HIGHER EDUCATION COMMISSION
HIGHER EDUCATION DEVELOPMENT IN PAKISTAN (HEDP)

LEARNING SKILLS ASSESSMENT TEST (LSAT)

REPORT ON CONDUCT OF LSAT & RESULT ANALYSIS

Background of the Project:

The Government of Pakistan, in collaboration with the World Bank, has been implementing the Higher Education Development in Pakistan (HEDP) project since May 2019. This initiative aligns with the Higher Education Commission (HEC)'s Vision 2025, aiming to improve the quality and relevance of education and to foster research and innovation within Higher Education Institutes (HEIs).

Component 2:

Under Component 2, which focuses on "Supporting Decentralized Higher Education Institutes for Improved Teaching and Learning," the project aims to elevate the quality of education in public Affiliated Colleges (ACs) by supporting enhanced teaching and learning practices.

Improvement in Teaching and Learning:

The HEDP project assesses learning improvements brought about by newly implemented programs of study under the revised University Education Program (UEP). To this end, a learning skills assessment of students in these newly launched programs was conducted.

Pre-LSAT Activities:

The following activities were completed before conducting the LSAT:

- Consultations with International Consultant Dr. Salvador Malo (2021).
- Multiple visits by Dr. Malo to finalize the conceptual framework (2022).
- Training sessions for Pakistani Assessment Specialists (2022).
- LSAT preparation (2023).
- LSAT contextualization (2023).
- LSAT translation (2023).
- Pilot testing of the LSAT (2023).
- Preparation of the Assessment Report (2023).

CONDUCT OF LSAT (MAY - JUNE 2024)

1. LSAT Orientation:

Dr. Arshad Bashir, Consultant Academics, conducted orientation sessions across Pakistan, engaging with over 500 AC Principals. These sessions focused on the assessment process, LSAT structure, student nominations, and test administration. The LSAT consisted of 54 items divided into three categories: a) Information Management, b) Problem Solving, and c) Communication.

2. Sampling Strategy:

Out of 77 Affiliated Universities (AUs) in Pakistan, 16 major universities were selected (listed in Annexure A). These universities possess the infrastructure and personnel necessary to assess AC students effectively. Each AU identified 10 affiliated colleges. The resulting sample of 120 ACs reflected an equal distribution of gender (male/female), geographic (urban/rural), and disciplinary representation. Approximately 6,000 student profiles, including gender, geographic location, disciplinary background, and contact details, were collected for coordination.

3. LSAT Administration:

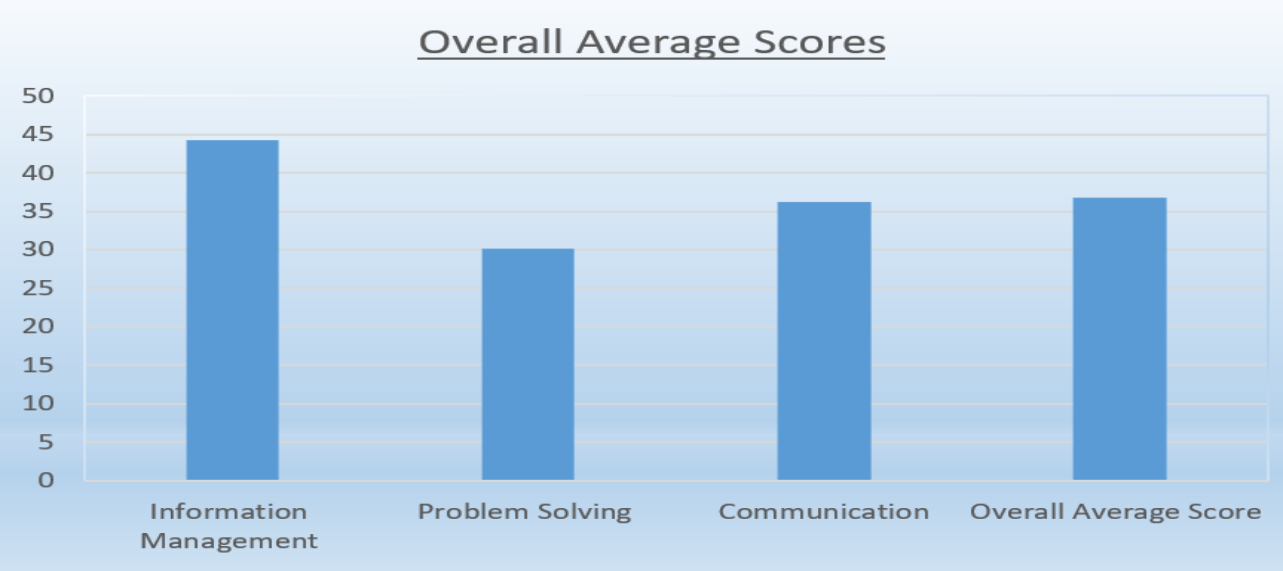
The Program Evaluation and Research Unit (PERU) printed two distinct versions of the LSAT under strict security measures, with item sequencing modified for each version. Participating AUs invited nominated students to their campuses for assessments, supervised by 1-2 representatives from PERU/HEDP. The LSAT test booklets and bubble answer sheets were unsealed 10 minutes before the test. Completed answer sheets were collected and securely returned to PERU for data entry and analysis by a dedicated team, including four Assistant Program Specialists with extensive experience in data management.

4. Positive Outcomes of In-house LSAT Administration:

- Orienting college principals to the LSAT objectives ensured clear communication, with PERU staff offering guidance and responding to student inquiries on assessment day. This engagement helped fulfill HEDP's LSAT objectives effectively.

- Conducting LSAT internally proved significantly cost-effective, with expenses at least five times lower than those quoted by the Education Testing Council (ETC).

DETAILED ANALYSIS OF THE LSAT RESULT



Description:

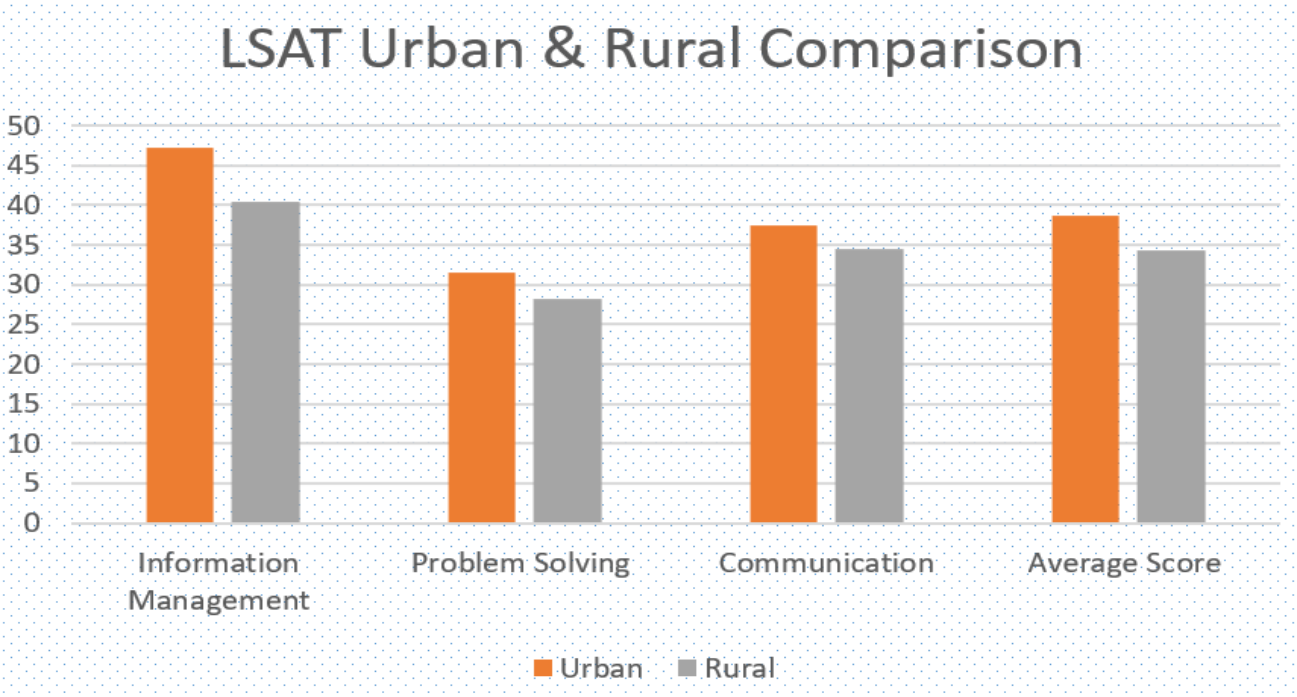
The bar chart illustrates average scores in three skill areas: Information Management, Problem Solving, and Communication, alongside an Overall Average Score bar representing the collective average across all skills.

Detailed Analysis:

1. **High Performance in Information Management**:
    - The bar for Information Management stands significantly higher than the other bars, indicating that individuals performed best in this skill area compared to the others.
    - **Interpretation**: This could reflect strong abilities in organizing, analyzing, and managing data or content among the evaluated group. It might suggest that participants have had more experience, exposure, or training in this domain.
2. **Moderate Performance in Communication**:
    - Communication scores are slightly below Information Management but above Problem Solving.
    - **Interpretation**: This suggests that while participants show competence in Communication, there may still be areas that need improvement, such as

effectively conveying ideas, active listening, or presenting information. It could also imply a secondary focus or proficiency level when compared to Information Management.

3. **Lowest Performance in Problem Solving**:
    - Problem Solving has the lowest average score among the three categories.
    - **Interpretation**: This highlights a potential gap or challenge faced by individuals in applying analytical and critical thinking skills to resolve complex or unfamiliar problems. The low scores might stem from a lack of relevant training, difficulty with specific types of problem-solving tasks, or limited exposure to real-world scenarios requiring such skills.
4. **Overall Average Score**:
    - The Overall Average Score bar reflects a balanced aggregate of the three skill areas, falling somewhere between the individual scores of the three categories.
    - **Interpretation**: The position of the Overall Average Score indicates a general, balanced proficiency level across all evaluated areas. Its relative proximity to the Information Management and Communication scores suggests that these areas heavily influence the overall result, while Problem Solving likely pulls down the average.



Description:

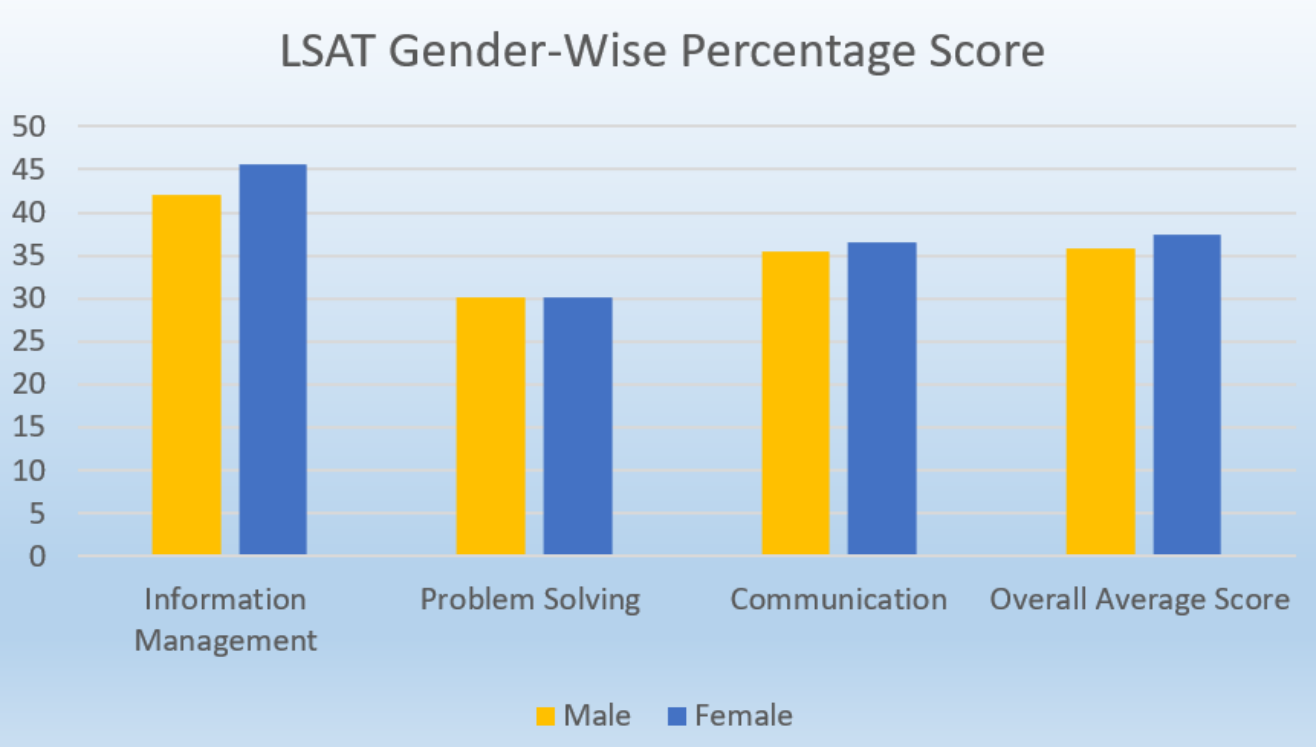
The graph compares average scores in Information Management, Problem Solving, Communication, and the Overall Average Score between two groups: Urban and Rural. Each category has two bars, one representing Urban (in orange) and the other representing Rural (in gray).

Detailed Analysis:

1. **Information Management**:
    - **Urban Performance**: The orange bar representing urban scores is higher compared to the rural bar.
    - **Rural Performance**: Rural participants scored slightly lower in Information Management.
    - **Interpretation**: This difference indicates that urban participants may have better access to resources, tools, or educational opportunities related to data organization and management. The urban environment may also provide more exposure to tasks that develop these skills. On the other hand, rural participants might face challenges such as limited access to technology or relevant training opportunities.
2. **Problem Solving**:
    - **Urban vs. Rural Scores**: Both urban and rural groups have relatively lower scores in this category compared to Information Management and Communication, but urban participants again outperform their rural counterparts.
    - **Interpretation**: This gap suggests a disparity in analytical training, critical thinking opportunities, or exposure to complex problem-solving scenarios. Urban settings might offer more problem-solving challenges in professional and academic settings, enhancing their skills relative to rural participants.
3. **Communication**:
    - **Urban Performance**: The orange bar for urban participants is higher than the gray bar for rural participants, though the gap is narrower compared to Information Management.
    - **Rural Performance**: Rural participants' scores in Communication are slightly lower but comparable to their urban counterparts.

- **Interpretation**: While urban participants have a slight edge, the closer performance levels suggest that communication skills may be more universally addressed across regions, perhaps through standardized educational curriculums or widespread media exposure.

4. **Overall Average Score**:
    - **Urban vs. Rural Scores**: The overall average score for urban participants is higher than that of rural participants.
    - **Interpretation**: This suggests a consistent performance advantage for urban participants across the evaluated skill areas. However, it is also an indicator of the broader challenges faced by rural candidates, potentially stemming from differences in educational infrastructure, access to resources, socioeconomic factors, or exposure to diverse challenges and opportunities.

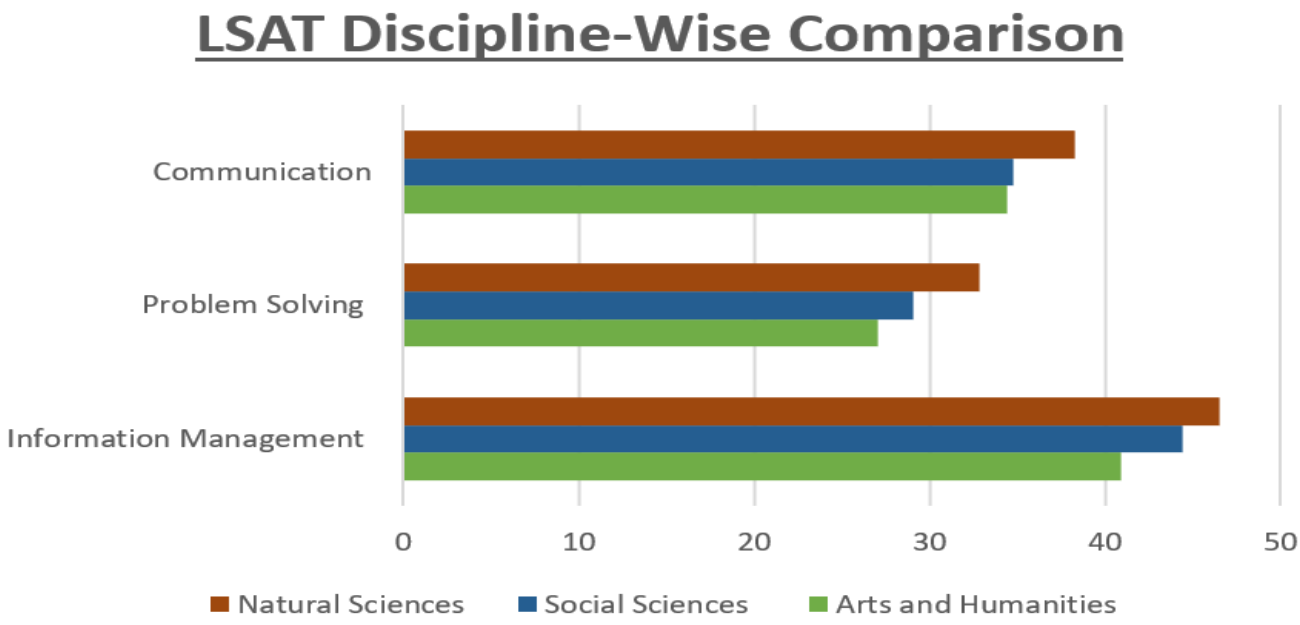


Description:

The graph compares the percentage scores of male and female participants across four categories: Information Management, Problem Solving, Communication, and the Overall Average Score. Males are represented by yellow bars, and females by blue bars.

Detailed Analysis:

1. **Information Management**:
    - **Female Performance**: The blue bar representing female scores is slightly higher than the yellow bar for males.
    - **Male Performance**: Males scored slightly lower in this category compared to females.
    - **Interpretation**: This suggests that, on average, female participants demonstrated stronger proficiency in tasks related to organizing, analyzing, and managing information. Possible contributing factors could include differences in educational training, skill application, or even data processing styles that favor particular strategies.
2. **Problem Solving**:
    - **Performance Comparison**: Both male and female scores in this category are very similar, with minimal difference between the bars.
    - **Interpretation**: The near parity in scores indicates that both genders performed comparably in tasks requiring analytical thinking and problem-solving. This suggests a level playing field in terms of critical reasoning skills, or it could reflect a focus on equal opportunities and access to relevant problem-solving resources or training.
3. **Communication**:
    - **Female Performance**: Female participants have a slight edge over their male counterparts, with a marginally higher blue bar.
    - **Male Performance**: Male participants performed slightly lower but are close to female scores.
    - **Interpretation**: The narrow gap between male and female performance in communication skills suggests broad parity but also indicates that female participants tend to perform slightly better. This may be influenced by factors such as communication-focused training, socialization emphasizing communication, or confidence in articulating and presenting information.



Description:

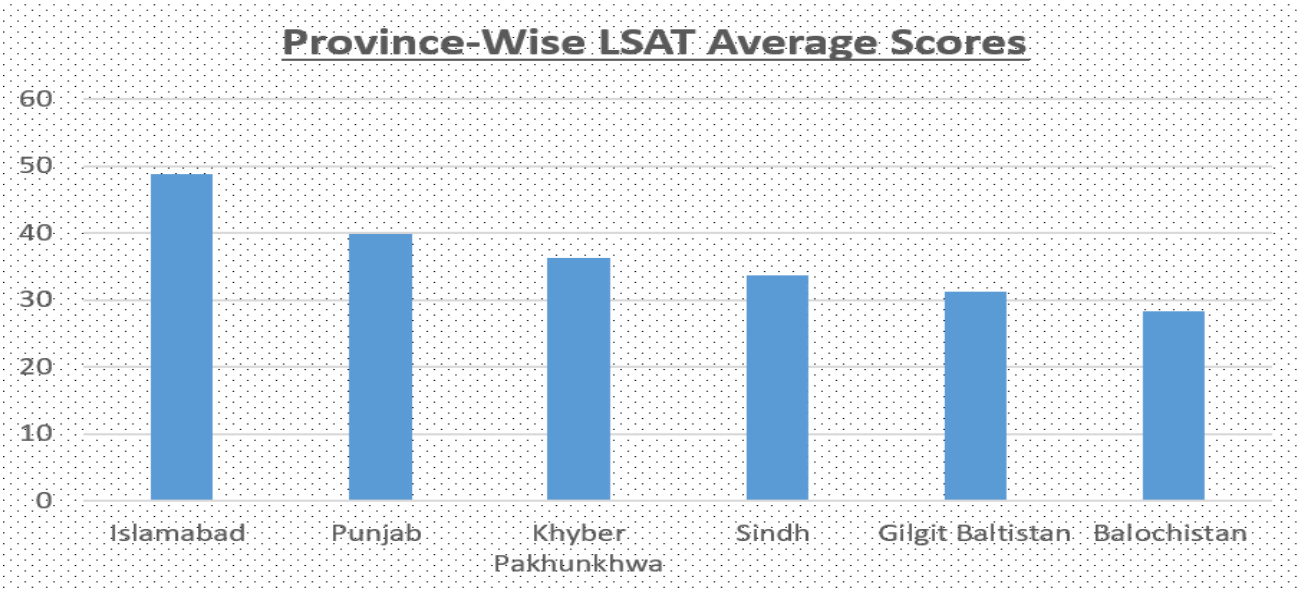
The bar chart compares LSAT scores in three skill areas—Information Management, Problem Solving, and Communication—across three academic disciplines: Natural Sciences, Social Sciences, and Arts and Humanities. Each bar represents the average score for participants from one of these disciplines.

Detailed Analysis:

1. **Information Management**:
    - **Natural Sciences**: Participants from the Natural Sciences exhibit the highest scores in Information Management, as shown by the longest brown bar.
    - **Social Sciences**: The blue bar, representing Social Sciences, falls below Natural Sciences but is above Arts and Humanities.
    - **Arts and Humanities**: Participants from this discipline have the lowest scores in Information Management.
    - **Interpretation**: The high performance by Natural Sciences students suggests they have strong skills in organizing, analyzing, and handling data, likely due to their rigorous focus on empirical research and quantitative analysis. Social Sciences participants demonstrate moderate proficiency, reflecting their blend of qualitative and quantitative skills, while Arts and Humanities participants may

focus more on creative or narrative-based work, resulting in a lower emphasis on data-intensive tasks.

2. **Problem Solving**:
    - **Natural Sciences**: Again, Natural Sciences participants lead in Problem Solving, indicated by the longest bar.
    - **Social Sciences**: The blue bar is shorter, showing that Social Sciences participants scored slightly lower than Natural Sciences.
    - **Arts and Humanities**: The green bar for Arts and Humanities indicates the lowest performance.
    - **Interpretation**: Natural Sciences disciplines often emphasize analytical and critical thinking, which likely contributes to superior problem-solving abilities. Social Sciences, while also involving critical analysis, may approach problems with a mix of qualitative reasoning. The comparatively lower performance of Arts and Humanities could be due to a lesser focus on strictly structured problem-solving approaches.
3. **Communication**:
    - **Natural Sciences**: Surprisingly, Natural Sciences participants lead or are at par in Communication as well, reflected by the longest brown bar or comparable height to others.
    - **Social Sciences and Arts and Humanities**: Both disciplines score similarly, with Social Sciences marginally ahead of Arts and Humanities.
    - **Interpretation**: This result may appear unexpected, as Arts and Humanities are often associated with strong communication skills. However, it could reflect differences in how communication is measured within the LSAT framework, such as structured argumentation or precision in language, which Natural Sciences participants may excel in due to the need for exact and methodical expression in scientific discourse.



Description:

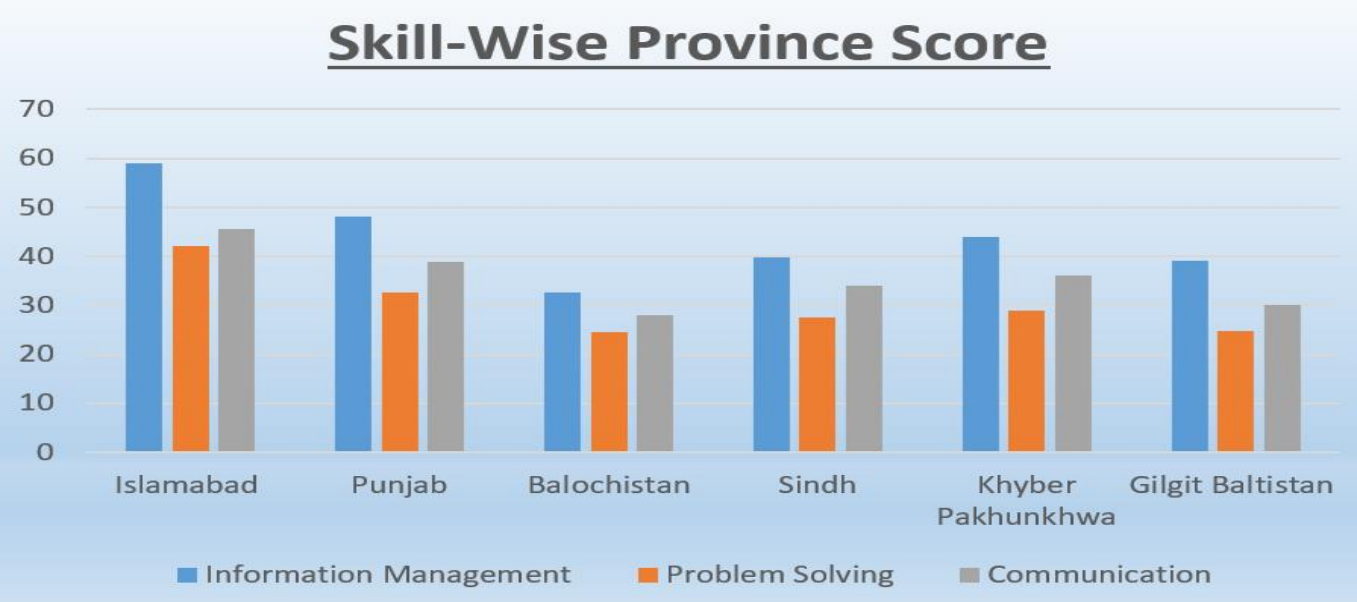
The graph compares the average LSAT scores across various provinces and regions, namely Islamabad, Punjab, Khyber Pakhtunkhwa (KPK), Sindh, Gilgit Baltistan, and Balochistan. Each bar represents the average score achieved by participants from the respective regions.

Detailed Analysis:

1. **Highest Scores in Islamabad**:
    - **Observation**: Islamabad has the highest average LSAT score among all regions, as indicated by the tallest bar in the chart.
    - **Interpretation**: This could be attributed to better access to educational resources, high-quality academic institutions, and greater exposure to standardized testing environments in Islamabad. The city's status as the capital likely plays a role in providing its residents with enhanced academic opportunities and preparatory tools, giving them an edge in competitive exams like the LSAT.
2. **Strong Performance in Punjab**:
    - **Observation**: Punjab follows Islamabad with a relatively high average LSAT score, though it is slightly lower than Islamabad.
    - **Interpretation**: Punjab's strong performance can be attributed to its large number of reputable educational institutions, widespread availability of preparatory

courses, and focus on academic excellence. It suggests that a significant portion of Punjab's population has access to quality education and test preparation services.

3. **Moderate Scores in Khyber Pakhtunkhwa (KPK) and Sindh**:
    - **Observation**: KPK and Sindh show moderate average scores, with both regions displaying similar heights for their bars, though Sindh slightly outperforms KPK.
    - **Interpretation**: This result highlights that, while both provinces have access to educational resources, there may still be disparities in availability or quality compared to Islamabad and Punjab. Factors such as infrastructure limitations, fewer elite institutions, or socio-economic barriers could impact performance. Sindh's slightly higher score might reflect the presence of educational hubs in major cities like Karachi.
4. **Lower Scores in Gilgit Baltistan and Balochistan**:
    - **Observation**: Gilgit Baltistan and Balochistan have the lowest average scores among all regions, as indicated by their shorter bars.
    - **Interpretation**: This performance gap points to significant challenges faced by these regions, including limited access to educational resources, fewer preparatory institutions, and socio-economic constraints that may hinder equal opportunities for LSAT preparation and skill development. Geographic isolation and infrastructural issues could further compound these challenges.



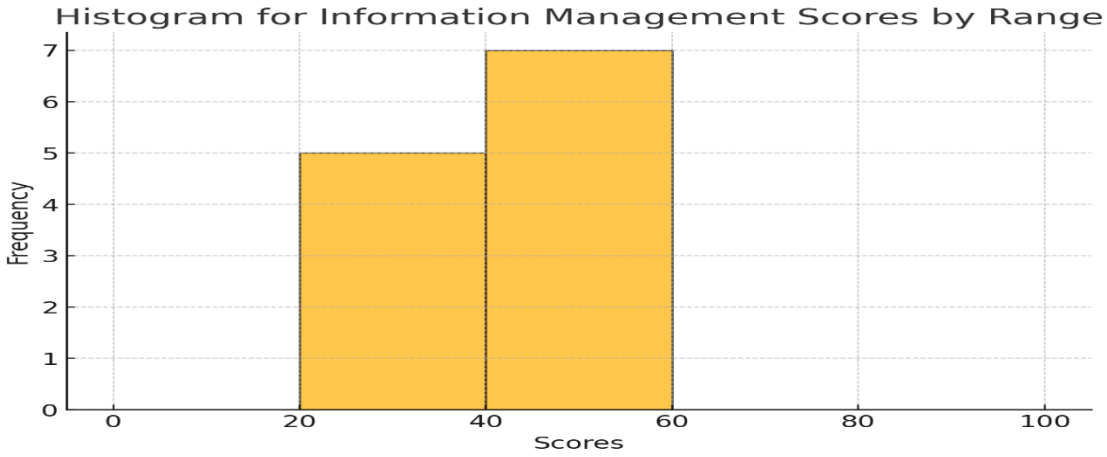
Description:

The graph presents a comparison of scores in three skill areas—Information Management (blue), Problem-Solving (orange), and Communication (gray)—across six regions: Islamabad, Punjab, Balochistan, Sindh, Khyber Pakhtunkhwa (KPK), and Gilgit Baltistan.

Detailed Analysis:

1. **Information Management**:
    - **Islamabad**: The highest score among all provinces for Information Management is seen in Islamabad, as indicated by the tallest blue bar.
    - **Punjab**: Punjab also shows strong performance but falls below Islamabad.
    - **Other Provinces**: Sindh, KPK, Balochistan, and Gilgit Baltistan display lower scores, with Gilgit Baltistan having the lowest score among the regions.
    - **Interpretation**: The dominance of Islamabad and Punjab suggests better educational infrastructure, resources, and exposure to data management skills. Lower scores in Balochistan and Gilgit Baltistan indicate a need for improved resources and training opportunities for participants in these regions.
2. **Problem Solving**:
    - **Comparative Performance**: Scores across provinces are more evenly distributed compared to Information Management, with Islamabad still leading but with a smaller margin over others.
    - **Balochistan and Gilgit Baltistan**: These regions again show the lowest performance, but the gap between their Problem-Solving scores and other regions is less pronounced than in Information Management.
    - **Interpretation**: This suggests that while access to problem-solving training may be more widespread than data management training, regional disparities still persist. Islamabad's lead implies access to diverse learning scenarios and structured problem-solving opportunities.
3. **Communication**:
    - **Islamabad and Punjab**: Both regions perform relatively well, with scores slightly below their Information Management scores but still higher than other provinces.

- **Sindh, KPK, and Balochistan**: These regions display similar levels of performance in Communication, indicating some level of parity across middle-tier provinces.
- **Gilgit Baltistan**: Communication scores are comparatively low but not as disparate as in Information Management.
- **Interpretation**: Higher scores in Islamabad and Punjab may result from better academic environments, exposure to diverse communication scenarios, or focused training programs. The moderate to lower performance across other regions points to varying degrees of access to resources and practical exposure.



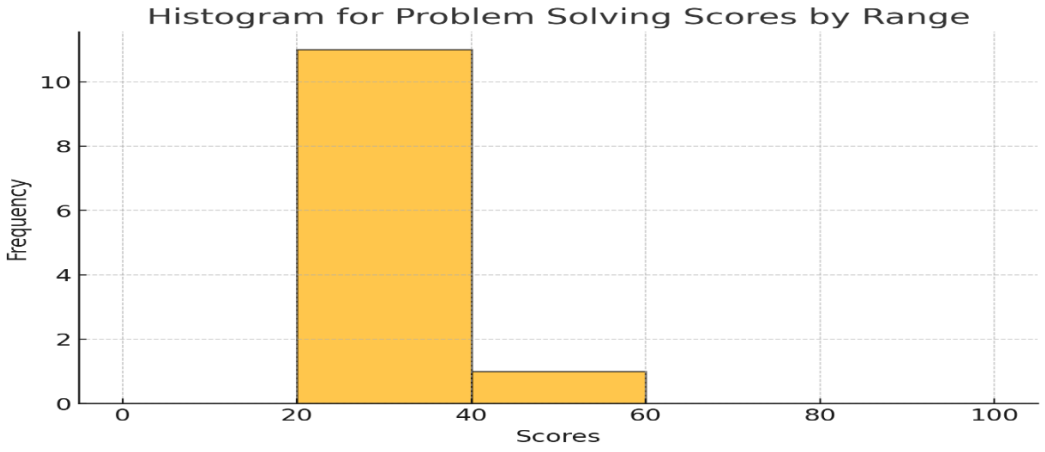
Description:

The histogram illustrates the distribution of scores for Information Management within specified ranges on the x-axis, while the y-axis shows the frequency of participants scoring within each range.

Detailed Analysis:

1. **Score Ranges and Frequencies**:
   - **First Bar (20-40 Range)**: The first bar represents scores between 20 and 40, showing a moderate frequency of participants falling within this range.
   - **Second Bar (40-60 Range)**: The second bar, covering scores between 40 and 60, displays the highest frequency, indicating that the majority of participants scored in this range.
   - **Absence of Higher and Lower Ranges**: No participants are shown scoring below 20 or above 60.

2. **Distribution Characteristics**:
    - **Bimodal Nature**: While the distribution is not truly bimodal, there is a noticeable concentration of participants within two specific ranges, with a significantly higher peak between 40 and 60.
    - **Skewness**: The histogram suggests that scores are somewhat clustered toward the middle range (40-60) with a slightly lesser but still notable grouping between 20 and 40. There is no representation of very high (above 60) or low scores (below 20), suggesting limited variability outside this main range.
3. **Interpretation**:
    - **Concentration of Scores**: The high frequency of scores in the 40-60 range implies a concentration of participants achieving moderate proficiency in Information Management. This could indicate that most participants have a reasonable grasp of skills related to data organization, analysis, and information processing, but there may be room for improvement to push scores higher.
    - **Lower Scores (20-40 Range)**: The presence of participants scoring in the lower range suggests a subset that may face challenges in Information Management. This group may benefit from targeted training or interventions to build foundational skills in this area.
4. **Lack of Extreme High Performers**:
    - The absence of scores above 60 may have a ceiling effect in participants' proficiency levels, indicating that achieving higher scores in Information Management might require more advanced or specialized training that was less accessible or not prioritized.



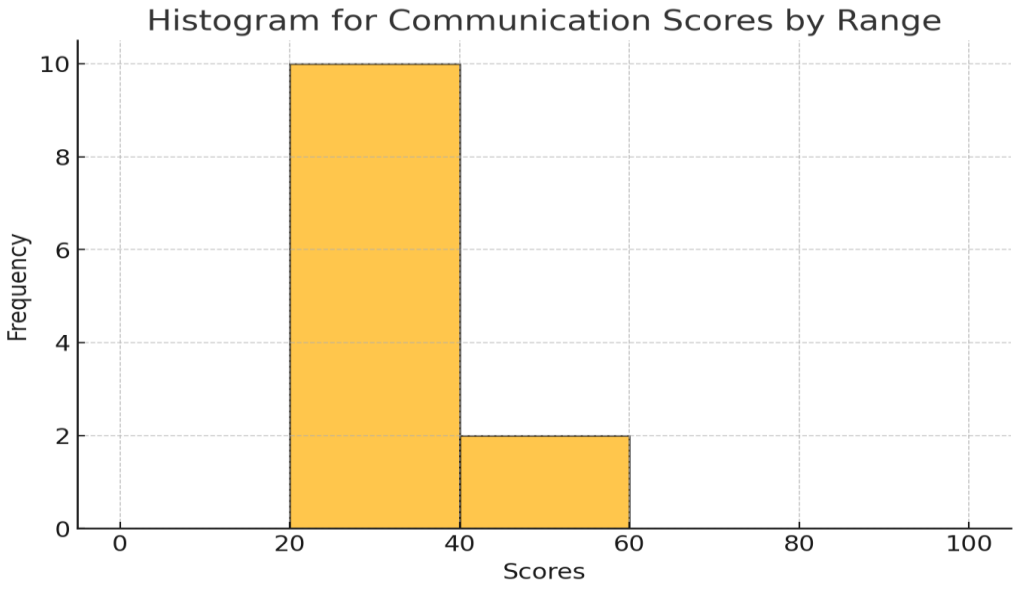
Description:

The histogram represents the distribution of Problem-Solving scores within specified ranges. The x-axis indicates the score ranges, while the y-axis shows the frequency of participants achieving scores within those ranges.

Detailed Analysis:

1. **Score Ranges and Frequencies**:
    - **20-40 Range**: The highest frequency of participants falls within this range, as indicated by the tallest bar in the histogram.
    - **40-60 Range**: A smaller but visible number of participants fall within this range, with a noticeable drop in frequency compared to the 20-40 range.
    - **Absence of Scores Below 20 and Above 60**: No participants are scoring below 20 or above 60, indicating a lack of extremely low or high scores in Problem Solving.
2. **Concentration and Distribution Characteristics**:
    - **Skewness**: The distribution is highly skewed, with most participants clustered in the lower to moderate range (20-40). There is a sharp decline in frequency for scores in the 40-60 range and an absence of higher scores.
    - **Narrow Range of Performance**: The histogram suggests that participants' Problem-Solving skills are concentrated within a narrow band, with limited representation in higher performance tiers.
3. **Interpretation**:
    - **High Frequency of Moderate Scorers**: The concentration of participants scoring in the 20-40 range indicates that most individuals have basic to moderate problem-solving skills. This suggests limited proficiency in handling complex or unfamiliar problems, potentially due to gaps in training, experience, or exposure to diverse problem-solving scenarios.
    - **Limited High Performers**: The sharp drop-off in participants scoring in the 40-60 range and the absence of scores above 60 suggest a challenge in elevating skill levels to higher proficiency tiers. This might point to a ceiling effect, where participants struggle to exceed a moderate level of problem-solving capability without significant training or exposure.

4. **Potential Causes and Influences**:
    - **Educational and Training Gaps**: The skewed distribution may reflect insufficient emphasis on critical thinking and analytical reasoning in educational or training programs. Limited access to resources that foster advanced problem-solving skills could contribute to the observed distribution.
    - **Preparation and Assessment Focus**: Participants may lack adequate preparation or experience with the types of problem-solving tasks assessed, leading to a concentration of scores in the lower range.



Description:

The histogram represents the distribution of Communication scores within specified score ranges. The x-axis shows the score ranges, while the y-axis represents the frequency of participants achieving scores within each range.

Detailed Analysis:

1. **Score Ranges and Frequencies**:
    - **20-40 Range**: The tallest bar in the histogram represents scores in the 20-40 range, indicating that the majority of participants scored within this band.
    - **40-60 Range**: There is a smaller, lower bar in this range, indicating a significant drop in the number of participants who scored higher in Communication.

- **Absence of Scores Below 20 and Above 60**: No participants are represented with scores below 20 or above 60, suggesting limited variability outside the main observed ranges.

2. **Distribution Characteristics**:
    - **Skewed Distribution**: The histogram demonstrates a skewed distribution, with the vast majority of scores concentrated in the 20-40 range and a noticeable decline for higher scores.
    - **Narrow Range of Scores**: The concentration of scores within a relatively narrow band (20-40) with a limited number in the 40-60 range suggests a lack of high performers in Communication skills.
3. **Interpretation**:
    - **Predominance of Moderate Scores**: The concentration of scores in the 20-40 range indicates that most participants exhibit moderate proficiency in Communication skills. This suggests that while participants have some foundational abilities, many may struggle with advanced or highly effective communication practices.
    - **Limited High Performance**: The small number of participants scoring between 40 and 60 and the absence of higher scores (above 60) indicate challenges in reaching high proficiency in Communication. This could point to systemic factors such as gaps in education, lack of focus on practical communication skills, or limited exposure to complex communication scenarios.
4. **Potential Influences and Causes**:
    - **Training and Exposure**: The distribution may reflect inadequate or limited access to communication training that emphasizes advanced writing, speaking, or structured argumentation. Participants may need more exposure to scenarios requiring effective communication.
    - **Cultural and Regional Factors**: If these scores are drawn from a culturally diverse or regionally varied group, differences in language proficiency, educational standards, or socio-economic factors may influence the observed distribution.

Conclusion of LSAT Analysis:

The detailed analysis of the nine graphs related to LSAT scores across different regions, demographics, and skill areas provides valuable insights into the strengths and challenges faced by participants. Key observations and their implications can be synthesized as follows:

Regional and Demographic Disparities

Participants from urban and well-resourced areas such as Islamabad and Punjab consistently outperformed their peers from other regions, particularly in Information Management and Problem-Solving skills. This highlights a disparity in access to quality educational resources, test preparation opportunities, and socioeconomic advantages. Conversely, regions such as Balochistan and Gilgit Baltistan exhibited lower scores, reflecting potential gaps in educational infrastructure, limited preparatory access, and systemic challenges that warrant targeted interventions.

Gender-wise analysis indicated relatively balanced performance in problem-solving but showed a slight edge for female participants in Information Management and Communication. This trend underscores gender-based differences in skill acquisition that may stem from social, educational, or training factors.

Skill-Specific Insights

Across the board, participants demonstrated stronger performance in Information Management, with a reasonable level of competency in Communication. However, Problem-Solving emerged as a notable challenge, with lower scores indicating limited proficiency in complex analytical and critical thinking tasks. This finding suggests a need for enhanced focus on real-world problem-solving and higher-order thinking development through tailored training programs.

Histograms for skill-specific scores revealed a concentration of participants achieving moderate performance levels, with a noticeable absence of high scorers. For instance, Communication and Problem-Solving histograms showed a predominance of scores in the 20-40 range, with few participants excelling beyond this threshold. This pattern points to the need for interventions that push participants to excel beyond their current competency levels.

Recommendations for Improvement

1. **Targeted Skill Development and Training**: Tailored educational programs/training should focus on enhancing participants' proficiency in critical areas such as Problem-solving and Communication. Workshops, real-world scenarios, and feedback-driven sessions could help address the observed performance gaps.

2. **Equitable Resource Access**: Efforts to bridge regional disparities by improving access to quality education and test preparation in underserved areas like Balochistan and Gilgit Baltistan are essential. Providing infrastructure, scholarships, and community support initiatives can promote equity.
3. **Advanced Training Modules**: Introducing specialized training modules for Information Management and Communication skills, particularly for those already performing at moderate levels, can foster excellence and push participants to higher performance levels.
4. **Real-World Exposure**: Practical exposure to complex problem-solving tasks, public speaking, and communication exercises can build confidence and proficiency.

Conclusion

The comprehensive analysis of LSAT scores highlights both strengths and significant areas for improvement across regions, skills, and demographics. While many participants demonstrate moderate proficiency, the limited number of high-performing individuals underscores the need for focused interventions. By addressing regional disparities, fostering equitable resource access, and enhancing skill-specific training, it is possible to uplift overall performance and provide greater opportunities for excellence across the participant group. With the right initiative, the observed gaps can be bridged, fostering a more equitable and proficient pool of LSAT candidates.