



Education Sector Study



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Education

Introduction & Definitions

Education:

- It is the process of imparting knowledge, aimed to develop faculties of judgement and reasoning, to prepare individuals or groups intellectually for mature life.
- It can be thought of a transmission of accumulated values and knowledge of a society.
- While there are many educational conventions and institutes, such as Schools (primary, secondary & high), Vocational Training Institutes, Degree Colleges and Universities; this report however will particularly focus on Universities.

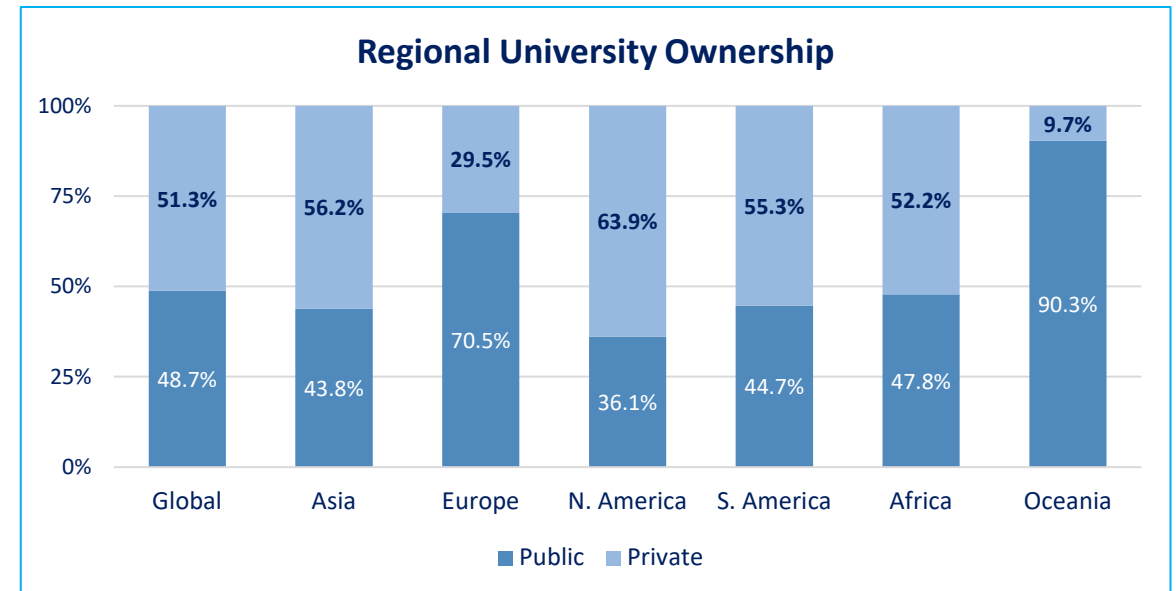
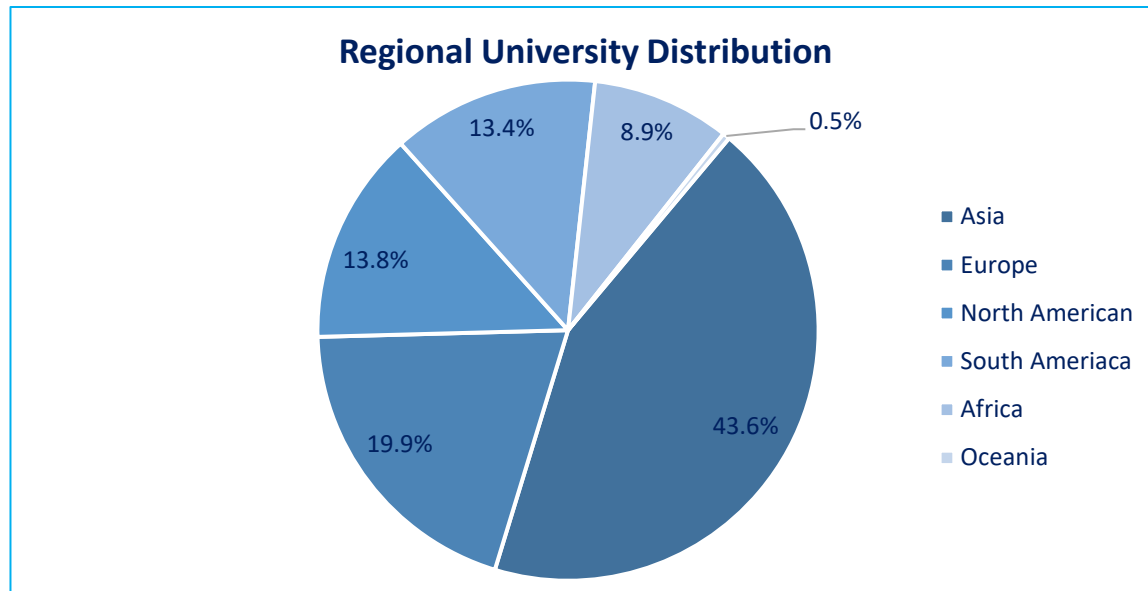
University:

- It is an institution of higher education, comprising of a variety of schools spanning multiple disciplines/subdisciplines and has the authority to confer undergraduate, graduate, doctorate and/or professional degrees.
- According to 4icu database, there are ~13,774 Universities (as of Dec'2021) around the globe that are officially recognized, licensed and accredited by either national or international bodies related to higher education.
- Tracked Universities offer 4 year undergraduate and/or postgraduate degrees (including doctorates) spanning disciplines from liberal arts to Science, Technology, Engineering and Mathematics (STEM).



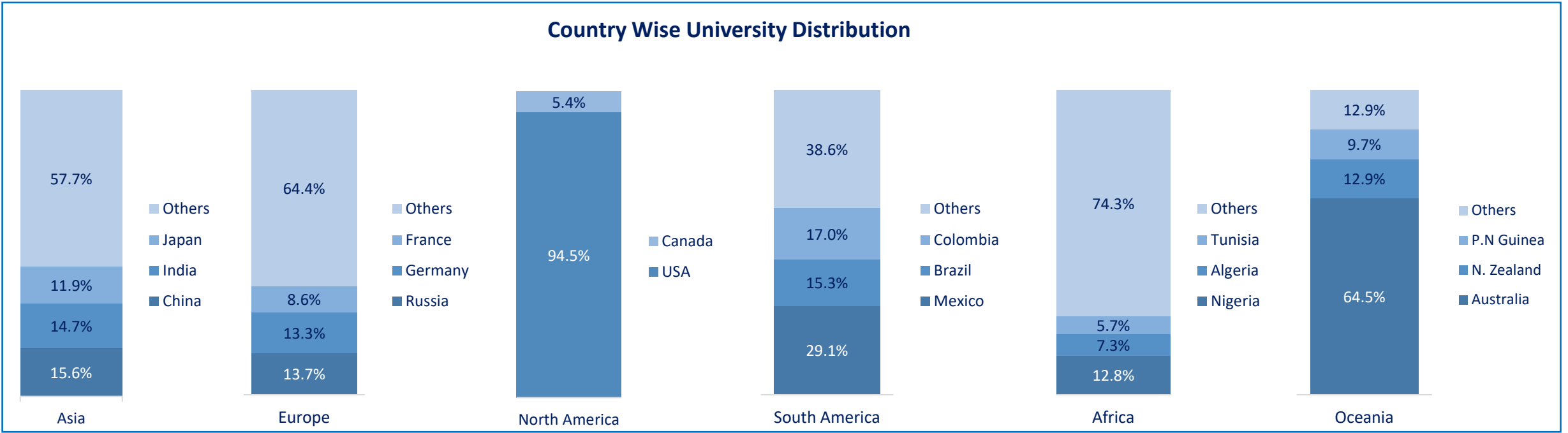
Global | Region Wise University Distribution

- As per the latest (Dec'2021) 4icu numbers, the global public to private University ownership mix stood at 49:51.
- The highest number of Universities are centered in Asia at ~43.6%, with a public to private ownership mix of 44:56.
- The proportion of private Universities is the highest in North America with a public to private ownership mix at 36:64; while ~13.8% of the total Universities are located there.
- The proportion of private Universities is the lowest in Oceania with a public to private ownership mix at 90:10; while it also has the lowest share in total Universities at ~0.5%.



Global | Region & Country Wise University Distribution

- As per the 4icu database, the highest proportion of Universities in Asia are located in China with a ~15.6% regional share, however in terms of the global comparison China has the second highest number of Universities with a ~6.8% global share.
- There is a similar case for India, while it has the second highest number of Universities in Asia with a ~14.7% regional share, it has the third highest number of Universities in the world with a ~6.4% global share.
- The highest number of Universities in the world are located in USA as it has a 12.8% global share and ~94.5% North American Universities are located there.



Education Levels

- UNESCO's International Standard Classification of Education (ISCED) divides education levels into 9 classes (0 to 8).

ISCED 0: Early & Pre-Primary Education	This level of education includes early childhood education, for 0 to 2 years age group and pre-primary education aimed at children aged 3, till start of ISCED 1.
ISCED 1: Primary Education	This level of education provides students with basic reading, writing and mathematical skills with an objective of preparing them for secondary education. This level has basic complexity, with little to no specialization. (usually grade 1-5)
ISCED 2 & 3: Secondary Education (Lower & Upper)	This level aims to lay the foundation for lifelong learning, is typically specialized and designed in preparation for tertiary education and/or provide skill for employment. (usually grades: 6-10 & 11-12)
ISCED 4: Post-secondary non-tertiary Education	This level provides individuals who completed ISCED level 3 with non-tertiary qualifications required for progression to tertiary education or for employment, however it's not sufficiently complex to be regarded as tertiary education.
ISCED 5: Short-cycle tertiary Education	These are designed to provide students professional skills, knowledge and competencies and typically are occupationally specific and prepare students for the labor market.
ISCED 6: Tertiary education (Bachelors or equivalent)	Bachelor's or equivalent level, are often designed to provide students with intermediate academic and/or professional knowledge, skills and competencies. They are offered by Universities and equivalent Tertiary educational institutions.
ISCED 7: Tertiary education (Masters or equivalent)	These are typically designed to provide students with advanced academic and/or professional knowledge, skills and competencies. Programs at this level may have a substantial research component but do not lead to a doctoral qualification.
ISCED 8: Tertiary education (Doctoral or equivalent)	These are designed primarily to lead to an advanced research qualification. Programs at this level are devoted to advanced study and original research and are typically offered only by research-oriented tertiary educational institutions.

Global | Regional Population and Education Stats

- According to UN and World bank data, the global population was recorded at ~7.79bln individuals in CY20 (CY19:~7.71bln); estimated global tertiary enrollments in CY20 stood at ~46.2% of the population; while estimated global per capita GDP stood at USD~10,329 (CY19: USD~10,811).
- Asia and Africa are the biggest population centers, holding ~59.8% and ~17.3% share in global population respectively; ~82.3% of the global 15-29 years age group (assumed tertiary education age) also lives in these regions; yet they have the lowest Tertiary enrollments (Africa is ~23% below global average) and the lowest GDP per capita.
- Oceania which reflects less than ~0.5% of the global population has the highest tertiary education enrollments of ~107.9%, owing to a high number of foreign student enrollments in Australia (~116.0% of total population).

Region	Global Population (mln)	Global %age Proportion	(15-29) Age Group (mln)	(15-29) Age Group %age of Region	% age Tertiary Enrollments*	GDP Per Capita USD
Asia	4,641	59.8%	719	15.5%	42.7%	6,686
Africa	1,341	17.3%	225	16.8%	16.6%	1,740
Europe	748	9.6%	84	11.2%	77.0%	26,203
South America	626	8.1%	107	17.2%	58.5%	7,942
North America	369	4.7%	51	13.9%	86.6%	56,534
Oceania	43	0.5%	6	14.4%	107.9%	40,771
Global	7,766	100.0%	1,192	15.3%	46.2%	10,329

(Table does not include Caribbean region)

*Tally of enrollments in post secondary programs only, not successful completion.

Local | Industry Snapshot

- The population of Pakistan has a 5-year annualized growth rate of 1.4% (FY17 to FY21) and in FY21, it was estimated to be ~212mln individuals (FY20: ~208mln).
- As per PBS estimate, almost ~27% of Pakistan’s population falls in the age group of 15-29 years, amounting to an estimated ~57mln individuals in FY21 (FY20: ~56mln).
- In FY21 the Real income per capita (GDP per capita + Foreign remittances per capita) rebounded at ~5.3% (FY20: ~-1.1%) and stood at PKR ~72,015 (FY20: ~68,403); indicating improved public buying power.
- The country’s total tertiary institutes in FY20 stood at 5,924 (FY19: 5,811) registering a YoY growth of ~1.9%; these include Universities, Degree Colleges and Technical & Vocational Institutes.
- There are 231 Universities in Pakistan that are recognized by the HEC (Dec’21). These range from general Universities that offer education in multiple disciplines to specialized ones particularly dedicated to the fields of Engineering & Technology, Medical sciences, Agricultural & Veterinary sciences and Arts & Design.

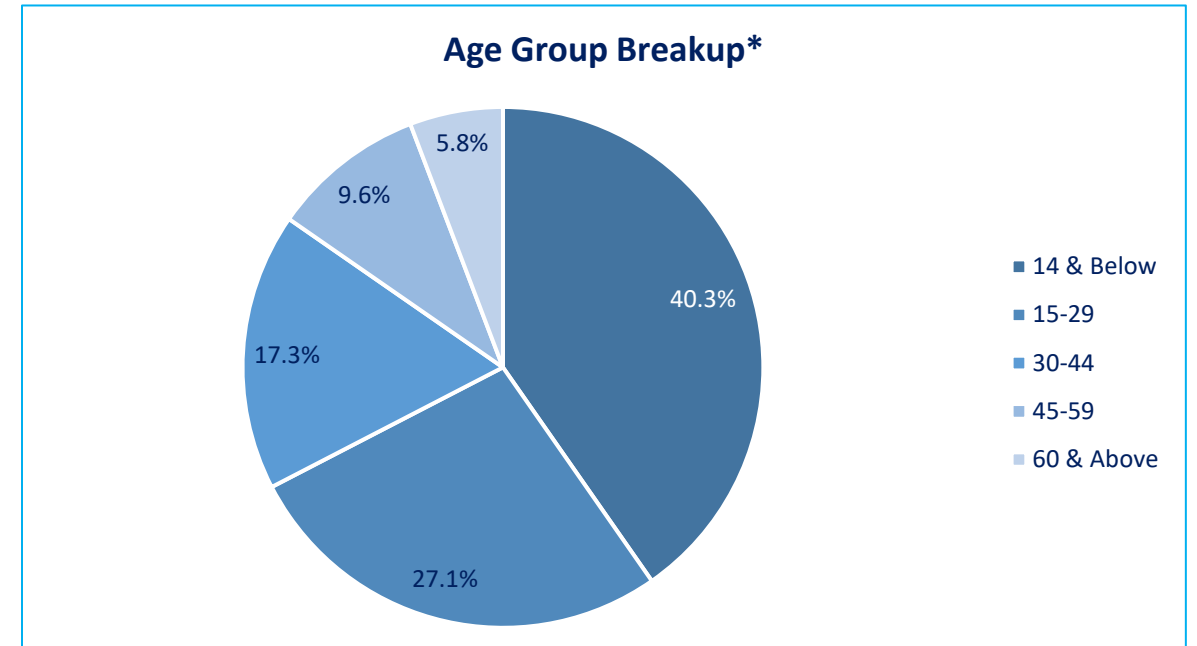
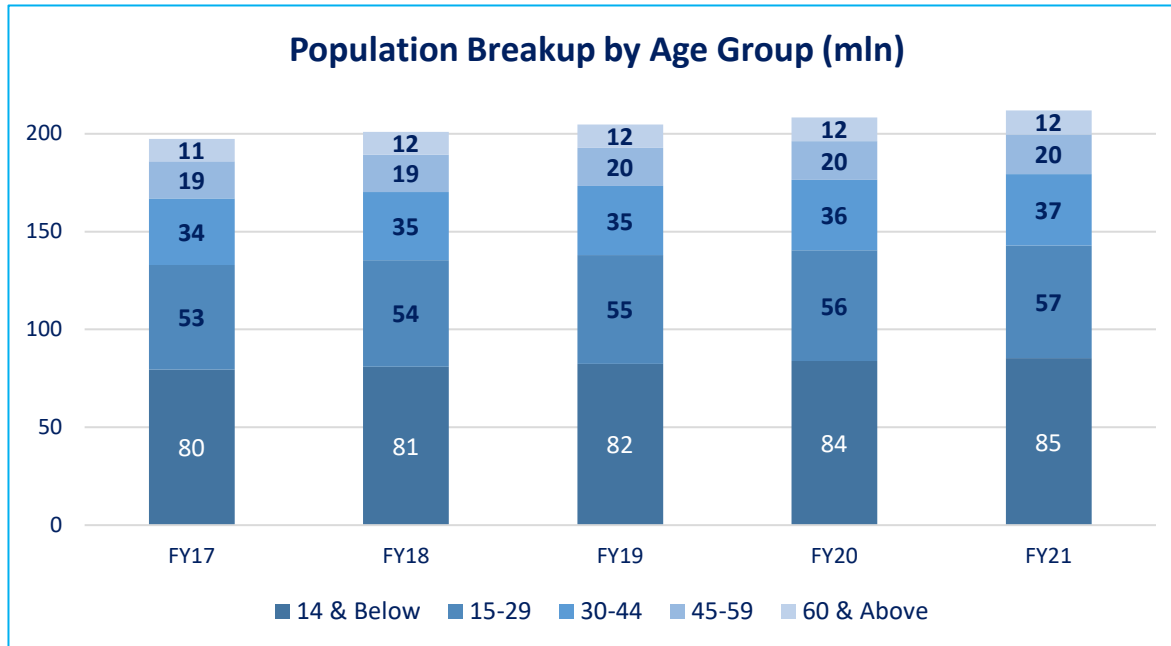
Particulars	FY20	FY21
Pakistan Population (mln)	208	212
Population 15-29 age group (mln)	56	57
Population Growth Rate	1.8%	1.7%
Real Income per Capita (PKR‘000’)	68	72
Number of Tertiary Institutes	5924	6066*
Tertiary Level Teachers (‘000’)	117	113*
New Tertiary Enrollments (‘000’)	2,973	3,161*
Number of Universities	224	231
University Teachers (‘000’)	58.0	57.8*
New University Enrollments (‘000’)	1,910	2,040*

**Estimated*

Education

Local | Socioeconomic Stats

- Pakistan is the 5th most populated country in the world, representing an estimated 2.7% of the global population; it also has a higher than global average 15-29 year age group (representative of University going age).
- In FY21, although the national real GDP stood at PKR~13,777bIn (FY20: PKR ~13,159bIn) ranked at 39th place in the world; but owing to the large population, real income per capita stood at PKR~72,015 (FY20: ~68,403) placing Pakistan at the 158th global rank.
- On a positive note long-term improvement in the population’s purchasing power was indicated as the 5-year (FY17 to FY21) annualized growth rate of Real income per capita stood at ~1.7%, and it is expected to keep its positive trajectory, as forecasts by IMF suggest Pakistan’s population to grow by ~1.9% and GDP to grow by ~4% to ~5% in the next 5 years (FY22-FY27).

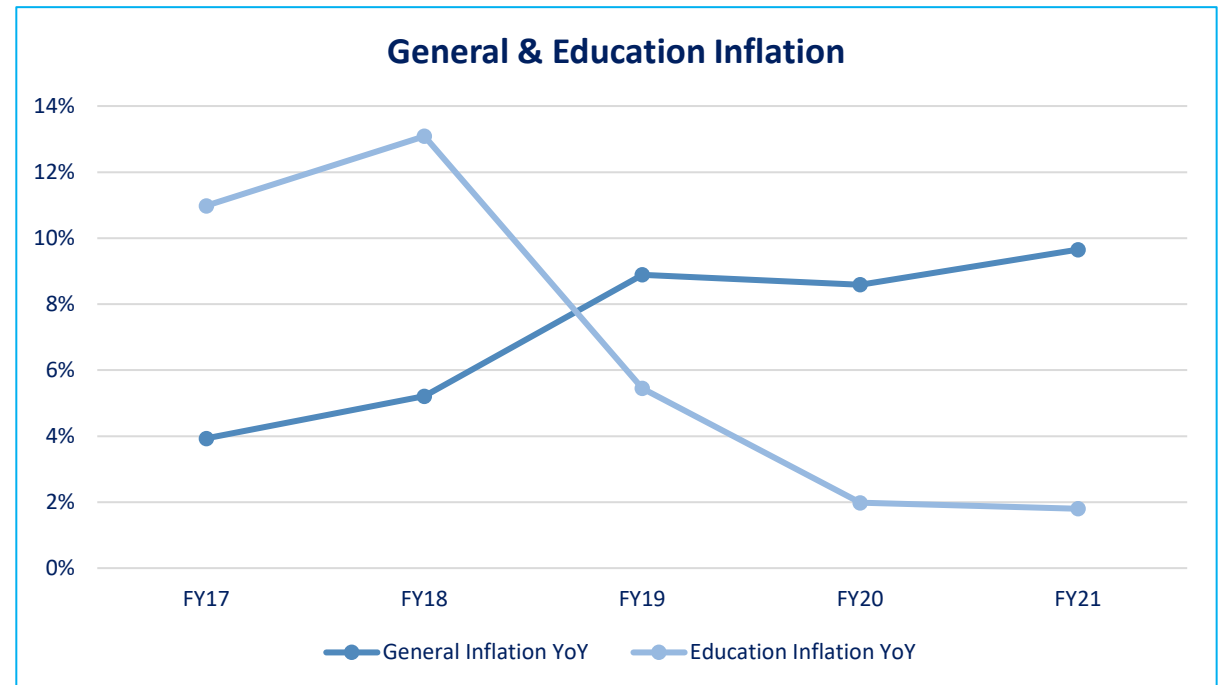
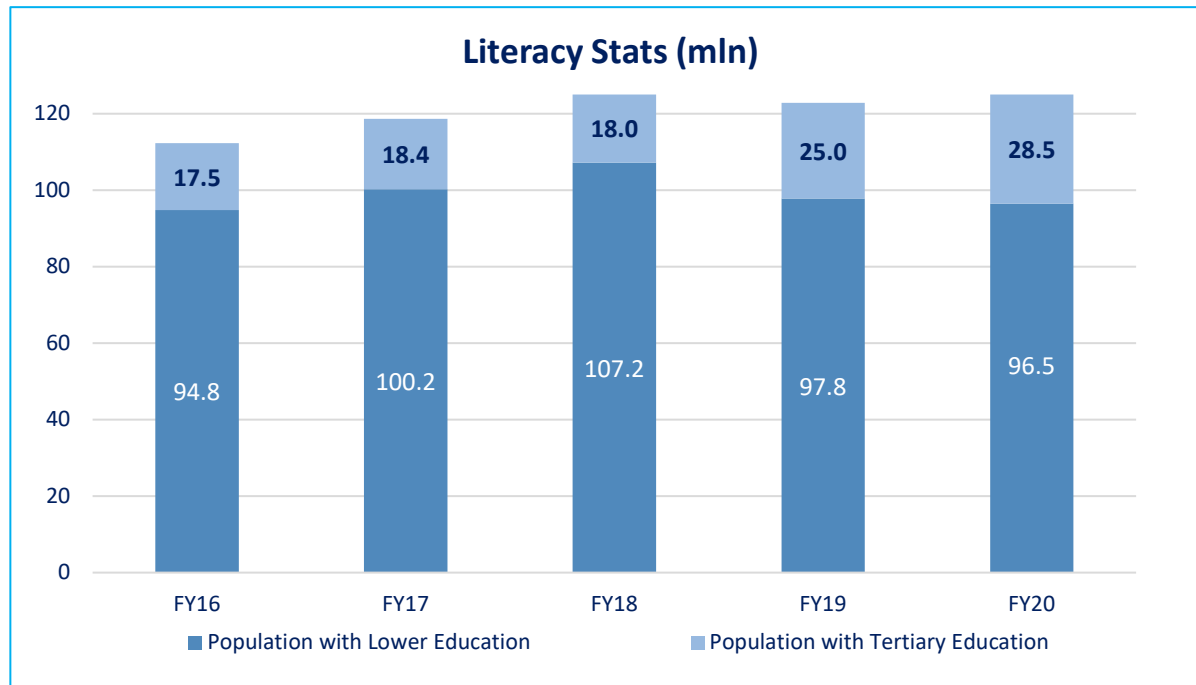


*Estimated on 2017 census proportion

Education

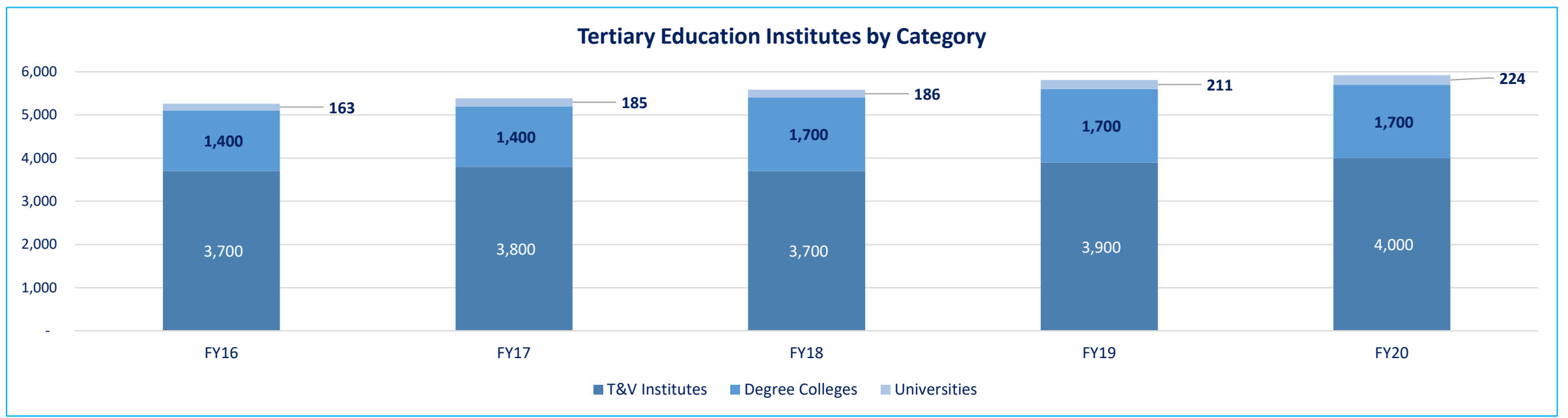
Local | Education Stats

- In FY20, Pakistan’s estimated literacy rate was at ~60% (FY19: ~60%) while the national tertiary education enrollments were estimated at ~13.7% (FY19: ~12.2%) of the total population, lower than the global average of ~46.2%.
- Total government expenditure (Federal and Provincial) on education in FY21 was estimated to be around ~1.8% (FY20: 2.0%) of the GDP; amounting to PKR~829bIn (FY20: PKR~901bIn).
- Inflation in prices of educational services peaked in FY18 at ~13.1% and in FY21 was estimated to be at ~1.8% (FY20: ~2%); as of FY21 education had 3.79% weight in the national CPI.



Local | Tertiary Education Institutes

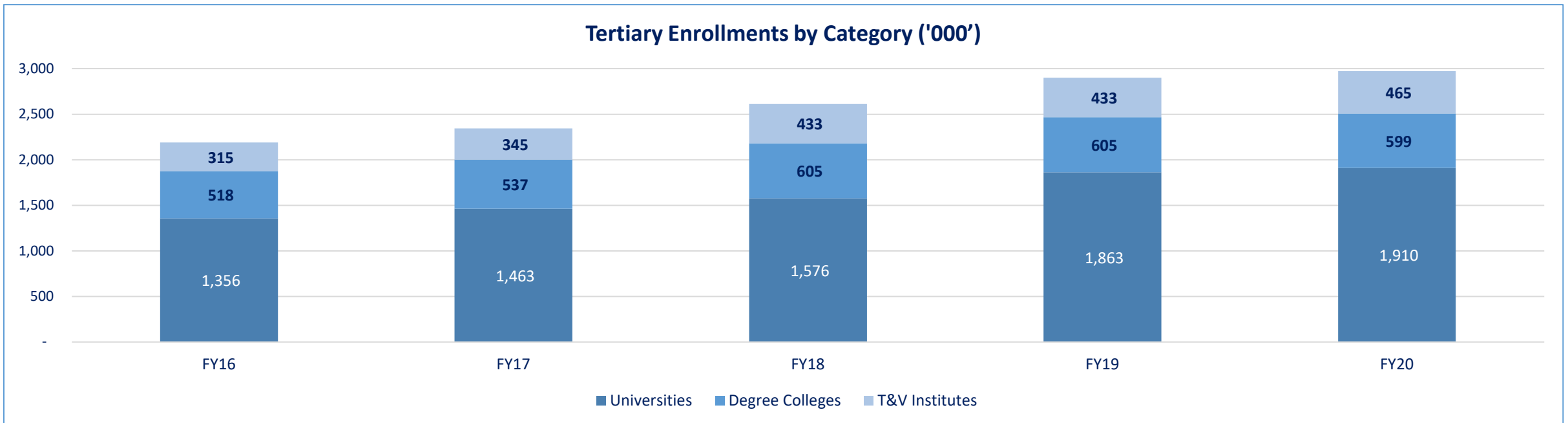
- Pakistan has almost 5,924* (FY19: 5,811) Tertiary Education Institutes, including Technical & Vocational (T&V) Institutes, Degree Colleges and Universities.
- Technical & Vocational Institutes make up the highest share in Tertiary Education Institutes: ~67.5% in FY20 (FY19: ~67.1%) , Degree Colleges: ~28.7% in FY20 (FY19: ~29.3%) while Universities had the lowest portion of ~3.8% in FY20 (FY19: ~3.6%).
- Tertiary Education Institutes grew with a 5 year (FY16 to FY20) annualized growth rate of ~2.4%; for the same period in subcategories, Universities had the highest annualized growth rate of ~6.6%, followed by Degree Colleges at ~4.0%, while Technical & Vocational Institutes had the lowest annualized growth rate of ~1.6%.
- The need for education and demand for Tertiary Education Institutes is also expected to increase in the future, with the increase in population.



*Data relating to FY20

Local | Annual Tertiary Enrollments

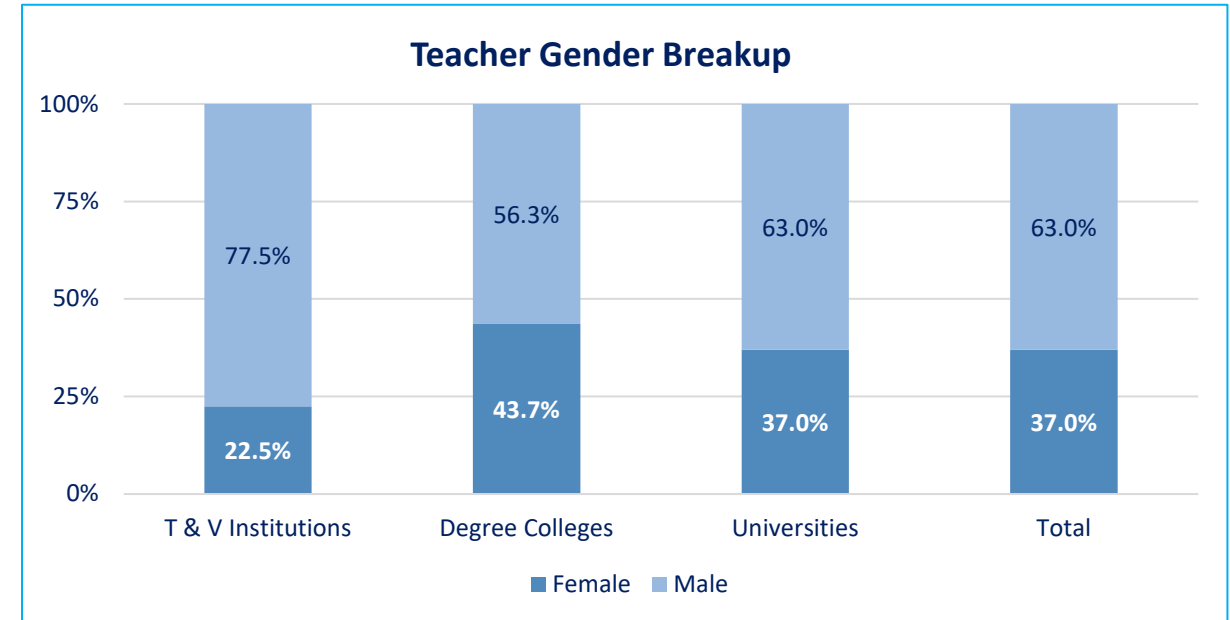
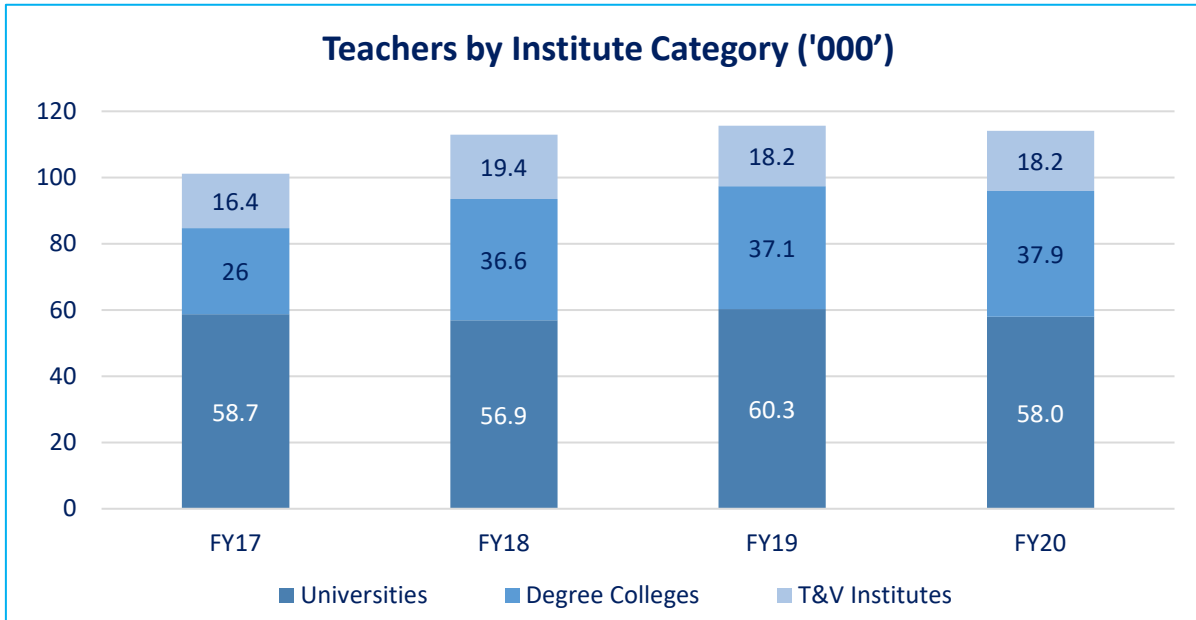
- During FY20, annual tertiary enrollments stood at ~3.0mln (FY19: ~2.9mln) students cumulatively from all three categories.
- Although Universities have the lowest proportion in terms of numbers in Tertiary Institutes, they hold the highest share in annual Tertiary enrollments; which in FY20 stood at ~64.2% (FY19: 64.2%); meanwhile, Degree Colleges and Technical & Vocational Institutes held ~20.1% (FY19: 20.8%) and ~15.6% (FY19: 14.9%) share in Tertiary enrollments respectively.
- The country's total tertiary enrollments grew by a 5-year (FY16 to FY20) annualized growth rate of ~6.3%, in the same period of the subcategories Technical & Vocational Institute enrollments had the highest annualized growth rate at ~8.1%, followed by Universities at ~6.7% while Degree College enrollments had the lowest annualized growth rate of ~2.9%.



Education

Local | Tertiary Teachers

- Pakistan’s total number of teachers employed at Tertiary level stood at ~114,100 in FY20 (FY19: ~115,600). Around half of the total Tertiary level teachers were employed at Universities i.e. ~50.8% (FY19: ~52.2%), ~33.2% (FY19: 32.1%) were employed at Degree Colleges and ~16.0% (FY19: 15.7%) were employed at Technical & Vocational Institutes.
- While the 4-year (FY17 to FY20) annualized growth rate of number of total Tertiary level teachers clocked in at ~3.1%, annualized growth rate for University teachers declined by ~-0.3% for the same period, where as it was ~9.9% and ~2.6% for Degree College and Technical & Vocational Institute teachers respectively.
- Based on latest available numbers Tertiary teachers had a female to male mix of 37:63; Degree Colleges had the highest female to male teacher mix at 44:56, while it was the lowest in Technical & Vocational Institutes at 23:77.

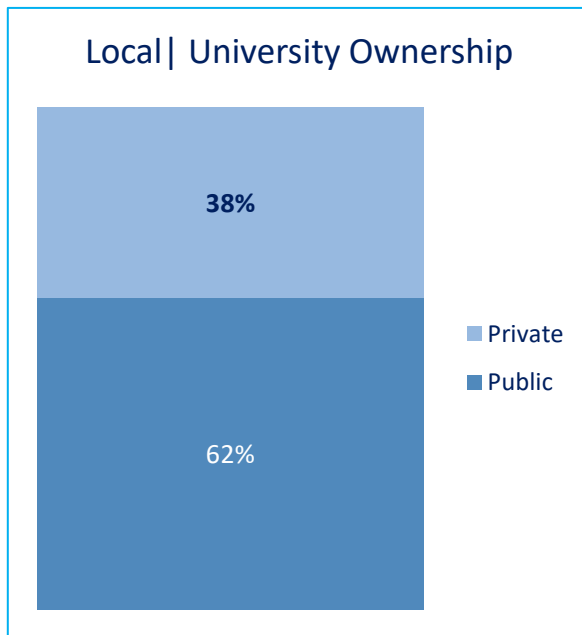


(University numbers based on FY19 data, rest on FY20 data)

Education

Local | Universities

- HEC recognizes 231 Universities to date overall in Pakistan. Public to Private University mix stands around 62:38.
- Around ~88.7% of the Universities in Pakistan are categorized as General (i.e. offering education in multiple disciplines), ~6.5% Universities are categorized as Engineering & Technology, ~3% are dedicated Medical Universities, while ~1.3% Universities are categorized as Arts & Design and ~0.4% Universities are dedicated to Agriculture and Veterinary Sciences.
- With reference to geographical spread, almost 36% Universities are located in Punjab, giving it the highest concentration in total and across all categories; no other province/region has dedicated Universities in all categories (as per HEC classifications).



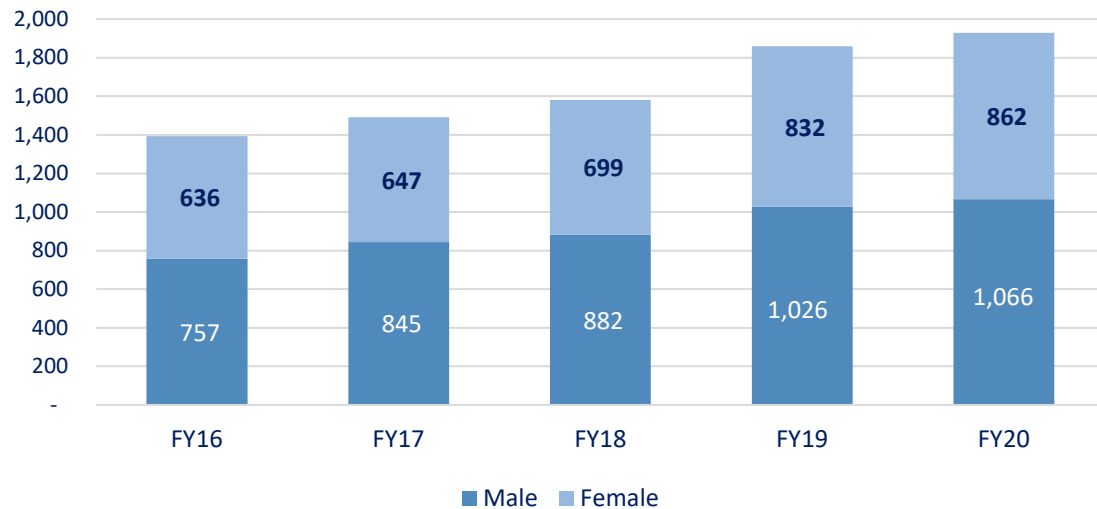
Region\Category	General	Engineering & Technology	Medical	Arts & Design	Agriculture & Veterinary	Total
Punjab	70	6	5	2	1	84
Sindh	63	2	0	1	0	66
KPK	39	2	0	0	0	41
ICT	18	4	1	0	0	23
Baluchistan	7	1	1	0	0	9
AJK & GB	8	0	0	0	0	8
Pakistan	205	15	7	3	1	231

(Based on Dec'21 data on HEC website)

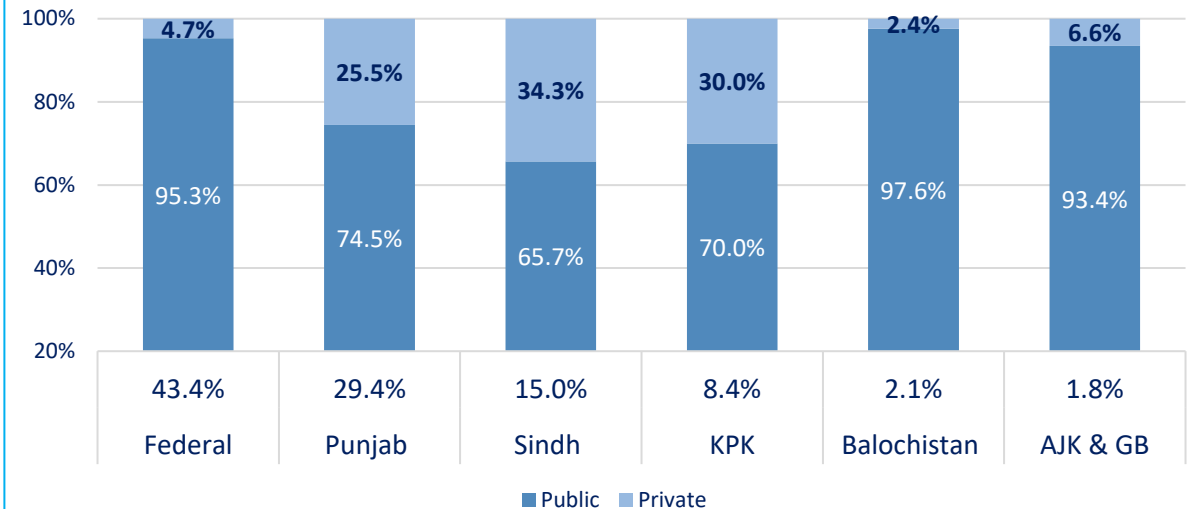
Local | Annual University Enrollments

- In FY20, ~2mIn new students were enrolled at Universities across Pakistan, of which ~44.7% (FY19: ~44.8%) were female students and ~55.3% (FY19: ~55.2%) were male students.
- 5-year (FY16-FY20) annualized growth rate for female student enrollments at Universities stood at ~6.3%, while the annualized growth rate for male student enrollments clocked in at ~7.1% in the same period.
- National Public to Private University enrollment mix stood at 83:17, Universities affiliated with the Federal government had the highest share in total enrollments at ~43.4% and had the second highest public to private enrollment mix at 95:5.
- The highest portion of private enrollments were recorded in Sindh government affiliated Universities, which had a public to private mix of 66:34 and ~15.0% share in total national enrollments.

University Enrollments by Gender ('000')



Enrollments per Regional Affiliation & Ownership*



*Proportions based on FY19 data by HEC

Local | Annual University Enrollments

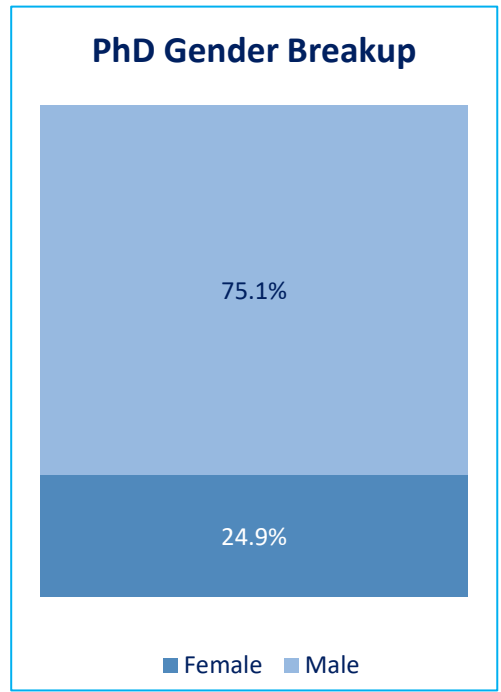
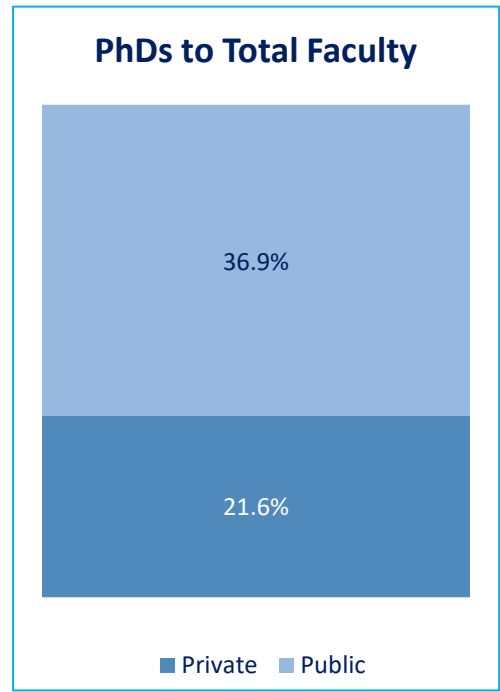
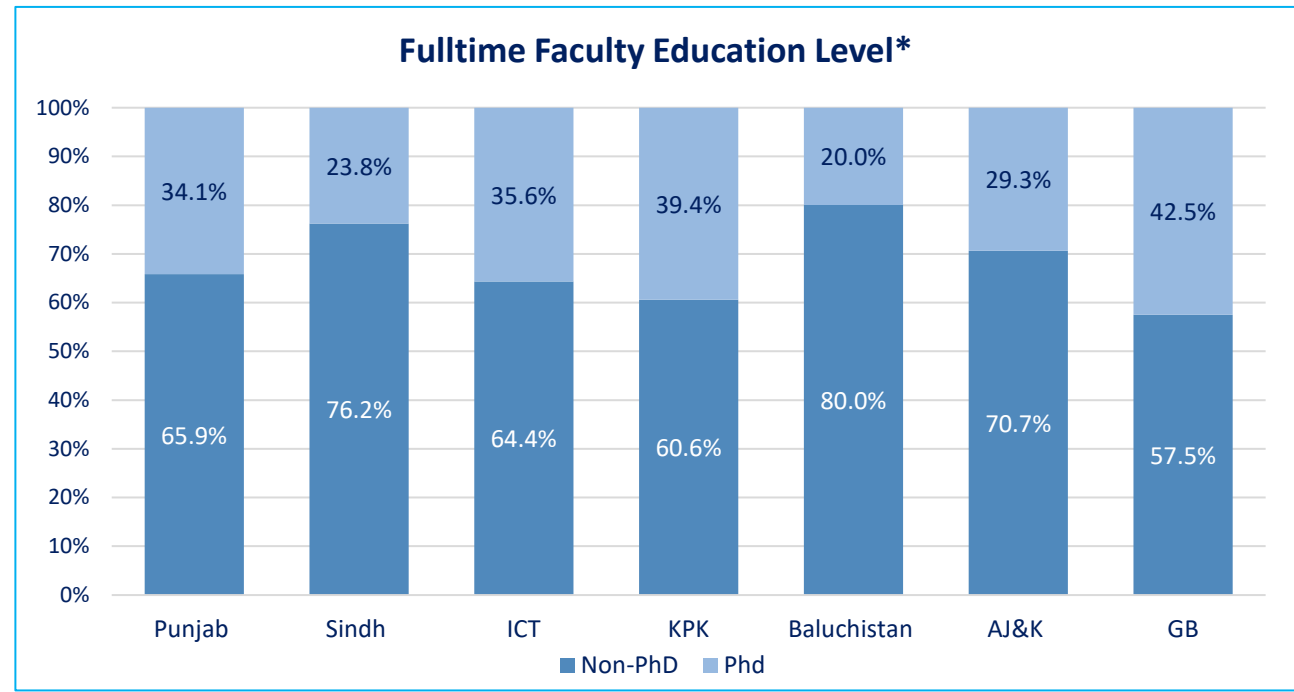
- In terms of level of education, out of the total enrollments of FY19: ~89.4% were in Bachelors & Masters; ~9.2% were in MS/M.Phil.; ~1.2% were in PhD and ~0.3% were in Post Graduate Diploma (PGD).
- In terms of disciplines, out of the total enrollments in FY19, Humanities & Arts had the highest enrollments with a share of 22.6%; followed by Education with a share of ~14.4%; Business and Law with a ~13.6% share; IT with ~11.3% share; Medical Sciences with ~10.5% share, Social Sciences with ~8.6% share, Engineering with ~8% share, Natural Sciences with a share of ~7.7% and Agriculture and Veterinary with a share of ~3.4%.

Disciplines\Level	Bachelor/ Master	MS/MPhil	PhD	PGD	Total per Discipline
Humanities & Arts	24.5%	6.2%	7.9%	9.1%	22.6%
Education	15.6%	3.6%	4.3%	8.9%	14.4%
Business & Law	11.8%	31.0%	12.0%	25.4%	13.6%
IT	11.6%	8.4%	6.5%	10.6%	11.3%
Medical Sciences	10.1%	12.4%	19.5%	17.7%	10.5%
Social Sciences	8.4%	9.9%	16.4%	20.7%	8.6%
Engineering	7.9%	9.8%	8.1%	4.2%	8.0%
Natural Sciences	7.0%	12.6%	16.9%	3.3%	7.7%
Agriculture & Veterinary	3.1%	6.0%	8.4%	0.2%	3.4%
Total by Level	89.4%	9.2%	1.2%	0.3%	100%

(Based on FY19 data by HEC)

Local | University Teachers

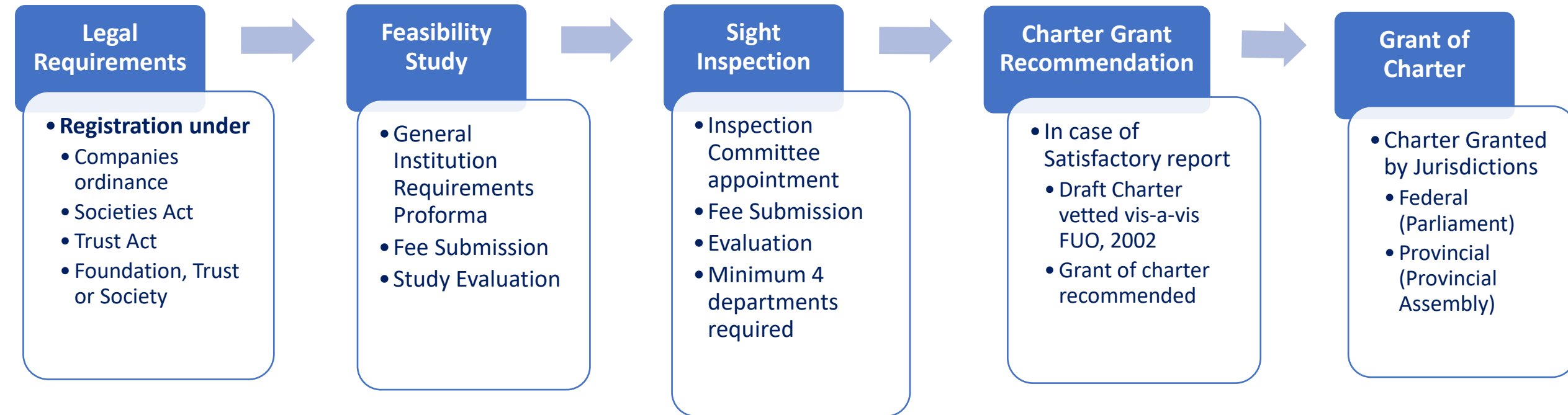
- As per the latest data published by HEC, out of the total University teachers, visiting faculty members make up to ~15.6% of the total; while the fulltime faculty members have a 67:33 public to private employment mix.
- Of the total fulltime faculty, the PhD to Non-PhD mix in the public sector Universities is 37:63, while for private sector the mix is 22:78.
- These dynamics put the national PhD to Non-PhD mix at 32:68.



*Proportions based on FY19 data by HEC

Local | University Setup

- The Sponsoring body of a University is required to be a Society, Trust or Foundation, registered under the relevant regulations of a Societies registration act, Trust act and/or Companies ordinance.
- Monitoring of Universities under Federal jurisdiction is overseen by HEC and Universities under provincial jurisdictions are monitored by the respective education departments.
- As per the HEC’s “Guidelines for the establishment of a new University or an Institution of higher education”, following procedure is followed.

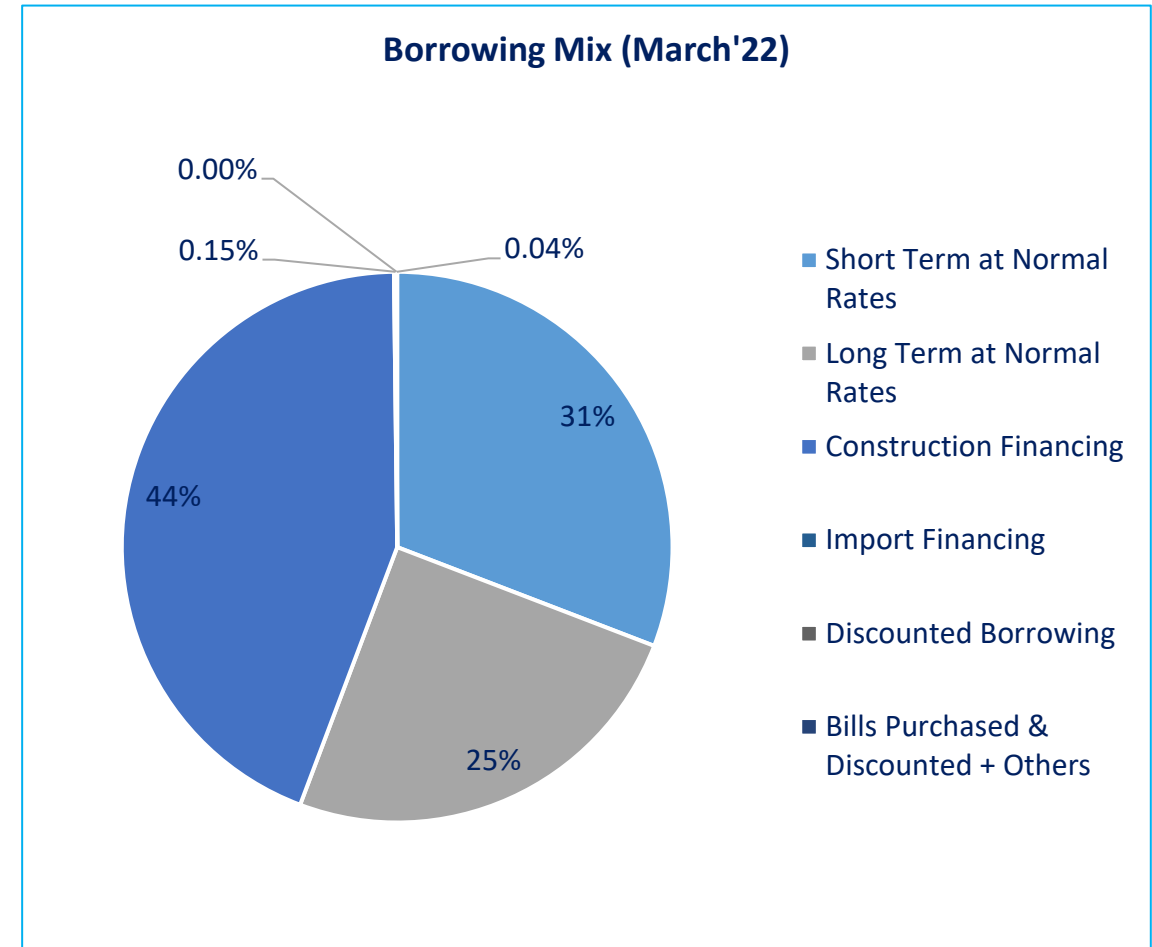


Business Risk

- Even though the GDP of Pakistan contracted by $\sim -0.47\%$ in FY20, University enrollments grew by $\sim 3.8\%$ (FY19: $\sim 17.6\%$); although there was a significant dip in the YoY growth, but the positive rate despite adverse economic and social conditions indicates a robust demand for higher education in Pakistan.
- Revenues from tuition fees make up to $\sim 99\%$ of a private University's inflows while the remaining sources are due from accounting adjustments and interest income on bank deposits.
- In FY21 education price inflation stood at $\sim 1.8\%$ YoY, private University fee inflation clocked in at $\sim 2.9\%$ YoY (Apr'21 on Apr'20, price weighted average); while their revenues from tuition fees grew by over $\sim 10\%$ YoY indicating significant contribution from higher number of enrollments.
- Being service providers, Universities don't have a matching cost of providing service classified by function; however major components of total costs (operating and admin) are: Salaries, trainings and amenities making up to $\sim 50\%$ of total period costs; Scholarships and grants making up to $\sim 20\%$ of total costs; Rent and rates at $\sim 6\%$, Fuel and power at $\sim 3\%$ and Repair and maintenance at $\sim 2.5\%$.
- $\sim 19\%$ of all University costs are of fixed nature (based on historic relevant ranges) and they have a variable cost component of PKR ~ 0.68 on every rupee of tuition fee earned.
- Private Universities have healthy operating margins of $\sim 16\%$ on average, and after further expending $\sim 2-3\%$ of the retained operating margins, they manage to retain up to $\sim 13\%$ earnings as surplus margins (as Universities are mostly Non for profit and not taxed).
- Decrease in annual enrollments is a major risk factor for private Universities as they face significant fixed costs, in recent times price elasticity of demand of University enrollments has become elastic with FY20 coefficient at ~ 1.9 (FY19: ~ 3.2) indicating a limited potential for increase in tuition fees.
- Probability of decreased enrollments can reasonably be expected due to emergence of new vaccine resistant COVID variants, that can potentially lead to lockdowns and adverse economic conditions if infections continue to increase.

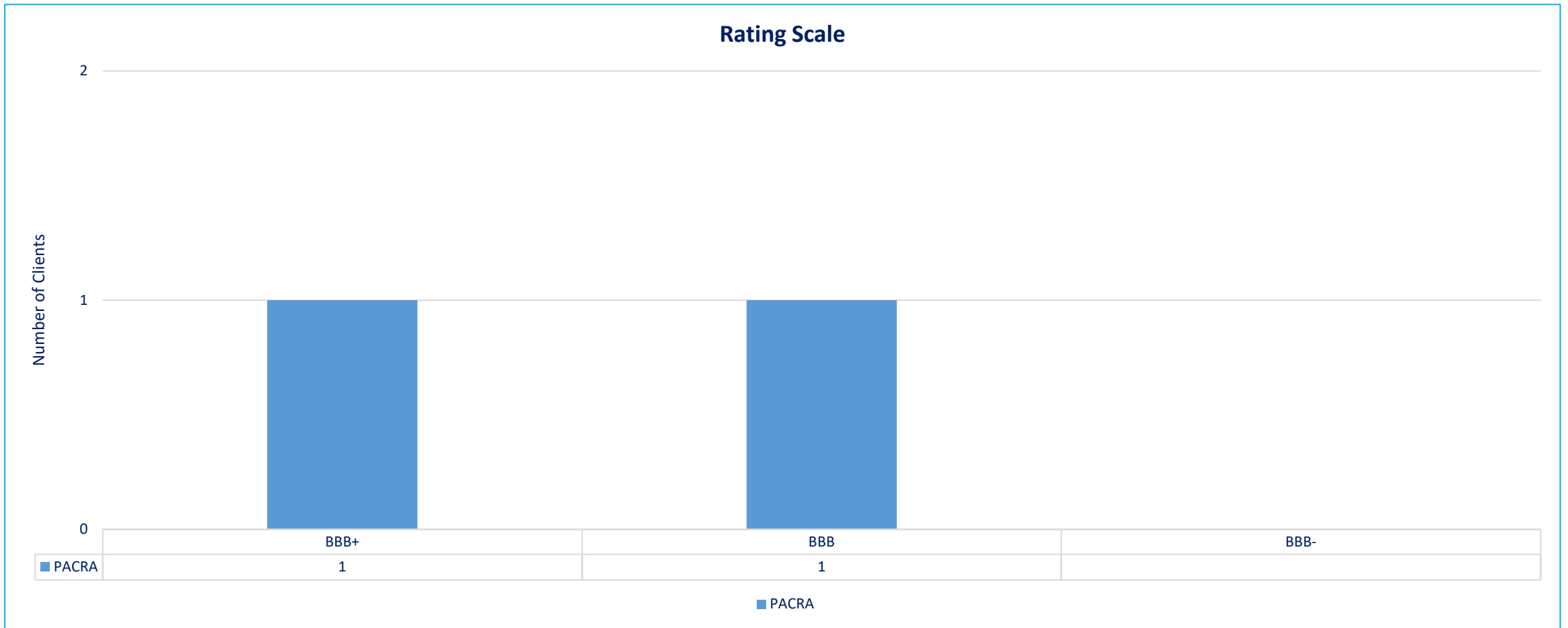
Financial Risk | Borrowing Mix

- The total borrowing of the higher education sector at March'22 end stood at PKR~11,431mln as compared to PKR~8,011mln at March'21 end.
- As at March'22 end, short term borrowings held a ~31% (March'21: ~55%) share in the higher education sector and stood at PKR~3,525mln (March'21: PKR~4,415mln).
- Construction financing held the largest component in the higher education sector borrowings, representing a ~44 % (March'21: ~17%) share in total and amounting to PKR~5,038mln up 2.7x YoY.
- Long term borrowings at nominal rates as a component of total higher education sector borrowings stand at ~29% and amounted to PKR ~2,846mln, up ~29% YoY.
- Import financing has the lowest share on higher education's borrowings books standing at ~0.15%, while any type of discounted borrowings (LTFF & TERF) has not been availed by the sector.
- As most higher education institutes (usually Universities) are limited by guarantee (i.e. do not hold any equity on their books), thus leveraging/gearing measures are not a valid metric for assessing their financial risk.



Ratings Curve

- PACRA Rates 2 Universities





SWOT Analysis

- Important social tenant
- Robust higher education demand
- Government patronage
- Low regulations
- Low to no taxes

Strengths

- Low barriers to entry
- Low specialized Universities
- Low PhD faculty ratio
- Low private University enrollments

Weaknesses

- Growing University going age group
- Growing real per capita income
- Grants from local government and international organizations
- IT based teaching solutions to enhance reach

Opportunity

- Dip in Government expenditure on education
- Online micro degree programs

Threats



Outlook: Stable

- The population of Pakistan had FY17 to FY21 annualized growth rate of ~1.4%, while Real income per capita experienced a slightly higher annualized growth rate of ~1.7% in the same period, indicating improvement (albeit not homogeneously across all socio economic classes) in population's purchasing power.
- The estimated University going age group of 15-29 years represents ~27.1% of the national population, higher than the global average of 15.3%; indicating robust demand for higher education for the foreseeable future.
- This is reflected in the robust growth of University enrollments, as in FY20 (even though GDP contracted by ~-0.47%) they grew by ~3.8% (FY19: ~17.6%); while the number of Universities in FY21 grew by ~3.1% (FY20: ~6.2%) with FY17 to FY21 annualized growth rate at ~4.5%; although there has been stable growth in the sector; however with FY20 tertiary enrollments standing at ~13.3% (FY19: ~12.2%), huge swaths of population are still underserved and unserved.
- The private sector has a low participation as private Universities account for ~38% of the total; of the total Universities less than ~12% are categorized as specialized in particular disciplines, of which ~85% are public.
- The proportion of PhD faculty only accounts for ~32% of the total permanent faculty, which is even lower in the private sector at ~22% and ~47% of total PhDs are from foreign countries.
- Universities are lightly regulated, their taxes are low to zero, are backed by government patronage and have a high variable cost component by nature; these inhilant dynamics enable Universities to retain health levels of operating and surplus margins.
- The emergence of the new COVID variant is a major cause for concern, if it proves to be as invasive as preliminary infection numbers are suggesting; plausible lockdowns and ensuing economic adversities can negatively impact annual enrollments and also limit the potential fee increase.
- However the sector has already faced such adversities and during the previous COVID crisis and as per a data driven perspective, education and by extension Universities were among lesser impacted sectors.



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- Pakistan Bureau of Statistics (PBS)
- Economic Survey
- State Bank of Pakistan (SBP)
- PACRA in-house Database

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