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“Assessing NEP 2020’s Influence On Holistic Growth: A Case Study Of Bidhan Chandra College Commerce Undergraduates”

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Abstract: The National Education Policy (NEP) 2020 in India signifies a transformative shift towards a holistic educational framework designed to address the challenges of the 21st century. By integrating humanities, arts, and STEM disciplines, the policy aims to cultivate well-rounded individuals through interdisciplinary learning, vocational training, character development, and research. Inspired by visionaries like Swami Vivekananda and Rabindranath Tagore, NEP 2020 emphasizes character building, self-sustained thinking, and a sense of service and patriotism, striving to develop graduates who are academically proficient, morally upright, and socially responsible. Moreover, NEP 2020 emphasizes value education, comprehensive development, professional training, and ethics, aiming to establish a competency-based, inclusive, and innovative educational framework. This study synthesizes quantitative data from surveys with qualitative insights gleaned from interviews and group discussions. Given that data collected through questionnaires are ordinal in nature, this study employs various non-parametric tests to uncover patterns and relationships that might not be apparent through traditional analyses. Implemented just a year ago in West Bengal, this study provides preliminary evaluations of NEP 2020 based on four established metrics, offering an early snapshot of the policy's impact on student development. Acknowledging that meaningful changes in education systems take time, ongoing monitoring will be essential to understand the long-term effects of NEP 2020 on students' overall development. The research aims to evaluate the holistic development of students across multiple dimensions, including academic performance, social interaction, mental and physical health, and life satisfaction. Findings suggest that NEP 2020's emphasis on holistic education positively impacts these dimensions, demonstrating interconnected growth in students' academic performance, social skills, physical and mental health, and overall life satisfaction.

Index Terms -NEP 2020, Holistic Development, Academic Performance , Social Interaction, Physical & Mental Health, Life Satisfaction.

Introduction:

The National Education Policy (NEP) 2020 in India signifies a pivotal moment in the country's educational landscape, reflecting a comprehensive overhaul aimed at fostering holistic development among learners (Ministry of Education, Government of India, 2020; Scholar Base, 2014). This transformative shift, as articulated by Dr. Ramesh Pokhriyal 'Nishank', Minister of Education, Government of India, in his insightful discourse on its transformative implications, underscores a commitment to preparing students for the multifaceted challenges of the 21st century ("National Education Policy 2020: A Paradigm Shift in Indian Education"). NEP 2020 has been widely discussed and analyzed by prominent educators and scholars, including Dr. Bhushan Patwardhan, Vice-Chairman of the University Grants Commission (UGC), who sheds light on its implications for higher education ("National Education Policy 2020: What Does It Mean for Higher Education?"). The policy's overarching goal is to equip students with the necessary skills and competencies for the 21st-century world, emphasizing holistic development and multidisciplinary learning ("National Education Policy 2020: A Paradigm Shift in Indian Education"). Dr. Patwardhan further elaborates on NEP 2020's implications for higher education, emphasizing its focus on promoting quality, innovation, and global competitiveness ("National Education Policy 2020: What Does It Mean for Higher Education?"). He discusses provisions for fostering research and innovation ecosystems, promoting autonomy and accountability among higher education institutions, and enhancing graduate employability through a flexible and inclusive education system ("National Education Policy 2020: What Does It Mean for Higher Education?"). Dr. Das offers insights into both the challenges and opportunities associated with NEP 2020's implementation ("National Education Policy 2020: Challenges and Opportunities"). He highlights the importance of effective stakeholder engagement, capacity building, and resource mobilization to realize the policy's ambitious goals ("National Education Policy 2020: Challenges and Opportunities"). Additionally, the Jagran Josh article on NEP 2020 provides key highlights and reforms outlined in the policy, including the emphasis on early childhood education, foundational literacy and numeracy, and the integration of vocational education into the mainstream curriculum ("National Education Policy 2020: Key Highlights and Reforms").

The Ministry of Education, Government of India, offers a comprehensive overview of NEP 2020, elucidating its key features, rationale, and implementation strategies ("Understanding the National Education Policy 2020"). The document emphasizes NEP 2020's holistic approach to education, encompassing aspects such as social-emotional learning, ethical values, and multidisciplinary learning ("Understanding the National Education Policy 2020").

Under this backdrop, we have chosen an empirical study to assess the holistic development of students under NEP 2020 because it allows us to systematically gather and analyze data on the multifaceted aspects of the policy's implementation. An empirical approach provides a structured method for observing and measuring the real-world impact of NEP 2020 on students, encompassing academic performance, social-emotional growth,

physical and mental wellness, and overall satisfaction. By collecting quantitative data through surveys and qualitative insights via interviews and focus group discussions, we comprehensively evaluate how well the policy is fostering holistic development.

Review of Literatures:

Holistic education aims to develop the full potential of students by integrating intellectual, emotional, social, physical, and moral dimensions. The National Education Policy (NEP) 2020 of India is a significant reform aimed at transforming the education system to foster holistic development in students. This review synthesizes key findings from recent literature on the holistic development of students, specifically assessing the impact of NEP 2020 on student growth.

The NEP 2020 emphasizes a multidisciplinary approach to education, aiming to develop critical thinking, creativity, and problem-solving skills in students. It advocates for the inclusion of co-curricular activities, sports, and arts to foster well-rounded development (Kapoor, 2021). This policy underscores the importance of blending academic learning with arts, humanities, sports, and vocational education, thereby promoting a more comprehensive development of students. Scholars like Kumar (2021) have emphasized that NEP 2020 marks a departure from traditional rote learning, advocating instead for experiential and inquiry-based learning to nurture critical thinking, creativity, communication skills, and ethical reasoning among students.

The integration of life skills and value-based education within NEP 2020 is explored by Sharma (2022). This policy initiative seeks to embed moral values, ethics, and essential life skills in the curriculum. By incorporating lessons on empathy, respect for diversity, and environmental sustainability, the policy aims to cultivate responsible citizenship and leadership qualities in students. This holistic approach is designed to ensure that students are not only academically proficient but also socially and ethically grounded.

Gupta (2021) discusses the crucial role of extracurricular activities in the holistic development framework envisioned by NEP 2020. The policy encourages the inclusion of sports, arts, and cultural activities in the regular curriculum, recognizing their significance in the physical, emotional, and social development of students. Participation in these activities helps students develop teamwork, discipline, and leadership skills, contributing to their overall personality development.

The role of teachers is pivotal in the successful implementation of NEP 2020, as highlighted by Patel (2021). The policy mandates continuous professional development for teachers to equip them with the necessary skills for new pedagogical approaches. Teachers are expected to mentor and guide students beyond academics, supporting their emotional and social growth. Patel underscores that effective teacher training is crucial for fostering an environment conducive to holistic education.

However, implementing NEP 2020 presents several challenges. Miseliunaite et al. (2022) point out the lack of large-scale quantitative studies that demonstrate the effectiveness of holistic education compared to traditional methods. They also identify the need for more comprehensive research on the impact of holistic education on

environmental awareness and sustainability. Similarly, Datnow et al. (2022) discuss the tensions between maintaining academic rigor and addressing broader developmental goals, suggesting that educational systems must navigate these challenges by fostering stakeholder collaboration and building supportive social infrastructure.

Singh (2022) identifies resource constraints, training gaps, and resistance to change as some of the obstacles in the implementation of NEP 2020. Singh suggests strategies such as increased funding, public-private partnerships, and community involvement to address these challenges. Additionally, a robust monitoring and evaluation framework is essential to track the progress of holistic education initiatives and ensure their effectiveness.

Empirical studies on holistic education highlight its potential benefits. Miseliunaite et al. (2022) conducted a systematic review of empirical research, concluding that holistic education can significantly enhance personal and social development. However, they emphasize the need for more quantitative research to validate these findings on a larger scale. Datnow et al. (2022) present case studies from seven educational systems, demonstrating how holistic development can be integrated into existing frameworks without compromising academic standards. These case studies show that holistic education can support intellectual, physical, emotional, social, cultural, and moral growth.

Rajan (2023) provides practical insights through case studies of schools that have successfully integrated holistic development practices in line with NEP 2020. These case studies illustrate innovative programs and activities that have led to measurable improvements in student outcomes, including better academic performance, increased self-confidence, and enhanced social skills. Such examples serve as models for other schools aiming to implement similar holistic education practices.

In conclusion, the literature on the holistic development of students under NEP 2020 highlights the transformative potential of the policy in reshaping Indian education. By promoting a balanced approach that values academic excellence alongside emotional, social, and ethical growth, NEP 2020 aims to prepare students for the challenges of the 21st century. The insights from Indian scholars underscore the importance of a supportive ecosystem involving educators, parents, and the community in achieving these ambitious goals.

Main Objectives:

- **Evaluate Student Development Across Multiple Dimensions:**

- Evaluate students' academic performance, including subject understanding, knowledge acquisition confidence, independent learning engagement, assignment punctuality, communication skills, time management, and vocational course involvement.
- Analyze social interaction through participation in extracurricular activities, group projects, club involvement, teamwork skills, and community service engagement.
- Evaluate mental and physical health by assessing hobbies, physical activities, stress levels, sleep quality, physical fitness, resilience, and healthy eating habits.
- Determine life satisfaction by understanding clarity of future aspirations, overall satisfaction, adaptability, critical thinking, problem-solving skills, and time spent on relaxation activities.

- **Analyze Ordinal Data:**

Given the nature of the data collected, which includes ranked outcomes and potentially contains outliers or imprecise measurements, this study employs non-parametric tests for analysis. Non-parametric methods are chosen because they do not require the major assumptions about data distribution that parametric tests do, making them suitable for analyzing ordinal data effectively.

- **Identify Patterns and Relationships:**

Through the application of non-parametric tests, this research seeks to uncover patterns and relationships within the collected data that may not be evident through traditional parametric analyses. The study will explore the magnitude and direction of differences across various dimensions of student development, shedding light on how different aspects of their growth are interconnected.

- **Understand the Impact of Various Factors:**

This objective focuses on investigating how different factors contribute to the holistic development of students. The study will examine the influence of academic performance, social interactions, mental and physical health, and life satisfaction on each other and on the overall development of students. Understanding these interdependencies will provide insights into the key drivers of holistic growth among commerce students under NEP 2020.

- **Contribute to the Literature on Holistic Education:**

Ultimately, this research aims to make a significant contribution to the broader literature on holistic education. By providing empirical evidence on the effectiveness of various aspects of student development and the interplay between them, this study will inform future research directions and policy decisions in the field of education. The findings will help shape the understanding of holistic education practices and their impact on student growth in the context of NEP 2020.

Research Methodology:

Introduction

This study aims to evaluate the impact of the National Education Policy (NEP) 2020 on the holistic development of commerce students at B.C. College. The analysis is structured around four primary metrics: academic performance, social interaction, physical & mental health, and life satisfaction. A combination of categorical and ordinal data is analyzed using various statistical tools to provide comprehensive insights.

Study Design

- **Population and Sample:**
 - The target population consists of 230 commerce students enrolled at B.C. College.
 - A sample of 96 students responded to the questionnaire, representing approximately 41.7% of the total population.
- **Questionnaire Development:**
 - The questionnaire comprised 27 questions: 5 categorical and 22 ordinal.
 - Questions were designed to capture data across the four metrics: academic performance, social interaction, physical & mental health, and life satisfaction.
- **Data Collection:**
 - Data were collected via a structured questionnaire administered to the selected sample.
 - Responses were anonymized to ensure confidentiality and ethical compliance.

Statistical Analysis

- **Descriptive Statistics:**
 - **Central Tendency:** Median were calculated to summarize the central values of the ordinal data.
 - **Variability:** Inter-quartile range (IQR) was used to assess the spread of the middle 50% of the data.
- **Distribution Analysis:**
 - **Skewness:** Calculated for the overall data and separately for each of the four metrics to understand the asymmetry of the distribution.
 - **Kurtosis:** Assessed for the whole data set to evaluate the presence of outliers and the "tailedness" of the distribution.
- **Non-Parametric Tests:**
 - Due to the ordinal nature of most data, non-parametric tests were employed. These tests do not assume a normal distribution, making them suitable for this type of data.
- **Chi-Square Test:**
 - Applied to analyze associations between categorical variables within the data set, such as the relationship between Academic performance and continuing vocational and other course simultaneously.
- **Spearman's Rank Correlation:**
 - **Overall Correlation:** Assessed the relationships between the four primary metrics to identify potential interdependencies.
 - **Subgroup Analysis:**
 - Correlation between strong academic results and other metrics (social interaction, physical & mental health, and life satisfaction).
 - Correlation between weak academic results and the same metrics to identify differing patterns based on academic performance levels.
- **Hypothesis Testing for Correlation:**
 - Conducted to determine the statistical significance of the Spearman's rank correlations. Hypothesis testing helped ascertain whether the observed relationships were statistically significant or occurred by chance.

Results Interpretation

- **Central Tendency and Variability:** Median values provided insights into the central response trends, while IQR highlighted variability.
- **Distribution Analysis:** Skewness and kurtosis offered a deeper understanding of the data distribution, identifying any asymmetry or potential outliers.
- **Correlation Analysis:**
 - Overall correlation analysis revealed the strength and direction of relationships between the primary metrics.
 - Subgroup correlation analysis highlighted how academic result influenced other aspects of student development.

Ethical Considerations

- Informed consent was obtained from all participants.
- Participant anonymity and data confidentiality were maintained throughout the study.
- The study adhered to ethical guidelines for research involving human subjects.

Summary

This methodology provided a comprehensive framework for assessing the impact of NEP 2020 on commerce students' holistic development. The combination of descriptive statistics, non-parametric tests, chi-square tests, and correlation analyses enabled a thorough evaluation of the collected data. The findings contribute to understanding how educational policies like NEP 2020 influence various dimensions of student development and can inform future educational strategies and interventions.

Analysis and Interpretation:

The analysis, findings, and interpretations of this study are divided into five distinct parts to capture the results from various perspectives comprehensively.

Part- I (Descriptive statistics):

1. Score Range

The scores range from 66 to 131 out of a possible 135:

- **Minimum Score:** 66
- **Maximum Score:** 131
- **Range:** $131 - 66 = 65$

This indicates a wide spread in scores, suggesting a significant variation in how students performed on the questionnaire.

2. Median Score

The median score is 82:

- The median is the middle value when all scores are arranged in ascending order.
- A median of 82 means that 50% of the students scored below 82 and 50% scored above 82.

3. Inter-quartile Range (IQR)

The inter-quartile range (IQR) is 14:

- The IQR is the range within which the middle 50% of the scores fall. It is calculated as the difference between the third quartile (Q3) and the first quartile (Q1).
- An IQR of 14 indicates that the middle 50% of the scores are within 14 points of each other, showing moderate variability.

4. Interpretation of Central Tendency and Variability

Central Tendency

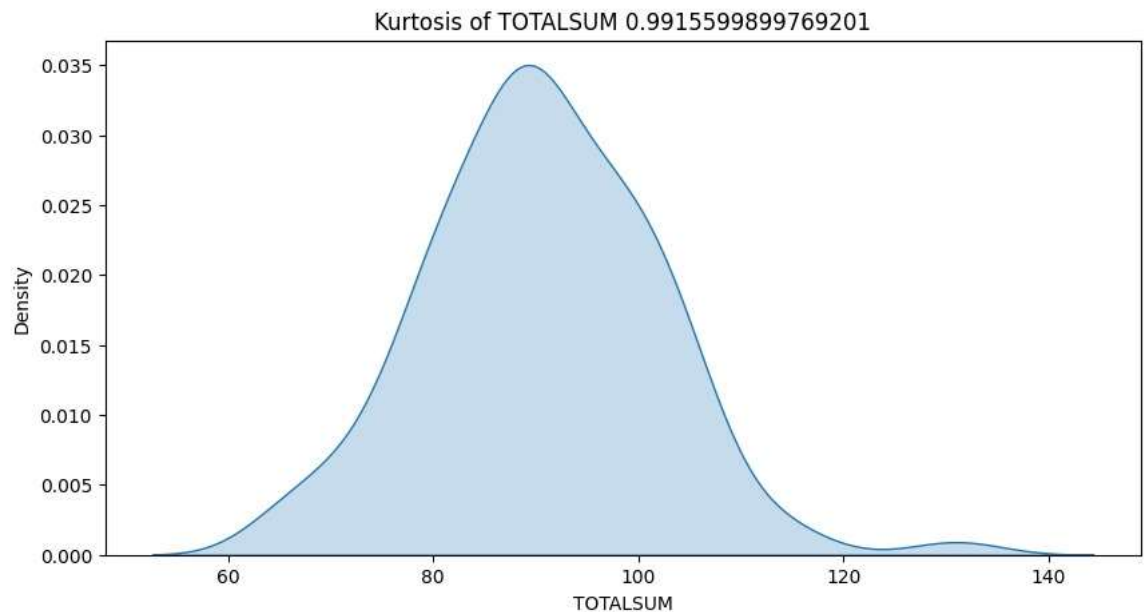
The central tendency of the scores is highlighted by the median score of 82:

- The median is a more robust measure of central tendency in the presence of outliers compared to the mean and it is best used for ordinal data. It is not affected by extremely high or low scores.
- A median score of 82 out of 135 suggests that the central location of student performance is on the lower side of the scoring scale. This might indicate potential areas for improvement in whatever skills or knowledge the questionnaire is measuring.

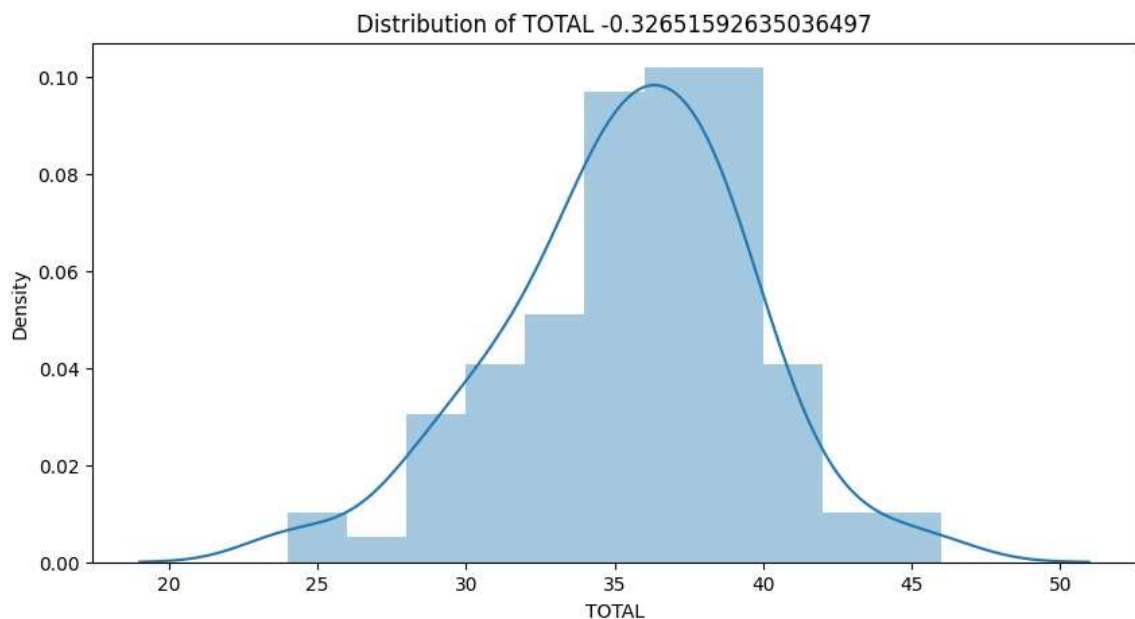
Variability

Variability in the scores is illustrated by the range and the IQR:

- **Range:** The wide range (65 points) indicates a high overall variability, suggesting diverse levels of understanding or performance among the students.
- **IQR:** The IQR of 14 shows moderate variability within the middle 50% of the scores, suggesting that while the overall spread is wide, the central bulk of scores are relatively close to each other.

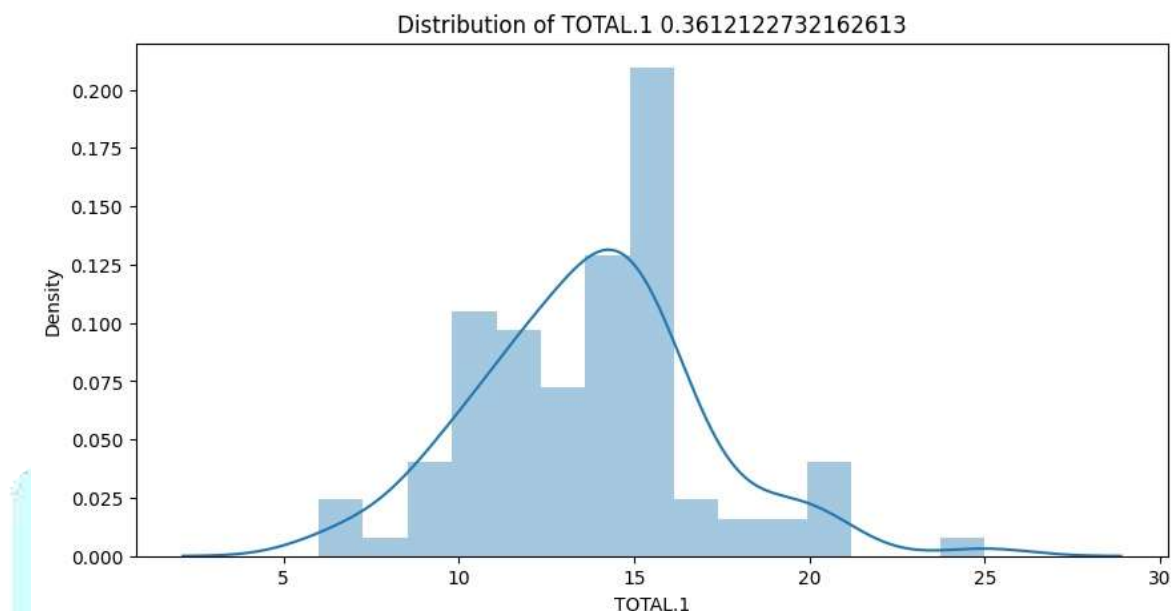
Part- II (Distribution Analysis):**Kurtosis of Total Sum (0.9916)**

- **Interpretation:** The kurtosis value of 0.9916 is close to 1, which is below the value of 3 for a normal distribution. This suggests that the distribution of the total sum is relatively flat and less peaked than a normal distribution. It indicates fewer extreme values or outliers in the total score distribution, making it platykurtic.
- **Academic Metrics (0.3265):**



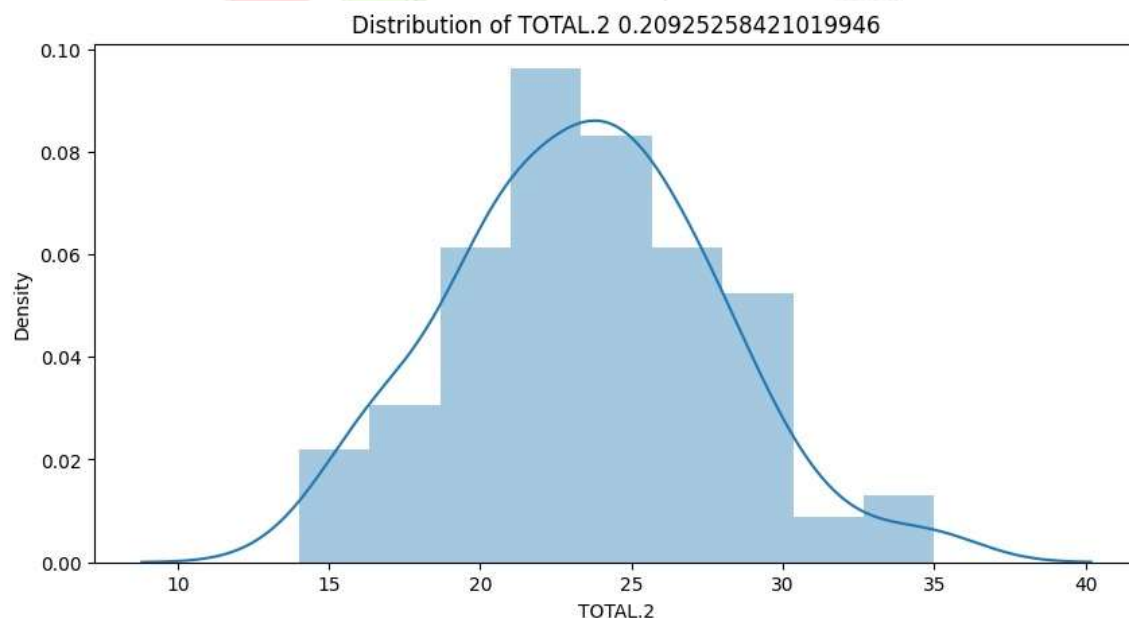
- **Interpretation:** A skewness of 0.3265 indicates a slight positive skewness in the distribution of academic metrics. This means that most students have scores slightly below the average, with a few having much higher scores.

- **Social Metrics (0.3612)**



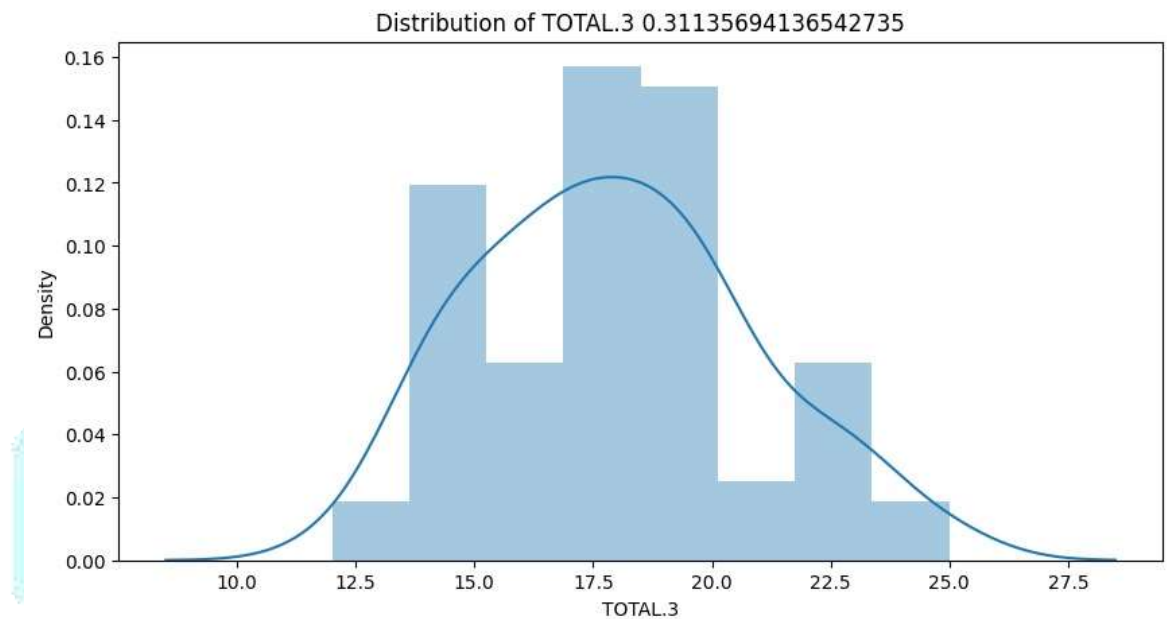
- **Interpretation:** The skewness value of 0.3612 also shows a slight positive skewness. There are more students with lower social metrics scores, and a few with significantly higher scores, indicating a longer tail on the right.

- **Physical & Mental Health Metrics (0.2093)**



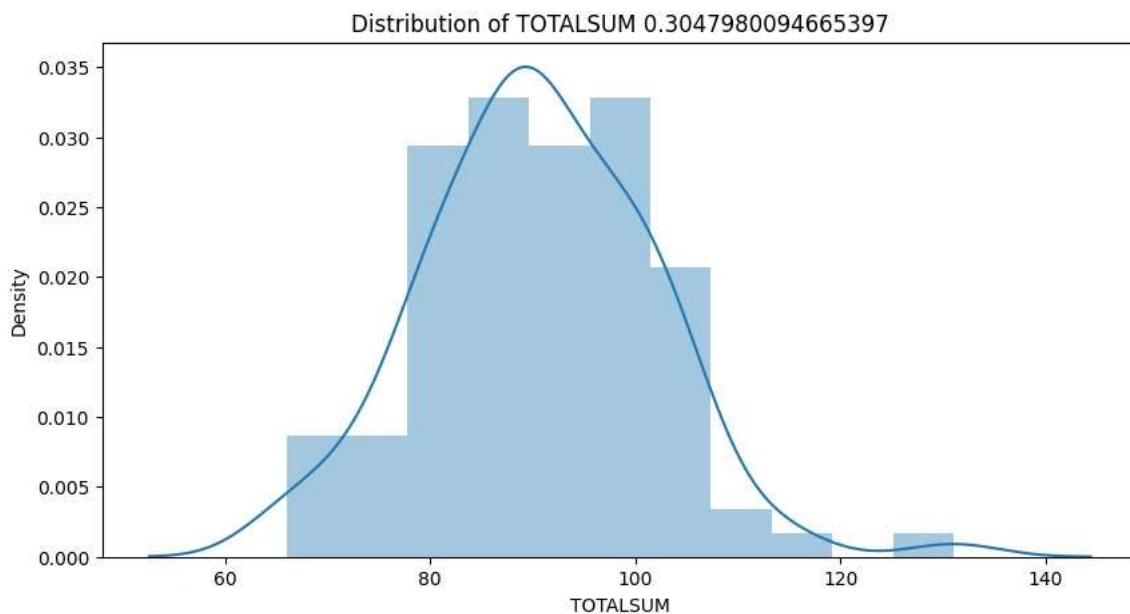
- **Interpretation:** With a skewness of 0.2093, the distribution of physical & mental health metrics is only slightly positively skewed. This suggests that the scores are fairly evenly distributed around the mean, but with a slight tendency towards lower scores and a longer tail of higher scores.

- **Overall Life Satisfaction Metrics (0.3113)**



- **Interpretation:** A skewness of 0.3113 indicates a slight positive skewness in overall life satisfaction metrics. Most students have somewhat lower life satisfaction scores, with a few outliers having higher satisfaction scores.

- **Total Sum (0.3047)**



Interpretation: The total sum's skewness of 0.3047 reflects a slightly positively skewed distribution. This means that the combined scores across all metrics tend to cluster towards the lower end, with a few higher total scores stretching the distribution to the right.

Part III (Chi-Square Test):

Purpose of the Test

The purpose of this Chi-Square test is to determine whether there is a significant association between academic performance and continuing vocational and other courses simultaneously. Data set are categorical in nature and that's why we use this parametric test. It aims to investigate if the distribution of academic performance varies across different vocational courses.

Null Hypothesis (H0)

The null hypothesis states that there is no association between academic result and vocational courses taken. In other words, the distribution of academic result is independent of the vocational courses taken by students.

H0: There is no association between academic result and vocational courses taken.

Alternative Hypothesis (H1)

The alternative hypothesis posits that there is an association between academic performance and vocational courses. This means that the distribution of academic performance depends on the vocational courses taken by students.

H1: There is an association between academic result and vocational courses taken.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	100.436 ^a	64	.002
Likelihood Ratio	62.369	64	.534
Linear-by-Linear Association	18.550	1	.000
N of Valid Cases	96		
a. 81 cells (95.3%) have expected count less than 5. The minimum expected count is .01.			

Interpretation of Results

- **Pearson Chi-Square Test:** The p-value is 0.002, which is less than 0.05. Therefore, the null hypothesis is rejected, indicating a statistically significant association between academic performance and vocational courses.
- **Likelihood Ratio Test:** The p-value is 0.534, which is greater than 0.05. This suggests that the sample data fits the population distribution well.

- **Linear-by-Linear Association:** The p-value is 0.000, which is also less than 0.05, further indicating a significant linear association between the variables.

Conclusion

Based on the Pearson Chi-Square test, there is sufficient evidence to conclude that there is a statistically significant association between academic performance and vocational courses taken.

Part IV (Hypothesis Testing):

Hypothesis testing serves as a critical tool in statistical analysis, allowing us to make informed decisions based on data-driven evidence. By systematically testing our hypotheses, we aim to uncover the underlying relationships between four metrics, providing valuable insights that can drive strategic decision-making and operational improvements. This approach not only enhances our understanding of the data but also ensures that our conclusions are robust and reliable. We proceed by clearly defining our hypotheses to facilitate a rigorous and systematic examination of these relationships.

1. Academic Performance Metrics vs. Social Interaction Metrics

Null Hypothesis (H0): There is no significant correlation between academic performance metrics and social interaction metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between academic performance metrics and social interaction metrics among students under the influence of NEP 2020.

2. Academic Performance Metrics vs. Physical and Mental Health Metrics

Null Hypothesis (H0): There is no significant correlation between academic performance metrics and physical and mental health metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between academic performance metrics and physical and mental health metrics among students under the influence of NEP 2020.

3. Academic Performance Metrics vs. Life Satisfaction Metrics

Null Hypothesis (H0): There is no significant correlation between academic performance metrics and life satisfaction metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between academic performance metrics and life satisfaction metrics among students under the influence of NEP 2020.

4. Social Interaction Metrics vs. Physical and Mental Health Metrics

Null Hypothesis (H0): There is no significant correlation between social interaction metrics and physical and mental health metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between social interaction metrics and physical and mental health metrics among students under the influence of NEP 2020.

5. Social Interaction Metrics vs. Life Satisfaction Metrics

Null Hypothesis (H0): There is no significant correlation between social interaction metrics and life satisfaction metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between social interaction metrics and life satisfaction metrics among students under the influence of NEP 2020.

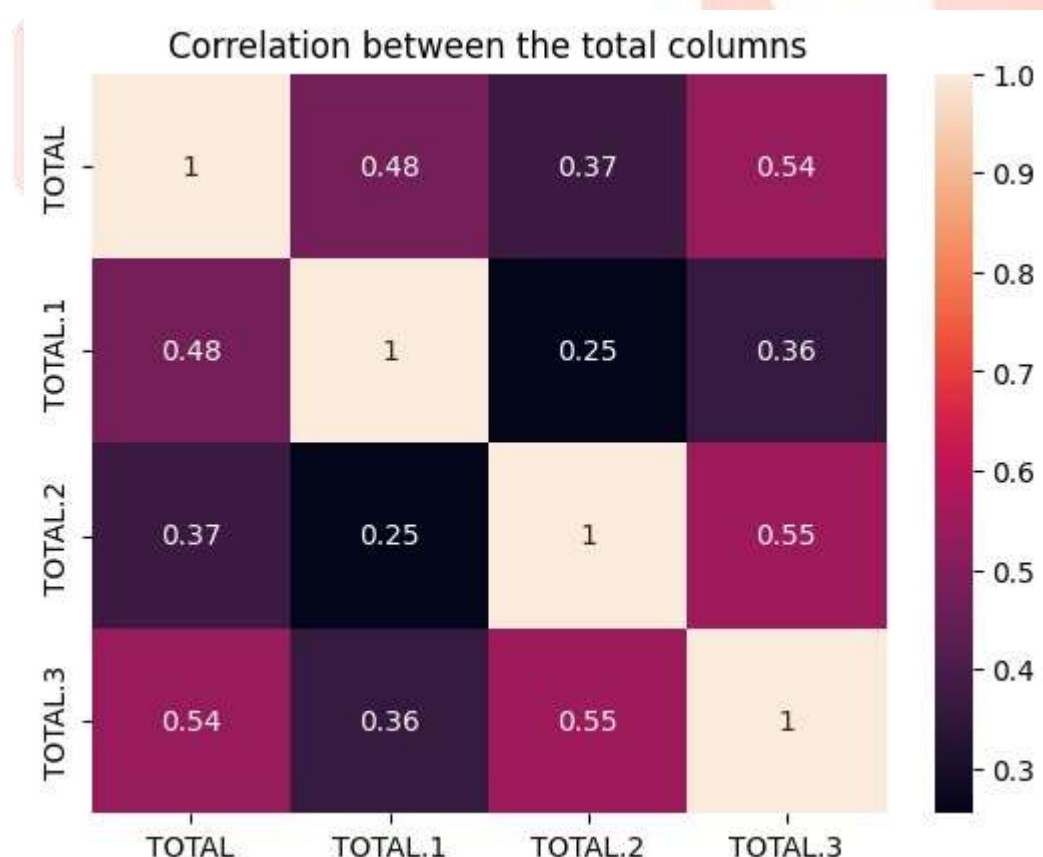
6. Physical and Mental Health Metrics vs. Life Satisfaction Metrics

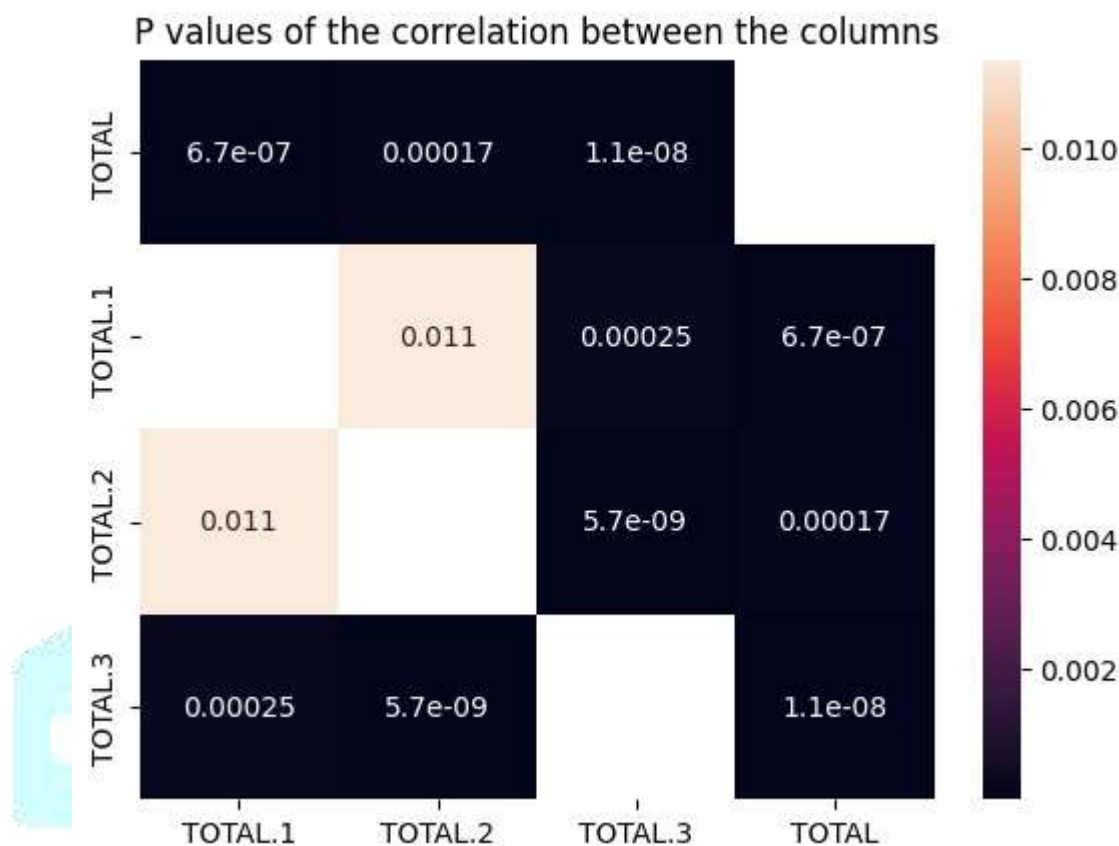
Null Hypothesis (H0): There is no significant correlation between physical and mental health metrics and life satisfaction metrics among students under the influence of NEP 2020.

Alternative Hypothesis (H1): There is a significant correlation between physical and mental health metrics and life satisfaction metrics among students under the influence of NEP 2020.

These hypotheses provide a structured framework for assessing the relationships between each pair of metrics selected to evaluate the impact of NEP 2020 on students' holistic growth.

Spearman's Rank Correlation :





- **Interpret the correlation coefficient r :** The value of r indicates the strength and direction of the relationship between the two metrics.
- **Interpret the p-value:** The p-value helps determine the statistical significance of the correlation. A p-value less than the significance level (typically 0.05) indicates that the correlation is statistically significant.

Given the significance level $\alpha=0.05$

1. Academic Performance Metrics vs. Social Interaction Metrics

- Spearman's rank correlation coefficient $r=0.48$
- p-value = 6.71×10^{-7}

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.48 indicates a moderate positive relationship between academic performance metrics and social interaction metrics.
- **Statistical significance:** The p-value is much smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). There is a significant correlation between academic performance metrics and social interaction metrics among students under the influence of NEP 2020.

2. Academic Performance Metrics vs. Physical and Mental Health Metrics

- Spearman's rank correlation coefficient $r=0.37$
- $p\text{-value} = 1.66 \times 10^{-4}$

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.37 indicates a moderate positive relationship between academic performance metrics and physical and mental health metrics.
- **Statistical significance:** The p -value is much smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). There is a significant correlation between academic performance metrics and physical and mental health metrics among students under the influence of NEP 2020.

3. Academic Performance Metrics vs. Life Satisfaction Metrics

- Spearman's rank correlation coefficient $r=0.54$
- $p\text{-value} = 1.12 \times 10^{-8}$

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.54 indicates a moderate to strong positive relationship between academic performance metrics and life satisfaction metrics.
- **Statistical significance:** The p -value is much smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). There is a significant correlation between academic performance metrics and life satisfaction metrics among students under the influence of NEP 2020.

4. Social Interaction Metrics vs. Physical and Mental Health Metrics

- Spearman's rank correlation coefficient $r=0.25$
- $p\text{-value} = 1.13 \times 10^{-2}$

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.25 indicates a weak positive relationship between social interaction metrics and physical and mental health metrics.

- **Statistical significance:** The p-value is smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H0) and accept the alternative hypothesis (H1). There is a weak but positive correlation exists between social interaction metrics and physical and mental health metrics among students under the influence of NEP 2020.

5. Social Interaction Metrics vs. Life Satisfaction Metrics

- **Spearman's rank correlation coefficient $r=0.36$**
- **p-value $=2.45 \times 10^{-4}$**

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.36 indicates a moderate positive relationship between social interaction metrics and life satisfaction metrics.
- **Statistical significance:** The p-value is much smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H0) and accept the alternative hypothesis (H1). There is a significant correlation between social interaction metrics and life satisfaction metrics among students under the influence of NEP 2020.

6. Physical and Mental Health Metrics vs. Life Satisfaction Metrics

- **Spearman's rank correlation coefficient $r=0.55$**
- **p-value $=5.69 \times 10^{-9}$**

Interpretation:

- **Strength and direction:** The correlation coefficient of 0.55 indicates a moderate to strong positive relationship between physical and mental health metrics and life satisfaction metrics.
- **Statistical significance:** The p-value is much smaller than 0.05, indicating that the correlation is statistically significant.

Conclusion: Reject the null hypothesis (H0) and accept the alternative hypothesis (H1). There is a significant positive correlation between physical and mental health metrics and life satisfaction metrics among students under the influence of NEP 2020.

Summary of Findings

The results indicate significant positive correlations across all pairs of metrics, with varying strengths of relationships. These findings suggest that the NEP 2020's emphasis on holistic education positively impacts

multiple dimensions of student development, demonstrating interconnected growth in academic performance, social interaction, physical and mental health, and life satisfaction.

Part V (Spearman's rank correlation between Academic result and other three metrics):

Academic result is often regarded as a key indicator of future success and personal development. However, the factors that contribute to academic success or underperformance can vary significantly among students. Understanding these factors is crucial for educators, policymakers, and psychologists who aim to support students in achieving their full potential. This part aims to compare the relationships between academic results (one main component of total academic performance metrics) and other three metrics—social metrics, physical and mental health metrics, and life satisfaction metrics (taking two main components out of five ordinal data of this metrics) among two distinct groups of students: those with strong academic results (more than 75% marks in higher secondary) and those with below-average academic results (less than 55% marks in higher secondary).

By analyzing the correlations between these metrics and academic results, we can identify whether the factors influencing academic success differ between high-achieving and lower-achieving students. This comparison can provide insights into how social interactions, health, and overall life satisfaction impact students differently based on their academic standing. It also helps to pinpoint areas where interventions can be tailored to support each group more effectively.

To analyze and interpret these results meaningfully, we have compared the correlation coefficients and p-values between the two groups of students (those with strong academic results and those with below-average academic results). The correlations are measured using Spearman's rank correlation coefficient (r), and the p-values indicate the statistical significance of the correlations.

Students with Strong Academic Results (More Than 75% Marks):

- **Social Metrics**

- Correlation (r): 0.432
- p-value: 0.005
- Interpretation: There is a moderate positive correlation between social metrics and academic performance, which is statistically significant ($p < 0.05$). This suggests that students with strong academic results tend to have better social metrics.

- **Physical and Mental Health Metrics**

- Correlation (r): 0.289
- p-value: 0.067
- Interpretation: There is a weak positive correlation between physical and mental health metrics and academic performance, which is marginally significant ($p \approx 0.05$). This indicates a slight

tendency for students with strong academic results to have better physical and mental health metrics, but the evidence is not very strong.

- **Life Satisfaction Metrics**

- Correlation (r): 0.534
- p-value: 0.00
- Interpretation: There is a strong positive correlation between life satisfaction metrics and academic performance, which is highly significant ($p < 0.01$). This suggests that students with strong academic results tend to have higher life satisfaction.

Students with Below Average Academic Results(Below 55% Marks):

- **Social Metrics**

- Correlation (r): 0.392
- p-value: 0.296
- Interpretation: There is a moderate positive correlation between social metrics and academic performance, but it is not statistically significant ($p > 0.05$). This indicates that for students with below-average academic results, the relationship with social metrics is not strong enough to be considered significant.

- **Physical and Mental Health Metrics**

- Correlation (r): 0.505
- p-value: 0.166
- Interpretation: There is a moderate positive correlation between physical and mental health metrics and academic performance, but it is not statistically significant ($p > 0.05$). This suggests that while there is a tendency for students with below-average academic results to have better physical and mental health metrics, the evidence is not strong enough to confirm this relationship.

- **Life Satisfaction Metrics**

- Correlation (r): 0.637
- p-value: 0.065
- Interpretation: There is a strong positive correlation between life satisfaction metrics and academic performance, which is marginally significant ($p \approx 0.05$). This suggests that students with below-average academic results may have higher life satisfaction, but the evidence is not very strong.

Comparison:

- Students with strong academic results have significant correlations with social metrics and life satisfaction metrics, indicating these factors are more closely related to their academic performance.
- Students with below-average academic results show higher, but not statistically significant, correlations with physical and mental health metrics and life satisfaction metrics.
- Overall, the strength and significance of correlations differ between the two groups, highlighting that the relationships between academic performance and other metrics can vary based on the level of academic achievement.

Limitations and Conclusion:

This study aimed to assess the impact of the National Education Policy (NEP) 2020 on the holistic growth of college students through a case study conducted in a metropolitan city. However, several limitations must be acknowledged to contextualize the findings and provide direction for future research.

- **Premature Evaluation:** The NEP 2020 has been implemented in the study area for only one year. This short duration limits our ability to capture the full spectrum of its effects on the holistic development of students. Holistic growth, encompassing academic, social, emotional, and physical dimensions, typically unfolds over an extended period. Therefore, the current findings should be viewed as preliminary insights rather than conclusive evidence.
- **Geographical Limitation:** The College under study is located in a metropolitan area. Colleges in rural or semi-urban regions may exhibit different patterns of holistic development due to varying socio-economic conditions, resources, and student demographics. The urban-centric focus of this study might not fully represent the broader impacts of NEP 2020 across diverse geographical settings.
- **Single Institution Focus:** This case study is restricted to a single college. A more comprehensive analysis involving multiple institutions would provide a more robust understanding of NEP 2020's impact. The current study's findings are specific to the selected college and may not be generalizable to other educational contexts.
- **Temporal Scope:** To gauge the long-term effects of NEP 2020 on students' holistic growth, another study should be conducted after four years, coinciding with the completion of an undergraduate cycle. This longitudinal approach would help in observing the sustained impact of NEP 2020 on the same cohort of students, providing deeper insights into their developmental trajectories.
- **Analytical Methods:** Other non-parametric tests such as cluster analysis and principal component analysis, a broader array of statistical tools, might yield more precise interpretations. Advanced methodologies could capture nuanced patterns and relationships that simpler analyses might overlook.

- **Economic Factors:** This study did not account for the influence of family earnings on holistic growth, a factor that significantly affects educational outcomes and opportunities. Future research should integrate socio-economic variables to present a more comprehensive picture of the determinants of holistic development.
- **Holistic Development Metrics:** The measurement of holistic development itself presents challenges. Diverse indicators like emotional well-being, social skills, physical health, and academic achievements were considered, but the subjective nature of these metrics can introduce variability. Standardizing these measurements across different studies would enhance comparability and reliability.

Conclusion

The National Education Policy (NEP) 2020 represents a bold and ambitious initiative aimed at transforming the Indian education system to meet the evolving needs of the 21st century. Insights from policymakers, educators, and experts highlight the immense potential of NEP 2020 to drive positive change and foster inclusive, equitable, and high-quality education for all.

However, successful implementation will require concerted efforts from all stakeholders. Addressing the challenges and seizing the opportunities presented by NEP 2020 is crucial to realizing its vision. As the country embarks on this transformative journey, NEP 2020 stands as a testament to India's commitment to shaping a brighter future for its citizens through education. The policy's successful execution will play a pivotal role in redefining educational paradigms and empowering future generations.

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