



آغا خان یونیورسٹی ایگزامینیشن بورڈ
AGA KHAN UNIVERSITY EXAMINATION BOARD



Ensuring Standardization and Fairness across Multiple Examination Administrations: The Aga Khan University Examination Board Experience

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Aga Khan University Examination Board, Pakistan

Education System in Pakistan

- Education System
 - Primary (grade 1-5),
 - Middle (grade 6-8),
 - Secondary/Higher Secondary (grade 9-12)
 - Tertiary Education
- The system faces critical issue of access and quality **(25M Out of School Children)**
- High dropout rates
- High stake Board Examinations - major issues of quality of assessment and conduct of examination – ***Cheating, leakage of exam papers, rote learning, poor assessment and marking etc.***
- 30 Government Examination Boards (**Operating District-wise**)



AKU Examination Board

- Establishing AKU-Examination Board
 - Needs – Secondary and Higher Secondary Education
 - Fair and transparent system
 - Promote conceptual learning
 - Quality of Assessment
 - Improve classroom teaching
 - Established in November 2002 – Ordinance of Government of Pakistan
 - First private university led national examination board
 - Secondary School Certificate – SSC (Grade 9th/10th)
 - Higher Secondary School Certificate – HSSC (Grade 11th/12th)



AKU Examination Board

Vision

AKU-EB aspires to be a model of excellence and innovation in education for Pakistan and the developing world.

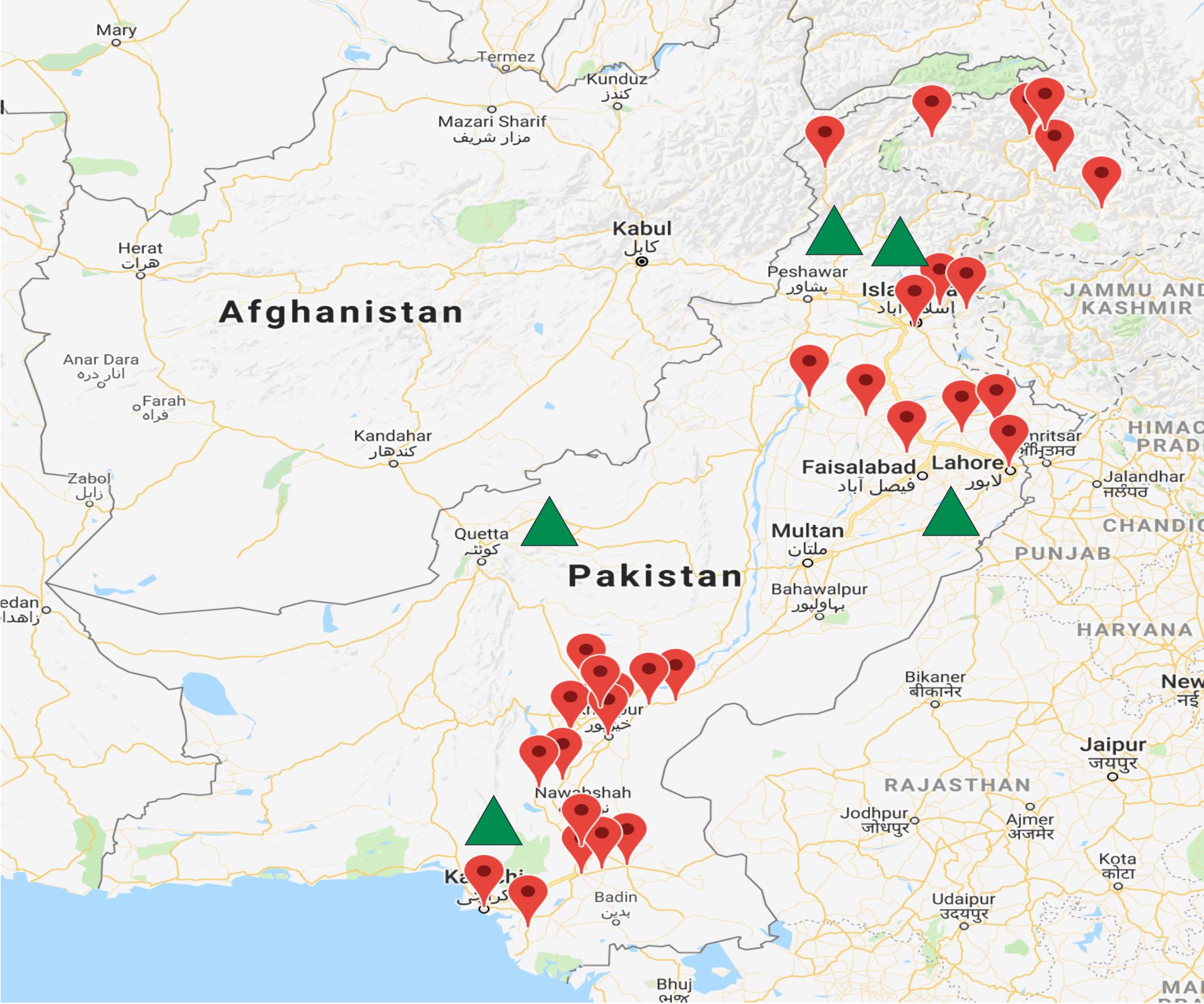
Impact

- a) Increase education quality for low and middle income students at secondary and higher secondary school level.
- b) Inculcate a culture of higher order thinking in youth through high quality, affordable assessments and educational development.

Goal

Catalyze the market to impact quality of exam boards across the nation.





•Geographical locations

•Context

•Cultures

•Socioeconomic Background

•Public and Private

Assessment at AKU-EB

- AKU-EB aims to make decisions based on best assessment practices for all examinations that are:
 - Valid
 - Reliable
 - Fair



AKU-EB Examination Cycle

- Exams offered 2 times a year
 - May (Annual attempt)
 - September
- A smaller sub-cohort from May examination re-sit for September examination (Absent, Improve and Pass)
- Hence, there is a need to verify the standardization and fairness across the two examinations



Quality Assurance of Examinations

- **Reliability**
- **Validity**
- **Fairness**

- Key Quality Indicators:

- Alignment with Syllabi and Objectives
- Alignment with Exam Specifications
- Required Cognitive Levels of Questions
- Appropriate Difficulty Level
- Fairness to all (diverse student body)
- Angoff Standard Setting



Research Objective

- To investigate the standardization, stability and equivalence of students scores during May and September AKU-EB high stakes examinations



Methods

01 Candidates attempting both May and September examinations from 2015 to 2018 are included.

02 Coefficient of Stability and Equivalence (COSE) is suggested as an index for test-retest reliability and is quoted as “honest reliability in literature”.

COSE is estimated using candidate scores on May and September examinations as an indicator of reliability, standardization and fairness.

COSE ranges from zero (no test-retest reliability) to 1 (perfect test-retest reliability), the higher it is the better.

03 Exemption was taken from AKU Ethical Review Committee.

Results

01 A total of 1678, 2253, 2567 and 2804 candidates from May examinations reappeared in September examinations in 2015, 2016, 2017 and 2018, respectively.

02 Analysis revealed a COSE of 0.855, 0.836, 0.860 and 0.836 between May and September examinations in 2015, 2016, 2017 and 2018, respectively (Table 1).

Year	No. of Candidates	COSE
2015	1,678	0.855
2016	2,253	0.836
2017	2,567	0.860
2018	2804	0.836

Table 1

Results

03

Hence, 73%, 70%, 74% and 70% variation in September examination scores were due to variation in May examination scores in 2015, 2016 and 2017, respectively (Figure 1).

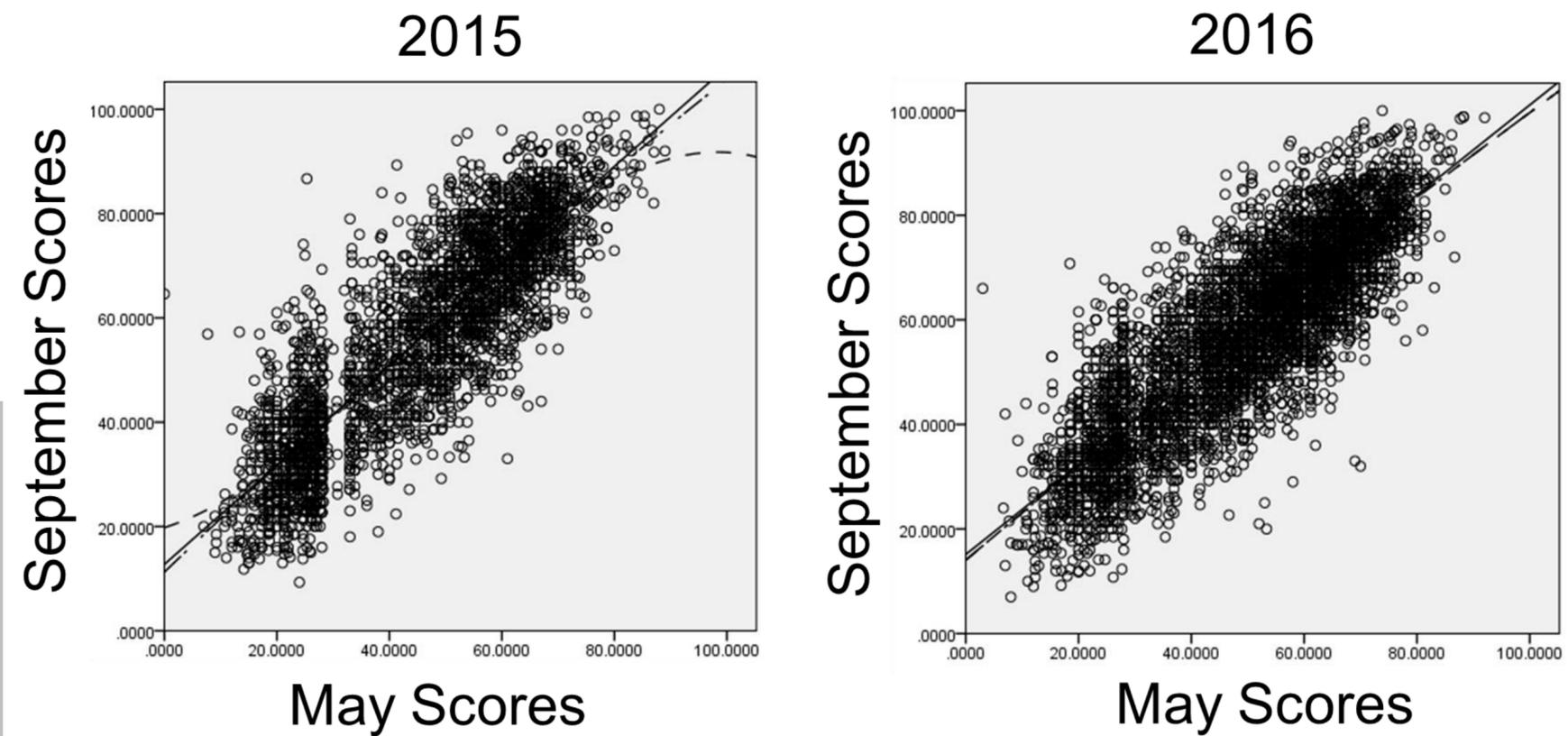
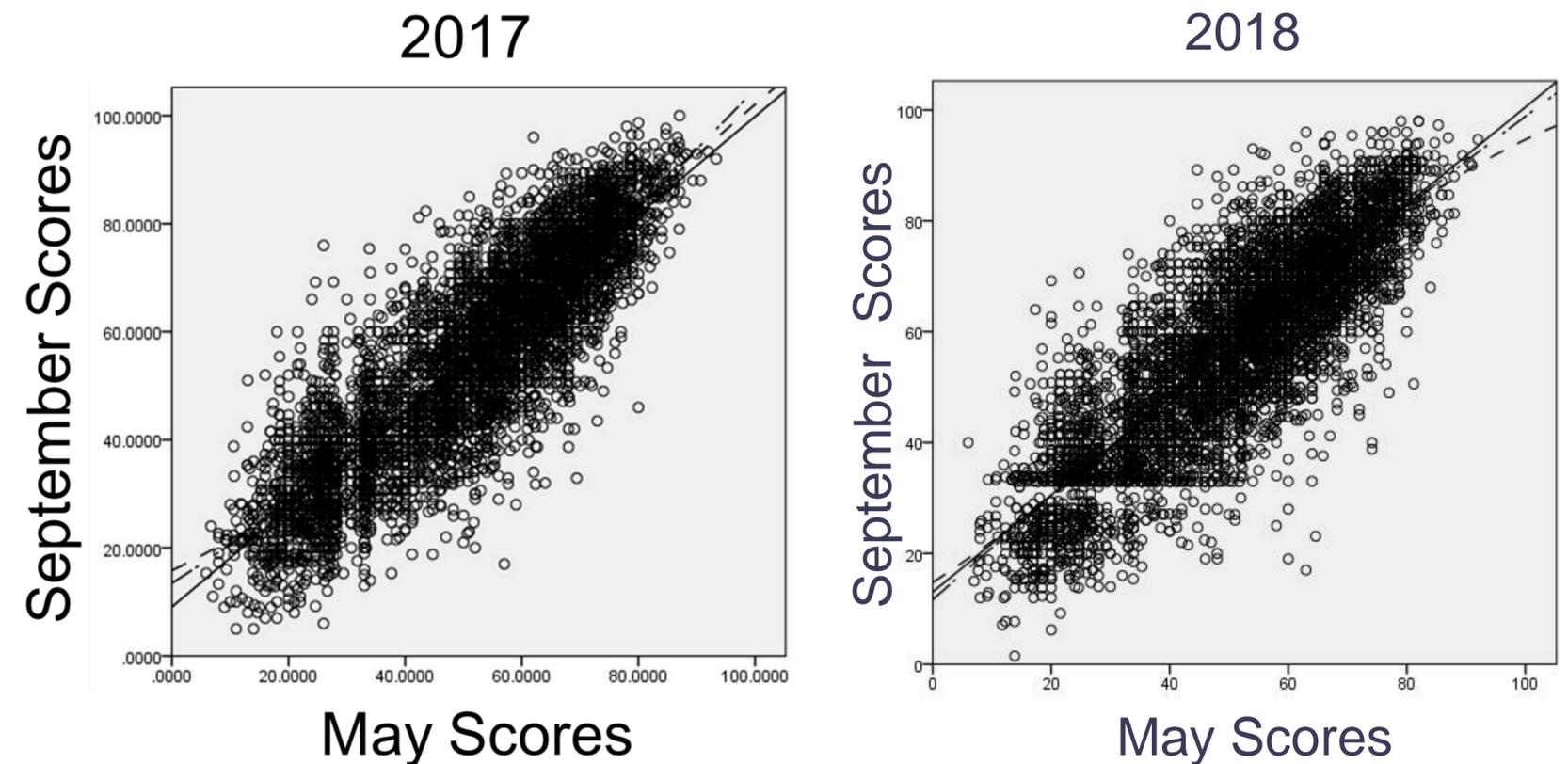


Figure 1: Regression Curve Estimation



Stability and Equivalence of Scores

	Count (%)	Mean (%)	SD (%)	Difference?	Mean (%)	SD (%)	Difference?
		May'15 Exam			September'15 Exam		
Female	36.0	46.3	18.0	No	57.3	20.1	No
Male	63.8	45.9	17.5		56.3	19.6	
		May'16 Exam			September'16 Exam		
Female	37.6	51.0	16.9	Yes	60.0	17.8	Yes
Male	62.4	48.0	17.1		55.9	17.3	
		May'17 Exam			September'17 Exam		
Female	39.1	53.3	18.3	Yes	58.2	19.4	Yes
Male	60.9	49.5	17.9		53.4	19.0	
		May'18 Exam			September'18 Exam		
Female	40.4	52.7	17.3	Yes	60.2	18.0	Yes
Male	59.6	48.7	17.0		54.5	17.8	

Stability and Equivalence of Scores

	Count (%)	Mean (%)	SD (%)	Rank	Mean (%)	SD (%)	Rank
		May'15 Exam			September'15 Exam		
Sindh	48.9	43.5	16.8	1.GB & KPK 2.Sindh 3.Punjab	53.6	18.9	1.GB & KPK 2.Sindh 3.Punjab
Punjab	12.6	36.4	20.1		46.7	21.3	
GB & KPK	38.5	52.5	15.6		63.8	17.8	
		May'16 Exam			September'16 Exam		
Sindh	49.0	46.1	16.1	1.KPK 2.GB 3.Sindh 4.Punjab	55.3	16.9	1.KPK
Punjab	10.0	40.4	20.1		52.2	20.4	2.GB
GB	37.4	54.6	15.9		61.1	16.9	3.Sindh
KPK	3.6	59.1	14.0		64.3	15.0	4.Punjab

Stability and Equivalence of Scores

	Count (%)	Mean (%)	SD (%)	Rank	Mean (%)	SD (%)	Rank
		May'17 Exam			September'17 Exam		
Sindh	49.4	48.0	17.0	1.KPK 2.GB 3.Sindh 4.Punjab	52.6	18.5	1.KPK 2.GB 3.Sindh 4.Punjab
Punjab	10.9	41.9	21.8		49.2	22.0	
GB	35.5	56.9	16.7		60.2	18.5	
KPK	4.3	58.8	14.1		62.5	16.1	
		May'18 Exam			September'18 Exam		
Sindh	52.2	47.7	16.0	1.KPK 2.GB 3.Sindh 4.Punjab	54.7	17.1	1.KPK 2.GB 3.Sindh 4.Punjab
Punjab	8.2	45.6	19.8		52.8	18.9	
GB	36.2	54.7	17.4		60.3	18.7	
KPK	3.4	55.1	16.6		61.5	16.8	

Conclusion

Results revealed standardization and fairness of assessments across multiple examination administrations is achieved at AKU-EB.





Thank you

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