

September 2024

ECONOMIC IMPACT REPORT

Agay Barho:
Empowering Pakistan's
Digital Economy



Content



Executive summary

In the face of macroeconomic challenges, Pakistan's information technology (IT) industry is emerging as an engine of economic recovery and growth. By 2030, digital transformation, if leveraged fully, could create up to PKR 9.7 trillion in economic value (estimated by Access Partnership in 2021).

Digital technologies are poised to play an even greater role in Pakistan's economic growth in years to come, particularly with the rising significance of Artificial Intelligence (AI). To make sense of such a vast and fast-changing landscape, we take a deeper dive into the economic potential of **digital exports** and **digital skilling** for Pakistan.

We also examine how Google is contributing to Pakistan's digital future with local partnerships and initiatives, as well as through its AI-powered products and solutions.



[Two young women discussing work on the laptop]. 2024. [Photo]. AI generated.

01

Leveraging digital exports for future-proof growth

The government is looking to boost Pakistan's exports to drive sustained economic growth and overcome macroeconomic challenges, such as balance of payments concerns, inflation, and rising unemployment.¹

Digital technologies will contribute significantly to Pakistan's digital exports, with **an additional USD 6.6 billion (PKR 1.8 trillion) in annual export value in 2030** gained by exports of mobile apps, online video services, cross-border digital ads, cross-border e-commerce, and other digital services. Furthermore, this number is expected to increase significantly if Pakistan implements enabling policies.

This boost in digital exports will mainly be driven by businesses using digital technologies to:²

1. create new exportable digital solutions;
2. reduce the cost of accessing overseas markets; and
3. drive more efficiencies in the export processes.

02

Equipping Pakistan's workforce with digital skills

To grow the country's digital exports, Pakistan needs a digitally skilled workforce. With 80% of IT graduates lacking relevant industry skills, Pakistan has a wide digital skills gap that must be addressed immediately.³

PKR 2.8 trillion of annual GDP in Pakistan can be added in 2030 by narrowing the digital skills gap through digital skills training and greater adoption of education technologies.

Tapping the strength of a large and relatively young workforce, where about two-thirds of the total population are under 30 years of age and are eager to equip themselves with the right skills, this could be achieved by making digital skills training and upskilling accessible (both online and offline).⁴ Further leveraging education technologies to personalize learning and enable access to training on demand can enhance the learning experience and facilitate the acquisition of new skills by workers.

03

Google is helping to accelerate Pakistan's digital future with AI-powered products and solutions

Building a future-proof economy will mean tapping the key opportunities of digital exports and digital upskilling, and Google is helping to connect Pakistan to these growth opportunities.

In 2023, Google's AI-powered products and solutions helped provide PKR 3.9 trillion of economic benefits for Pakistani businesses and households — an increase of 222% from 2020.* This was achieved by helping Pakistani businesses digitize and access international markets.

In 2023, Google Search, Google Ads, Google AdSense, Google Play, Cloud, and YouTube helped provide **PKR 2.6 trillion of economic activity (+159% vs. 2020)** for Pakistani businesses. Notably, 58% of this value accrued to small and medium-sized businesses (SMBs), highlighting Google's role in supporting Pakistan's growing SMB ecosystem.

On a household level, in 2023, Google Search, Google Maps, Google Play, Google Drive, and YouTube helped provide **PKR 1.3 trillion for households (+526% vs. 2020), or 33% of the total economic benefits.** From entertainment options (i.e., YouTube), to improved efficiency and easy access to helpful information (i.e., Search, Gemini), Google's products and solutions are helping Pakistanis in their daily lives.

*Previously, Access Partnership estimated that Google products and solutions supported PKR 1 trillion in economic activity for businesses and PKR 210.2 billion in economic benefits for households in Pakistan in 2020. Note that the calculations may not sum due to rounding.

Key highlights

Agay Barho: How Google is Empowering Pakistan's Digital Economy

Google's products and solutions provide economic benefits to Pakistani businesses and households.

In 2023, Google's AI-powered products and solutions helped provide PKR 3.9 trillion (+222% vs. 2020) of economic benefits for Pakistani businesses and households.

Accelerating access and growth for businesses

Local businesses have gained



PKR 2.6 trillion of economic activity (+159% vs. 2020)

In 2023, Google Search, Google Ads, Google AdSense, Google Play, Google Cloud, and YouTube helped provide **PKR 2.6 trillion of economic activity** for Pakistani businesses.



PKR 249 billion of export benefits

In 2023, Google Search, Google Ads, Google AdSense, Google Play, and YouTube helped provide **PKR 249 billion of export benefits** from overseas markets for local businesses.



864,600 jobs (+111% vs. 2020)

In 2023, Google supported **864,600 jobs** by helping businesses expand through their use of Google Search, Google Ads, Google AdSense, Google Cloud, and YouTube. The Android app economy supported an additional **100,400 jobs** (+3% vs. 2022).



40 work days of time savings

In 2023, **40 work days** was the average time saved per employee through productivity gains from their use of AI-powered Google Workspace solutions.

Enhancing lives and opportunities in Pakistani homes

Households have derived



PKR 1.3 trillion of economic benefits (+526% vs. 2020)*

In 2023, Google Search, Google Maps, Google Play, Google Drive, and YouTube helped provide **PKR 1.3 trillion of economic benefits** for households.

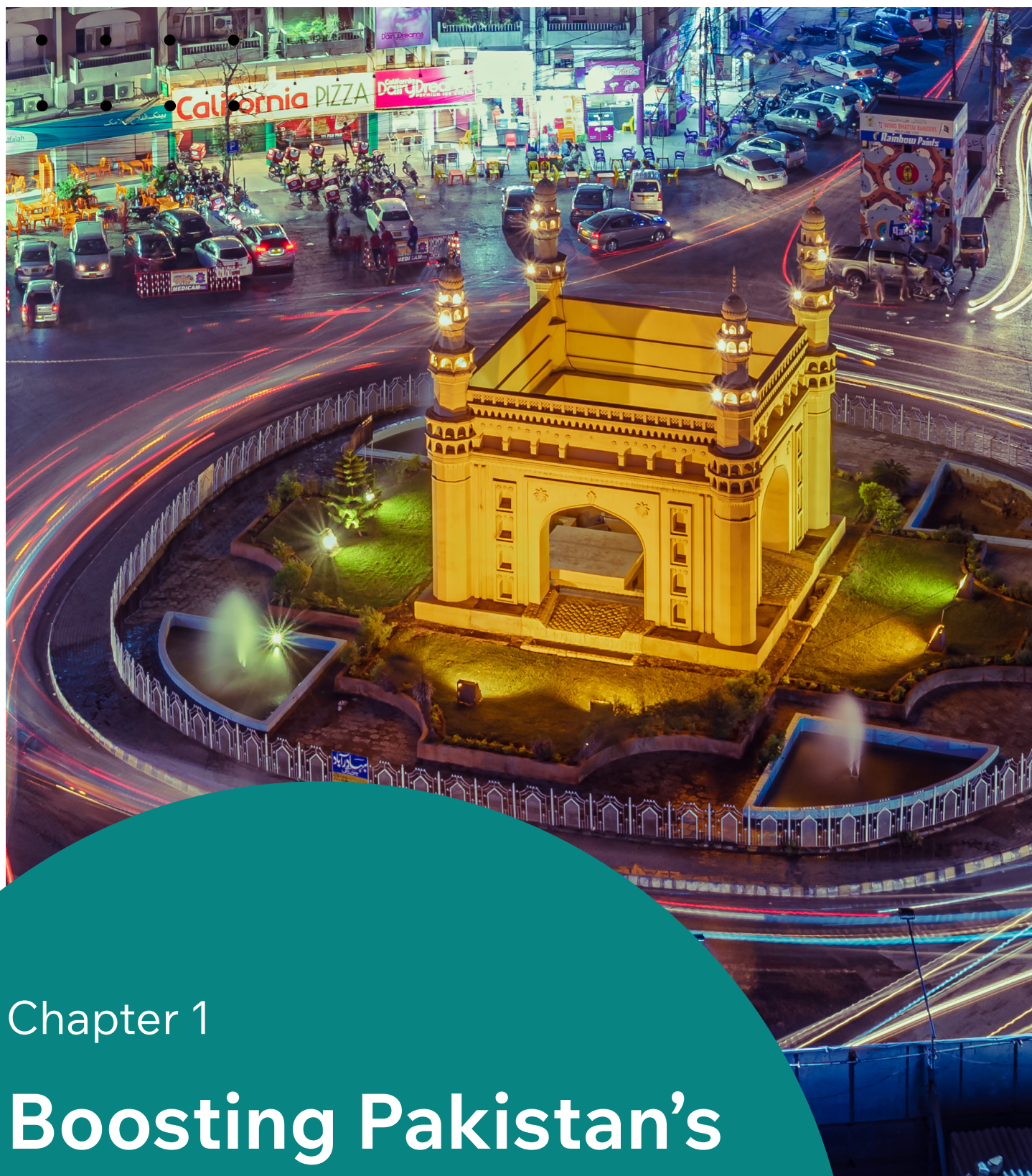


82% of YouTube users

In 2023, **82% of YouTube users** have learned new advanced digital skills on the platform.[^]

* The household benefit estimates from 2020 and 2023 include the consumer benefits derived by Pakistanis from using Google products such as Google Search, Google Maps, YouTube, Google Play, and Google Drive. This was calculated based on how much Pakistani users are willing to pay for each Google product before they would switch to an alternative product. These figures represent the perceived value for consumers rather than cost savings.

[^] Estimates are based on a 2023 consumer survey conducted by Access Partnership in Pakistan, where n=510.



Chapter 1

Boosting Pakistan's economy through digital technologies

Pakistan's opportunities

Digital technologies will contribute significantly to Pakistan's digital exports, with an additional

**USD 6.6 billion
(PKR 1.8 trillion)**

in annual export value gained in 2030.

PKR 2.8 trillion

of annual GDP in Pakistan can be added in 2030 by narrowing the digital skills gap through **digital skills training** and greater adoption of education technologies.



Boosting Pakistan's economy through digital technologies

Pakistan is prioritizing sustainable economic growth and job creation under its National Initiative for Sustainable Development Goals, and growing its digital economy is central to achieving these goals.⁵ While recent policies, such as the 2018 “Digital Pakistan Policy,” have improved digital infrastructure, ongoing economic challenges remain.⁶ These include the ongoing balance of payments challenges, hyperinflation, currency devaluation, and rising unemployment.⁷

To overcome these challenges, Pakistan must focus on **boosting digital exports**. The IT sector has grown rapidly in recent years, driven by IT services exports that have outperformed most other emerging economies, growing 2.7 times since 2014 and reaching 35% of all service-sector exports in 2023.⁸

To keep up this momentum, Pakistan also needs to invest in **digital skills training and education** for its young workforce (about two-thirds of the population is under 30 years old), who do not yet have the necessary skills to participate in the country's digital economy. This makes digital skills training and education crucial to Pakistan's next phase of economic development.⁹



Shifting gears: Pakistan's digital export revolution

Pakistan's past growth model, reliant on spending and debt, is not sustainable. To ignite long-term growth, the country should embrace high-value sectors, especially digital exports. Despite a recent decline in global export competitiveness, as demonstrated by a 40% drop in its share of global exports in the last 30 years, Pakistan's IT sector is expanding rapidly.¹⁰

The **mobile app industry**, in particular, has experienced significant growth, with Pakistan-developed apps gaining worldwide popularity. 65 apps (by 24 local developers) were in the global top 10 on both the Play Store and App Store, underscoring the global reach and appeal of Pakistani apps.¹¹

E-commerce is also surging in Pakistan. With increasing Internet penetration (57% nationally and 48% for rural areas) and a boom in online businesses, Pakistani companies are breaking barriers and embracing global markets.¹² Online platforms are enabling businesses, even in rural areas, to export easily and cost-effectively. Studies have shown that businesses using online platforms are around five times more likely to export than those that do not.¹³

**4 billion
downloads**

of homegrown apps in 2022,
making Pakistan the
**fastest-growing app
market globally.**¹⁴



Pakistan's digital export opportunities

Pakistan's digital exports, however, still represent a mere 1% of the country's GDP, and its share of global IT services exports remains only 0.3%.¹⁵ To grow its share of digital exports, the country can tap into three key opportunities.¹⁶

Three opportunities for digital exports

- 1 **New exportable digital solutions**
Develop innovative mobile apps, digital services (like IT support), and online content that appeal to global audiences.
- 2 **Cost-effective market access**
Use e-commerce, online advertising, and digital platforms powered by AI solutions for efficiency to reach new markets at a lower cost.
- 3 **Streamlined export processes**
Use AI, machine learning (ML), and cloud computing to enhance efficiency and make data-driven decision-making in export processes.

Digital technologies will contribute significantly to Pakistan's **digital exports**, with an **additional USD 6.6 billion (PKR 1.8 trillion) in annual export value in 2030** gained by exports of mobile apps, online video services, cross-border digital ads, cross-border e-commerce, and other digital services.

Growth is expected in **online video services** — specifically, what Pakistani creators earn through overseas audiences — with a 10% compound annual growth rate (CAGR) from 2023 to 2030. On the other hand, **mobile apps** and **cross-border e-commerce** are expected to grow at 8% and 7% annually over the same period, respectively.¹⁷



Digital technologies will contribute significantly to Pakistan's **digital exports**, with an additional

**USD 6.6 billion
(PKR 1.8 trillion)**

in annual export value gained in 2030.



[Pakistani worker using VR]. 2024. [Digital art]. AI generated.

Best practices: How other Asian economies grew their digital exports

Creating new exportable products: Indonesia invested in digital infrastructure and empowered SMBs with digital skills

Indonesia's visionary “Palapa Ring” project (2020) expanded Internet access to remote regions — 34 provinces and 440 cities across the country — paving the way for a surge in e-commerce.¹⁸ By 2023, Indonesia emerged as the world's 9th largest e-commerce market (USD 53 billion).¹⁹

Empowered by connectivity, more Indonesian SMBs ventured into exports: 58% of medium businesses exported to three or more global markets in 2022 — an increment of 23 percentage points in just two years.²⁰

Earlier in 2021, the government also launched “Program Sekolah Ekspor” to boost SMB exports,²¹ providing:

1. Digital skills training to enhance SMBs' online presence and e-commerce capabilities.
2. An innovation platform for developing new export-ready products.

Over 198 new exportable products were created through this program alone, and Indonesia aims to increase SMB export contribution to a total of 17% by 2024.²²



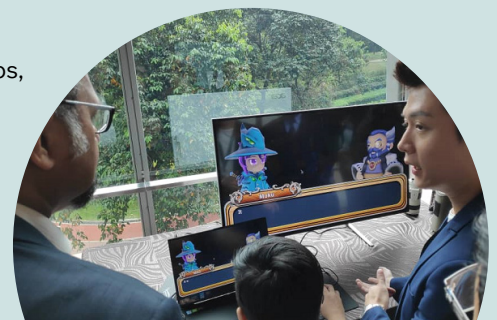
[Launch of Sekolah Ekspor]. (n.d.). [Photo]. Retrieved 1 Mar 2023. Sekolah Ekspor.

A national vision: Malaysia nurtured a supportive ecosystem and is forging international connections

Malaysia's digital creative industry has seen remarkable growth. Between 2014 and 2020, the export value of digital content (animation, games, visual effects) doubled to RM 1.2 billion (USD 263 million). Local animation studios made waves internationally, having produced over 65 original intellectual properties and showcasing their work in more than 120 countries.²³

This success is rooted in a strategic national vision. The Malaysian government implemented the “Digital Content Ecosystem” (DICE) policy, supporting digital content as a key export sector and investing in talent development.²⁴ This collaborative ecosystem, fostered by the Malaysia Digital Economy Corporation (MDEC) involving government, industry, and academia, further fueled growth.

Malaysian studios gained valuable experience through international partnerships, such as with Japanese and European animation studios. Local visual effects studios have gone on to take part in major Hollywood productions, including *Life of Pi* and *X-Men: First Class*.²⁵ This strategic approach, emphasizing vision, collaboration, and talent, has propelled Malaysia's digital content industry onto the global stage, driving export success.



[DC Gan explaining key features of the game Re: Legend to Gobind]. 2019. [Photo]. Digital News Asia.

Digital skills: The key to unlocking the global digital economy

Pakistan's digital export sector holds immense potential. However to fully harness it, the country must urgently address the **digital skills gap**. Currently, there is a talent deficit and the education system lacks the ability to deliver necessary digital skills — Pakistan ranked 94th out of 134 economies.²⁶ Digital upskilling would allow more Pakistanis to take part in the digital economy. This would address the issue of rising unemployment (expected to reach 8% in 2024), which disproportionately affects youth and women.²⁷

Currently, a **significant skills gap** exists between the digital skills employers seek and those possessed by Pakistan's workforce. This mismatch is evident in the IT sector, where employers find that over 80% of IT graduates lack the necessary technical skills, according to a 2021 survey by the Pakistan Software Houses Association for IT and ITES (P@SHA).²⁸ The educational curriculum needs to adapt to meet the evolving demands of the digital economy, especially with the rise of AI.

However, **digital skills training** has proven effective in narrowing the skills gap. In the same survey, 67% of companies in Karachi and 63% of companies in Lahore agreed that training programs have been instrumental in narrowing the skills gap within their organizations.²⁹ Moreover, individuals who gain basic digital skills can increase their personal income by up to 97% and contribute to a 1.3% boost in business productivity.³⁰ With the emergence of AI tools focused on productivity, this number is likely to increase significantly.

Pakistan's young workforce recognizes the importance of digital skills, with 72% considering basic digital skills as crucial for employment.³¹ Advanced digital skills, like data analysis and visualization (49%), digital marketing and e-commerce (48%), and IT support (40%), are also viewed as imperative and are highly desired.

- 1 **Skill gap:** Over **80%** of IT graduates lack the technical skills to work in Pakistan's IT sector.
- 2 **Need for basic digital skills:** **72%** of Pakistan's young workforce considers basic digital skills to be crucial for employment.
- 3 **Desire for advanced digital skills:** Data analysis and visualization (**49%**), digital marketing and e-commerce (**48%**), and IT support (**40%**) are also viewed as imperative.

Many workers are actively pursuing free online courses to upskill themselves, demonstrating a strong drive for self-improvement.³²

Pakistan produces over 25,000 IT graduates annually and is home to over 300,000 English-speaking IT professionals, with the country being the **third-largest freelance market globally**.³³ However, with the rapidly changing digital landscape, continuous investment in digital skills training and education is vital to remain competitive.

Digital skills training and education technologies (i.e., online training programs and personalized learning) are key to creating more job opportunities and decent employment for Pakistanis.



PKR 2.8 trillion

of annual GDP in Pakistan can be added in 2030 by narrowing the digital skills gap through **digital skills training** and greater adoption of education technologies.*

* Education technologies, such as personalizing learning with AI and gamification, can enhance the learning experience by tailoring the delivery of training materials based on the learner's abilities, pace, and schedule. Online training hosted on cloud platforms also enables learners to access training on demand.

Best practices: How other emerging economies around the region are preparing their workforces for a digital future

Practical application is essential: Thailand integrated workplace skills training into the education system to prepare graduates for the real-world job market

Thailand's "Lift Skill Thai Labor Force" project strategically prepares its future workforce. By aligning education with the demands of the digital economy, Thailand aims to equip students with skills for the jobs of tomorrow.³⁴

The project involved in-depth research to identify high-potential industries and the specific skills required. This data-driven approach informed the development of new curricula in vocational education and training institutions. From 2018 to 2022, this project, along with other initiatives under the "Digital Economy Promotion Master Plan," has successfully trained 682,000 digital workers and equipped 20.5 million Thais with basic digital literacy.³⁵



[Panel discussion during the launch of Lift Skill Thai Labor Force]. 2022. [Photo]. NXPO.

Partnerships are powerful: the Vietnamese government, private sector, and international organizations collaborated to drive large-scale digital skills initiatives

Vietnam's "Cong Dan So Initiative" is a collaborative effort between the Vietnamese government, the International Organization for Migration, and the private sector.³⁶ Focused on boosting digital literacy among Vietnamese workers, especially migrant ones in industrial areas, this initiative offers free online digital skills training courses through vocational institutions.

The initiative aims to enhance workforce productivity and job opportunities by covering essential digital skills, soft skills, job application strategies, and entrepreneurship. The impact has been significant, with over 31,100 course completions recorded since its launch in 2021.³⁷



[Park Mihyung, the International Organization for Migration (IOM) Chief of Mission, speaking on the Cong Dan So Initiative]. 2023. [Photo]. Hanoi Times.



Chapter 2

Google's impact and commitment to a Future Forward Pakistan

Google's economic impact in Pakistan

In 2023, Google's AI-powered products
and solutions helped provide

PKR 3.9 trillion

(+222% vs. 2020) of economic benefits
for **Pakistani businesses and households.**



Google's impact and commitment to a Future Forward Pakistan



PKR 3.9 trillion of economic benefits

In 2023, Google's AI-powered products and solutions helped provide PKR 3.9 trillion of economic benefits for Pakistani businesses and households.

Every day, Google provides businesses and individuals access to products and solutions that help Pakistanis capture opportunities that stem from digital exports and address the country's digital skills gap.

Through Google Search and YouTube, businesses and content creators can connect with audiences far and wide to foster cross-border collaboration, knowledge sharing, and trade. Meanwhile, Google Ads and AdSense enable businesses to reach new customers worldwide, boosting exports and enhancing Pakistan's global competitiveness.

In fact, Google's contribution has come a long way, with Pakistani businesses and households gaining more than three times (+222%) in economic benefits compared to 2020.

Google helps businesses digitize

Google's AI-powered products and solutions have helped Pakistani businesses **drive efficiency and grow** at home and abroad. Collectively, Google Search, Google Ads, Google AdSense, Google Play, Google Cloud, and YouTube helped provide **PKR 2.6 trillion** of economic activity for Pakistan's businesses in 2023 — a 159% increase since 2020.

The effects of this have rippled across the ecosystem. Real-time collaboration via **Google Workspace** has enabled productivity gains and saved Pakistani workers **40 days** of work time per year (e.g., through shared access, storage, and online documents, and reduced meeting times).³⁸ Meanwhile, Google continues to introduce innovative new products, like its AI model **Gemini** (previously known as Bard), which helps individuals and organizations brainstorm, spark creativity, and boost productivity.

For many local mobile app players, **Google Play** has unlocked global reach, resulting in revenue primarily being driven by international customers.

Google Ads and **Google AdSense** have helped many Pakistani businesses boost exports, elevating the country's global competitiveness. Similarly, **YouTube** has helped connect content creators with overseas collaborators and global audiences (55% of their viewers are from outside Pakistan), and boosting their ability to monetize the platform.³⁹



PKR 2.6 trillion of economic activity

In 2023, Google Search, Google Ads, Google AdSense, Google Play, Google Cloud, and YouTube helped provide PKR 2.6 trillion of economic activity for Pakistan's businesses.



40 work days of time savings

per employee annually through productivity gains from their use of AI-powered Google Workspace solutions.

2.1

Google helps Pakistani businesses expand globally

A common trait across Google's advertising and app publishing solutions is their sizable contribution to Pakistan's digital exports. Of the total economic activity generated, AI-powered Google products and solutions enabled an estimated **PKR 249 billion** of export benefits for local businesses.

SMBs are also the biggest beneficiaries of Google products and solutions, deriving **PKR 1.5 trillion** or 58% of the **PKR 2.6 trillion** benefits enjoyed by all businesses.⁴⁰



Case study

Esire expands its global footprint with Google's help

Esire, one of Pakistan's fastest-growing e-commerce players, was determined to expand globally, so it turned to Google Analytics to uncover hidden customer wants and needs. The company also leveraged Google Shopping Ads to attract new audiences. Within three months, conversion rates soared. Esire has since **entered four new markets and grown its revenue 2.5 times**.

Aside from reach and conversion, Google Cloud's integrated suite of products, including Google Drive and Google Sheets, helped to facilitate real-time and efficient collaboration, **boosting team productivity by 20%**.



[Photo of the Esire team]. 2024. [Photo]. Esire.

“ With the help of Google, it is very easy to expand overseas. Google Ads and Google Analytics have helped optimize and target our ads in markets we were not previously in. ”

Danish Patel
Director
Esire Inc

Google powers job creation in Pakistan

In 2023, Google supported **864,600 jobs (+111% vs. 2020)** by helping businesses expand through their use of Google Search, Google Ads, Google AdSense, Google Cloud, and YouTube.⁴¹ As Google Ads unlocks new audiences, more people are required to service these customers, boosting job creation.

Android supported an additional **100,400 jobs (+3% vs. 2022)** across the app development ecosystem in Pakistan in 2023.⁴² The Android app ecosystem enables developers to create, market, monetize, and scale their products, creating jobs at every stage. In addition, support staff (e.g., marketing and finance support) are needed as the business expands.

Beyond jobs, Google's impact extends into a second layer of benefits:

- **The app economy also fuels the freelance economy:** As Pakistan's businesses grow, many turn to freelancers for additional support. From game testers to translators and copywriters to graphic designers, companies are engaging freelancers for their specialized skills and flexibility.
- **Talents who use digital tools such as Google products and solutions are generally digitally fluent and hold higher-value jobs:** This includes tech roles like digital marketing or cloud computing, with a higher propensity to spend and contribute to the economy.⁴³



864,600 jobs

In 2023, Google supported 864,600 jobs by helping businesses expand through their use of **Google Search, Google Ads, Google AdSense, Google Cloud, and YouTube.**



100,400 jobs

were supported by the Android app economy in 2023.



[A group of Pakistanis working on the computer]. 2022. [Photo]. Rest of World.

Case study

Google fuels business innovation and economic prosperity in Pakistan

Hazel Mobile goes from local studio to gaming powerhouse with Google

Hazel Mobile, a market leader in Pakistan's game development scene, dreamt of reaching a global audience. They set their sights on Android and Google Play's over 2.5 billion users as their launchpad to international success.⁴⁴

Instead of a single big leap, in collaboration with Google, Hazel Mobile adopted a smart, data-driven approach called the "AAA model":

Android

To develop high-quality games for a wide range of devices.

AdMob

To strategically place ads within their games and maximize revenue.

Ad Campaigns

To acquire new players and optimize their advertising budget.

This strategic combination proved to be a winning formula. In 2022, the AAA model was applied to "Impossible Truck Driving," their truck simulator game, achieving over 100 million downloads worldwide and ranking #1 in the "Top Simulation Driving Game" category.

This success was not a one-hit wonder. Hazel Mobile replicated this approach across other games with staggering results:

8x

Increased revenue

>2 billion

Downloads in 200 countries

>200

Jobs created locally in Pakistan



[Photo of Hazel Mobile team]. 2023. [Photo]. Hazel Mobile.

“ Google really helped us follow our vision of growing Hazel Mobile worldwide while creating 200+ jobs locally in Pakistan. ”

Aisha Arif
Senior Software Quality Assurance Engineer
Hazel Mobile

2.2

Google improves the everyday lives of Pakistanis

Google's AI-powered products and solutions are changing the way Pakistanis access information, navigate, commute, and consume content. In 2023, Google Search, Google Maps, Google Play, Google Drive, and YouTube helped provide **PKR 1.3 trillion (+526% vs. 2020)** of economic benefits for households — or **PKR 11,000** in value to the average Pakistani Internet user — equivalent to 2% of the median annual household income.⁴⁵

Google Search offers helpful information across topics of interest, while **Gemini** provides personalized and comprehensive answers sourced from various mediums, such as text, images, audio, and video. These responses are also available in multiple languages, including English and Urdu. **Google Maps** identifies nearby businesses, showcases user reviews, and suggests optimized travel routes to save time and resources.

Google Play provides Pakistanis access to over 2.6 billion apps, including countless tools for productivity, wellness and health, entertainment, and many other aspects of life.⁴⁶ Many have leveraged Google's cloud-based, AI-powered collaboration solutions, including **Google Drive, Photos, Docs, Slides, and Sheets**, to simplify their everyday tasks.

YouTube, home to endless entertainment options, is also a major conduit for quality education and upskilling options. Over 82% of Pakistani YouTube users* have turned to the online video platform to learn new digital skills, such as AI, software programming, mobile, and application development.⁴⁷



PKR 1.3 trillion in economic benefits

In 2023, Google Search, Google Maps, Google Play, Google Drive, and YouTube helped provide PKR 1.3 trillion of economic benefits for households.

* Estimates are based on a 2023 consumer survey conducted by Access Partnership in Pakistan, where n=510.



[Iqra filming content for her vlog]. 2024. [Video]. Google.

Case study

The right chord: From singing in the living room to empowering millions through YouTube

Armed with a beautiful voice and a YouTube channel featuring her family's vlog, "Sistrology," Iqra Kanwal started sharing her talent in 2021. The world responded by consuming her content and subscribing to her channel. *Sistrology* gained 500,000 subscribers by the fall of 2022 and over 4.5 million subscribers by August 2024.⁴⁸

Iqra, a doctor turned YouTuber, experimented with different video formats to connect with her audiences. Her vibrant content, which tackles themes like sisterhood and gender equality, resonated deeply with young Pakistani women, turning her into a powerful voice for female empowerment.

“ YouTube has made me financially independent and gave me the platform to empower more women to pursue their dreams and ambitions. ”

Iqra Kanwal
YouTuber

2.2

Case study

Google's contribution to digital skilling via community-focused learning in Pakistan

Decoding growth: Google nurtures Pakistani talent, one Developer Group at a time

Pakistan's professionals, students, online learners, and freelancers can tap into a strong footprint of Google Developer Groups (8 Google Developer Groups and 82 Developer Student Clubs) across Pakistan for courses, events, and talks on the latest technological developments.⁴⁹ The groups can also gain access to Google developers and technologists to learn from their experiences and best practices. In 2023, the program benefited over **100,000 developers in Pakistan**.⁵⁰



[Google Developer Group session in Pakistan], 2023. [Photo]. Google.

A next-gen app developer acquires the right skills and exposure through Google Developer programs

When Ahsan's mother was scammed with a fake currency note, he was determined to prevent the incident from happening again.⁵¹ Through his university's Google Developer Student Club, Ahsan learned about Google Teachable Machine and Tensorflow, on which he developed **5Hazar**, the world's first counterfeit detection app. Powered by machine learning, the app scans and detects counterfeit notes within seconds, safeguarding people's hard-earned money.

Ahsan has since joined forces with several startups and persuaded over **200 businesses to test his app**. 5Hazar has received **overwhelming support, including from the Prime Minister's Youth Program**.



[Ahsan developing a counterfeit detection app], 2023. [Video]. Google.

Case study

Google’s contribution to careers via on-demand digital skilling programs

Potential unlocked: Google empowers Pakistanis (especially women) to accelerate careers

Pakistani talents are committed to digitally upskilling themselves, and Google is actively supporting their efforts. The recently launched [Google AI Essentials](#) course empowers people from any background to gain essential AI skills. This self-paced program, taught by Google’s AI experts, uses practical examples on how AI can boost productivity and be helpful for everyone.⁵² The [Google Career Certificates](#) (GCC) program offers nine self-paced courses based on today’s most in-demand skills, including business intelligence, data analytics, and e-commerce.⁵³

Designed to bridge Pakistan’s education and inequality gaps, the GCC provided 44,500 scholarships in 2023, of which half went to women.⁵⁴ Google has also committed to allocating the same number of scholarships in 2024. Over 80% of Pakistani GCC graduates have reported positive career outcomes, such as new employment or promotion, within six months of completing the program.⁵⁵

44,500
Scholarships
provided
in 2023

50%
Scholarships
awarded
to women across Pakistan

Over 80%
Of Pakistani
GCC graduates
have reported positive career outcomes

How Google Career Certificates paved the way for Pakistani women’s success

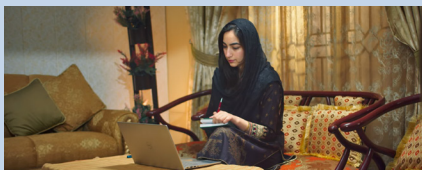
Google Career Certificates has empowered young women like Ayesha Noor and Arooba Shahid to pursue meaningful and financially secure careers.

Ayesha, a freelancer, is the sole breadwinner in her family. Through the Digital Marketing and E-Commerce GCC programs, Ayesha gained valuable skills she uses daily. Ayesha can now financially support herself and provide for her two elderly parents through her own freelance business offering IT services in digital marketing and e-commerce.⁵⁶

Similarly, Arooba graduated as a doctor but struggled to find a job. GCC helped unlock new opportunities when she switched careers to a multinational company as a digital marketer.⁵⁷ Arooba gained critical skills through GCC’s digital marketing and e-commerce course that prepared her for her new role, boosting her confidence along the way.



[Ayesha sharing her experience with GCC]. 2023. [Video]. Google.



[Arooba upskilling through GCC]. 2023. [Video]. Google.

Empowering a Future Forward Pakistan

Pakistan has significant potential to accelerate its economic growth and create quality jobs through **digital exports**. By investing in **digital skills and leveraging AI-powered products and services**, businesses in Pakistan can expand into international markets and enhance their competitiveness. Moreover, this presents avenues for Pakistanis to engage actively in the digital economy, unlocking future of prosperity for all.

As this report outlines, **Google continues to show an ongoing commitment** to bolstering Pakistan's development trajectory by empowering businesses and individuals with its AI-powered products and solutions. Initiatives such as free digital skills training and forging collaborations with both the public and private sectors underscore Google's unwavering support for Pakistan's digital transformation endeavors.

By embracing digital technologies and tapping into the potential of its young and talented workforce, Pakistan stands poised to emerge as a key player in the digital economy, driving sustainable and inclusive growth for its citizens.



Methodology

Estimating the digital export opportunity and economic benefits of digital skills training and greater adoption of education technologies in Pakistan

This report estimates the annual economic benefits of digital technologies for two key focus areas in Pakistan: digital exports and digital skills training and education technologies. The analysis takes 2030 as the target year to ensure sufficient runway for reasonable projections (which take into account increases in technology uptake over the coming years).

The economic benefits of digital export in 2030 were estimated based on revenue gains from exporting digital solutions and reduced costs of accessing overseas markets. The digital export opportunities could potentially be higher through implementation of proper government policies to upskill the workforce and improve the infrastructure.

The economic benefits of digital skills training and education technologies were estimated based on the relationships between digital skills training (i.e., offline and online training programs and personalized learning platforms) and technology applications (i.e., personalized learning and e-career platforms) on employment outcomes (i.e., labor productivity).

Estimating Google's economic benefits in Pakistan

The household benefits supported by Google are challenging to measure and analyze because individuals typically do not pay to use Google Search, Google Maps, YouTube, Google Play, Google Drive, and Google Workspace (all free tools). In the absence of price indicators, the economic "willingness to pay" principle provides a proxy for the dollar amount Pakistanis benefit from these tools, representing the perceived economic benefits they derive. Individuals were asked how much they value the specific services, a value known as consumer surplus.

These insights were gathered through a survey conducted in May 2023 with 510 individuals based in Pakistan. The sample size of respondents is statistically significant based on the Internet population in the country, at a 95% confidence interval and 5% margin of error.

The economic activity generated by businesses from Google products, such as Google Search, Google Ads, Google AdSense, Google Play, Google Cloud, and YouTube was estimated based on the gross revenue, income, or savings generated by businesses in Pakistan from leveraging Google's AI-powered products and solutions. The value of using Google products and solutions does not include flow-on economic effects generated, such as further purchases from their suppliers or the economic activity generated by employees of these businesses who spend their wages in the broader economy. The value also does not account for the activities that may have been displaced by Google, nor do they attempt to estimate the incremental impact of Google on the Pakistani economy in hypothetical instances where Google itself does not exist but similar companies do. The methodology adopted to derive the economic activity generated by businesses in Pakistan in this report is consistent with the methodology adopted in the 2021 Google Economic Impact Report in Pakistan.⁵⁸

The export-related benefits for Google products such as Google Search, Google Ads, Google AdSense, Google Play, and YouTube were estimated based on the economic activity generated by businesses using each product and its respective export ratio. The export ratios for Google Search, Google Ads, Google AdSense, and YouTube were derived based on the share of overseas traffic on search and display advertisements and online video channels for Pakistan, respectively. For Google Play, the overseas share was estimated using the 'power law' curve (an established empirical approach to approximate the dynamics of winner-take-all markets like mobile apps).

The number of jobs supported by Google's tools in 2023 was estimated based on the economic benefit to businesses from each advertising product and Google Cloud, the share of digitally enabled businesses, and the labor productivity in Pakistan. The number of jobs enabled by the Android app economy in 2023 was calculated based on the methodology from the Progressive Policy Institute, a leading institute studying app economies around the world. This is derived based on the estimated app intensity of Pakistan (app economy jobs as a share of total jobs) and the economically active population in Pakistan.

A detailed methodology memo outlining the approach adopted in our study can be accessed on our website [here](#).

References

1. The Express Tribune (2023), "Achieving \$50b export target in five years". Available at: <https://tribune.com.pk/story/2450316/achieving-50b-export-target-in-five-years>
2. Access Partnership (2022), *Boosting exports through digital technologies*. Available at: <https://accesspartnership.com/wp-content/uploads/2022/10/the-digital-sprinters-regional.pdf>
3. Pakistan Software Houses Association for IT and ITES (2022), *The Great Divide: Skills Gap Report 2022*. Available at: <https://www.pasha.org.pk/wp-content/uploads/The-Great-Divide-Industry-Academia-Skills-Gap-Analysis-Report-2022.pdf>
4. United Nations Development Programme (2018), *Pakistan National Human Development Report*. Available at: <https://www.undp.org/pakistan/publications/pakistan-national-human-development-report>
5. Sources include: Ministry of Planning, Development and Reform (n.d.), "Pakistan's commitment". Available at: <https://www.pc.gov.pk/web/sdg/sdgpak>; and United Nations Department of Economic and Social Development (n.d.), "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all". Available at: <https://sdgs.un.org/goals/goal8>
6. Ministry of IT & Telecom (2018), *Digital Pakistan Policy*. Available at: [https://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](https://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)
7. Sources include: World Bank (2023), "The World Bank in Pakistan". Available at: <https://www.worldbank.org/en/country/pakistan/overview>; Pakistan Bureau of Statistics (2021), "Labour Force Survey 2020-21". Available at: <https://www.pbs.gov.pk/publication/labour-force-survey-2020-21-annual-report>; and International Monetary Fund (IMF) (2023), "Unemployment Rate". Available at: <https://www.imf.org/external/datamapper/LUR@WEO/PAK>
8. Source include: Tabadlab (2022), *Digital Now: A Guide to Pakistan's Digital Transformation*. Available at: <https://tabadlab.com/wp-content/uploads/2023/04/Tabadlab-Working-Paper-13-Digital-Now.pdf>; and Government of Pakistan (2023), "Pakistan Economic Survey 2022-23". Available at: https://www.finance.gov.pk/survey/chapters_23/Highlights.pdf
9. United Nations Development Programme (2018), *Pakistan National Human Development Report*. Available at: <https://www.undp.org/pakistan/publications/pakistan-national-human-development-report>
10. IMF (2022), "Pakistan: Selected Issues". Available at: <https://www.elibrary.imf.org/view/journals/002/2022/027/article-A006-en.xml>
11. The Nation (2023), "Google's Think Apps 2023 helps over 500 Pak developers from across 136 studios grow their apps and bring them to world". Available at: https://www.nation.com.pk/06-Aug-2023/google-s-think-apps-2023-helps-over-500-pak-developers-from-across-136-studios-grow-their-apps-and-bring-them-to-world#google_vignette
12. Kantar (2022), *Unlocking Digital in Rural Pakistan*. Available at: https://services.google.com/fh/files/misc/unlocking_digital_in_rural_pakistan_google_kantar.pdf
13. United Nations Conference on Trade and Development (2018), "Expanding E-commerce Capacity for a Sustainable 2030". Available at: <https://unctad.org/meeting/expanding-e-commerce-capacity-sustainable-2030>
14. The Nation (2023), "Google's Think Apps 2023 helps over 500 Pak developers from across 136 studios grow their apps and bring them to world". Available at: https://www.nation.com.pk/06-Aug-2023/google-s-think-apps-2023-helps-over-500-pak-developers-from-across-136-studios-grow-their-apps-and-bring-them-to-world#google_vignette
15. Sources include: State Bank of Pakistan (2023), "Special Section: Pakistan's Growing IT Exports and Tech Startups: Opportunities and Challenges". Available at: <https://www.sbp.org.pk/reports/half/arFY23/SpecialSection.pdf>; The Nation (2023), "Pakistan earns \$2,60 million from IT services' export during FY2023". Available at: <https://www.nation.com.pk/27-Aug-2023/pakistan-earns-dollar-2-60-million-from-it-services-export-during-fy2023>; and International Monetary Fund (2023), "GDP, current prices". Available at: <https://www.imf.org/external/datamapper/NGDPD@WEO/PAK>
16. Access Partnership (2022), *Boosting exports through digital technologies*. Available at: <https://accesspartnership.com/wp-content/uploads/2022/10/the-digital-sprinters-regional.pdf>
17. Based on Access Partnership analysis.
18. ASEAN Briefing (2020), "Indonesia's Palapa Ring: Bringing Connectivity to the Archipelago". Available at: <https://www.aseanbriefing.com/news/indonesias-palapa-ring-bringing-connectivity-archipelago/>
19. Sources include: eCommerce DB (2023), "eCommerce market in Indonesia". Available at: <https://ecommercedb.com/markets/id/all>; and International Trade Administration (2024), "Indonesia - Country Commercial Guide". Available at: <https://www.trade.gov/country-commercial-guides/indonesia-ecommerce>
20. United Parcel Service (2023), "Indonesia Facts". Available at: https://about.ups.com/content/dam/upsstories/assets/our-stories/customer-first/ups-surveys-4700-smbs-in-12-countries/Indonesia_facts_0623.pdf
21. Sources include: Sekolah Ekspor (n.d.), "Sekolah Ekspor". Available at: <https://sekolah ekspor.com/>; and Ministry of Education, Culture, Research and Technology (2022), "The Independent Campus Program through the Export School Produces 198 Student Products Ready for Export". Available at: <https://dikti.kemdikbud.go.id/kabar-dikti/kabar/program-kampus-merdeka-melalui-sekolah-ekspor-hasilkan-198-produk-karya-mahasiswa-siap-ekspor/>
22. Ministry of Education, Culture, Research and Technology (2022), "The Independent Campus Program through the Export School Produces 198 Student Products Ready for Export". Available at: <https://dikti.kemdikbud.go.id/kabar-dikti/kabar/program-kampus-merdeka-melalui-sekolah-ekspor-hasilkan-198-produk-karya-mahasiswa-siap-ekspor/>
23. The Edge Malaysia (2020), "Enabling the digital creative industry to level up". Available at: <https://theedgemaalaysia.com/article/enabling-digital-creative-industry-level>
24. The Edge Malaysia (2020), "Enabling the digital creative industry to level up". Available at: <https://theedgemaalaysia.com/article/enabling-digital-creative-industry-level>
25. The Edge Malaysia (2020), "Enabling the digital creative industry to level up". Available at: <https://theedgemaalaysia.com/article/enabling-digital-creative-industry-level>
26. Wiley (2021), "The Digital Skills Gap Index (DSGI)". Available at: <https://dsgi.wiley.com/global-rankings/>
27. International Monetary Fund (2024), "Unemployment rate". Available at: <https://www.imf.org/external/datamapper/LUR@WEO/PAK>
28. Pakistan Software Houses Association for IT and ITES (2022), *The Great Divide: Skills Gap Report 2022*. Available at: <https://www.pasha.org.pk/wp-content/uploads/The-Great-Divide-Industry-Academia-Skills-Gap-Analysis-Report-2022.pdf>
29. Pakistan Software Houses Association for IT and ITES (2022), *The Great Divide: Skills Gap Report 2022*. Available at: <https://www.pasha.org.pk/wp-content/uploads/The-Great-Divide-Industry-Academia-Skills-Gap-Analysis-Report-2022.pdf>

References

30. Sources include: OECD (2021), "The impact of digitalisation on productivity: Firm-level evidence from Netherlands". Available at: [https://one.oecd.org/document/ECO/WKP\(2021\)31/En/pdf](https://one.oecd.org/document/ECO/WKP(2021)31/En/pdf); and Gallup (2023), "Study by Gallup and AWS shows digital skills drive economic growth across APAC". Available at: <https://aws.amazon.com/blogs/training-and-certification/aws-gallup-digital-skills-study-asia-pacific-2023/>
31. The Economist (2023), *Bridging the skills gap: Fuelling careers and the economy in Pakistan*. Available at: https://impact.economist.com/perspectives/sites/default/files/bridging_the_skills_gap_fuelling_careers_and_the_economy_in_pakistan.pdf
32. The Economist (2023), *Bridging the skills gap: Fuelling careers and the economy in Pakistan*. Available at: https://impact.economist.com/perspectives/sites/default/files/bridging_the_skills_gap_fuelling_careers_and_the_economy_in_pakistan.pdf
33. Sources include: Pakistan Software Houses Association for IT and ITES (2022), *The Great Divide: Skills Gap Report 2022*. Available at: <https://www.pasha.org.pk/wp-content/uploads/The-Great-Divide-Industry-Academia-Skills-Gap-Analysis-Report-2022.pdf>; and International Labour Organization (2021), *The role of digital labor platforms in transforming the world of work*. Available at: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_771749.pdf
34. NXPO (2023), "Developing skills of Thai labor force to enhance Thailand's competitiveness". Available at: <https://www.nxpo.or.th/th/en/12634/>
35. Digital Economy Promotion Agency (2022), *Digital Economy Promotion Master Plan 2023 - 2027*. Available at: <https://www.depa.or.th/en/master-plan-digital-economy/master-plan-for-digital-economy-66-67>
36. Hanoi Times (2023), "Digital transformation in vocational education: Key for future growth of Vietnam". Available at: <https://hanoitimes.vn/digital-transformation-in-vocational-education-key-for-future-growth-of-vietnam-324589.html>
37. Hanoi Times (2023), "Digital transformation in vocational education: Key for future growth of Vietnam". Available at: <https://hanoitimes.vn/digital-transformation-in-vocational-education-key-for-future-growth-of-vietnam-324589.html>
38. Access Partnership's consumer survey conducted in 2023. In the survey, individuals who use Google Workspace at work are asked to indicate the amount of time saved each day through the adoption of Google Workspace tools (e.g., Gmail, Meet, Chat, Calendar, Drive, Docs, Sheets, Slides, Forms) to facilitate remote working and collaboration between colleagues. The time savings is based on an eight-hour work day.
39. ProPakistani (2022), "Pakistani YouTubers Get More Views from Foreign Countries". Available at: <https://propakistani.pk/2022/06/09/pakistani-youtubers-get-more-views-from-foreign-countries>
40. SMBs are defined as businesses with an employment size of up to 250 and annual sales of up to PKR 250 million.
41. Job benefits refer to jobs that are enabled by the additional revenue generated by businesses using Google's products and solutions, such as Google Ads, AdSense, YouTube, and Cloud, which allows local businesses to expand their customer bases and capture more demand, spurring the need for additional hiring.
42. Access Partnership analysis. App economy jobs are divided into three categories: direct, indirect, and spillover jobs. Direct app economy jobs include app developers; software engineers whose work requires knowledge of mobile applications; security engineers who help keep mobile apps safe from being hacked; and help-desk workers who support use of mobile apps. Indirect app economy jobs are non-IT jobs (such as sales, marketing, finance, human resources, or administrative staff) that support core app economy jobs in the same enterprise. Spillover jobs are jobs in the local economy that are supported either by the goods and services purchased by the enterprise or by the income flowing to core and indirect app economy workers.
43. Asian Development Bank (2022), *Digital Jobs and Digital Skills: A Shifting Landscape in Asia and the Pacific*. Available at: <https://www.adb.org/sites/default/files/publication/829711/digital-jobs-digital-skills.pdf>
44. Google Play (n.d.), "How Google Play works". Available at: <https://play.google/about/howplayworks/>
45. Based on Access Partnership analysis. Sources include: Pakistan Bureau of Statistics (2019), "Percentage distribution of monthly household income by source and quintiles, 2018-19". Available at: https://www.pbs.gov.pk/sites/default/files/pslm/publications/hies2018-19/TABLE_11.pdf
46. Business of Apps (2024), "Google Play Store Statistics (2024)". Available at: <https://www.businessofapps.com/data/google-play-statistics/>
47. Access Partnership's consumer survey conducted in 2023. The reported percentage represents the use of online video services to learn digital skills amongst Pakistanis for whom YouTube is their most frequently used online video service.
48. YouTube (2023), "Sistrology". Available at: https://www.youtube.com/watch?v=_Yb5ktbX7SI
49. Sources include: Google Developer Groups (n.d.), "GDG live Pakistan". Available at: <https://gdg.community.dev/gdg-live-pakistan/>; and Google for Developers (n.d.), "Google Developer Students Club". Available at: <https://developers.google.com/community/gdsc>
50. Tribune (2022), "Let the Games Begin!". Available at: <https://tribune.com.pk/story/2365284/let-the-games-begin-1>
51. Google Pakistan (2023), "Ahsan's Story - Google Developer Student Clubs". Available at: <https://www.youtube.com/watch?v=eSfj4GoL-Co>
52. Grow with Google (n.d.), "Google AI Essentials". Available at: <https://grow.google/ai-essentials/>
53. The Nation (2023), "Google deepens commitment to help create Future Forward Pakistan with 3 new courses, 44,500 GCC scholarships". Available at: <https://www.nation.com.pk/10-May-2023/google-deepens-commitment-to-help-create-future-forward-pakistan-with-3-new-courses-44-500-gcc-scholarships>
54. The Nation (2023), "Google deepens commitment to help create Future Forward Pakistan with 3 new courses, 44,500 GCC scholarships". Available at: <https://www.nation.com.pk/10-May-2023/google-deepens-commitment-to-help-create-future-forward-pakistan-with-3-new-courses-44-500-gcc-scholarships>
55. Google in Asia (2023), "How the Asia-Pacific region can bridge the digital skills gap". Available at: <https://blog.google/around-the-globe/google-asia/how-the-asia-pacific-region-can-bridge-the-digital-skills-gap/>
56. Google Pakistan (2023), "Life After Google Career Certificates: Ayesha Noor". Available at: <https://www.youtube.com/watch?v=mdAmc3BhXAo>
57. Google Pakistan (2023), "Arooba Shahid | Digital Marketing & E-Commerce Certificate Graduate — Google Career Certificates". Available at: <https://www.youtube.com/watch?v=LUiJRqJWUDM>
58. Access Partnership (2021), *Unlocking Pakistan's Digital Potential: The Economic Opportunities of Digital Transformation and Google's Contribution*. Available at: <https://accesspartnership.com/wp-content/uploads/2023/03/pakistan-digital-transformation.pdf>

Important Information

This report has been prepared by Access Partnership for Google. All information in this report is derived or estimated by Access Partnership analysis using both non-Google proprietary and publicly available information. Google has not supplied any additional data, nor does it endorse any estimates made in the report. Where information has been obtained from third-party sources and proprietary research, this is clearly referenced in the endnotes. With the exception of desktop researched claims, which have been endnoted, all claims in the report have been derived based on Access Partnership modeling.

All calculations for the business and export benefits were done in USD and have been converted to PKR based on the average PKR exchange rate in 2023 of 1 USD = 279.55 PKR, obtained from OFX. All estimates in this report are expressed in PKR and are based on the latest available data as of the time of analysis in 2024.

Access Partnership (<https://accesspartnership.com/>) makes innovative technology work for the world. Navigating complex regulatory challenges, we help businesses to deploy and optimize their technologies. Collaborating with governments, we design policy and regulation that attracts investment and welcomes innovation. Through this powerful partnership between transformative technology and purposeful policy, we drive commercial and economic growth.

Access Partnership's Economics Strategy team (formerly known as AlphaBeta) is a leading economic and strategy consulting practice with deep experience across a number of topics in the digital economy and the future of skills, sustainability, and economic development.



Prepared by

