

Beyond the Baseline: Pakistan's Race to Premium-Grade Skills

Pakistan has the talent. Now build the skills.



A MESSAGE FROM THE AUTHOR

Pakistan is not a country that lacks ambition. Nor does it lack talent. What the data in this report reveals is something more precise and more actionable: Pakistan lacks a skills delivery system commensurate with its opportunity.

When we set out to analyse Pakistan's position in the global skills landscape, we expected to find a gap. What we did not expect was the sharpness of the contradiction. A labour cost score of 97 out of 100. The world's second-largest freelance talent pool. A population of 140 million people under 30, entering the workforce at precisely the moment when AI skills command their highest-ever lifetime return. And yet, Coursera proficiency percentiles of 6% in Business, 8% in Technology, and just 2% in Data Science. Last among every peer in Asia Pacific. Not close to last. Last.

This is not a counsel of despair. It is a diagnosis and a precise one. The gap is not in resources, not in market access, and not in the intelligence of Pakistani learners. It is in institutional delivery. Universities still designing for subjects rather than stacks. Assessment systems that reward recall over application. Faculty who are being asked to teach skills they have not yet been trained to use. These are fixable problems. Each one has a tested solution, drawn from Singapore, MIT, and Singapore's SkillsFuture model. The evidence is in this report. So is the roadmap.

The window is real, and it is narrow. Vietnam's GenAI enrollment is growing at 417% year-on-year. GCC regulatory mandates under IFRS S1 and S2 take effect in 2026, creating an immediate, time-bounded demand for ESG talent that no other South Asian country is currently positioned to capture. Saudi Arabia alone has committed USD 30 billion to cybersecurity investment by 2030. These are not projections. They are procurement decisions already underway and they require the kind of verified, premium-grade skills that Pakistani graduates do not yet hold at scale.

To the university leaders, policymakers, investors, and GCC employers reading this: the data removes ambiguity about where to start. GenAI, Cybersecurity, Data Science, Cloud and DevOps, and ESG and Green Finance, these five clusters satisfy every criterion simultaneously: global demand growth, Pakistan's existing graduate base, and direct GCC market access. The salary evidence is equally unambiguous. Skill combinations pay 2 to 2.5 times the rate of individual skills. Design for stacks, not for subjects.

The demographic dividend, the cost advantage, and the regulatory window will not wait. What this report asks of its readers is not optimism. It asks for urgency, grounded in evidence, and acted on before 2028.



Sajjeed Aslam
Partner, Sustainadility

Executive Summary

Global skills rank #105 / 109	IT exports FY2026 \$3.4B	Labour cost score 97 / 100	Population under 30 140M
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The core tension Pakistan has world-class cost competitiveness and a massive young workforce, yet Coursera proficiency sits at 6% in Business, 8% in Technology, and just 2% in Data Science last among all APAC peers. The challenge is not resources or market access. It is skills delivery.

The window: 2025–2028 GCC regulatory mandates (IFRS S1/S2) take effect in 2026. Vietnam's GenAI enrollment is growing at 417% YoY. First-mover positioning closes within 24–36 months.	The prize Government target of \$10B in IT exports by 2029. At elevated proficiency, the same workforce commands 2.0–2.5× higher rates — making the target achievable through skills investment alone.
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Five priority skill clusters includesGenAI & Prompt Engineering, Cybersecurity, Data Science & BI, Cloud & DevOps, ESG & Green Finance. Skill combinations pay 2–2.5× individual rates. ESG is the most undervalued: finance graduates can cross-skill in 6–12 months for GCC placements at \$50K–\$110K/yr versus \$8K–\$15K locally.

The conclusion: design for stacks, not for subjects. Act before 2028 the demographic dividend, cost advantage, and regulatory window will not wait.

Pakistan's IT Export Opportunity: The 2025-2028 Window

Pakistan stands at a rare strategic inflection point. With a labour cost competitiveness score of 97 out of 100 exceeding India's 96 and 65% of its population under 30, the country possesses the foundational ingredients to become a dominant force in global digital services. IT exports reached USD 3.4 billion in the first nine months of FY2026, a 20% year-on-year increase. Upwork's 2024 ranking places Pakistani freelancers as the world's second-largest talent pool with over 2.3 million active professionals. The demand signal from global buyers is already there. Yet Pakistan's Coursera proficiency percentiles sit at just 6% in Business, 8% in Technology, and 2% in Data Science ranking last among APAC peers. This is not a resource gap. It is a skills delivery gap, and it is closable within one university generation.

The government's Uraan Pakistan initiative targets USD 10.0 billion in IT exports by 2029. The Pakistan Software Houses Association (PASHA) has identified the binding constraint clearly: it is not market access, it is the supply of verifiable, premium-grade skills. Five skill clusters, GenAI, Cybersecurity, Data Science, Cloud/DevOps, and ESG, offer the highest return for Pakistan because they align global demand growth, Pakistan's existing graduate base in CS, engineering, and finance, and GCC market access, Pakistan's number-one export destination for IT services. This document presents the evidence, the strategic framework, and the eight interventions Pakistani universities must execute before 2028 to capture this window.





Why the Window Is 2025–2028: Three Structural Advantages

Pakistan's strategic opportunity rests on three structural advantages that, when activated simultaneously, create a compounding competitive position. The window for activation is narrow: demographic dividends expire, cost advantages erode as competing nations invest in skills, and regulatory mandates create first-mover windows that close within 24 to 36 months. The evidence is unambiguous: act before 2028, or watch the window close.

01 · Demographics Are the Entry Ticket

65% of Pakistan's population is under 30, approximately **140 million potential learners** entering the workforce during the precise window where AI skills command the highest lifetime return on investment. This is not just a youth bulge; it is a structural supply advantage that no aging economy can replicate. The critical question is whether this demographic dividend gets activated through quality skills delivery or dissipates through underemployment.

02 · Cost Advantage Is Real and Documented

Labour cost competitiveness score of **97 out of 100**. Pakistan's blended developer rate of **USD 15–25 per hour** is 60–70% below the U.S. equivalent, making it directly price-competitive for GCC and U.S. digital outsourcing. This cost position, combined with English-language proficiency and timezone alignment with GCC markets, creates a natural export corridor that requires only skills quality to unlock premium rates.

03 · The Government Targets USD10B; the Pathway Is Skills

Uraan Pakistan targets **USD 10.0 billion in IT exports by 2029**. PASHA has identified the binding constraint: not market access, but the supply of verifiable skills. At current proficiency levels, Pakistan captures volume at low rates. At elevated proficiency, the same workforce commands 2.0–2.5x higher rates transforming the USD 10B target from aspirational to achievable through skills investment alone.

The complication is equally clear. Pakistan's Coursera proficiency percentiles **6% in Business, 8% in Technology, and 2% in Data Science**, rank last across all three domains among APAC peers. In an era where global buyers verify skills through micro-credentials and platform ratings, low proficiency means low rates and high substitutability. Vietnam's GenAI enrollment growth of **417% year-on-year** is the strategic warning: a country at similar income levels is moving faster. The demand signal exists. The skills quality to capture premium-rate work does not yet exist. That gap is the entire strategic challenge.

97/100

Labour Cost Score

Exceeds India's 96, documented competitive advantage

140M

Potential Learners

Under-30 population entering workforce in the AI skills window

\$10B

Export Target by 2029

Uraan Pakistan national IT export goal

2%

Data Science Proficiency

Pakistan's Coursera percentile, the binding constraint to close



The Five Priority Skill Clusters for Pakistan

Five skill clusters offer the highest return for Pakistan because they satisfy a triple alignment: global demand growth (all rank in the top 10 by every Tier-1 source Coursera, WEF, McKinsey, BCG, and Stanford HAI), **Pakistan's existing graduate base** (CS, engineering, and finance programs provide the foundational knowledge), and **GCC market access** (Pakistan's number-one export destination for IT services). The chart below illustrates Pakistan's proficiency gap relative to APAC peers — the country ranks last across all three measured domains but has the demographic depth to close the gap fastest if universities act decisively.

Cluster	Global Demand Signal	Pakistan Starting Point	Export Opportunity	Why the Window Is Now
1. GenAI & Prompt Engineering	Highest globally — +195% YoY enrollment growth; 8.0M+ total enrollments; 12 learners per minute in 2025	Near-zero baseline; first-mover window still open for late entrants	Export AI-augmented services to GCC, U.S., and EU markets	195% YoY growth. GCC buyers actively procuring AI-augmented services now
2. Cybersecurity	5.0M global professional shortfall (ISC ²); Security Management Specialist is WEF top-5 fastest-growing role	HEC National AI Policy targets this; acute delivery gap at institutional level	Cybersecurity services hub for GCC and South Asian SMEs	Saudi Arabia alone plans USD 30B in cybersecurity investment by 2030
3. Data Science & BI	Foundational for all AI deployment; McKinsey rates demand as High with 2.7x index by 2035	Strong mathematics base exists; needs applied data-tooling layer added	Analytics-as-a-service for MENA banks, telecoms, and retail	Every AI deployment requires data pipelines and BI layers — non-negotiable demand
4. Cloud & DevOps	Cloud migration is a global baseline requirement by 2027; +28% infrastructure cert growth	AWS/Azure/GCP certifications are globally portable; remote-friendly entry path	High demand in Saudi Vision 2030 infrastructure projects	Cloud migration is non-negotiable for GCC enterprises. Globally portable certifications give Pakistani graduates immediate credentialing
5. ESG & Green Finance ★	New category in 2025 top 10; 2.5x demand index by 2035; IFRS S1/S2 GCC mandates from 2026	Untapped; finance and engineering graduates can cross-skill in 6–12 months	First-mover as GCC-facing ESG reporting talent pool	GCC companies mandated to file IFRS S1/S2 disclosures from 2026. Acute shortage of ESG analysts who understand both finance and sustainability frameworks

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Skill Combination Stacks: The 2.0–2.5x Rate Premium

Individual skills generate employability. Skill combinations generate a **premium** a salary and hire-rate multiplier that no single credential can match. Drawing on WEF employer survey data (n=1,000+ employers across 55 economies), McKinsey wage analysis, and Coursera's learner outcome dataset, three combination archetypes emerge as highest-value for Pakistani talent in 2025–2028. The insight that every hiring manager confirms: the rarest and most valuable people are those who can **reason analytically, execute technically, and communicate commercially**. The stack, not the single skill, determines the rate. For Pakistani universities, the implication is unambiguous design for stacks, not for subjects.

Stack 1 – The AI-Augmented Analyst

GenAI + Data Science + Critical Thinking

The number-one stack across all five Tier-1 sources. Captures the most frequent buyer need in 2025: someone who can extract insight from data using AI tools and translate that insight into business decisions. McKinsey's 2025 survey finds professionals holding all three components command a **35–50% salary premium** over those with only technical skills. WEF ranks this combination as the most future-proof profile through 2030.

Rate uplift: USD 15–25/hr → USD 35–55/hr (**2.0–2.2x current baseline**)

Target market: GCC banks, telecoms, retail chains

Time to stack: 12–18 months part-time via Coursera Professional Certs + capstone project

Stack 2 – The Cyber-Cloud Engineer

Cybersecurity + Cloud & DevOps + Technological Literacy

Commands the highest absolute rate premium globally because the supply gap is structural: 5.0M cybersecurity professionals are needed globally by 2025, and cloud migration means that gap cannot be filled by on-premise security expertise alone. Every cloud deployment requires security architecture. BCG notes that **78% of enterprises** cite "security of AI infrastructure" as their number-one technology concern.

Rate uplift: USD 18–30/hr → USD 45–75/hr (**2.2–2.5x current baseline**)

Target market: GCC financial institutions, government agencies

Time to stack: 18–24 months structured training (EC-Council CEH + AWS Security Specialty)

Stack 3 – The Green Finance Specialist

ESG & Green Finance + Data Science + Leadership & Communication

The most undervalued combination in Pakistani higher education and the one with the most asymmetric opportunity. IFRS S1 and S2 sustainability reporting mandates take effect for GCC-listed companies in 2026. Finance and engineering graduates who can read a

carbon accounting model and build an ESG disclosure are extremely scarce. Pakistan produces **80,000+ finance and engineering graduates per year**.

The cross-skilling investment is modest. The market timing is perfect.

Rate uplift: Minimal current rate → USD 40–70/hr or GCC placement at USD 50,000–110,000/yr

Target market: GCC banks, sovereign wealth funds, real estate

Time to stack: 12–18 months for finance graduates (CFA + IFRS S1/S2 + ESG data cert)

Key Insight for University Curriculum Teams: The salary data is unambiguous — skill combinations pay **2–2.5x the rate of individual skills**. Multi-disciplinary programs (not single-subject degrees) are the highest-ROI investment for Pakistani graduates. Design for stacks, not for subjects.



ESG & Green Skills: Pakistan's Most Undervalued Strategic Asset

Green and ESG skills rank **number 8** in Coursera's Top 10 Skills by quantified demand, a new category that did not appear in the 2024 edition. The 10-year demand index projects **2.5x growth by 2035**. For Pakistan, the combination of GCC regulatory mandates, English-language proficiency, and an existing finance and engineering graduate base creates a window that no other South Asian country is currently positioned to exploit. The IFRS S1/S2 opportunity is time-bounded: GCC companies must file their first IFRS-compliant sustainability disclosures in 2026. The talent shortage is acute today. Pakistani universities that build this capability in 2025 will own the market in 2026. Those that wait until 2027 will enter a crowded field.

ESG skills are structurally different from other high-demand categories. Most skills, GenAI, Cybersecurity, Cloud, are driven primarily by technology adoption, which is fast-moving and often commoditized quickly. ESG skills are driven by **regulatory mandates and net-zero commitments**: structural, long-cycle, and hard to automate. Three forces make ESG demand uniquely durable and uniquely valuable for Pakistan's export positioning.

Regulatory Mandates — IFRS S1/S2

GCC-listed companies must file IFRS S1 (general sustainability) and S2 (climate-specific) disclosures from 2026. Saudi Arabia, UAE, and Qatar have all confirmed mandatory adoption. This is not aspirational — it is legal compliance. Companies that cannot file will face regulatory penalties and capital market exclusion. The bottleneck is trained human capital, not policy framework.

Net-Zero Commitments

Saudi Arabia has committed to net-zero by 2060 with an interim target of 50% renewable energy by 2030. UAE's Net Zero by 2050 initiative is backed by USD 163 billion in investment. Qatar's National Environment and Climate Change Strategy mandates Scope 1, 2, and 3 emissions measurement for all listed entities by 2027. Each commitment requires carbon accountants, ESG analysts, sustainability report writers, and green project finance specialists.

Green Finance Capital Flows

Global green bond issuance reached USD 620 billion in 2024 (Climate Bonds Initiative). The GCC is the fastest-growing green bond market outside China. Every green bond issuance requires sustainability verification, impact reporting, and ongoing disclosure. The human capital infrastructure to support this capital flow simply does not exist at the required scale in the GCC — creating an immediate import demand for ESG-trained talent.

ESG is not a single skill, it is a cluster of five interconnected competencies. A practitioner-grade ESG professional needs all five. This is what makes it a premium-rate role: it is genuinely multi-disciplinary, and it resists automation better than most technical skills because it requires human judgment, stakeholder engagement, and regulatory interpretation. Pakistan produces 80,000+ finance and engineering graduates per year.

The cross-skilling cost to add ESG competency is **6–12 months of targeted training** — not a new degree. The return: GCC placement at USD 50,000–110,000 per year versus local finance roles at USD 8,000–15,000 per year. This is a **5–7x income multiplier** for the individual and a **USD 3–5 billion export opportunity** for the country.



Eight Interventions Pakistani Universities Must Execute by 2028

Drawn from Singapore's Skills Future model, MIT's Micro Masters framework, BCG's skills-based organization research, and UNESCO's 2025 Pakistan educators framework, these eight interventions are evidence-based and implementable within current HEC policy constraints. Each addresses a specific binding constraint identified in the skills delivery gap analysis. Together, they form a coherent institutional transformation agenda that Pakistani universities can begin executing immediately. The sequencing matters: interventions 1, 4, and 5 are pre-conditions for the others. A faculty member who cannot use GenAI tools cannot teach students to use them. An examination-based assessment system cannot validate the portfolio evidence that employers actually use to make hiring decisions.

01

Embed GenAI in Every Discipline

Mandate AI literacy modules in all degree programs not just computer science. A literature student needs to understand prompt engineering. A medical student needs to understand AI-assisted diagnostics. Coursera's data shows 97% of employers require at least foundational AI literacy by 2027. This is a pre-condition for every other intervention on this list.

03

Industry-Linked Curriculum Boards

Establish joint industry-academic boards with minimum 40% industry representation for every technology, data, and ESG program. Singapore's SkillsFuture model mandates this for all national polytechnics, the result is curriculum that lags the market by 6 months, not 3 years.

05

Mandatory Faculty AI Upskilling

UNESCO's 2025 framework for Pakistan recommends mandatory AI upskilling for **100% of teaching faculty within 24 months**. A faculty member who cannot use GenAI tools cannot teach their students to use them. This is the foundational pre-condition for every other intervention.

07

Women-Focused AI Pathways

Pakistan cannot build a USD 10.0 billion IT export economy while excluding 50% of its talent base. Women represent **46% of global Coursera learners but only 30% of GenAI enrollments**. Pakistan's gender gap is wider. Targeted scholarships, flexible scheduling, and mentorship programs are the tested interventions.

02

Launch Micro-Credential Pathways

Partner with Coursera, Google, IBM, and Microsoft to offer credit-bearing Professional Certificates as stackable credentials toward degree completion. MIT's Micro Masters model demonstrates that 40% of enrolled students convert to full degree enrollment creating both revenue and student pipeline simultaneously.

04

Capstone-Based Assessment

Replace examination-based assessment with capstone projects that require students to solve real employer problems. BCG's research shows skills-first hiring decisions are based on demonstrated portfolio evidence 4x more than degree classification. Examinations test recall; employers test application.

06

Export-Oriented Talent Hubs

Co-locate university AI and cybersecurity labs with Special Economic Zone offices and export-facing placement agencies. The Pakistan Software Houses Association (PASHA) and National Incubation Centres provide the infrastructure. The missing link is formal university integration.

08

ESG & Green Finance Curriculum

Target QS Digital and Technology subject rankings and THE Impact Rankings (SDG-aligned). Global ranking credibility is the signal that GCC employers and global micro-credential platforms use to select university partners. A ranked Pakistani university gets a seat at the table for international curriculum partnerships.



The Global Skills Landscape: Why the Urgency Is Real

The global labor market is undergoing its fastest structural shift in a generation. Drawing on **170 million learners across 109 countries**, Coursera's 2025 Global Skills Report, corroborated by WEF, McKinsey, and BCG confirms that GenAI fluency, cybersecurity capability, and data literacy are now baseline requirements across every major employer sector, not differentiators. Yet **59% of the global workforce lacks the skills** to do the jobs that will exist in 2030. The WEF projects 92 million jobs will be displaced and 170 million new ones created, a net gain of **78 million roles**, but only for those holding the right skills. McKinsey finds AI fluency demand grew **7.0x in two years**. BCG finds only **51% of frontline workers** use AI regularly. The skills gap is widening faster than incumbent systems can close it.

170M+

Learners on Coursera

Global total in 2025 across 109 countries

+195%

GenAI Enrollment Growth

Year-on-year - 12 learners per minute in 2025, up from 5 per minute in 2024

78.0M

Net New Jobs by 2030

WEF Forecast - 170M created, 92M displaced

59%

Workers Need Reskilling

By 2030 - WEF Future of Jobs Report

Six Macro-Themes Defining 2025

GenAI Surge: +195% YoY enrollment growth to 8.0M+ total enrollments. Coding is the number-one GenAI use case globally, followed by writing and data analysis.

Cybersecurity Urgency: 5.0M additional professionals needed globally. Geoeconomic fragmentation accelerates demand beyond commercial threats.

Micro-Credentials Redefining Hiring: 97% of employers use or explore skills-based hiring; 91% say micro-credential holders perform on par with or better than degree holders.

Gender Gap in AI Persists: Women represent 46% of all learners but only 30% of GenAI enrollments, both a social equity problem and an economic inefficiency.

Skills-First Talent Models: Verified competencies are displacing degree credentials as the primary hiring signal. LinkedIn's 2025 data shows skills-first job postings grew 45% YoY.

Skill Sets Shifting Fast: WEF projects 39% of core skills change by 2030. Half-life of technical skills is now estimated at just 2.5 years.

What This Means for Pakistan

The global skills landscape is not waiting. Vietnam's **417% GenAI enrollment growth** is the strategic warning for Pakistan. A country at similar income levels is moving faster. MENA's **128% YoY GenAI growth**, powered by Saudi Arabia's USD 100 billion Project Transcendence and the UAE's We the UAE 2031 initiative, means the skills bar is rising in Pakistan's most important customer base. The GCC is not just a buyer of Pakistan's skills; it is *the* buyer. And it is accelerating its own talent development.

The compounding effect of these six macro-themes creates a narrow window. Countries that invest in skills infrastructure now will compound their advantage. Countries that wait will find the cost of entry rising every year as global employers raise their verification standards and as competing nations build their own export-ready talent pools.

Strategic Warning: Vietnam's 417% GenAI growth rate at similar income levels to Pakistan is the clearest signal that demographic advantage without skills activation is a wasted asset. The window for first-mover positioning closes within 24-36 months.

SUSTAINABILITY



Regional Skill Rankings: Where Pakistan Stands Among Peers

Two regional comparisons define Pakistan's competitive position. In Asia Pacific, India leads on volume while Singapore leads on quality, Pakistan ranks last among measured peers across all three proficiency domains. In MENA, the region is accelerating at 128% YoY GenAI enrollment growth, powered by Vision 2030 investments. This is Pakistan's primary export market for IT services. The GCC is not just a buyer of Pakistan's skills, it is the buyer. MENA's acceleration means the skills bar is rising in Pakistan's most important customer base. The data below, drawn from Coursera's 2025 Global Skills Report, makes the competitive gap unambiguous.

Asia Pacific – Proficiency Percentiles by Domain

Country	Global Rank	Business %	Technology %	Data Science %	AI Maturity Rank	GenAI Growth
Singapore	#4	98%	100%	96%	#1	+105%
Vietnam	#33	64%	78%	71%	#67	+417%
India	#89	18%	22%	20%	#46	+107%
Bangladesh	#96	17%	14%	12%	#92	—
Pakistan	#105	6%	8%	2%	#91	Lagging

Singapore's proficiency scores 98% in Business, 100% in Technology, 96% in Data Science represent the quality benchmark for what is achievable at scale. Vietnam's 417% GenAI growth rate is the strategic warning: a country at similar income levels to Pakistan is moving dramatically faster. India, while ranking lower on proficiency, holds the number-one position globally for absolute GenAI enrollment volume. Pakistan ranks last across all three domains. The gap is large, but the demographic depth to close it exists. What is required is institutional will and a skills delivery infrastructure that matches the urgency of the competitive landscape.

MENA – Pakistan's Primary Export Market Is Accelerating

Country	Global Rank	Business %	Technology %	Data Science %	Key National Driver
UAE	#38	85%	52%	59%	We the UAE 2031; Nafis program; GenAI +344%
Qatar	#40	72%	64%	64%	Economic diversification; coding as number-one AI use case; GenAI +194%
Saudi Arabia	#54	60%	40%	52%	USD 100.0B Project Transcendence ; Neom AI data center; GenAI +165%
MENA Region	—	—	—	—	Regional GenAI Growth: +128% YoY Professional Certificate Growth: +36% YoY

The MENA data is particularly significant for Pakistan's export strategy. The UAE, Qatar, and Saudi Arabia are not just growing their GenAI enrollment — they are building institutional capacity through national programs (Nafis, Project Transcendence, We the UAE 2031) that will reduce their dependence on imported talent over time. Pakistan's window to position itself as the preferred GCC-facing IT services provider is **time-bounded**. The skills bar in Pakistan's most important customer base is rising. Pakistani universities must match that acceleration — or risk losing market share to Vietnam, the Philippines, and Eastern European competitors who are investing aggressively in the same skill clusters.



1st

2nd

3rd

Six Structural Forces, Top 10 Skills, and Triple Convergence

Six structural forces are driving skill demand across every major economy. Gen AI diffusion has made prompt engineering, LLM integration, and AI governance core competencies across all major employer categories. Geoeconomic fragmentation sanctions compliance, supply-chain realignment, and cross-border digital regulation is creating specialist legal-tech and compliance roles while accelerating cybersecurity demand. Demographic asymmetry means aging workforces in Europe and Japan require urgent reskilling, while youth-bulge economies like Pakistan can supply this demand if skill quality meets the bar. The green economy transition, driven by IFRS S1/S2 mandates effective for GCC-listed companies from 2026, is creating immediate demand for ESG analysts and carbon accountants. Cloud and AI infrastructure expansion, including Saudi Arabia's planned USD 30 billion data-center investment, requires an estimated **45,000 additional cloud engineers in the GCC alone by 2028**. And skills-first hiring has become the dominant paradigm, with 97% of employers globally using or exploring skills-based hiring and 91% believing micro-credential holders are equally or better prepared than traditional graduates.

Top 10 Skills Ranked by Quantified Demand

#	Skill Domain	Coursera Growth	WEF Demand	McKinsey Rating	2030 Outlook
1	Generative AI & LLM Skills	+195% YoY	78% of employers	Highest	40% role growth by 2028; 4.5x demand index by 2035
2	Cybersecurity & Network Defence	+11–106% by region	72%	Critical	5.0M global shortfall; 33% analyst role growth by 2033
3	Data Science & Analytics	+29–34% certs	70%	High	Foundational for all AI deployment; 2.7x demand by 2035
4	Cloud Computing & MLOps	+28% infra	68%	High	Cloud migration a baseline requirement by 2027
5	Critical & Analytical Thinking	+28% globally	55%	High	AI augments technical skills; human judgment becomes the differentiator
6	Leadership & Talent Management	+18% mgmt certs	61%	Elevated	Hybrid AI-first teams demand new management models
7	Technological Literacy (broad)	+22% digital	70%	High	Sector-agnostic baseline requirement by 2027

8 ★	Green & ESG Skills	New category 2025	52%	Emerging→High	IFRS S1/S2 GCC mandates from 2026; 2.5x demand index by 2035
9	Resilience & Adaptive Capacity	+19% soft skills	67%	High	Change velocity makes adaptability a survival skill in every role
10	Project Management & Agile	+32% PM certs	48%	Moderate	Stable demand; increasingly AI-augmented

Triple Convergence: Five Tier-1 Sources Agree

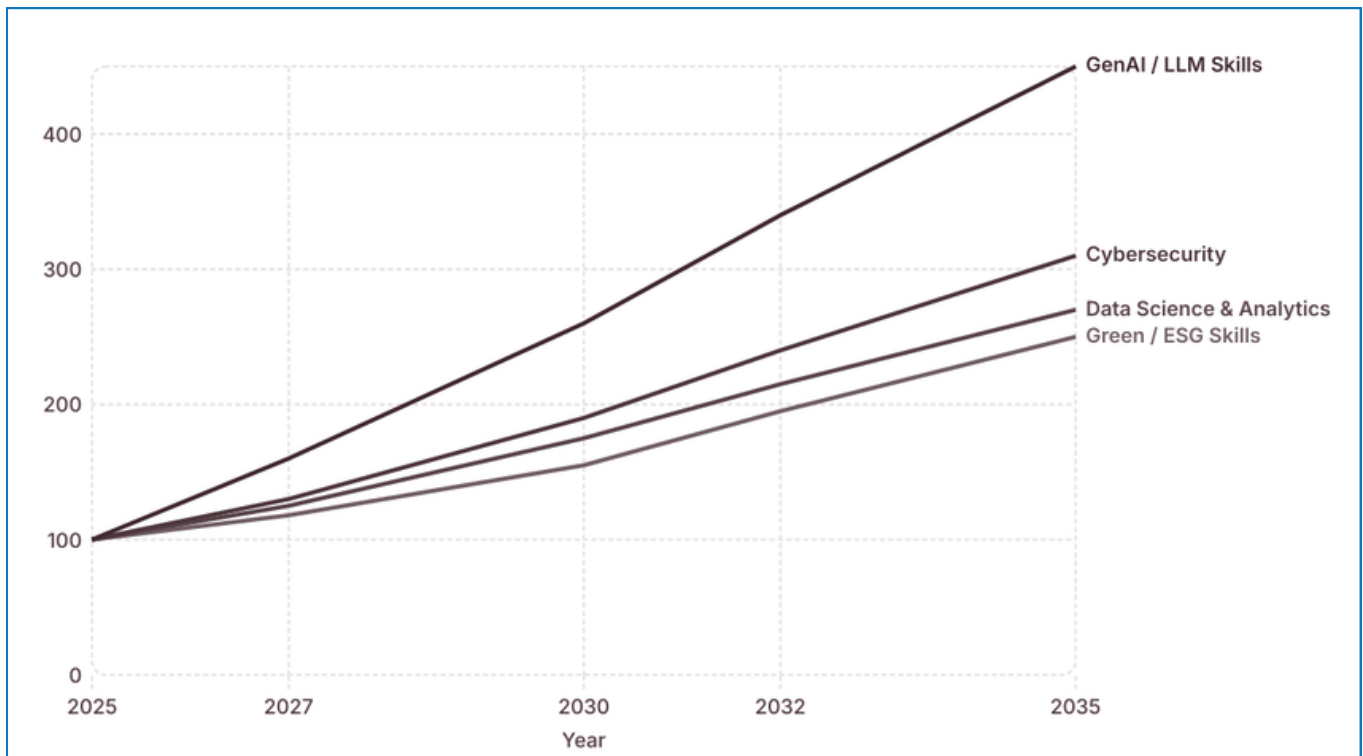
Five independent knowledge sources were triangulated — Coursera, WEF, McKinsey, BCG, and Stanford HAI. All five independently identify **GenAI, Cybersecurity, and Analytical Thinking** as the three highest-priority skill clusters. This cross-methodology alignment gives very high confidence. For Pakistani universities, this removes all ambiguity about where to start. The table below summarizes the convergence across all five sources on the critical dimensions of skill priority, job displacement and creation, reskilling urgency, the cybersecurity gap, and the role of micro-credentials in the new hiring paradigm.

Dimension	Coursera GSR 2025	WEF FoJ 2025	McKinsey MGI 2025	BCG AI@Work 2025	Stanford HAI 2026
Top skill priority	Generative AI	AI & Big Data	AI Fluency (7x demand growth)	GenAI Adoption	AI skills in 2.5% of job postings (+297% in 10 years)
Jobs net change by 2030	+78.0M net	+78.0M (+170.0M created, -92.0M displaced)	30% of EU work hours automatable by 2030	57% of U.S. work hours technically automatable today	AI adoption accelerating across all major sectors
Reskilling urgency	59% of workers by 2030	39% of core skills change by 2030; skills gap = number-one barrier (63%)	46% of C-suite cite skills gaps as cause of slow AI deployment	Only 51% of frontline workers use AI regularly	70% of skills in automatable roles remain needed in non-automatable work
Cybersecurity gap	5.0M professionals needed	Number-2 fastest-growing skill cluster	Underpins all AI infrastructure security	Geoeconomic driver; business-critical	33% growth in infosec analyst roles by 2033
Micro-credentials	91% of employers value them; 94% of students report career boost	Essential for rapid labor market transitions	Fastest pathway to AI-era roles	Skills-based hiring now uses certificate verification	Credit-bearing certificates integrated at MIT and Stanford



Ten-Year Outlook, Data Caveats, and the Strategic Imperative

By 2035, Gen AI skills will command 4.5x today's demand. Green and ESG skills follow the steepest growth trajectory of any emerging category, reaching 2.5x by 2035 driven by compounding regulatory mandates and capital flows. For Pakistan, being positioned in both GenAI and ESG before 2028 means operating at the front of two independent 10-year growth curves. The indexed demand chart below, based on WEF Future of Jobs 2025 trajectory data and Coursera enrollment trend modeling, illustrates the divergence between skill clusters over the coming decade. GenAI and Cybersecurity pull away fastest, but ESG's trajectory is the steepest among emerging categories and it is the one where Pakistan has the clearest first-mover opportunity.



Indexed skill demand, 2025 = 100. GenAI leads absolute growth; ESG follows the steepest emerging-category trajectory. Pakistan positioned in both before 2028 operates at the front of two independent 10-year growth curves. Six structural caveats define the boundaries of these findings and must inform how decision-makers interpret the data.

First, Coursera data captures motivated, internet-connected learners. Pakistan's labor force is less than 1% represented on the platform, meaning rankings systematically under-measure true potential in high-aspiration, low-connectivity markets. Second, online course completion rates average 10–15%, so enrollment surges may overstate actual skill acquisition; employment outcomes require longitudinal tracking that most platform data does not provide. Third, WEF and BCG surveys capture stated preferences, not actual hiring behavior. AI fluency requirements in job postings are partially aspirational rather than enforced at the

point of hire. Fourth, AI is evolving faster than any survey cycle; basic prompt engineering could be abstracted away by agentic AI within three years, and all 10-year projections carry high uncertainty bands requiring annual re-evaluation. Fifth, informal economy workers, significant in Pakistan, are largely invisible in platform data, and WEF and McKinsey data is weighted toward formal-sector G20 employers, limiting direct applicability to frontier markets. Sixth, Coursera's catalog shapes which skills appear in demand, a circularity risk that this analysis mitigates by triangulating against four additional Tier-1 sources.

The Window Is Open – But Not Indefinitely

Pakistan has the demographics 140 million potential learners under 30. Pakistan has the cost advantage, a labour competitiveness score of 97 out of 100, with developer rates 60–70% below U.S. equivalents. Pakistan has the diaspora network and the export infrastructure through PASHA and the National Incubation Centres. What Pakistan needs is a university sector that builds skills the world will pay for before 2028.

The interventions in this document are targeted and achievable. The ESG first-mover window is 2–3 years. The GenAI enrollment gap with Vietnam is widening. The GCC regulatory mandates take effect in 2026. Every quarter of delay is a quarter of competitive position surrendered to nations that are moving faster.

The conclusion is unambiguous: Skill combinations pay 2–2.5x the rate of individual skills. Design for stacks, not for subjects. Act before 2028. The demographic dividend, the cost advantage, and the regulatory window will not wait.

Priority Actions for Decision-Makers

University Vice-Chancellors: Launch IFRS S1/S2 micro-credentials in business schools now; mandate AI literacy across all disciplines; establish industry-linked curriculum boards with 40% industry representation.

HEC & Federal Government: Fund mandatory faculty AI upskilling for 100% of teaching staff within 24 months; co-locate university AI labs with Special Economic Zones; create a Pakistan ESG Talent Pledge with 10 GCC employers.

Investors & Development Partners: Prioritize funding for multi-disciplinary skill stack programs over single-subject degrees; target women-focused AI pathways to unlock the full 140-million-learner demographic; support export-oriented talent hubs with formal university integration.

GCC Employers & Diaspora Networks: Engage with Pakistani universities to co-design capstone projects and guaranteed placement pipelines; signal demand for ESG and GenAI talent to drive student enrollment toward highest-ROI skill stacks.

Sources: Coursera Global Skills Report 2025 (Global, APAC, MENA editions) · WEF Future of Jobs Report 2025 · McKinsey Global Institute 2025 · BCG AI@Work Report 2025 · Stanford HAI AI Index 2026 · Pakistan National AI Policy 2025 · HEC Pakistan · World Bank Pakistan Labour Market Data · Pakistan Finance Division IT Survey FY2026 · UNESCO Pakistan Educators AI Framework 2025 · ISC² Cybersecurity Workforce Study 2025 · Climate Bonds Initiative Green Bond Market 2024 · IFRS Foundation ISSB Standards S1/S2 · Dubai Sustainable Finance Working Group 2025



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