 3, and the composite reliability, AVE, standard error, and beta factors of all factors were all found to be valid and reliable according to standard parameters.

Table 3. Summary of CFA i.e., Confirmatory Factor Analysis

| Variables | Label | SL | R2 | CR | AVE | SMC |
|--------------------------------|-------|-----|-----|-------|-------|-----|
| Attitude Towards adoption (AT) | AT 1 | .88 | .77 | 0.879 | 0.655 | .70 |
| | AT 2 | .87 | .78 | | | .64 |
| | AT 3 | .83 | .68 | | | .66 |
| Government Support (GS) | GS 1 | .56 | .31 | 0.863 | 0.564 | .48 |
| | GS 2 | .80 | .64 | | | .62 |
| | GS3 | .82 | .66 | | | .67 |
| User Innovativeness (UI) | UI 1 | .83 | .71 | 0.920 | 0.68 | .67 |
| | UI 2 | .80 | .61 | | | .72 |
| Brand Image (BI) | BI 1 | .83 | .71 | 0.915 | 0.660 | .64 |
| | BI 2 | .78 | .63 | | | .70 |

Source: Authors Own

SL here refers as Standardized Factor Loading

SMC here means squared multiple correlations

AVE here refers as average variance extracted should be more than the recommended value i.e., 0.5 (Ruvio, Shoham, & Brenčić, 2008).

CR here refers as Composite Reliability should be more than the recommended value i.e., 0.7 (Chin, W. W.,1998)

Cronbach's alpha (R2) should be more than the recommended value i.e., 0.8 (Fornell, C., & Larcker, D. F.,1981)

In order to investigate all aspects of the variables in the indicated hypothesised model, model fitness was classified as CFA, or confirmatory factory analysis (CFA; Ho, 2006). The fit for the model was validated to have appropriate statistics. The CFA outcomes are given in Table 3 in terms of scale validity and goodness of fit. All of the output obtained

by the AMOS ensures that not any of the alterations are required and that all of the variables have a good goodness of fit (GOF). A good model fit index contains a high value of the chi-square/degree of freedom (CMIN/df), a higher statistical value of the goodness-of-fit indicators (GOF), such as the GFI and AGFI, and an elevated value of the badness-of-fit indicators (BOF), such as the RMSEA. It came to light that all of the indicators in this model fit with the expected parameters, which is consistent with previous investigations (Steiger, 2007; Hooper et al., 2008, Rai, Gupta & Tyagi,2021). The analysis's findings were satisfactory when contrasted with industry norms. Co-variance is shown in Table 4 and co-relation between attitudes toward adoption, government support, user innovation, and brand image are shown in Table 5. All of these components' values for p were satisfactory ($p > 0.05$), revealing a strong connection among them.

Table 4: Covariances among factors (First Order CFA)

| | | | Estimate | S.E. | C.R. | P |
|--------------------------------|------|----|----------|------|-------|-----|
| Attitude towards Adoption (AT) | <--> | GS | .178 | .020 | 9.117 | *** |
| Government Support (GS) | <--> | UI | .215 | .024 | 9.019 | *** |
| User Innovativeness (UI) | <--> | BI | .177 | .019 | 9.179 | *** |
| Brand Image (BI) | <--> | AT | .174 | .017 | 9.176 | *** |

Source: Authors Own

Table 5. Corelation among factors

| | AVE | MSV | ASV | GS | AT | UI | BI |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Government Support (GS) | 0.564 | 0.146 | 0.133 | 0.770 | | | |
| Attitude towards Adoption (AT) | 0.655 | 0.375 | 0.274 | 0.381 | 0.765 | | |
| User Innovativeness (UI) | 0.680 | 0.288 | 0.227 | 0.382 | 0.522 | 0.772 | |
| Brand Image (BI) | 0.660 | 0.286 | 0.219 | 0.380 | 0.519 | 0.769 | 0.768 |

Source: Authors Own

Thumb Rule= $AVE > MSV > ASV$

AVE here refers as average variance extracted

MSV here refers as maximum shared squared variance

ASV here refers as average shared squared variance

Model Fit indices

All of the model fit parameters were found to be in line with the model's recommended value, suggesting a good fit of the data (Steiger, 2007; Hooper et. al., 2008; Rai & Gupta, 2021). The probability is 0.001. Chi-square = 336, df = 72, CMIN/df = 4.49, Comparative Fit Index (CFI) value of 0.94, Goodness-of-Fit Index (GFI) of Model Fit value of 0.92, Tucker-Lewis Statistics Index of 0.93, RMSEA (badness of Fit Indicated) of 0.071, RMR = .044.

Results of Path Analysis (Structural Model)

Path investigation was carried out for applying the investigation to the specified hypothesis. The outcome of the path analysis is displayed in Table 6. The next table exhibits the key ratio values and regression weights, which highlight a significant connection between Government Support (***, $p > 0.05$) Attitude towards adoption. Significant results also find with User Innovativeness (***, $p > 0.05$) and Brand Image (***, $p > 0.05$) with Attitude towards adoption. As a result, all three Hypothesis 1, Hypothesis 2 and Hypothesis 3 have been confirmed by the findings of the present investigation, revealing that they are plausible.

Table 6: Results of Structural Model

| Path | Estimates | S.E. | C.R. | P |
|-----------|-----------|------|------|-----|
| AT<---GS | .237 | .041 | 5.49 | *** |
| AT<--- UI | .459 | .061 | 7.28 | *** |
| AT<--- BI | .458 | .059 | 7.26 | *** |

Source: Authors Own

Conclusions

The study revealed a strong association of Government Support, Brand Image and User Innovativeness on Attitude Towards Adoption of Fintech Services by customers of cooperative banks of Delhi, India. The results of this paper consistent with the conclusion of some previous researches (Kesharwani et al., 2012; Marakarkandy et al., 2017). Consequently, it is of paramount importance for government, banks and policy makers to devise innovative technologies, economic policies or practices that can enable individuals to access the fintech services, financial and capital markets and other online payment services with greater proficiency, in order to foster sustainable financial development. The urgent need to comprehend efficient implementation of technology in the financial sector and create awareness among customers/ individuals about the use of these fintech services. Government departments must take strong action to foster awareness about financial technology usages amongst the population through the implementation of seminars, workshops, and discussion sessions. In a rapidly evolving financial environment, the present effort provides evolving decent practices for policy makers, controllers and depositors. This empirical research seeks to establish a fundamental success factor as well as an additional driver for FinTech establishments. The findings would help mobile service businesses and banks to understand the economy of scope in providing services at a low cost while offering optimal social benefits. The research will help financial institutions to gain insight into how to provide finance services via using updated technology in order to manage cross-border operations for low-income consumers in remote areas. In policy terms, the research encourages decision makers and controllers to devise strategies that foster Fintech growth and financial inclusion.

Limitation and Future Scope

Present study is not free from limitations. This study has only taken a sample of respondents from Delhi, and thus the data may not be representative of the entire Indian population. Additionally, only three variables i.e., Government Support, Brand Image and User Innovativeness have been included in the analysis. Some other related variables and their relationship to attitude towards adoption of fintech services may be conducted in the future. Furthermore, additional variables such as the respondent's family background, education level, and type of occupation may also be used for future research. It is important to note that the sample taken

from Delhi is only representative of the Indian population, and that data from other states may be necessary for a more comprehensive understanding and policy formation.

References

1. Adeiza, A., Azizi Ismail, N., & Marissa Malek, M. (2017). An empirical examination of the major relationship factors affecting franchisees' overall satisfaction and intention to stay. *Iranian Journal of Management Studies*, 10(1), 31-62.
2. Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS quarterly*, vii-xvi.
3. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
4. Gholami, R., Singh, N., Agrawal, P., Espinosa, K., & Bamufleh, D. (2021). Information technology/ systems adoption in the public sector: evidence from the Illinois department of transportation. *Journal of Global Information Management (JGIM)*, 29(4), 172-194.
5. Grabner-Kräuter, S., & Faullant, R. (2008). Consumer acceptance of internet banking: the influence of internet trust. *International Journal of bank marketing*, 26(7), 483-504.
6. Ho, R. (2006). *Handbook of univariate and multivariate data analysis and interpretation with SPSS*. Boca Raton, FL: CRC Press.
7. Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
8. Kesharwani, A., & Singh Bisht, S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International journal of bank marketing*, 30(4), 303-322.
9. Kiwanuka, A. (2015). Acceptance process: The missing link between UTAUT and diffusion of innovation theory. *American Journal of Information Systems*, 3(2), 40-44.
10. Kline, R. B. (2005). *Principles and practice of structural equation modeling*. The Guilford Press.
11. Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking

- in Korea: A modified DeLone and McLean's model perspective. *Interacting with computers*, 21(5-6), 385-392.
12. Leicht, T., Chtourou, A., & Youssef, K. B. (2018). Consumer innovativeness and intentioned autonomous car adoption. *The Journal of High Technology Management Research*, 29(1), 1-11.
 13. Marakarkandy, B., Yajnik, N., & Dasgupta, C. (2017). Enabling internet banking adoption: An empirical examination with an augmented technology acceptance model (TAM). *Journal of Enterprise Information Management*, 30(2), 263-294.
 14. Marakarkandy, B., Yajnik, N., & Dasgupta, C. (2017). Enabling internet banking adoption: An empirical examination with an augmented technology acceptance model (TAM). *Journal of Enterprise Information Management*, 30(2), 263-294.
 15. Papavasiliou, S., Reaiche, C., & Ricci, P. (2019). Digital Adoption: The Need for Truly Inclusive e-Government Services. In *Proceedings of the International Conference on e-Learning, e-Business, Enterprise Information Systems, and e-Government (EEE)* (pp. 43-49). The Steering Committee of The World Congress in Computer Science, Computer Engineering and Applied Computing (WorldComp).
 16. Park, E., Kim, H., & Ohm, J. Y. (2015). Understanding driver adoption of car navigation systems using the extended technology acceptance model. *Behaviour & Information Technology*, 34(7), 741-751.
 17. Patil, P. P., Dwivedi, Y. K., & Rana, N. P. (2017). Digital payments adoption: an analysis of literature. In *Digital Nations—Smart Cities, Innovation, and Sustainability: 16th IFIP WG 6.11 Conference on E-Business, E-Services, and E-Society, I3E 2017, Delhi, India, November 21–23, 2017, Proceedings 16* (pp. 61-70). Springer International Publishing.
 18. Paulus, M., Jordanow, S., & Millemann, J. A. (2022). Adoption Factors of Digital Services—A Systematic Literature Review. *Service Science*, 14(4), 318-350.
 19. Priem, R. L., & Swink, M. (2012). A demand-side perspective on supply chain management. *Journal of Supply Chain Management*, 48(2), 7-13.
 20. Priem, R. L., Li, S., & Carr, J. C. (2012). Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research. *Journal of management*, 38(1), 346-374.
 21. Rai, K., & Gupta, A. (2021). Financial literacy leads to retirement financial planning: A structural equation modelling approach. *Journal of Commerce & Accounting Research*, 10(4), 9-18.
 22. Rai, K., Gupta, A., & Tyagi, A. (2021). Personality traits leads to investor's financial risk tolerance: A structural equation modelling approach. *Management and Labour Studies*, 46(4), 422-437.
 23. Riyadh, A. N., Bunker, D., & Rabhi, F. (2010). Barriers to e-finance adoption in small and medium Sized enterprises (SMEs) in Bangladesh. Available at SSRN 1726262.
 24. Ruparelia, N., White, L., & Hughes, K. (2010). Drivers of brand trust in internet retailing. *Journal of Product & Brand Management*, 19(4), 250-260.
 25. Ruvio, A., Shoham, A., & Brenčič, M. M. (2008). Consumers' need for uniqueness: short-form scale development and cross-cultural validation. *International Marketing Review*, 25(1), 33-53.
 26. Saleem, Z., & Rashid, K. (2011). Relationship between customer satisfaction and mobile banking adoption in Pakistan. *International Journal of Trade, Economics and Finance*, 2(6), 537.
 27. Sang, S., Lee, J. D., & Lee, J. (2010). E-government adoption in Cambodia: A partial least squares approach. *Transforming Government: People, Process and Policy*, 4(2), 138-157.
 28. Samuel, H., & Lianto, A. S. (2014). Analisisewom, brand image, brand trust dan minatbeliproduk smartphone di Surabaya. *Jurnalmanajemenpemasaran*, 8(2), 7-54.
 29. Shapiro, S. L., Reams, L., & So, K. K. F. (2019). Is it worth the price? The role of perceived financial risk, identification, and perceived value in purchasing pay-per-view broadcasts of combat sports. *Sport Management Review*, 22(2), 235-246.
 30. Siamagka, N. T., Christodoulides, G., Michaelidou, N., & Valvi, A. (2015). Determinants of social media adoption by B2B organizations. *Industrial Marketing Management*, 51, 89-99.
 31. Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual differences*, 42(5), 893-898.
 32. Yee-Loong Chong, A., Ooi, K. B., Lin, B., & Tan, B. I. (2010). Online banking adoption: an empirical analysis. *International Journal of bank marketing*, 28(4), 267-287.
 33. Zavolokina, L., Dolata, M., & Schwabe, G. (2016). The FinTech phenomenon: antecedents of financial innovation perceived by the popular press. *Financial Innovation*, 2(1), 1-16.
 34. Zhang, T., Lu, C., & Kizildag, M. (2018). Banking "on-the-go": examining consumers' adoption of mobile banking services. *International Journal of Quality and Service Sciences*, 10(3), 279-295.



CSR Initiatives as a Means to Transform the Society

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Abstract

Initiatives focused on corporate social responsibility (CSR) have drawn much attention as a means of transforming society. The many ways that CSR contributes to constructive social change are examined in this conceptual paper. The paper explores the theoretical foundations of CSR, tracing its development from charitable endeavors to corporate culture-integrated strategic initiatives, all while utilizing secondary data. To address social, environmental, and economic challenges, the paper explains how CSR initiatives go beyond simple regulatory compliance. This paper identifies important aspects of it such as community development, employee welfare, ethical business practices, and environmental sustainability. In addition, the paper addresses the strategic implications of CSR for businesses, emphasizing how it can improve stakeholder engagement, and brand reputation, and reduce risks. Additionally, it looks at how CSR promotes inclusive growth. The paper argues for increased accountability and transparency in corporate practices and emphasizes the need for strong frameworks to assess how CSR initiatives affect societal outcomes. This paper contributes to societal development by providing insights into the transformative potential of CSR initiatives through a synthesis of existing research and theoretical perspectives.

Keywords: CSR. Community development, environmental sustainability, corporate practices, societal development

Introduction

Corporate Social Responsibility (CSR) initiatives have evolved into a critical aspect of modern business practices, as they endeavor to contribute to societal well-being beyond mere profit-making endeavors (Carroll, 1999). In contemporary discourse, businesses are increasingly acknowledged as entities with obligations extending beyond shareholders, encompassing a spectrum of stakeholders such as employees, customers, suppliers, communities, and the environment. These stakeholders are integral components of a business's ecosystem and thus warrant consideration in corporate decision-making processes. CSR activities encompass a broad array of endeavors, ranging

from philanthropic initiatives to sustainable environmental practices, community development projects, and ethical business conduct.

Such initiatives are underpinned by a collective ambition to foster positive impacts on society, fortify relationships with stakeholders, and ensure the enduring sustainability of businesses. Within this context, this review seeks to elucidate the catalytic role of CSR initiatives in driving transformative changes within society. By examining the theoretical foundations, empirical evidence, and practical implications, we aim to offer a comprehensive understanding of how CSR initiatives serve as agents of societal progression.

Furthermore, this study endeavors to delve deeper into the tangible effects of CSR initiatives on the everyday lives of individuals, elucidating their capacity to shape the socioeconomic landscape. Through an exploration of these impacts, we aspire to illuminate the multifaceted contributions of CSR initiatives to societal advancement. Additionally, this research undertakes a rigorous examination of the underlying theories that inform CSR practices, analyzing their manifestation in real-world contexts.

Ultimately, our endeavor is to underscore the pivotal role of CSR in fostering positive social transformation. By highlighting the significance of businesses embracing their broader responsibilities, beyond the pursuit of profit, we aim to underscore the imperative for corporations to proactively engage in initiatives that contribute to the greater good of society.

Literature Review

Theoretical Foundations of CSR:

CSR draws on several theoretical perspectives, including stakeholder theory, corporate citizenship, and social contract theory. Stakeholder theory suggests that businesses have obligations not only to shareholders but also to a broader set of stakeholders, such as employees, customers, suppliers, communities, and the environment (McWilliams & Siegel, 2001). CSR initiatives are viewed as a way for businesses to manage these relationships and fulfill their societal

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responsibilities. Corporate citizenship extends this idea by treating businesses as members of society with rights and responsibilities similar to individual citizens (Matten & Crane, 2005). Social contract theory emphasizes the implicit agreement between businesses and society, wherein businesses gain legitimacy and support by fulfilling their societal obligations, including CSR activities (Donaldson & Dunfee, 1994).

Empirical Evidence on CSR Impact

Numerous studies have explored the effects of CSR initiatives on various stakeholders and societal outcomes. Research indicates that CSR activities can benefit businesses by enhancing their reputation, increasing customer loyalty, boosting employee morale, and improving financial performance (Orlitzky, Schmidt, & Rynes, 2003). Furthermore, CSR initiatives have been associated with positive social and environmental impacts, such as poverty alleviation, environmental conservation, education promotion, and community development. However, the effectiveness of CSR initiatives may vary depending on factors such as industry context, organizational commitment, stakeholder engagement, and integration into core business strategies.

Practical Implications for Businesses

Implementing effective CSR initiatives requires a strategic approach aligned with organizational values, objectives, and stakeholder expectations. Successful CSR initiatives involve identifying relevant social and environmental issues, engaging stakeholders, setting measurable goals, implementing initiatives effectively, and transparently communicating outcomes (Porter & Kramer, 2011). Businesses can leverage CSR initiatives to differentiate themselves in the market, attract and retain talent, build trust with stakeholders, mitigate risks, and contribute to sustainable development.

Objectives of the Study

Primary Objective: To find out how CSR acts as an agent to transform society.

Secondary Objectives:

1. To understand the impact of CSR initiatives on the world.
2. To acquaint ourselves with the various CSR strategies that can be undertaken by companies.

Research Methodology

This research paper uses a descriptive and analytical research design. The information was obtained from several secondary

sources, including blogs, research papers, journals, and web pages. Additionally, the data was gathered using compiled and derived data. Finally, both quantitative and qualitative data are included in this study.

Conceptual Framework

What is CSR? What are its legal implications?

A common definition of corporate social responsibility (CSR) is a business model wherein organizations incorporate social and environmental concerns into their operations and stakeholder interactions, rather than solely focusing on financial gains. Economists such as Howard R. Bowen and William C. Frederick conducted extensive contemplations on the social obligations of corporate entities and their leaders during the 1950s and 1960s, which is when the intellectual foundations of CSR were established. This was a reaction to ethical concerns brought up by the professionalization of management and the rise of hitherto unheard-of massive corporations. In India, certain companies are required by Section 135 of the Companies Act 2013 (Act) to devote a minimum of 2% of their average net profits from the three previous financial years to corporate social responsibility (CSR) initiatives. Companies that had a net worth of at least Rs. 500 crores, a turnover of at least Rs. 1000 crores, or a net profit of at least Rs. 5 crores in the previous fiscal year are covered by this provision. These businesses shall form a CSR Committee of the Board, composed of three or more directors, at least one of whom must be independent. On the other hand, a CSR committee must have two or more directors if a company is exempt from the Act's section 149(4) requirement regarding the appointment of an independent director.

How CSR activities are undertaken?

- Adopting techniques that emit less to no pollution.
- Promoting sustainable practices among customers such as using reusable cups.
- Localizing sourcing to reduce carbon footprints.
- Working towards saving natural resources.
- Adopting proper waste disposal techniques.
- Engaging in charitable activities.
- Supporting people working towards a noble cause.
- Encouraging the stakeholders to work towards society and philanthropic activities.
- Adopting socially conscious business activities.
- Promoting non-discriminatory practices.
- Supporting diversity both inside and outside the firm.
- Adopting a Triple Bottom line approach that involves Profit, People, and Planet.

Potential benefits of CSR

- Environment Protection through minimizing emissions, promoting sustainability, etc.
- Improved brand perception or consumer loyalty.
- Increase in employee satisfaction and retention.
- Creation of strong communities through positive partnerships.
- Attracting investors as socially conscious companies are believed to be serious in making a difference.
- Improved financial performance due to sustained backing from customers, investors, and employees.

Impact of CSR on the society:

Bowen, H. R. (1953): Corporate Social Responsibility initiatives have become deeply ingrained in our society, profoundly impacting communities in diverse ways. When companies engage in CSR activities, it's not just about making profits; it's about showing they care about the well-being of society. These initiatives often tackle critical social issues like poverty, education, healthcare, and protecting our environment. For example, investing in education doesn't just benefit individuals; it uplifts entire communities by providing people with the tools to improve their lives. Similarly, CSR efforts in healthcare can significantly enhance public health, especially in areas with limited access to medical services. And when businesses focus on environmental sustainability, they're helping to preserve our planet for future generations. The combined effect of these initiatives is a society that's fairer and more sustainable, with businesses playing an active role in positive change. But CSR isn't just about tangible outcomes; it also shapes how companies are perceived and how employees feel about their work. Businesses known for their commitment to social responsibility often enjoy stronger customer loyalty and attract top talent looking for meaningful careers. Moreover, by aligning business objectives with societal needs, CSR fosters collaboration between companies, governments, and non-profits, leading to innovative solutions to complex problems. In essence, CSR is a powerful force for social progress, turning businesses into agents of positive change.

Real-life examples of CSR initiatives (Foreign companies)

- Johnson & Johnson has been working on reducing their environmental impact for the past 3 decades. It aims to use 100% renewable energy by 2025.
- Google has been funding initiatives to promote inclusion in areas like racial equity, gender equality, LGBTQ+ inclusion, etc.
- Coca-Cola aims to reduce its carbon footprint by 25% by 2030. They aim to collect and recycle all their bottles.
- Bosch too aims to reduce its upstream and downstream emissions by 15% in 2030.

- Starbucks has been working on workforce diversification, it has employed around 40000 veterans and spouses since its launch.
- Lego has increased the spending on sustainability initiatives to 1.4 billion USD by 2025 to focus on making items from more sustainable materials by 2032.

Examples of CSR Initiatives by Indian Companies:

- **Tata Group:** Tata Group's CSR efforts span various domains such as education, healthcare, environmental sustainability, and rural development. Notable initiatives include the Tata Medical Center, Tata Trusts, and Tata Water Mission.
- **Infosys:** Infosys Foundation, the philanthropic arm of Infosys, is engaged in initiatives covering education, rural development, healthcare, and arts & culture. Projects like the Infosys Science Foundation and mobile healthcare units are among their significant contributions.
- **Reliance Industries Limited (RIL):** RIL's CSR activities are broad, encompassing education, healthcare, rural development, and environmental sustainability. Noteworthy initiatives include Reliance Foundation Schools and Reliance Foundation Hospitals, which cater to underprivileged communities.
- **Mahindra Group:** Mahindra Group's CSR initiatives focus on education, healthcare, rural development, and environmental sustainability. Projects like Project Nanhli Kali and Mahindra Pride Schools are aimed at empowering marginalized sections of society.
- **Aditya Birla Group:** Aditya Birla Group's CSR endeavors cover education, healthcare, sustainable livelihood, and community development. Notable initiatives include Aditya Birla Scholarships and Aditya Birla Public Schools, contributing significantly to social welfare.

Data Analysis and Interpretation

Some quantitative data to depict the situation of CSR over the last few years:

- The number of B Corps increased by 25% in 2019 as companies like the British newspaper's owner, Guardian Media Group, and the American shoe company TOMS became certified.
- In 2015, 92% of the biggest American businesses released a CSR report (HBR), up from 64% in 2005.
- Fortune Global 500 companies invested almost \$20 billion in CSR initiatives in just 2018.
- A B Corp's average growth rate is 49%, while comparable companies grow at a rate of 15%.
- When it comes to brand rank, 75% of B Corps received a score of 9 or 10, while the average for all consumer companies is a 5.

- B Corps had a 63% higher chance of surviving the previous financial crisis than comparable-sized businesses.

Findings

- CSR is one of the major aspects that can help to transform society through its holistic approach towards the betterment of the society such as working towards environmental protection, working towards benefitting all the stakeholders, undertaking charitable activities, etc.
- CSR has had a great impact on the world when referring to various domains such as reduction of pollution levels, increased consciousness about the planet, increasing the sense of togetherness and equality, etc.
- A company can undertake varying initiatives that can range from something as simple as maintaining workforce diversity and a good organizational culture to even running awareness campaigns and making the production processes environment-friendly.

Conclusion

In conclusion, our study underscores the pivotal role that Corporate Social Responsibility (CSR) programs assume in fostering positive social change. By delving into the strategic imperatives of corporate social responsibility (CSR), we have highlighted its significance as a driving force behind societal progress. Our analysis has elucidated how CSR initiatives can effectively address socio-economic challenges, facilitate stakeholder engagement, and enhance brand reputation.

In sum, this study contributes to the ongoing discourse surrounding corporate citizenship, emphasizing the paramount importance for companies to acknowledge and fulfil their broader obligations. Looking ahead, civil society, governments, and businesses must collaborate synergistically to unlock the full transformative potential of CSR. By doing so, we can collectively strive towards a more sustainable and equitable future for all stakeholders involved.

Recommendations

In the pursuit of fostering positive social change, Corporate Social Responsibility (CSR) initiatives serve as vital mechanisms for businesses to contribute meaningfully to societal well-being beyond their core economic activities. To further amplify the transformative potential of CSR initiatives, companies can implement a range of strategies aimed at enhancing their effectiveness and impact.

First and foremost, engaging in rigorous self-assessment is essential. Companies should actively question the efficacy of their CSR endeavors, evaluating whether these initiatives are yielding the intended results and aligning with overarching societal goals. By conducting thorough assessments, businesses can identify areas for improvement and refine their CSR strategies to ensure maximum impact on communities.

Transparency emerges as a cornerstone of effective CSR practices. Openly sharing objectives, progress, and outcomes with stakeholders fosters trust and credibility, strengthening relationships and enhancing the perceived legitimacy of CSR efforts. Transparency not only demonstrates accountability but also invites valuable input and feedback from stakeholders, facilitating collaboration and collective problem-solving.

Championing principles of equity is paramount in advancing CSR initiatives. Businesses must ensure that their CSR efforts prioritize fairness and inclusivity, benefiting all stakeholders equitably. This involves examining CSR practices through an equity lens, addressing disparities and systemic inequalities both at the macro and micro levels. By embracing diversity and inclusivity, companies can create more sustainable and resilient communities, driving positive social change.

Enhancing responsiveness is another critical aspect of effective CSR. Companies can demonstrate their commitment to societal well-being by proactively addressing pressing issues and emerging challenges. Introducing measures such as disaster management funds or rapid response teams enables companies to provide timely support and assistance to communities in times of crisis, fostering resilience and strengthening social cohesion.

Furthermore, fostering creativity and innovation in CSR approaches can unlock new opportunities for positive impact. Embracing innovative solutions and exploring novel approaches allows companies to address complex societal challenges more effectively. By tapping into the collective ingenuity of employees, partners, and stakeholders, businesses can develop innovative CSR initiatives that deliver tangible benefits to communities while also driving business value.

In conclusion, by implementing these strategies, businesses can enhance the transformative potential of their CSR initiatives and drive meaningful societal change. Through rigorous self-assessment, transparency, equity, responsiveness, and innovation, companies can maximize the positive impact of their CSR efforts, contributing to a more sustainable, equitable, and prosperous future for all.

Limitations of the Study

Several challenges need to be addressed regarding the reliability and scope of the data utilized in these studies. Firstly, the dependence on secondary sources for data introduces concerns regarding data quality and availability. Since the studies rely on pre-existing data, there may be limitations in terms of accuracy and completeness. Moreover, the imposed time constraints hindered the possibility of conducting primary research, which could have provided more accurate and comprehensive results. Additionally, temporal restrictions pose another challenge as the longitudinal study may be constrained by the availability of data limited to specific time periods. Overcoming these

challenges is essential to ensure the robustness and validity of the findings and to enable a more thorough examination of the phenomena under investigation.

References

1. Aditya Birla Group. (n.d.). Corporate Social Responsibility. Retrieved from <https://www.adityabirla.com/sustainability/csr>
2. Bowen, H. R. (1953). *Social Responsibilities of the Businessman*. New York: Harper & Brothers.
3. Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & Society*, 38(3), 268-295.
4. Digital Marketing Institute (2 January 2024) 16 Brands Doing Corporate Social Responsibility Successfully. <https://digitalmarketinginstitute.com/blog/corporate-16-brands-doing-corporate-social-responsibility-successfully#:~:text=Some%20of%20the%20most%20common%20examples%20of%20CSR,the%20environment%208%20Socially%20and%20environmentally%20conscious%20investments>
5. HEC Paris, What is Corporate Social Responsibility? <https://www.hec.edu/en/faculty-research/centers/sustainability-organizations-institute/think/so-institute-executive-factsheets/what-corporate-social-responsibility-csr>
6. IMD (February 2024) Corporate Social Responsibility (CSR): Types, Benefits & More. <https://www.imd.org/reflections/corporate-social-responsibility-csr-types-benefits-more/>
7. Infosys Foundation. (n.d.). Areas of Focus. Retrieved from <https://www.infosys.com/infosys-foundation/areas-of-focus.html>
8. Kaif M. (26 February 2023) Corporate Social Responsibility in India: Legal Framework & Recent Developments. <https://taxguru.in/company-law/corporate-social-responsibility-india-legal-framework-developments.html>
9. Mahindra Group. (n.d.). Sustainability. Retrieved from <https://www.mahindra.com/sustainability>
10. McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26(1), 117-127.
11. Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24(3), 403-441.
12. Passi A. (18 May 2021) The Future of CSR. <https://twimbit.com/insights/corporate-social-responsibility>
13. Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, 89(1/2), 62-77.
14. Reliance Industries Limited. (n.d.). Reliance Foundation. Retrieved from <https://www.reliancefoundation.org/>
15. Tata Group. (n.d.). Corporate Social Responsibility. Retrieved from <https://www.tata.com/sustainability/corporate-social-responsibility>



Twitter-Based Analysis of Python Learning Community: A Data-Driven Approach

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Abstract

Python programming language has become increasingly popular in recent years resulting in a large and vibrant community consisting of developers, learners and fans. This paper presents a study that uses data mining to analyze python learning communities on twitter. This work aims at discovering some trends, perceptions and conducts within python learning community therefore giving out how it is learned and put into practice. Data was gathered from Tweets related to Python learning using Twitter API. Sentiment analysis was carried out to understand overall sentiment among people while topic modeling was used to establish famous topics discussed in the community. On top of that, network analysis examined connections as well as interactions within this group. The results show an active community discussing everything from beginner tutorials to advanced topics in data science and machine learning. Sentiment analysis indicates that there is mainly positive sentiment towards python indicating its popularity and usefulness. Topic modeling identifies key areas where discussions took place during this period.

Keywords: Python, Twitter, data mining, sentiment analysis, topic modeling, network analysis, online learning communities, community engagement, data science, machine learning, web development and automation.

Introduction

By utilizing data mining to examine trends, preferences, and practices, this research delves in to the Python learning community on Twitter. Web development, AI and data science are some of the areas where Python is commonly used. It is important for developers, educators and learners to know how Python is learnt and applied by analyzing online communities such as Twitter. To enhance supportive environment as well as improve learning resources it's necessary to understand engagement within communities and sentiments therein. This study thus seeks to expose significant findings about the Python learning community that will enhance both general learning and community involvement.

Objectives Of The Research

- **Community Landscape:** We will take apart the community structure, look for the main influencers, its interaction patterns and engagement levels. Through network analysis we will know who is driving it and how members are connected.
- **Learning Discourse:** Topic modeling will find what central issues that were argued about by a community. Trends can be expected in programming tutorials, best practices, emerging technologies, and real-world Python applications.
- **Sentiment Analysis:** Evaluating emotional tone in tweets will tell us about overall satisfaction with Python as a programming language, enthusiasm and other feelings.
- **Learning Patterns:** We have to understand how learning occurs within the community. This entails types of questions asked, shared resources and support systems available for those who want to become pythonistas.
- **Actionable Insights:** Above all this research aims at empowering educators, developers and learners. Expect tailor made recommendations for each group informed by our data-driven insights.

Significance of the Research

To investigate the Python learning community on Twitter using data mining techniques is important as it offers valuable insights for educators, developers and community managers. By getting to know what kind of resources and materials are useful to learners, what difficulties they face within the community, those who teach or develop using Python can come up with better ways to reach out to them. Moreover, this information may help in developing online platforms for learning Python. In other words, this research contributes not only to understanding online communities where people learn through digital media but also shows that such kind of analysis is possible. Thus, overall, this research could enhance python education initiatives; promote increased engagement and support by communities while fostering appropriate practices online learning communities research efforts.

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Twitter’s Python Learning Community: Hub Of Global Collaboration

The Twitter Python learning community boasts an incredibly active and diverse group of members who share their desire to learn and teach Python programming language. This is a melting pot for all kinds of people – from expert programmers, passionate tutors, ardent students and loyal fans, scattered across the globe as an indication of how far and wide Python has been adopted.

At its core, the Python learning community on Twitter is about exchanging ideas, materials, and encouragement. They are engaged in talks, provide useful stuff such as tutorials or articles and are ready to support each other in any way. The one thing that distinguishes it from other communities is that it does not discriminate against beginners trying to get into Python programming or experienced experts who would like to share their knowledge with others.

The fact that Python’s learning community on Twitter seems to be always participating and engaging is among its main features that define it. This means that the discussions held there tackle a range of topics, from basic programming concepts to more advanced applications in data science and machine learning. As a result, the multiple subjects covered demonstrates the wide interests and expertise found in this community.

Also, Python’s learning community on Twitter creates a feeling of inclusiveness among its members. These are individuals who can help you out in case you are stuck with any programming problem or when you need support

and motivation for your latest project. Generally, Twitter’s learning community about Python provides precious education stuff for all those wishing to study or upgrade their knowledge on python scripting.

Data Collection Methods

Various methods can be utilized to gather data for the analysis of the python learning community on Twitter such as:

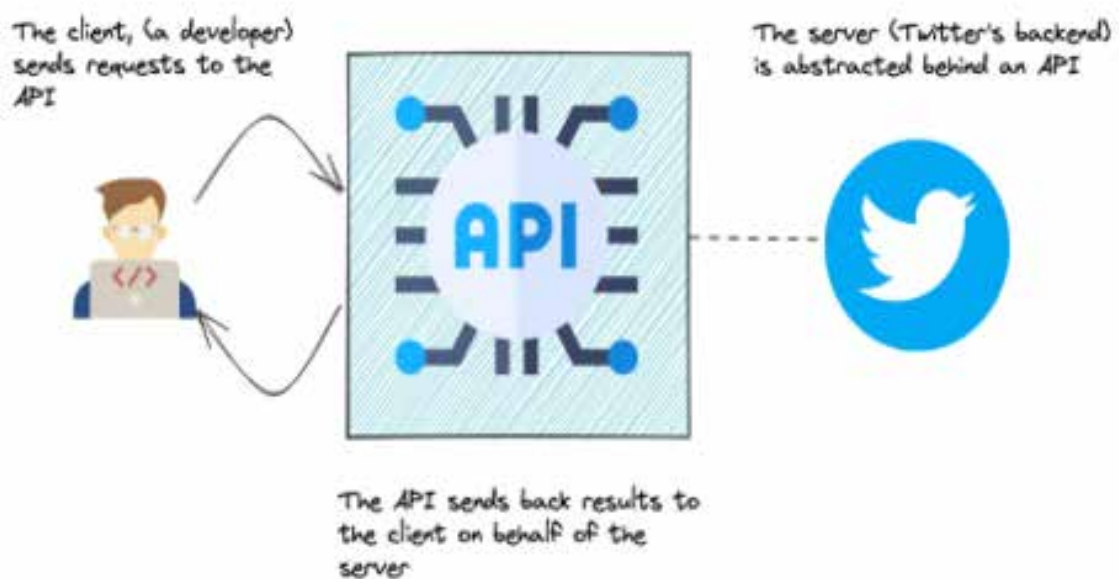
Twitter API: This gives access tweets, profiles and interactions. Researchers can capture into their dataset specific tweets that are related to Python learning communities by employing API such as those containing certain hashtags or keywords about Python education.

Web Scraping: Web scraping involves extracting data from websites directly. It could be used in situations where there is no such information provided by Twitter API, like older tweets or accounts which had been deleted or made private since then but it comes with many challenges including ethical issues and technical hitches.

Third-party Tools: There are also third-party tools and services that make possible collection and analysis of twitter data. Data collection and analysis through these tools usually have more features.

In conclusion, using any of these methods will enable researchers collect a comprehensive dataset of python learning community related tweets on twitter which can be analyzed through data mining techniques in order to uncover insights on trends, preferences, and behaviors within this community.

Fig-1 : The above diagram shows how tweets can be collected using Twitter API



Data Preprocessing Steps

Data pre-processing generally involves cleaning and turning raw tweet data into useful information prior to analyzing it. This is important because when tweets are not pre-processed they may include various noise such as special characters, URL's and emoji's which can distort the results of analysis. Pre-processing helps ensure that the data used in researches is clean, uniform and ready for analysis.

The reason why Data pre-processing is important is to make sure that there are no errors in the data as well as ensuring accuracy of the information or the results. Wrong conclusions, misleading insights can result from a lack of pre-processing which would mean that. Furthermore, it aids in simplifying the data so that it can be easily analysed and interpreted.

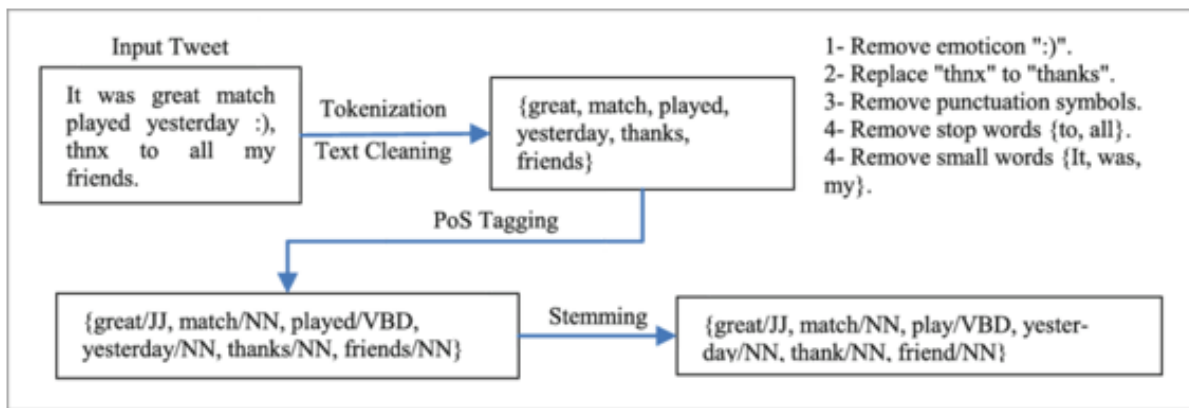
In Summary, this process ensures that data mining itself can only be performed once this step has been carried out hence making it a vital aspect in its completion.

Let's dig into all of the data pre-processing steps one by one for the analysis of Python learning community on Twitter:

- **Cleaning:** Here, we eliminate any redundant or noisy elements from tweets like special characters, URLs and emoji's. This is to ensure that text data is clean and ready for analysis. For example, we could use regular expressions to remove URLs or filter out tweets which have inappropriate emoji's from the analysis.

- **Filtering:** Filtering implies that only those tweets relevant to Python learning community are considered. It may be achieved by identifying tweets with certain hashtags or keywords about Python education. For example, it can filter out such messages which contain hashtags #PythonLearning and "Python tutorial."
- **Tokenization:** Tokenization refers to taking text data apart into individual words or tokens. The purpose of this step is to break down a text for better comprehension on analysis. For example, the sentence "Python is a great language" will be tokenized as ["Python", "is", "a", "great", "language"].
- **Normalization:** Normalization is about standardizing text data. It could be by converting everything to lowercase to make sure that the data remains consistent. For example, "Python" and "python" can be changed to "python" because we consider them as the same word.
- **Stopword Removal:** Stopwords refer to commonly used words such as "and," "the," and "is." When stopwords are removed, it reduces the dimensions of the dataset facilitating faster analysis. E.g., in this case, "Python is a great language," would become ["Python", "great", "language"].
- **Stemming or Lemmatization:** Stemming and lemmatization are both methods for reducing the words into their root form. This helps in overcoming word variations and improves results when analyzing text. For instance, one may reduce the terms "running" and "runs" to 'run' in order to treat them as one word.

Fig-2: The figure above shows the tweet text pre-processing



Mining Approaches Adopted in Analyzing Twitter Data in the Python Learning Community

Data mining involves looking for patterns, trends and insights in big datasets using various techniques and algorithms. It is the process of extracting useful information from data so as to discover underlying relationships, patterns and knowledge, which can then be used for decision making.

Data mining techniques are methods and tools used to analyze data sets in order to identify meaningful patterns and insights. These can be broadly grouped into several categories:

Sentiment Analysis: Analyzing the overall sentiment of tweets in the python learning community would be called sentiment analysis. This helps determine if tweets are positive, negative or neutral towards Python and provides an understanding of attitudes and perceptions within the community.

Topic Modeling: Another technique can be used to spot popular topics that are discussed by the Python learning community. The main themes of conversation in a particular society like popular programming concepts, tools and resources can be deduced from this method.

Network Analysis: Network analysis is another method that can be employed to study how users interact with each

other in python learning community. This is useful because it makes it easier to establish who the key opinion leaders are, understand their roles and explain how they participate within the online communities.

Association Rule Mining: Association rule mining refers to patterns observed in usage of hashtags or keywords across all posts made by participants in Python Learning Community; such patterns reveal underlying trends and interests for these subjects.

Clustering: Cluster could be used in Python community that learn to group the same kind of tweets or users. Another use is to notice and isolate distinctive sub-groups within a large community. This can help us appreciate how diverse our interests are as well as those of other people around.

Regression Analysis: Regression analysis is a statistical technique that models the relationship between one dependent variable with one or more explanatory variables. Its commonly used when trying to predict numerical results based on inputs.

Anomaly Detection: Anomaly detection is an approach employed when there are outlying values or unusual occurrences in data. For instance, it helps find fraudulent activities, mistakes or any deviant behaviors within datasets.

Text Mining: Text mining is a method used in extracting important information from text data that are lacking structure. Different procedures such as parsing of texts, sentiment analysis and topic modeling are used to reveal insights from textual data.

Fig-3: The above diagram depicts the Sentimental Analysis



Sentiment Analysis of Tweets: Opinions Towards Python

Sentiment analysis of tweets about Python involves analyzing the text content of tweets to determine the sentiment expressed towards it. The process normally includes a number of steps which entail data collection, text pre-processing, sentiment classification and analysis.

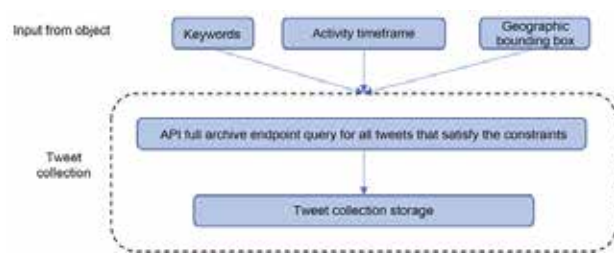
Data collection entails gathering relevant tweets such as those with hashtags or keywords relating to Python learning. Once data has been collected, cleaning and tokenization are performed as text pre-processing techniques in order to prepare the text data for analysis.

Next, sentiment classification is done using machine learning algorithms or lexicon-based approaches. Support vector machines (SVM) or deep learning models are examples of machine learning algorithms that can be trained on labelled data to classify tweets into positive, negative or neutral categories. Alternatively, lexicon-based methods use predefined word lists with sentiment scores associated with them to evaluate the sentiment behind each tweet.

Following this stage is a detailed examination of patterns and trends in Python sentiment. Such an analysis might provide information about how people generally feel regarding Python on Twitter among would-be learners as well as demonstrating how these feelings change over time or from one topic to another.

Generally, the Twitter users' attitude towards Python use is of great significance in that it can tell about various aspects and notions of community on it. The data could be leveraged to make Python learning materials better, target outreach more effectively, and improve participation within communities.

Fig-4: This figure shows a Python Package for Collecting social media on Online Events



Topic Identification and Discussion Analysis in the Python Learning Community on Twitter

The most common topics and discussions among the Python learning community on Twitter are recognized by examining tweet contents in order to establish the most frequent subjects of interest. Such examination allows one to understand the preferences and interests of members as well as to identify ongoing debates within this community.

Text mining techniques like topic modeling and keyword extraction for identifying popular topics and discussions. In other words, topic modeling algorithms such as Latent Dirichlet Allocation (LDA) or Non-Negative Matrix Factorization (NMF) can be used in detecting word clusters that encapsulate coherent themes in a data set that includes tweets. It is from these topics that their popularity within the community can be revealed.

In addition, keywords might help distinguish the main points of discussion and trending matters among communities

through keyword extraction methods for spotting frequently occurring phrases or keywords in the tweet data set.

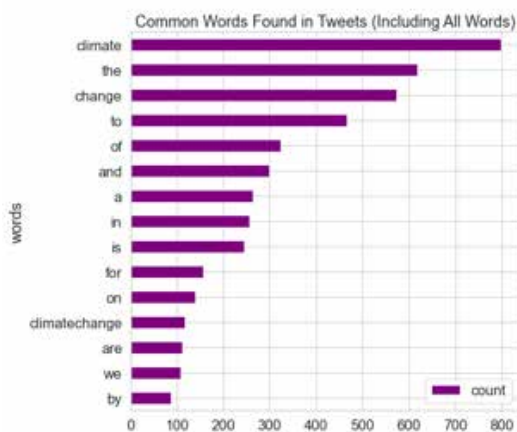
Discovering common subjects and talks in the Python learning community on Twitter can provide insights into what the community members are interested in and their preferences. The data retrieved through such a method can help develop appropriate educational resources, design captivating content and create an active community.

Statistical Insights from Twitter Data Analysis in the Python Learning Community

A statistical analysis of data from the Python learning community on Twitter can reveal patterns, trends and associations in that data. Some possible key statistical analyses are:

- **Frequency Distributions:** Breaking down the frequency of different kinds of data such as tweets,

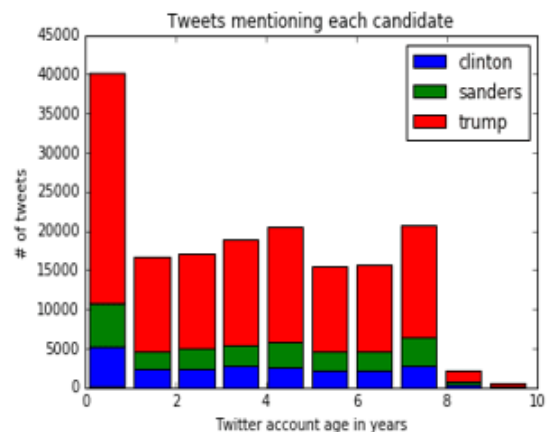
Fig-5



hashtags or user interactions will help in understanding how the data is distributed throughout the community.

- **Correlation Analysis:** Looking at how different variables relate to one another like the correlation between frequency of tweets and user engagement levels could indicate some patterns and dependencies within the dataset.
- **Descriptive Statistics:** The calculation of descriptive statistics such as mean, median and standard deviation provide an outline about how data is grouped which can help to determine what outliers and anomalies may exist.
- **Comparative Analysis:** When you compare different groups within the data like comparing activity levels of different user groups, it can be a way to understand differences and similarities present in a community.
- **Time Series Analysis:** What do we find out when analyzing this kind of information over time? Sometimes there are trends and seasonal patterns within this community’s activities during certain events or periods.

Fig-6



The above diagram shows the tweets in an understandable format to make an easy analysis

Graphical Presentation of Main Results Obtained when Investigating the Twitter Based Python Learning Society

To convey clear and informative outcomes of Python’s Twitter community analysis, visuals can be used. Effective visualizations that can be employed include:

Word Clouds: These are word clouds which display the most used words or hashtags in tweets associated with Python. This is a way to get an overall idea on what people talk about.

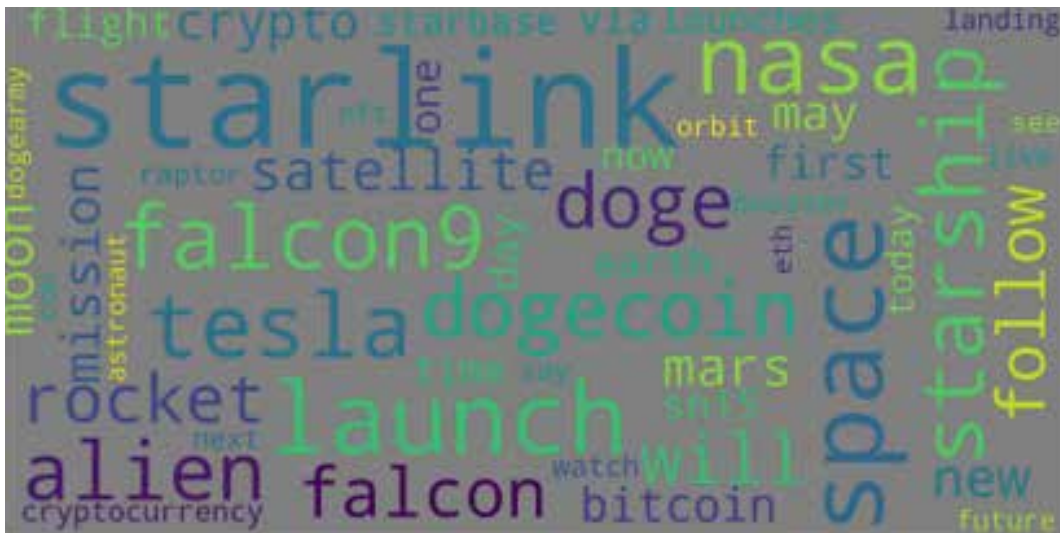
Bar Charts: Bar charts can compare how often different topics or hashtags related to Python appear. Doing this helps to pick out the leading themes and discussions within the group.

Line Charts: Line charts capture the trend in the volume of tweets regarding Python over a given duration of time. In this manner, people can view patterns between interactions within communities.

Network Graphs: Network graphs show us how users are connected among themselves in the Twitter-based Python learning community. They also help establish who commands authority as well as groups that exist inside larger networks.

Sentiment Analysis Charts: Sentiment analysis charts depict how emotions are divided into positive, negative and neutral categories among python-related tweets thereby giving insights towards general attitude of the society

Fig-7: The above figure shows the Word Cloud of Tweets Using Python



Conclusion

The above explore we have undertaken on the python educators’ online community on Twitter using data mining techniques has given us a lot of information to be used as our conclusion. The activities of this group are dynamic and encompassing the whole range from novice to experienced levels of discussions. The Python language was analyzed to determine whether it is understood positively or negatively. Topics such as web development and data analysis emerged through topic modeling. Network analysis helped identify influencers and communities within the network. Through further statistics, main results were adequately presented by use of good visualizations.

This study provides insights into understanding online learning communities that can be used to enhance python learning materials and twitter engagement strategies for developers alike.

References

1. https://www.researchgate.net/publication/347373178_Social_Network_Analysis_using_Python_Data_Mining
2. <https://marcobonzanini.com/2015/03/02/mining-twitter-data-with-python-part-1/>
3. Logan, A.P., LaCasse, P.M. & Lunday, B.J. Social network analysis of Twitter interactions: a directed multilayer network approach. *Soc. Netw. Anal. Min.* **13**, 65 (2023).
4. <https://www.toptal.com/python/twitter-data-mining-using-python>
5. Brian Warner, Twitter Sentiment Analysis with Python Feb 22, 2018
6. https://www.researchgate.net/figure/Flow-chart-for-sentiment-analysis-IV-RESULTS-AND-DISCUSSIONS-I-There-have-been-four_fig1_330136547
7. https://www.researchgate.net/figure/Network-graphs-show-how-influential-twitter-accounts-have-been-involved-in-retweet_fig4_351419780



Ethical Research in Business Ethics

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Abstract

In this paper, we expand the concept of care to encompass the researcher's reflexivity regarding their own positionality and privilege, along with the aims of the research, by embracing ethics as the bedrock of the entire research process. During the research, we have examined the ways in which the methodological approaches of the authors can be shaped with reflexivity, care and purpose, drawing on examples from published research. Historically, research ethics have often centered on the methodological aspects of scholarship. The prevailing standard has been to view ethical requirements as aspirations rather than mere obstacles. An ethical researcher not only adheres to guidelines but also demonstrates genuine concern. In order to exercise concern, an ethical researchers must actively consider and assume accountability for their ethical conduct and research objectives, situating these activities reflexively within a broader, more comprehensive scholarly inquiry process.

Keywords: Ethical Business Practices, Ethical Decision Making, Ethical Research, Corporate Social Responsibility.

Introduction

The study of Business Ethics involves implementation of suitable business practices and policies based on a framework of values [1]there is minimal discussion about the ethical treatment of the research subject in these publication processes. In contrast, the ethical scrutiny of management research processes within research institutions is often highly formalized and very focused on the protection of research participants. Hence, the question arises of how management publication processes should best account for the interests of the research subject, both in the narrow sense of specific research participants and in the broader understanding of the subject of the research. This question is particularly pertinent in light of significant codification of research ethics within academic institutions, and increasing self-reflection within the management discipline about the "good" of management research and education. Findings from a survey and interviews with management journal editors (and others involved in journal publication. This paradigm defines employee behavior in their connections

with each other and outsiders. It also outlines the principles and function of a company in a community.

When considering potentially controversial subjects such as corporate social responsibility, bribery, fiduciary duties, insider trading, discrimination, corporate governance and much more, business ethics refers to the study of appropriate business rules and practices. Although the law has frequently dictated business ethics, it occasionally offers a fundamental norm which the companies can follow in order to win the public's approval.

The basic instance of Business Ethics can be- to avoid partiality during quarterly assessments, a corporation can, forbid direct reports from employees who are dating one another [2]necessitating a (re.

Hence, corporate ethics are intended to maintain a lawful, just, productive and efficient workplace.

Figure 1. Meaning of Business Ethics



Review of Literature

Goduscheit¹² (2022) utilizes qualitative interviews, program materials, and observations in his study investigating the influence of external funding on research independence. His aim is to understand how funding organizations shape research outcomes. He illustrates how expectations from funding bodies can impact the topics explored, the methodologies employed to address research questions, and the types of research outputs produced. Rather than merely labeling these effects as unethical, he examines both the positive and negative aspects of the evolving relationships between researchers and funding sources, along with their implications for advancing scholarship.

Allen et al.² (2019) delve into the importance of reflexivity in sustainability research, highlighting how ecological responsibility stems from acknowledging the diverse

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relationships between humans and the environment. They underscore the significance of recognizing relationships, albeit on a distinct issue. The authors advocate for techniques such as participatory action research and arts-based methods to identify organizational actors entrenched in ecological relationships, promoting an “ecocentric radical-reflexivity” approach. Similar to the previous example, this study also underscores that research transcends mere adherence to rules. Instead, ethical research hinges on fostering awareness of the intricate economic and ecological relationships that frame the study.

Business Ethics’ Principles

Comprehending the fundamental moral principles that underlie ethical conduct is crucial. If an individual lacks any of these values, it may lead to not only the downfall of the individual’s talent but also the organizations they represent.

The twelve principles of business ethics are as follows:

Leadership

Intentionally striving to embrace, integrate, and embody the other eleven principles is essential for guiding behaviour in all areas of both professional and personal life.

Accountability

Ensuring that you, as well as others, are held responsible for your actions. Commitment to upholding moral principles and ensuring that others do the same.

Integrity

Embraces the values of reliability, honesty, and trustworthiness. An individual with integrity consistently acts honourably and strives to maintain a superior benchmark.

Respecting others

In order to create ethical behaviour and surroundings at the workplace, giving respect to others is a very essential. Everybody needs to be treated with respect, privacy, equality, opportunity, and empathy.

Honesty

Creating an ethical climate hinges on always telling the truth. Inaccuracies, omissions, and exaggerations do not contribute to improved company performance. Both good and bad news should be delivered and received with equal openness to foster effective solutions.

Respect for laws

As part of ethical leadership, all local, state, and federal laws should be upheld. Leaders should prioritize legality over exploiting loopholes in situations where there is a legal grey area.

Responsibility

The management should encourage the employees to take greater accountability for their tasks, and hold themselves responsible for their actions and work in order to promote ownership within an organization.

Transparency

A stakeholder is a person who has an interest in an organisation, such as a shareholder, an employee, the community where the company works, or an employee’s family. Companies ought to make sure that details regarding their financials, price adjustments, employment procedures, Compensation and advancement opportunities are readily accessible to anyone interested in the success of the entity, while safeguarding trade secrets.

Compassion

All parties involved in a business relationship should be handled equally with consideration for their needs, including customers, partners in company and employees.

Fairness

Everyone should be treated equally and afforded the same opportunities. A practice or behaviour which causes discomfort or prioritizes personal or corporate gain over principles of equality, politeness, and respect is unfair.

Loyalty

Leaders should show loyalty to their team members and the business by keeping information private. Loyalty among management and staff ensures their dedication to optimal practises.

Environmental concern

Amidst a global landscape, it is vital to recognize and be concerned about the environmental impact of business operations, where resources are scarce, ecosystems have been depleted by previous practices, and the climate is undergoing significant shifts. Every employee ought to be inspired to identify and provide solutions to problematic practices that could exacerbate existing harm.

Importance of Business Ethics

Business Ethics is paramount for success in modern business for several reasons [9]. The foremost advantage of established ethics programs is the development of a code of conduct that shapes behaviour across all employee levels, from top executives to middle management to newcomers. When each employee behaves ethically, the business cultivates a reputation for moral integrity. With an elevated reputation, the organization begins to reap the benefits associated with ethical practices:

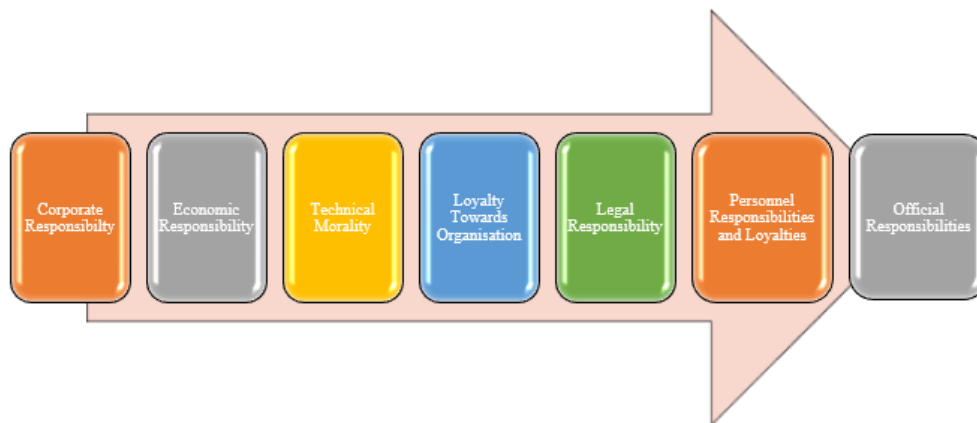
- Client retention and growth;
- Brand recognition and growth;
- Improved negotiating skills;
- Greater trust in goods and services
- Draws in talent and investment

All of these elements together have an impact on an organisation's revenue. People who fail to uphold moral standards will soon find themselves in their company.

Types of Business Ethics

Although there are numerous theories and varieties of business ethics, behaviours in corporate social responsibility, openness and dependability, fairness, and technical innovation set businesses apart.

Figure 2. Types of Business Ethics



Corporate Social Responsibility

Meeting stakeholder demands while taking into account the effects that doing so has on employees, the environment, society, and the neighbourhood in which the business works is known as corporate social responsibility (CSR). Finances and profits are essential, but they should come after the wellbeing of society, clients, and staff because, according to research, good corporate governance and ethical behaviour boost financial success [10]–[12]. Companies should be accountable and responsible for their effects on the environment, philanthropy, ethics, and the economy.

Transparency and Trustworthiness

It is crucial for businesses to make sure they are transparently disclosing their financial performance. This holds true for all reports in general, not just obligatory financial reports. For instance, many businesses distribute yearly reports to shareholders. The majority of these reports include information on the decisions that were made, whether objectives were fulfilled, and variables that affected performance in addition to the reports that were given to regulators. CEOs summarise the business's yearly performance and provide their projections in writing.

Technological Practices and Ethics

As technology of various kinds is increasingly used in corporate operations, it is necessary for a company to guarantee that the technology and data it collects are handled responsibly and ethically. Also, it should make sure that the technology is as safe as possible, especially since many

companies retain consumer information and gather data that might be used by people with bad intents.

Fairness

Regardless of ethnicity, religion, beliefs, age, or identity, a workplace should be welcoming, diverse, and equitable for all of its employees. Every employee can advance, receive a promotion, and find success in their own right in a fair workplace.

Therefore, we argue that research in business ethics should be mindful of the ethical implications of its methodological choices, implications that extend beyond simply adhering to established ethical norms. Methodological decisions should be made with consideration of their broader societal impact, both within and beyond academic circles. Researchers who acknowledge these implications move beyond safeguarding the integrity of their methods to more comprehensively address the ethics of their methodologies as knowledge practices with broader institutional consequences

Guide on Ethical Research in Business Ethics

When research ethics decisions intersect with the relationship between specific ethical practices and the evaluative objectives of societal advancement, they become increasingly intricate. This compels researchers, reviewers, and editors to confront genuine ethical dilemmas that cannot be resolved through straightforward compliance practices alone. Recognizing this complexity is beneficial. It underscores that the review

process is merely one component of a broader framework of evaluative practices, encompassing institutional ethics approval procedures preceding submission, ethical and legal considerations of publishing entities and scholarly societies overseeing academic output, and the reception of research post-publication.

Each of these instances highlights various ethical issues, and we view our editorial job as an essential but not conclusive evaluative stage. Our responsibility is to facilitate a discussion that has the best chance of fostering scholarly generativity and advancement rather than to set up a barrier that can only be cleared by the most perfect study. This turns our objective into a shared one, and we assess research based on its potential to advance the field, as well as its rigour, interest, reflexivity, or some combination of these epistemic virtues.

Relationship Between Broader Purpose of the Study and Methodological Design

By explicitly stated research questions and hypotheses, business ethics scholarship should describe its aim. Furthermore, the methodology should elucidate why specific research procedures are essential for a broader purpose and why that purpose holds ethical significance in its own right. The discussion of methods should explicitly demonstrate how the study's ethically tied objective aligns with the methodological approach employed, encompassing both the overall design and specific practices. Research that is ethically sensitive, in a nutshell, integrates methodologies with the overall goal of the study and aligns the two.

Every step in the research process involves a number of players who work together to define what scholarship means. Even if it might not be able to fully reveal this network, having the option to do so boosts the openness and worth of a scholarly investigation.

Conclusion

In conclusion, we argue that business ethics research must consider the ethical implications of its methodological choices, extending beyond mere adherence to established norms. Methodological decisions should be made with an understanding of their broader societal impact, both within and beyond academic settings. Researchers who recognize these implications move beyond safeguarding methodological integrity to deeply address the ethics of their research practices, considering wider institutional consequences.

We encourage academics to explore new forms of ethical empirical research, where connections between research conduct and objectives are actively developed. This serves as a counterbalance to ethical theorizing reliant on traditional empirical methodologies. Our editorial aims to assist authors in integrating meaningful and introspective narratives about moral behavior and research objectives throughout their publications. By placing greater emphasis on research ethics, with the support of editors, reviewers, and authors, business ethics research can be more effectively centered.

References

1. M. Greenwood, "Approving or Improving Research Ethics in Management Journals," *J. Bus. Ethics*, vol. 137, no. 3, pp. 507–520, Sep. 2016, doi: 10.1007/S10551-015-2564-X/METRICS.
2. S. Allen, A. L. Cunliffe, and M. Easterby-Smith, "Understanding Sustainability Through the Lens of Ecocentric Radical-Reflexivity: Implications for Management Education," *J. Bus. Ethics*, vol. 154, no. 3, pp. 781–795, Feb. 2019, doi: 10.1007/S10551-016-3420-3/FIGURES/1.
3. J. R. Hollenbeck and P. M. Wright, "Harking, Sharking, and Tharking," *J. Manage.*, vol. 43, no. 1, pp. 5–18, Nov. 2016, doi: 10.1177/0149206316679487.
4. B. Williams, "Ethics and the Limits of Philosophy," *Ethics Limits Philos.*, pp. 1–254, Mar. 2006, doi: 10.4324/9780203969847.
5. D. B. Shank, "Using Crowdsourcing Websites for Sociological Research: The Case of Amazon Mechanical Turk," *Am. Sociol.*, vol. 47, no. 1, pp. 47–55, Mar. 2016, doi: 10.1007/S12108-015-9266-9/METRICS.
6. T. J. Roulet, M. J. Gill, S. Stenger, and D. J. Gill, "Reconsidering the Value of Covert Research," *Organ. Res. Methods*, vol. 20, no. 3, pp. 487–517, Mar. 2017, doi: 10.1177/1094428117698745.
7. N. L. Kerr, "HARKing: Hypothesizing After the Results are Known," *Personal. Soc. Psychol. Rev.*, vol. 2, no. 3, pp. 196–217, Aug. 1998, doi: 10.1207/S15327957PSPR0203_4.
8. S. O. Hansson, "Informed consent out of context," *J. Bus. Ethics*, vol. 63, no. 2, pp. 149–154, Jan. 2006, doi: 10.1007/S10551-005-2584-Z/METRICS.
9. G. Islam and M. Greenwood, "Reconnecting to the Social in Business Ethics," *J. Bus. Ethics*, vol. 170, no. 1, pp. 1–4, Apr. 2021, doi: 10.1007/S10551-021-04775-7/METRICS.
10. D. Sachar and K. Chaudhary, "Ethical Business Practices - A Road Map for Integrated Sustainability," *Parichay Maharaja Surajmal Inst. J. Appl. Res.*, vol. 6, no. 2, pp. 37–43, 2023, [Online]. Available: https://www.msijr.msi-ggsip.org/papers/vol6issue2/6_2_9.pdf
11. J. W. Weiss, "Business ethics : a stakeholder and issues management approach", Accessed: Jun. 11, 2024. [Online]. Available: <https://www.oreilly.com/library/view/business-ethics-seventh/9781523091560/>
12. O. C. Ferrell, John Fraedrich, and Linda Ferrell, "Business Ethics: Ethical Decision Making and Cases," in *Business Ethics: Ethical Decision Making and Cases*, 13th Ed., Cengage, 2022, pp. 364–373. Accessed: Jun. 10, 2024. [Online]. Available: <https://faculty.cengage.com/titles/9780357513361>



The Illusion of Work-life Balance: Insights and Practices from Indian Corporations

Dr. Nidhi Tewatia¹

Abstract

The concept of work-life balance has garnered significant attention in India, especially as the demands of both professional and personal life continue to evolve. Traditionally viewed as a division of time and energy between work and personal pursuits, this binary framework is increasingly seen as unrealistic and overly simplistic. This paper challenges the notion of achieving a perfect work-life balance, arguing instead for a holistic approach that emphasizes the integration of work and life. By analyzing the challenges faced by professionals in urban India, such as prolonged work hours, societal expectations, and the pressures of maintaining personal relationships, this study illustrates how the pursuit of balance often leads to feelings of guilt, inadequacy, and stress. Through case studies and real-life examples, the paper highlights the myths associated with work-life balance, such as the belief that it requires equal time for work and personal life or that it is always achievable. It also explores the challenges specific to India, including role conflicts and societal pressures, particularly for women. The paper advocates for a more integrated and mindful approach to managing both spheres, where individuals can find purpose and meaning in their professional and personal lives without the rigid expectation of balance. Moreover, the paper reviews successful work-life integration strategies employed by major Indian organizations like Infosys, TCS, and Wipro, offering flexible work arrangements, wellness programs, and mindfulness practices. These initiatives demonstrate how organizations can foster a supportive environment for employees, helping them navigate the complexities of modern work and life in India.

Keywords: Holistic Development, Mindfulness, Stress, Well-Being, Work Life Balance,

Introduction

*“There is no such thing as work life balance- it is all life.
The balance has to be within you”
By Sadhguru*

The concept of “work-life balance” has become a pervasive theme in contemporary discourse, particularly in India.

It suggests the need to allocate time and energy equitably between professional and personal pursuits. This binary framework, however, might be overly simplistic. This paper argues that the pursuit of a perfect balance between work and life is illusory and that a more holistic approach, focusing on the integration of these two spheres, is essential for overall well-being, especially in the Indian context.

Consider the example of Amita, a young professional working in a demanding corporate job in Mumbai. She often feels guilty for neglecting her family and friends in her hometown of Pune, but she also believes that her career is essential to her future happiness. Amita’s experience highlights the tension between work and personal life that many Indians face today, particularly in urban areas where the pace of life is fast-paced and the demands of work are high.

The concept of work-life balance often implies a rigid division between work and personal life. This dichotomy can lead to several challenges. First, it can create unrealistic expectations. Individuals may feel pressured to achieve a perfect balance, leading to feelings of guilt or inadequacy when they fall short. Second, it can reinforce a binary mindset, suggesting that work and personal life are mutually exclusive. This can make it difficult to find meaning and fulfillment in both spheres.

Third, the pursuit of work-life balance can often be at odds with the demands of modern Indian life. The increasing pace of work, the proliferation of technology, and the blurring of boundaries between work and personal time can make it difficult to maintain a clear separation between the two. As a result, individuals may find themselves feeling overwhelmed and stressed.

A more holistic approach to work and life recognizes that these two spheres are interconnected and interdependent. Rather than seeking a rigid balance, individuals should focus on integrating work and personal life in a way that promotes overall well-being. This can involve finding meaning and purpose in both work and personal life, setting boundaries between work and personal time, and cultivating a sense of mindfulness and present-moment awareness.

For example, Amita might find that she can better integrate work and personal life by planning regular visits to Pune to

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spend time with her family and friends. She might also benefit from mindfulness practices, such as yoga or meditation, which can help her to reduce stress and increase her focus. By adopting a more holistic approach, Amita can learn to appreciate the interconnectedness of work and personal life and find greater fulfillment in both spheres.

The Myths of Work-Life Balance

Work-life balance is a crucial aspect of overall well-being, yet several myths can cloud people's understanding of what it truly entails. Here are some common myths:

Work-Life Balance Means Equal Time

- Many believe that work-life balance means dividing time equally between work and personal life. In reality, balance is subjective and varies for each individual. It's about prioritizing time based on personal values and responsibilities rather than strict equal distribution.

Achieving Work-Life Balance Is Always Possible

- Some think that it's feasible to achieve perfect work-life balance at all times. However, life is dynamic, and there will be periods where work demands more attention and vice versa. Flexibility is essential in navigating these changes.

Work-Life Balance Means You're Less Committed

- There's a common misconception that those who prioritize work-life balance are less dedicated to their jobs. In fact, maintaining a healthy balance can enhance productivity and job satisfaction, leading to better performance.

You Have to Make Sacrifices

- Many believe that achieving work-life balance requires sacrificing one aspect of life for another. While some trade-offs may be necessary, it's crucial to find ways to integrate work and life harmoniously without feeling deprived.

Work-Life Balance Is Just a Personal Issue

- While individuals play a significant role in managing their work-life balance, organizations also have a responsibility to foster a culture that supports it. Work-life balance initiatives, flexible hours, and supportive management can significantly impact employees' well-being.

It's Too Late to Achieve Work-Life Balance

- Some people feel that they've missed the opportunity to achieve work-life balance due to past choices. However, it's never too late to make changes in your life and prioritize balance, regardless of your current situation.

Understanding these myths is essential for fostering a healthier perspective on work-life balance and taking actionable steps toward achieving it in both personal and professional realms.

Challenges of Work Life Balance

The concept of work-life balance, while a global concern, takes on particular salience in the Indian context. The rapid pace of economic growth, coupled with evolving societal norms and expectations, has led to heightened pressures on individuals to excel both in their professional and personal lives. However, the pursuit of a perfect equilibrium between these two spheres can often be elusive, leading to a variety of challenges.

- **Time Constraints:** One of the most prevalent challenges faced by individuals in India is the difficulty in balancing the demands of work and personal life. Prolonged working hours, coupled with commuting times and other work-related commitments, can leave little time for personal pursuits. This is particularly true for individuals residing in large cities like Mumbai, Delhi, and Bangalore, where the cost of living is high and competition for jobs is intense.

For example, consider the case of Ravi, a software engineer working in a multinational company in Bangalore. Ravi's job necessitates him to work long hours, often late into the night. This leaves him with scant time to spend with his family or pursue his hobbies. As a result, Ravi often feels stressed and overwhelmed, struggling to find a harmonious balance between his work and personal life.

- **Role Conflict:** Another challenge faced by many individuals in India is the conflict between their professional and personal roles. In traditional Indian society, family and community often take precedence over individual aspirations. This can create tension for individuals who are trying to balance their career ambitions with their family obligations.

For instance, consider the case of Priya, a working mother who lives in Delhi. Priya's job as a marketing executive requires her to travel frequently for work. This can make it difficult for her to spend quality time with her children and husband. Priya often feels guilty about neglecting her family, but she also recognizes that her career is important to her.

- **Guilt and Shame:** Individuals who feel unable to achieve a perfect balance between work and personal life may experience feelings of guilt or shame. This can lead to a decline in self-esteem and overall well-being. In Indian culture, there is often a strong emphasis on fulfilling one's duties and obligations. This can make it difficult for individuals to accept that they may not be able to meet all of their responsibilities.

For example, consider the case of Arun, a young professional who works in a start-up in Mumbai. Arun is under constant pressure to deliver results at work. He often feels guilty for neglecting his personal life, but he believes that he must sacrifice his own happiness for the success of his career. This constant guilt and self-doubt can take a toll on Arun's mental health.

Additional Challenges are:

- **Lack of Support:** Individuals in India may lack the necessary support systems, such as childcare or flexible work arrangements, to help them balance work and personal life.
- **Societal Expectations:** Traditional gender roles and expectations can make it difficult for women in India to achieve a work-life balance.
- **Economic Pressures:** The need to earn a living can make it difficult for individuals to prioritize their personal well-being.

In short, the pursuit of work-life balance can be a challenging endeavor, particularly in the Indian context. The demands of work, family, and community can often conflict with one another, leading to feelings of stress, guilt, and shame. It is important to recognize that a perfect balance may not always be achievable. Instead, individuals should focus on finding ways to integrate work and personal life in a way that promotes overall well-being.

The Holistic Approach: Life Integration In India

The concept of work-life balance, while a global concern, takes on particular salience in the Indian context. The rapid pace of economic growth, coupled with evolving societal norms and expectations, has led to heightened pressures on individuals to excel both in their professional and personal lives. However, the pursuit of a perfect equilibrium between these two spheres can often be elusive, leading to a variety of challenges.

A more holistic approach to work and life recognizes the interconnectedness and interdependence of these two domains. Rather than seeking a rigid balance, individuals should focus on integrating work and personal life in a manner that promotes overall well-being. This can involve:

Mindfulness and Present Moment Awareness:

Cultivating mindfulness can help individuals to be more present in their experiences, both in their professional and personal lives. This can reduce stress, enhance focus, and improve overall well-being. Many Indian organizations are now incorporating mindfulness practices into their employee wellness programs. For example, Infosys has partnered with a meditation app to offer mindfulness training to its employees.

Setting Boundaries:

Establishing clear boundaries between work and personal time can help to prevent burnout and maintain a healthy work-life balance. This can involve setting specific work hours, avoiding work-related activities during personal time, and creating a designated workspace. Indian organizations are increasingly recognizing the importance of work-life balance and implementing policies to support it. For

example, Tata Consultancy Services (TCS) offers flexible work arrangements, such as work-from-home options and compressed workweeks.

Prioritizing Self-Care:

Taking care of oneself physically, emotionally, and mentally is essential for overall well-being. This can involve consuming a nutritious diet, obtaining sufficient sleep, engaging in regular exercise, and seeking support from friends and family. Indian organizations are increasingly investing in employee wellness programs that promote physical and mental health. For example, Wipro has established wellness centers that offer a variety of services, including yoga, meditation, and counseling.

Finding Meaning and Purpose:

Connecting work and personal life to a broader sense of meaning and purpose can enhance job satisfaction and life fulfillment. This can involve aligning one's career with personal values, volunteering for causes that are meaningful, or pursuing hobbies and interests outside of work. Indian organizations are increasingly recognizing the importance of creating a meaningful work environment. For example, HCL Technologies has a strong focus on corporate social responsibility and encourages employees to volunteer for community service initiatives.

Additional Considerations:

- **Cultural Factors:** Indian culture places a strong emphasis on family and community. It is important to consider how these cultural factors can influence one's approach to work and life.
- **Societal Expectations:** Traditional gender roles and expectations can make it difficult for women in India to achieve a work-life balance.
- **Economic Pressures:** The need to earn a living can make it difficult for individuals to prioritize their personal well-being.
- **Government Policies:** Government policies can play a significant role in supporting work-life balance. For example, the Indian government has introduced several policies to promote gender equality and work-life balance, such as maternity leave benefits and flexible work arrangements.

Indian Organizations With Successful Work-Life Balance

1. **Infosys:** Infosys, one of India's largest IT companies, has been a pioneer in promoting work-life balance. The company offers flexible working hours, telecommuting options, and childcare facilities to its employees. Infosys has also implemented programs to address the emotional and mental well-being of its workforce.

Case Study

In 2015, Infosys introduced an internal initiative called **iCARE** to help employees manage stress and balance work with their personal lives. This initiative includes an employee assistance program that provides counseling, support services, and workshops on stress management. The company also offers sabbatical programs and career breaks, allowing employees to take time off to pursue personal goals or family commitments without jeopardizing their career trajectory.

Through these efforts, Infosys has seen a significant improvement in employee engagement and productivity, while employee turnover rates have reduced. Employees reported a higher level of satisfaction and an increased ability to balance their personal and professional lives.

2. **Tata Consultancy Services (TCS):** Tata Consultancy Services, another major player in the IT sector, has been committed to promoting a healthy work-life balance. The company has implemented several flexible working arrangements and wellness programs.

Case Study:

TCS launched a program called **Maitree**, aimed at building stronger bonds among employees by supporting family integration and work-life balance. Maitree encourages employees to involve their families in company events and activities. It provides support systems for working mothers, such as childcare facilities and part-time work options. TCS also offers flexible work hours and work-from-home options to help employees manage personal commitments.

During the COVID-19 pandemic, TCS expanded its work-from-home policy through the Secure Borderless Workspaces (SBWS) model. This approach allowed over 95% of TCS employees to work remotely while maintaining productivity. The initiative proved successful, with employees expressing higher levels of job satisfaction due to the flexibility and reduced commuting time.

3. **Wipro:** Wipro, another leading IT company, has implemented several work-life balance initiatives to support its employees. Wipro believes that maintaining balance between personal and professional life is essential for employee well-being and productivity.

Case Study:

Wipro introduced its **Women of Wipro (WoW)** program to address gender diversity and support working mothers. The program offers part-time work, extended maternity leave, and sabbatical options. Wipro also provides professional counseling services and health and wellness programs focused on mental health, stress management, and family support.

In addition, Wipro's **FlexiWorks** program offers flexibility in terms of location and working hours, enabling employees to customize their work schedule. The result of these initiatives

has been a more engaged and motivated workforce, as well as an increase in the retention of women employees, especially those returning from maternity leave.

4. **Hindustan Unilever Limited (HUL):** HUL is a major FMCG company in India that has also taken notable steps to support work-life balance among its employees.

Case Study:

HUL has implemented a policy called '**Agile Working**' that allows employees to work from home or any location, with flexible hours. The company also provides various wellness programs aimed at reducing stress, such as fitness challenges, mental health support, and employee well-being workshops.

To help employees achieve a balance between their personal and professional commitments, HUL offers a policy of compressed workweeks, where employees can work extra hours on certain days and take a full day off. This helps employees to manage family responsibilities or pursue personal interests while maintaining their career trajectory.

HUL's Agile Working model has resulted in higher employee satisfaction, and it has become a key factor in the company's ability to attract and retain top talent. The initiative has also contributed to improved employee performance, reduced stress, and greater work engagement.

5. **Mahindra & Mahindra:** Mahindra & Mahindra, a leading Indian multinational conglomerate, has been actively promoting work-life balance through various employee-centric policies.

Case Study:

Mahindra & Mahindra launched its '**Rise for Good**' initiative, which includes a range of programs designed to support employee well-being and foster work-life balance. The company offers flexible work hours, paid time off for volunteering, and extended maternity and paternity leave policies.

Mahindra also introduced '**Wellness Wednesdays**,' a program that encourages employees to engage in wellness activities every Wednesday, such as meditation sessions, fitness programs, and healthy living workshops. Employees can take a break from their regular workday to focus on their physical and mental well-being.

This focus on holistic employee well-being has led to higher levels of employee engagement, lower stress levels, and increased job satisfaction at Mahindra & Mahindra. Employees report that the flexibility and wellness programs help them better manage their professional and personal responsibilities, making the company an employer of choice.

Conclusion

A deeper understanding of work-life balance reveals that it is not about perfectly dividing time between work and personal

life, but about creating harmony that aligns with individual values, priorities, and circumstances. Indian organizations have begun to embrace this concept, recognizing that a rigid separation between professional and personal spheres is often impractical in today's fast-paced and interconnected world. Companies like Infosys, TCS, Wipro, HUL, and Mahindra & Mahindra have successfully challenged the myths of work-life balance by offering programs that prioritize employee well-being. Initiatives like flexible work hours, wellness programs, and mindfulness practices have shown that it is possible to integrate work and life in a way that fosters both professional growth and personal fulfillment. These case studies highlight that work-life balance is not just an individual responsibility but a shared commitment between employees and organizations. As these companies have demonstrated, fostering a culture that promotes balance leads to lower stress, higher retention rates, and enhanced performance. By encouraging employees to take care of their mental and physical health, organizations not only improve productivity but also nurture a more engaged, motivated, and loyal workforce. In essence, the path to achieving work-life balance in India requires moving away from myths and rigid expectations. A flexible, integrated approach that acknowledges the evolving needs of employees is essential. Both individuals and organizations must actively participate in creating an environment where work and life are not competing forces, but complementary aspects that support overall well-being and success.

References

1. Barck-Holst, P., Nilsson, Å., Åkerstedt, T., & Hellgren, C. (2022). Reduced working hours and work-life balance. *Nordic Social Work Research*, 12(4), 450-463.
2. Bhende, P., Mekoth, N., Ingalhalli, V., & Reddy, Y. V. (2020). Quality of work life and work-life balance. *Journal of Human Values*, 26(3), 256-265.
3. Brough, P., Timms, C., Chan, X. W., Hawkes, A., & Rasmussen, L. (2020). Work-life balance: Definitions, causes, and consequences. *Handbook of socioeconomic determinants of occupational health: From macro-level to micro-level evidence*, 473-487.
4. Chaudhuri, S., Arora, R., & Roy, P. (2020). Work-Life balance policies and organisational outcomes—a review of literature from the Indian context. *Industrial and Commercial Training*, 52(3), 155-170.
5. Koon, V. Y. (2022). A multilevel analysis of work-life balance practices. *Asia Pacific Journal of Human Resources*, 60(2), 429-450.
6. Köse, S., Baykal, B., & Bayat, İ. K. (2021). Mediator role of resilience in the relationship between social support and work life balance. *Australian Journal of Psychology*, 73(3), 316-325.
7. Iacovoïu, V. B. (2020). Work-Life Balance between Theory and Practice. A Comparative Analysis. *Economic Insights-Trends & Challenges*, (2).
8. Lendák-Kabók, K. (2022). Women's work-life balance strategies in academia. *Journal of Family Studies*, 28(3), 1139-1157.
9. Muralidhar, B., Prasad, D. K., & Mangipudi, D. M. R. (2020). Association among remote working concerns and challenges on employee work-life balance: an empirical study using multiple regression analysis with reference to international agricultural research institute, Hyderabad. *International Journal of Advanced Research in Engineering and Technology*, 11(6).
10. Pasamar, S. (2020). Why a strong work-life balance system is needed?, *Management Letters/Cuadernos de Gestión*, 20(3).
11. Palumbo, R. (2024). Making sense of the relationship between involvement and work-life balance: empirical insights from the public sector. *International Journal of Public Administration*, 47(10), 663-679.
12. Perreault, M., & Power, N. (2023). Work-life balance as a personal responsibility: The impact on strategies for coping with interrole conflict. *Journal of Occupational Science*, 30(2), 160-174.
13. Roopavathi, S., & Kishore, K. (2021). The impact of work life balance on employee performance. *Journal of Interdisciplinary Cycle Research*, 12(10), 31-37.
14. Warren, T. (2021). Work-life balance and gig work: 'Where are we now' and 'where to next' with the work-life balance agenda?. *Journal of Industrial Relations*, 63(4), 522-545.
15. Wood, J., Oh, J., Park, J., & Kim, W. (2020). The relationship between work engagement and work-life balance in organizations: A review of the empirical research. *Human Resource Development Review*, 19(3), 240-262.



Leadership Ethos for Sustainable Development Goals

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Abstract

Leadership is anchored by unspoken behaviours and ethos. The notion of leadership as the exercise of power and force does not exist anymore. The true essence of leadership is bringing all together wholeheartedly. It facilitates the accomplishment of goals within specified time frame while leveraging available resources. Additionally, it contributes to organizational growth. But the recipe would be incomplete without a perfect set of ethos. The outcomes of leadership are enormous. The results are in the terms of employee engagement, team agility, organizational productivity, good culture, and overall effectiveness. The Agenda of 2030 regarding sustainable development, with its 17 sustainable development goals (SDGs) has put an immense encumbrance on our leaders. It demands leaders to have a grasp of how to contribute and accomplish the targets. Sustainability is a multifaceted task that requires significant changes in organizations. Ethos of leaders is one of the primary transformative agents. With their perspective, leaders and not organisations effect change This article explores the various approaches of leaders which contributes in meaningful ways for sustainable development goals.

Keywords: Leadership, Ethos, Sustainable Development Goals, Challenge.

Introduction

“Culture eats strategy for breakfast.”

While expressing this statement, renowned author Peter Drucker emphasised the significance of the human element in every organisation. No matter how comprehensive your plans, strategies are, if the people executing it do not nurture the appropriate culture, then the plan will stumble. A good leader with a right set of ethos might develop culture overtime.

Leadership

The primary objective of every organization is not just to maintain its operations, but also to secure its long-term sustainability through the improvement of its performance. In order to remain competitive in today’s marketplaces,

businesses are compelled to consistently enhance their performance. Previous studies (Avolio and Gartner, 2005; Shafique et al. 2019) have shown the importance of leadership in driving organizational success. Leadership is often associated with positive outcomes such as increased profitability, a competitive advantage, and improved overall organizational performance (Lussier and Achua, 2007; Yahaya and Ebrahim 2016). Leadership entails acknowledging the responsibilities owed to all stakeholders and to society as a whole. (Caldwell, 2012). They are instrumental in cultivating an organizational culture grounded in trust and a commitment to ongoing learning (Senge, 2006 and Shockley-Zalabak et al., 2010). Their mindset and values strengthen organizational commitment (Covey, 2004). Many studies confirmed that organisational failures are typically the result of the wrong path being taken by top management to realise the organization’s goals. Leadership is the power to change someone’s values, beliefs, behaviour, and attitudes. (Ganta, and Manukonda, 2014).

Organisations must prioritize their investment in leadership ethos to yield greater returns, focusing on growth, learning, deliberative, and thoughtful mindsets. As mindset adapt and evolve, the thinking, learning, and behaviour of leaders will naturally improve, as they will perceive and interpret their situations more accurately. Improving their ideas, learning, and action will result in increased performance and accomplishment. Employees who are committed to organization’s goals and value system, contribute success to the organization by carrying out significant responsibilities (Schaufeli and Bakker, 2004; Demerouti and Cropanzano, 2010). The growth mindset framework is frequently used in the context of learning and education. Nonetheless, the need of a growth mindset has been shown to be just as important for leaders and coaches (Asbury et al., 2015; Boyd, 2014; Chase, 2010; Heslin and Keating, 2017).

Sustainability

Sustainability is explained as the capacity to maintain something over a period. (Basiago.1999). Similarly, Stoddart (2011) defined sustainability as efficient and fair resource distribution intra- and inter-generationally with socio-economic activity within a finite ecosystem. According

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to Ben-Eli (2015) sustainability is a state of dynamic equilibrium in which a population and the carrying capacity of the environment interact in such a way that the population grows and develops to its full potential without threatening the sustainability of the ecosystems on which it depends.

Sustainable Development

Sustainable development explains to the concept of fulfilling the requirements of the today without jeopardizing future generations' needs. It is a way of harmonizing economic, social, and environmental contemplations to achieve long-term prosperity and wellbeing for all. The term was first introduced in the 1980s by the Brundtland Commission, which elucidated sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Attaining sustainable development requires collective action at all levels, including individual, community, corporate, and government action. It also requires a long-term perspective and a commitment to making difficult choices and trade-offs to ensure that we leave a better world for future generations.

The 2015 UN 2030 Agenda for Sustainable Development presents a roadmap for peace and prosperity for people and the planet. The 17 Sustainable Development Goals (SDGs) are an urgent call for all countries, developed and developing, to work together. They understand that eradicating poverty and other deprivations requires methods to enhance health, education, disparity, and economic progress while combating climate concerns and preserving our oceans and habitats. The 2030 Agenda would be difficult to implement due to its unprecedented level of ambition, and a compartmentalised strategy to development would not be sufficient.

Fundamentals of Sustainable Development

Sustainable development is a visionary and prospective development paradigm that places an emphasis on a constructive transformation trajectory based on socioeconomic and ecological considerations. Taylor (2016) identified economic development, environmental preservation, and social parity as the three core issues of sustainable development. Accordingly, the framework of sustainable development is based on economic, social, and environmental sustainability, known as conceptual pillars of sustainable development.

Economic Sustainability

At first, it was anticipated that advances in technology would result in an increase in the availability of natural resources for industrial use. (Cooper & Vargas, 2004). Assuming infinite natural resources, economists have overemphasized the market's capacity to distribute resources proficiently (Du & Kang, 2016). The fact that natural resources are finite and not all of them are capable of being renewed or refilled is something that has become widely recognized in recent times.

Economic sustainability requires a production system that sees existing demands without compromising forthcoming requirements. (Lobo, Pietriga and Appert, 2015). Hence, economic sustainability necessitates those decisions be made in the fair and judicial manner, considering all dimensions of sustainability (Zhai & Chang, 2019).

Social Sustainability

Social sustainability focuses on the growth of individuals (Benaim & Raftis, 2008). The realm of social sustainability covers the area of equity, participation, entrusting, availability, cultural existence, and organizational stability (Daly, 1992). At the societal level, (Saith, 2006) explained that sustainability means nurturing the progress of people, communities, and cultures to attain a meaningful existence, leveraging healthcare, education, gender parity, peace, and stability.

Environmental Sustainability

The notion of environmental sustainability focuses on the natural environment and the ways through which it can be fruitful while also remaining resilient to sustenance mankind. Moreover, ecological equilibrium and ecosystem carrying capacity influence environmental sustainability (Brodhag and Taliere, 2006). To preserve the sustainability of natural capital, it must be utilized judiciously. Both, a source of inputs and a receptacle for outputs. (Goodland & Daly, 1996). The extraction and removal of natural resources and waste must not exceed the rate at which they can be replaced or assimilated by the ecosystem. (Diesendorf, 2000; Evers, 2018). This is so that balance can be maintained within the constraints of the earth systems' limits or boundaries. Environmental sustainability is concerned with how the natural environment may be kept productively stable and robust to support human life and growth.

Sustainable Development Goals & Leadership

To put the concept of sustainable development into practice, general public involvement must be improved. Everyone on the planet needs to realize and accept the fact that their survival as well as the survival of future generations is contingent on practicing responsible consumption, accountable production, good stewardship of the environment, and progressive social values. Although everyone has a role to play in ensuring sustainable development, international, national, regional, and local institutions are encouraged and expected to show ownership, leadership, and citizenship in this endeavour.

Sustainable development demands effective leadership, which begins with self-understanding and a relational worldview. Reflection involves "understanding one's own abilities, knowledge and values within the framework of communal groups." This reflecting mechanism allows feedback loops and growth and change cycles. Hence, leadership is inclusive, collaborative, and introspective.

Leadership at the national and organizational levels must foster a feeling of shared responsibility for achieving the SDGs, focus on the long term, and build procedures to assure their long-term achievement. Leaders must grasp the necessity for national and organizational collaboration, be open to learn, exhibit and promote ethics.

Ethos

Ethos means a person's perspective or viewpoint of life, as well as attitudes, conventions, and principles that impact a person's actions as well as the ways in which they relate to and behave with other people. (Dweck and Leggett 2000). Another meaning of ethos is mindset, refers to the collective mental framework shared by members of a community at a certain period and place. (Hong, Chiu, Dweck, Lin and Wan 1999). Consequently, depending on the mentality or ethos of leaders, sustainable development can be promoted or impeded. Micro-credit famed Nobel Laureate Professor Mohammed Yunus once explained : "My greatest challenge has been to change the mindsets of people. Mindsets play strange tricks on us. We see things the way our minds have instructed our eyes."

Ethos isn't static and one-dimensional; rather, they are the product of a complex interplay of many different aspects of their lives. As mentioned earlier, ethos is multifaceted and evolve over the course of our lives. Furthermore, they are formed, deconstructed, and reconstructed through many processes at various times of our lives. For instance, the norms and attitudes that are formed in the early stages of life are frequently influenced by the values that are taught by parents at home and those that are learned at school. Some of these norms and attitudes may shift in during maturity because of exposure to higher education, the exchange of information, and the work environment.

Mindset in Leadership Ethos

1. **Agile Mindset:** Agile mindset holds that change is feasible and required to address various alternatives prior to rapidly arriving at a solution; failure is transient, and any impediments can be quickly surmounted. Agile leaders' mindset adopts a comprehensive perspective on situations. They believe in proactive attitude, employs inquisitive thinking and critical reasoning.
2. **Problem Solving Mindset:** Problem mindset explains that the capabilities of humans are not static; rather, they may be continually improved via the application of effort and the acquisition of new knowledge. Leadership characterized by innovative attitude is daring and adventurous, open to trying new things, good at finding solutions to problems, imaginative and resourceful, able to bounce back from setbacks, and highly determined to succeed.
3. **Evidence-based Mindset:** Leaders that have an evidence-based approach feel that having adequate data is essential to making sound decisions. The mindset of this kind of leader is one that is driven and

motivated to making use of data, ensuring its validity, and recording it.

4. **Foresight Mindset:** The attitude of foresight begins with the presumption that present and future transformation is achievable. If we ask the appropriate questions, make a strategy, and get ourselves ready for the future, we can have an impact on the future and foresee trends.
5. **Result oriented Mindset:** The decisions that put an emphasis on the outcomes are the ones that are considered productive. The result-oriented leader's approach is centred on acting and getting outcomes.
6. **Collaborative Mindset:** Collaboration amplifies the effect of an endeavour. A collaborative attitude values learning, co-creating, sharing experiences, and conversing with people.
7. **Digital Mindset:** Digital technology has the potential to assist in the settlement of a wide variety of problems, if it is utilised effectively. The mindset of the leaders is centred on using the benefits of technology to enable the transition of governance while simultaneously addressing the dangers it poses.
8. **Ethical Mindset:** Respecting the opinions of other people and adhering to the moral and legal guidelines established by one's company are all essential components of ethical mindset.
9. **Transparent Mindset:** Building smarter judgements requires establishing trust, maintaining open lines of communication, and being honest. Leaders with transparent mindset considers new concepts and openly discloses information that is not classified.
10. **Personal Accountability Mindset:** Leaders establish the standard for the organisation. Without responsibility from senior executives and middle managers, people feel adrift and disoriented. Personal accountability involves taking responsibility.

Toolkit for Ethos

Leaders need a toolkit of competencies to be persuaded to embrace diversity and inclusion. It includes following skills:

1. **Emotional Intelligence:** It mentions to a person's ability to observe, comprehend, manage, and express their feelings in a constructive manner. It also involves recognizing and influencing the emotions of others, which can be essential in building strong relationships and effective communication. Emotional intelligence encompasses four main capabilities such as knowledge about self, self-discipline, awareness of social aspect, and relationship management. Evolving emotional intelligence skills can be beneficial in both personal and professional settings.
2. **Communication Skills:** Leaders need to be able to communicate in a way that resonates with all sectors of society, including those who may have different beliefs, cultures, or experiences. This requires active listening, empathy, and an ability to communicate complex ideas in a clear and concise manner.

3. **Respect for Diversity:** It involves recognizing and valuing the differences among individuals and groups, including their unique needs, perspectives, and backgrounds. This means that leaders should be able to adjust and respond to the changing needs of individuals and groups, especially those who are marginalized and vulnerable.
4. **Negotiation and Facilitation:** Leaders need these skills to resolve conflicts and establish agreements to address the special challenges of vulnerable people. They should protect disadvantaged groups. To find the best answers, leaders may need to negotiate the process through direct or guided conversations with stakeholders, who may have different take, approaches and strategies due to the complex dangers of vulnerable. .
5. **Engagement and Collaboration:** Inclusive and participatory policymaking is critical for creating policies that are effective, equitable, and sustainable. By involving diverse stakeholders, policymakers can build stronger relationships with their communities, foster collaboration, and innovation, and ultimately achieve better outcomes for all.

Conclusion

Leaders drive change and create a sustainable future; thus, their ethos are crucial to achieving sustainable development goals. Sustainable leaders can impact company culture and values, influencing decision-making and action toward sustainable development goals. Leaders' ethos helps to achieve sustainable development goals for these reasons:

1. **Vision:** Leaders with proper ethos have the potential to inspire people with a clear vision for a sustainable future. They may rally support for sustainable development goals by emphasizing their importance.
2. **Innovation:** Sustainable development goals require innovative approaches to complex problems. Leaders with a correct ethos can encourage innovation, risk-taking, and experimentation to find new solutions for existing problems.
3. **Collaboration:** Sustainability requires collaboration across different sectors and stakeholders. A right ethos of leaders can build bridges between different groups and facilitate dialogue and cooperation, leading to more effective solutions and better outcomes.
4. **Accountability:** Sustainable development goals require leaders who take responsibility for the outcomes of their decisions and actions. By holding themselves and their teams accountable, leaders can track progress, measure success, and adjust strategies as needed to achieve sustainable development goals.
5. **Adaptability:** An adaptable approach is needed to meet sustainable development goals. Sustainable development leaders must also learn from mistakes. They consider failures as learning experiences. Leaders can uncover problem reasons and build new solutions by evaluating mistakes and failures.

The ethos of a leadership is a game changer when it comes to attaining the Sustainable Development Goals (SDGs)

because the SDGs are complex, interconnected, and require a holistic approach to achieve. A leader who is committed to the SDGs and has the right ethos can inspire their team to think creatively and proactively about how they can contribute to achieving the goals. A leader who prioritizes collaboration can help their team to work together effectively, leveraging diverse skills, perspectives, and expertise to achieve common goals. This approach is essential for tackling the interconnected challenges of the SDGs, which require a multidisciplinary and cross-sectoral approach.

References

1. Asbury, K., Klassen, R., Bowyer-Crane, C. A., Kyriacou, C., & Nash, P. (2015). National differences in mindset among students who plan to be teachers. *International Journal of School and Educational Psychology*, 4(3):158-164.
2. Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, 16(3), 315-338.
3. Basiago, A. (1999). Economic, social, and environmental sustainability in development theory and urban planning practice. *The Environmentalist*, 19:145-161.
4. Benaim, A., Collins, A., & Raftis, L. (2008). Social dimension of sustainable development: guidance and application.
5. Ben-Eli, M. (2015). Sustainability: Definition and five core principles a new framework the sustainability laboratory New York: The sustainability Laboratory. [Online] Available: <http://www.sustainabilitylabs.org/assets/img/SL5CorePrinciples.pdf>
6. Boyd, D. E. (2014). The Growth Mindset Approach: A Threshold Concept in Course Redesign. *Journal on Centers for Teaching and Learning*, 6.
7. Brodhag, C., & Talière, S. (2006), May. Sustainable development strategies: Tools for policy coherence. In *Natural Resources Forum*, 30(2): 136-145. Oxford, UK: Blackwell Publishing Ltd.
8. Caldwell, C. (2012), *Moral Leadership: A Transformative Model for Tomorrow's Leaders*, Business Expert Press, New York, NY
9. Chase, M. A. (2010). Should coaches believe in innate ability? The importance of leadership mindset. *Quest*, 62(3): 296-307.
10. Cooper, P. J., & Vargas, C. M. (2004). *Implementing sustainable development: From global policy to local action*. Rowman & Littlefield Publishers.
11. Covey, S.R. (2004), *The 8th Habit*, Free Press, New York, NY.
12. Daly, H. E. (1992). UN conferences on environment and development: retrospect on Stockholm and prospects for Rio. *Ecological Economics*, 5(1):9-14.

13. Demerouti, E., & Cropanzano, R. (2010). From thought to action: employee work engagement and job performance. *Work engagement: a handbook of essential theory and research*:147-163.
14. Diesendorf, M. (2000). Sustainability and sustainable development. *Sustainability: The corporate challenge of the 21st century*, 2: 19-37.
15. Du, Q., & Kang, J. T. (2016). Tentative ideas on the reform of exercising state ownership of natural resources: Preliminary thoughts on establishing a state-owned natural resources supervision and administration commission. *Jiangxi Social Science*, 6: 160.
16. Dweck, C. S., & Leggett, E. L. (2000). A social-cognitive approach to motivation and personality.
17. Evers, B. A. (2018). Why adopt the sustainable development goals? The case of multinationals in the Colombian coffee and extractive sector: Master Thesis Erasmus University Rotterdam
18. Ganta, V. C., & Manukonda, J. K. (2014). Leadership during change and uncertainty in organizations. *International Journal of Organizational Behaviour & Management Perspectives*, 3(3):1183.
19. Goodland, R., & Daly, H. (1996). Environmental sustainability: universal and non-negotiable. *Ecological Applications*, 6(4): 1002-1017.
20. Heslin, P. A., & Keating, L. A. (2016). Stuck in the muck? The role of mindsets in self-regulation when stymied during the job search. *Journal of Employment Counselling*, 53(4): 146-161.
21. Hong, Y. Y., Chiu, C. Y., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of personality and social psychology*, 77(3):588-599.
22. Lobo, M. J., Pietriga, E., & Appert, C. (2015), April. An evaluation of interactive map comparison techniques. In *Proceedings of the 33rd annual ACM conference on human factors in computing systems*: 3573-3582.
23. Lussier, R., & Achua, C. (2007). *Effective Leadership* (3rd ed.). Thomson Learning.
24. Saith, A. (2006). From universal values to millennium development goals: Lost in translation. *Development and Change*, 37(6): 1167-1199.
25. Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(3): 293-315.
26. Senge, P.M. (2006), *The Fifth Discipline*, Crown Publishing, New York, NY
27. Shafique, I., Ahmad, B., and Kalyar, M. N. (2019). How ethical leadership influences creativity and organizational innovation: examining the underlying mechanisms. *Eur. J. Innov. Manag.* 23, 114–133. doi: 10.1108/EJIM-12-2018-0269
28. Shockley-Zalabak, P.S., Morreale, S. and Hackman, M. (2010), *Building the High-Trust Organization*, Jossey-Bass, San Francisco, CA.
29. Stoddart, H., Schneeberger, K., Dodds, F., Shaw, A., Bottero, M., Cornforth, J., & White, R. (2011). A pocket guide to sustainable development governance. Stakeholder Forum. In *United Nations conference on the human environment 1992. Rio declaration on environment and development. Rio de Janeiro, Brazil: United Nations.*
30. Taylor, S. J. (2016). *A review of sustainable development principles: Centre for environmental studies. South Africa: University of Pretoria.*
31. Yahaya, R., & Ebrahim, F. (2016). Leadership styles and organizational commitment: Literature review. *Journal of Management Development*, 35(2), 190–216.
32. Zhai, T. T., & Chang, Y. C. (2018). Standing of environmental public-interest litigants in China: Evolution, obstacles and solutions. *Journal of Environmental Law*, 30: 369–397. <https://doi.org/10.1093/jel/eqy011>
33. https://www.brainyquote.com/quotes/muhammad_yunus_228663



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