# 5 Movement of People

Migration

Outflows from Asia and the Pacific Have Recovered, While Major Host Economies Have Broadened Access to Skilled Migrant Workers

Migration outflows from Asia and the Pacific have been recovering after the coronavirus disease (COVID-19) pandemic.[21] The pandemic saw a sharp dip in migrant outflows from major migrant source economies in Asia in 2020. Migrant workers from the region's top 10 sending economies account for 70.1% (65.2 million) of the 93 million Asian migrants across the world.[22] However, post-2020 figures indicate that the trend in migrant flows from traditional sending economies are recovering, but to varying degrees (Figure 5.1). For instance, outflows in 2022 have recovered from the pre-pandemic flows in 2019 for Bangladesh (162.2%), India (101.5%), Pakistan (133.0%), and Sri Lanka (147.8%). Meanwhile, outflows from Indonesia and the Philippines have risen but remain below the pre-pandemic level.

Figure 5.1: Outflow of Migrant Workers from Selected Asian Economies (2019 = 100)
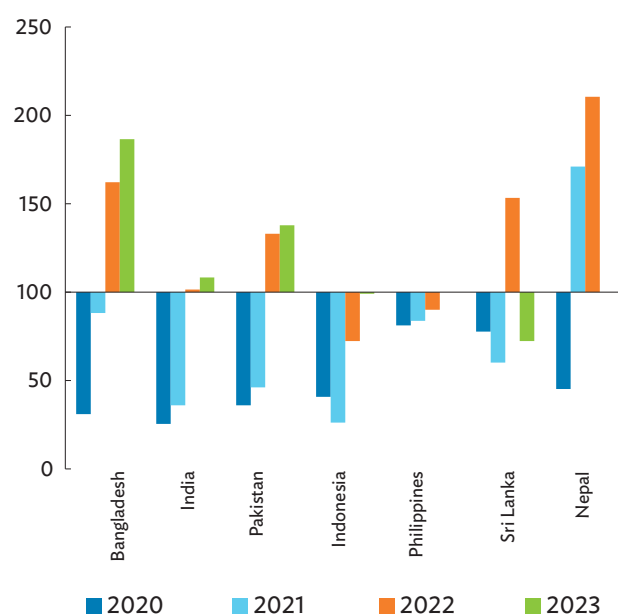
Note: The 2023 data are up to June for Sri Lanka.

Sources: Government of Bangladesh, Bureau of Manpower, Employment, and Training. http://www.old.bmet.gov.bd/BMET/stattisticalDataAction (accessed January 2024); Government of India, Ministry of External Affairs. Performance Smartboard. https://meadashboard.gov.in/ (accessed January 2024); Government of Malaysia, Migrant Worker Protection Agency (Badan Pelindungan Pekerja Migran Indonesia). https://bp2mi.go.id/ (accessed January 2024); Government of Nepal, Ministry of Labour, Employment and Social Security (2022); Government of Nepal, Department of Foreign Employment. https://dofe.gov.np/DetailPage.aspx/id/425/lan/ne-NP (accessed November 2022); Government of Pakistan, Bureau of Emigration and Overseas Employment. https://beoe.gov.pk/reports-and-statistics (accessed January 2024); Government of the Philippines, Philippine Statistical Authority (2020, 2021, 2022, 2023); and Government of Sri Lanka, Central Bank of Sri Lanka. https://www.cbsl.gov.lk/en/statistics/statistical-tables/external-sector (accessed January 2024).

---

[21] Asia and the Pacific, or Asia, consists of the 49 regional member economies of the Asian Development Bank (ADB). The composition of economies for Central Asia, East Asia, the Pacific and Oceania, South Asia, and Southeast Asia are outlined in ADB. Asia Regional Integration Center. Economy Groupings. https://aric.adb.org/integrationindicators/groupings.

[22] In 2020, the top 10 migrant-sending economies in Asia are India, the People's Republic of China, Bangladesh, Pakistan, the Philippines, Indonesia, Kazakhstan, Viet Nam, Nepal, and the Republic of Korea.

Pandemic-induced work-hour losses exacerbated labor shortages in developed economies, particularly in foreign labor-dependent sectors.

Lost work hours in 2020 were equivalent to 255 million full-time jobs, or $3.7 trillion in lost labor income (ILO 2021). This staggering figure highlights how persistent labor shortages could hinder recovery in major developed-economy migrant host economies.

In the United States (US), sectors with the highest percentage of migrant workers in 2019—such as hospitality, food services, and professional services— had significantly higher rates of unfilled jobs in 2021 (Figure 5.2a). Peri and Zaiour (2022) estimate that US sectors with 10% more migrant workers than another industry employing migrant labor in 2019 had a 3% increase in job vacancy rates in 2021. In 2022, foreign-born workers were more likely than native-born workers to be employed in service occupations; natural resources, construction, and maintenance occupations; and production, transportation, and material moving

occupations.[23] Similarly, job vacancy rates in Canada are particularly high in sectors connected to sales and services, trades and transport, health, and business finance and administration (Figure 5.2b).

Major migrant-host economies have expanded access to migrant workers to reduce skilled labor shortages.

As slow global growth continues its grip, many developed economies are relaxing their immigration policies to facilitate the higher inflow of foreign workers. Australia issued 38.4% more worker visas in 2022 than in 2021 under the Temporary Skilled Shortage program (Figure 5.3). It raised its permanent immigration intake by more than a fifth to 200,000 in 2022 to address labor shortage (Fildes 2022). Initiatives to accelerate visa processing are also in place for jobs in nursing, engineering, and technology and to boost the rural workforce. In early 2024, Australia will launch its new Pacific Engagement Visa category, allowing up to 3,000 nationals of Pacific island economies and Timor-Leste to migrate as permanent residents each year.[24]

Figure 5.2: Job Vacancies in the United States and Canada, by Sector

Q = quarter.
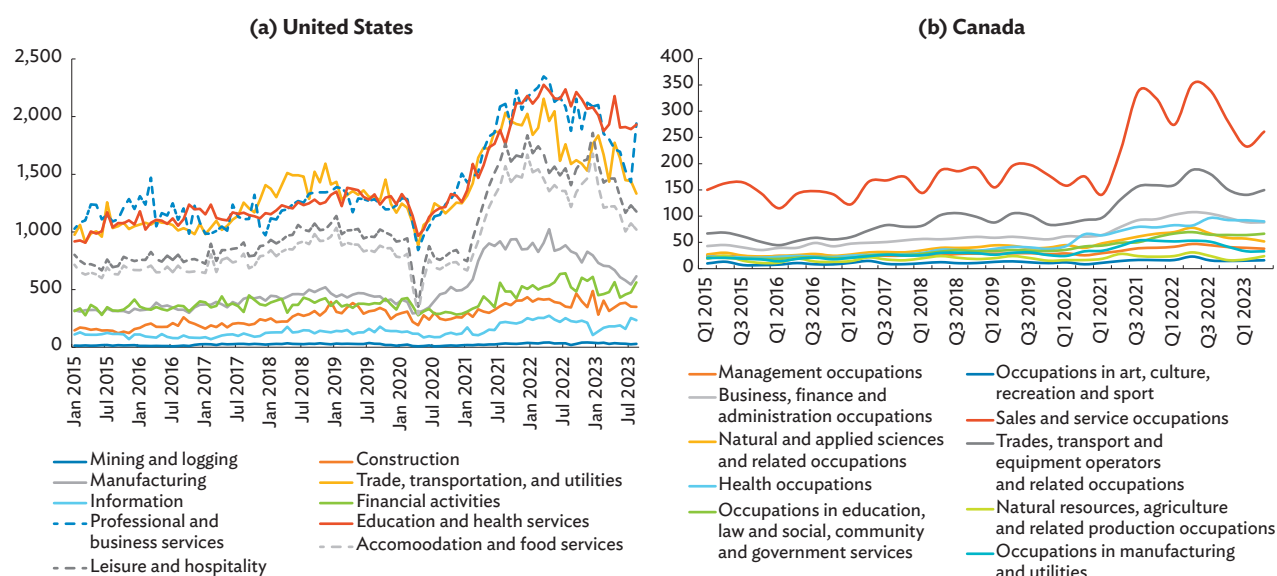
Sources: Government of the United States, Bureau of Labor Statistics. Job Openings and Labor Turnover Survey. https://www.bls.gov/jlt/ (accessed October 2023); Statistics Canada. Table 14-10-0356-01 Job Vacancies and Average Offered Hourly Wage by Occupation (Broad Occupational Category), Quarterly, Unadjusted for Seasonality. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410035601.

[23]   Government of the United States, Bureau of Labor Statistics. Job Openings and Labor Turnover Survey. https://www.bls.gov/jlt/ (accessed October 2023).

[24]   Government of Australia, Department of Foreign Affairs and Trade. https://www.dfat.gov.au/geo/pacific/people-connections/people-connections-in-the-pacific/pacific-engagement-visa.

In New Zealand, 13 times more work visas were issued in 2022 (78,714) than in 2021 (5,778). By September 2023, that had doubled to 156,387. In October 2023, New Zealand rolled out the Skilled Migrant Category Resident Visa with a new points system for applicants.[25]

Canada released its 2023–2025 Immigration Levels Plan in November 2022, with targets to settle 465,000 permanent residents in 2023, rising to 485,000 in 2024 and 500,000 in 2025. The plan aimed to continue welcoming immigrants at a rate of about 1% of Canada's population a year, with a sharper focus on supporting economic resurgence and post-pandemic growth.

The United Kingdom (UK) saw a doubling of migrant worker inflows in 2022 from 2021. In August 2023, it introduced modifications to the Skilled Worker Route, including changes to the Shortage Occupation List. A job on the list makes it easier for licensed employers, including in the construction and fishing industries, to meet the points requirement to sponsor skilled workers.

In the US, the tripling of work visas issued in 2022 suggests a sharp deviation of migration policy from the previous administration's restrictive stance. For fiscal year 2024, the US has set its annual employment-based preference immigrants to least 140,000.[26] The People's Republic of China (PRC), India, and the Philippines were cited as having oversubscribed applications for certain types of employment-based visas, but visas for priority workers from these economies remain on track.

Japan's aging problem and low fertility rates are at the root of its labor shortage problem and led to the 2018 adoption of a law allowing 300,000 foreigners into the economy.[27] The Japan System for Special Highly Skilled Professionals (J-Skip) and the Japan System for Future Creation Individual Visa (J-Find) were rolled out in April 2023 to attract researchers, engineers, and high-level managers.

Figure 5.3: Work Visas Issued by Migrant Host Economy
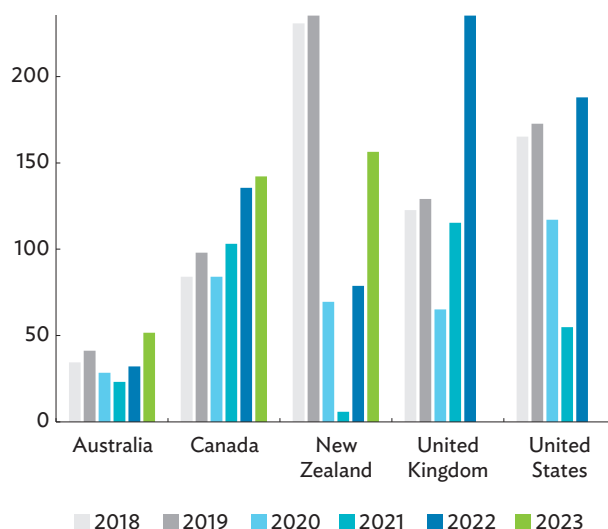
Note: In 2023, values for Canada and New Zealand refer to January to September data.

Sources: ADB calculations using data from Government of Australia, Department of Home Affairs. https://www.homeaffairs.gov.au/ (accessed October 2023); Government of Canada. Temporary Residents: Temporary Foreign Worker Program (TFWP) and International Mobility Program (IMP) Work Permit Holders – Monthly IRCC Updates. https://open.canada.ca/data/en/dataset/360024f2-17e9-4558-bfc1-3616485d65b9 (accessed November 2023); Government of the United States, Department of State, Bureau of Consular Affairs. https://travel.state.gov/content/travel/en/legal/visa-law0/visa-bulletin/2024/visa-bulletin-for-october-2023.html (accessed November 2023); and Government of the United Kingdom, Home Office. https://www.gov.uk/government/organisations/home-office (accessed October 2023).

Skilled migrants comprise a rising share of Asian migrant workers in developed host economies.

Migrant workers with background in science, technology, and mathematics are often employed in sectors that, besides being major drivers of innovation, research, and technical progress, also generate a job multiplier effect in the local economy. Figure 5.4 shows the share of highly skilled migrants has been increasing in the United Arab Emirates and the UK, two of the major destinations for Asian migrant workers, and more working migrants with a high degree of education has been observed in Australia,

---

[25]   According to Immigration New Zealand, these points can be made up from 3 to 6 points based on New Zealand occupational registration, qualifications, or income, and 1 point for each year having worked in New Zealand in a skilled job, up to a maximum of 3 points. Source: New Zealand Immigration. Skilled Migrant Category Resident Visa. https://www.immigration.govt.nz/new-zealand-visas/visas/visa/skilled-migrant-category-resident-visa.

[26]   Information of employment visa preferences is from Visa Bulletin for October 2023 of the US Department of State, Bureau of Consular Affairs. https://travel.state.gov/content/travel/en/legal/visa-law0/visa-bulletin/2024/visa-bulletin-for-october-2023.html.

[27]   The law creates two new visa categories under the Specified Skill Worker Program. Migrants in Type 1 are allowed in for up to 5 years if they have a certain level of skill and some proficiency in Japanese. Workers with higher skills would qualify for the Type 2 visa category for employment in construction and shipbuilding and ship machinery industries (Government of Japan, Ministry of Foreign Affairs. https://www.mofa.go.jp/mofaj/ca/fna/ssw/us/). As of February 2023, there were about 146,000 Type 1 holders and only 10 Type 2 holders.
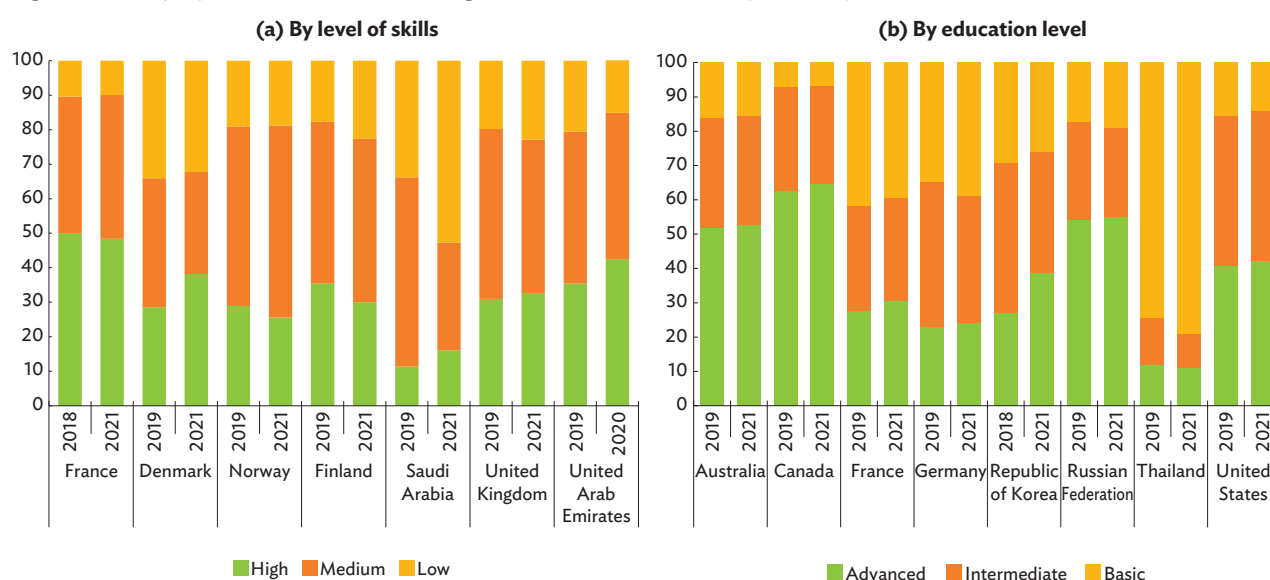
Canada, France, and the US. While Organisation for Economic Co-operation and Development (OECD) economies make up only less than a fifth of the world's population, they host two-thirds of highly skilled migrants. About 70% of such workers are concentrated in four English-speaking economies—Australia, Canada, the UK, and the US with the US playing host to about half. As global competition for high-skilled human capital intensifies, other OECD economies, such as France, Germany, and Spain, have changed their skilled migrant policies.

Large outmigration challenges small economies like the Pacific islands with constrained working populations.

Australia and New Zealand have maintained immigration programs in the Pacific that are largely temporary and seasonal through various labor mobility schemes like the Seasonal Worker Program[28] and Pacific Labour Scheme[29] for Australia, and the Recognised Seasonal Employer[30] for New Zealand, mainly to relieve labor shortages in sectors with seasonal demand. The movement of workers began picking up in 2022, after a dip in 2021, and continued until 2023 (Figure 5.5). These labor mobility schemes aid the Pacific pandemic recovery through remittance inflows. The negative impact of worker outflows on domestic labor forces has intensified, especially for Pacific economies counting on the tourism revival to boost recovery. Fiji, for instance, has unprecedented need for foreign workers to fill tourism jobs left by Fijians who have moved mostly to Oceania.[31]

Figure 5.4: Employment Distribution of Migrants in Host Economies (% of total)

(a) By level of skills

(b) By education level

High | Medium | Low

Advanced | Intermediate | Basic

Notes: The International Standard Classification of Occupations defines skill level as a function of the complexity and range of tasks and duties needed in an occupation and is measured by considering any one of the following: (i) nature of work, (ii) level of formal education, and (iii) amount of informal on-the-job training and/or previous experience in a related occupation. High skill level refers to managers, professionals, and technicians and associate professionals. Medium skill level refers to clerical support workers; sales, and service workers; skilled agricultural, forestry, and fishery workers; crafts and related trades workers; and plant and machine operators and assemblers. Low skill level refers to elementary occupations.

Source: ADB calculations using data from International Labour Organization Statistical Database (ILOStat). https://ilostat.ilo.org/data/ and https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/ (accessed December 2023).
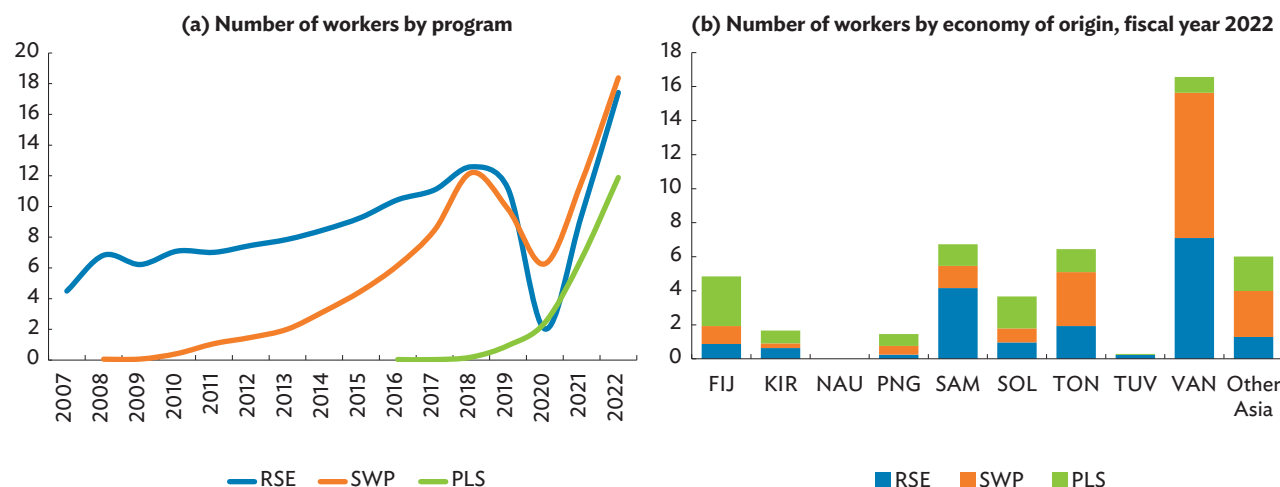
---

[28] This program is now known as the short-term component of the Pacific Australia Labour Mobility scheme, filling labor gaps for up to 9 months. Eligible economies are Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu.

[29] This program is now known as the long-term component of the Pacific Australia Labour Mobility scheme, allowing workers employment in Australia up to 4 years. Eligible economies are Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu.

[30] The Recognised Seasonal Employer brings temporary workers from Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu to work in horticulture or viticulture.

[31] From 2022 to October, around 50,000 Fijians have emigrated on employment and student visas (Tabureguci 2023).

Figure 5.5: Labor Mobility Scheme Workers in Australia and New Zealand ('000)

(a) Number of workers by program

(b) Number of workers by economy of origin, fiscal year 2022

RSE   SWP   PLS

FIJ = Fiji, KIR = Kiribati, NAU = Nauru, PLS = Pacific Labour Scheme, PNG = Papua New Guinea, RSE = Recognised Seasonal Employer, SAM = Samoa, SWP = Seasonal Worker Program, TON = Tonga, TUV = Tuvalu, VAN = Vanuatu.

Notes: Values are based on fiscal year, which start in July and end in June of the following year (e.g., fiscal year 2007 refers to July 2007–June 2008). Other Asia in panel (b) refers to India; Indonesia; Malaysia; the Philippines; Taipei,China; Timor-Leste; and Viet Nam.

Source: Bedford (2023).

Policy Implications

Investments in human capital should be boosted alongside technology for improving migrants' skills and enhancing their recognition. To maximize migration benefits, prioritizing human capital development, internet technology access, and skills training is essential. Cross-regional certification and skills training programs are crucial for migrants to access opportunities and integrate into labor markets and host societies. Digitalized immigration systems or processes are significantly more efficient than paper-based ones and could support swift changes in policy.[32] Use of artificial intelligence has been gaining traction in border management, migration management, and asylum procedures (IOM 2020). Technology for migrants—such as apps for messaging, transportation and translation, and digital maps—could also help reduce vulnerabilities (ADBI, OECD, and ILO 2021).

Effective management of international labor migration requires collaborative strategies between origin and destination economies. Stakeholders should expand the pool of globally transferable skills through adequate and sustainable education and training to mitigate the effects of worker outflow. Consultations with private employers in both the origin economy and at destinations would ensure market-driven training.[33] Engaging the private sector is one way to mitigate the difficulties from a sudden spike in worker outflows. In many migrant-source economies, promoting higher education through private investment, especially related to emigrants' future occupations, is beneficial. Bilateral labor arrangements in several Asian economies align emigrant flow with destination economy industry needs, ensuring continuous labor market access.

---

[32]   For example, within ASEAN, Mutual Recognition Arrangements and the ASEAN Qualifications Reference Framework form a framework for mutual skills recognition.

[33]   For instance, Singapore plans to hire 4,000 more nurses by the end of 2023, registering Philippine nurses to deter their transfer to New Zealand, which offers residency to health workers (Philippine News Agency 2023). Thailand, a migration pathway for workers from economies within the Mekong subregion, has advanced to the second phase of its International Organization for Migration project, PROMISE, aiming by 2025 to aid 450,000 revolving or returning migrants across four economies through skills development for better employment, economic resilience, and poverty reduction (IOM Thailand 2022).

Remittances

Resilient Inflows to Asia Continue as the Main Source of External Finance for Development

Global remittance flows are estimated to climb 3% further to $860.3 billion in 2023 after rising 5.5% to $835.6 billion in 2022. Inflows to Asia totaled $356.0 billion, marking a 10.7% growth from 2021 and the highest since 2011 (Figure 5.6). These inflows were $34.5 billion greater than in 2021, and accounted for 79.5% of the total global increase of $43.4 billion in 2022. In 2023, inflows to the region are expected grow 4.4% to reach $371.5 billion. Remittances to the region were bolstered by robust employment rates in OECD economies, particularly the US, and a slowdown in inflation in high-income economies.   Large transfers from the Russian Federation to Central Asia, which raised remittance flows in 2022, are seen to have moderated in 2023.

Amid the global lockdown and shutdown caused by government-mandated COVID-19 control measures, global remittance inflows dipped only slightly by

1.4% in 2020 while flows to Asia slowed only by 1.9%. Remittances rebounded strongly in 2021 across major regions and the uptrend continued in 2022 (Figure 5.7). Across Asian subregions, inflows continued to rise in 2022 except in East Asia—with notable growth in Central Asia (69.4%) and robust rise in inflows that continued well into 2023 for Oceania (17.4% and 21.2%), and South Asia (12.2% and 7.2%). Even the Russian invasion of Ukraine did not dampen money transfers to Central Asia, which rose by 24.4% in 2021 and 69.4% in 2022.

India, the PRC, the Philippines, Pakistan, and Bangladesh were among the top 10 global recipients of remittances across all economies (Figure 5.8a). In several economies, remittance inflows account for a significant portion of gross domestic product, reaching as high as 40.6% in Tonga and 48.2% in Tajikistan in 2023 (Figure 5.8b). Central Asia received 80% of its remittances from the Russian Federation in 2021. In the months following the February 2022 Russian invasion of Ukraine, Central Asia experienced large money transfers from the Russian Federation as skilled workers and businesses relocated to the subregion (ADB 2023a, 2023b).

Since 2010, Asia has received about 43% of global remittances. However, with a greater number of Asian

**Figure 5.6: Remittance Inflows to Asia and the Pacific, and the World**
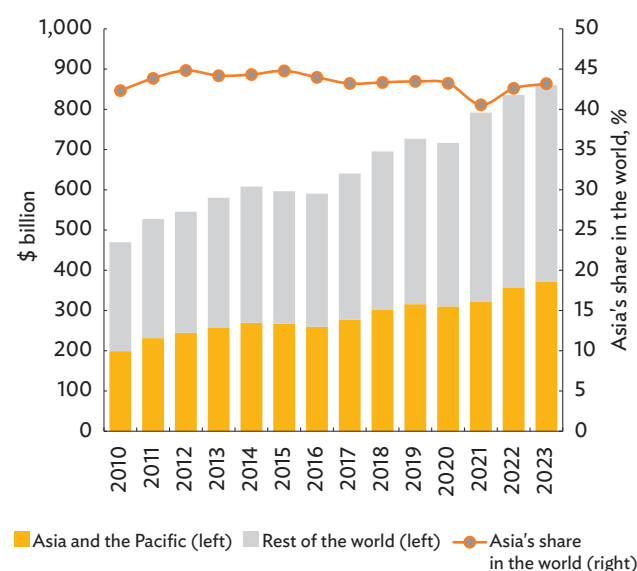
Asia and the Pacific (left)   Rest of the world (left)   Asia's share in the world (right)

Source: ADB calculations using data from World Bank-KNOMAD (Global Knowledge Partnership on Migration and Development). http://www.knomad.org/data/remittances (accessed December 2023).

Figure 5.7: Inflows to Asia and the Pacific, by Subregion (2019 = 100)
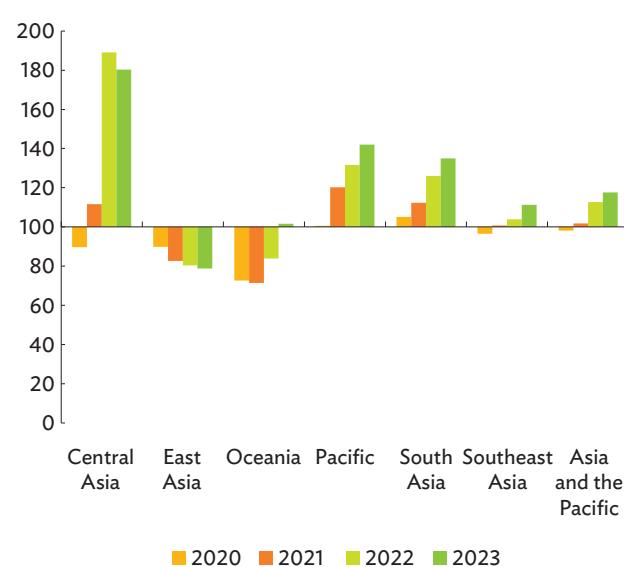
2020   2021   2022   2023

Source: ADB calculations using data from World Bank-KNOMAD (Global Knowledge Partnership on Migration and Development). http://www.knomad.org/data/remittances (accessed December 2023).

Figure 5.8: Top 10 Remittance Recipient Economies in Asia and the Pacific

(a) Inflows ($ billion)

(b) Inflows (2023, % of GDP)
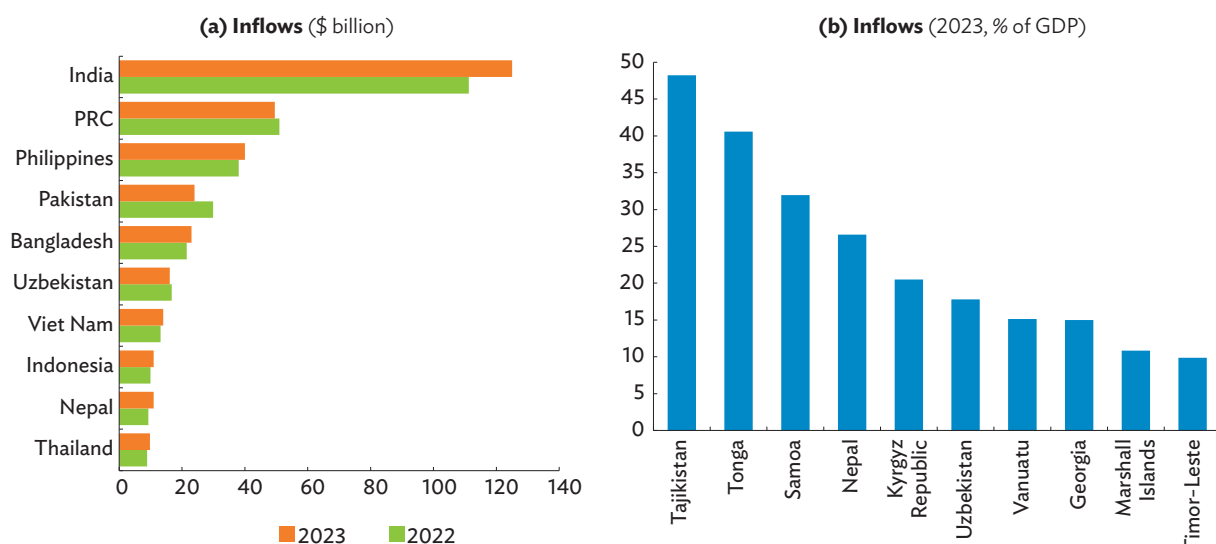
PRC = People's Republic of China.

Source: ADB calculations using data from KNOMAD (Global Knowledge Partnership on Migration and Development. http://www.knomad.org/data/remittances (accessed December 2023).

migrants moving to non-Asian host economies in the past decade, it is no surprise that Asia's intraregional remittance shares have also fallen (Figure 5.9). For instance, in 2010, 33.2% of Asian remittance flows were from the region but this fell to 25.5% by 2021. Dependence on remittance between subregions varies (Figure 5.10). For example, Pacific economies received 81.6% more remittances from other Asian subregions between 2019 and 2021, while Southeast Asian economies received fewer remittances from the subregion and more from others. Studying the trend of intrasubregional dependence could help craft targeted initiatives to lower costs through different remittance corridors.

Digitalization Contributes to Resilience of Remittance Inflows, but Usage Remains Lower Than for Traditional Channels

The average cost of remittances remains high, significantly above the United Nations' Sustainable Development Goals target.

As of the first quarter of 2023, the average cost of sending $200 anywhere in the world was 6.3% of the remittance

Figure 5.9: Intraregional Remittance Share—Asia and the Pacific
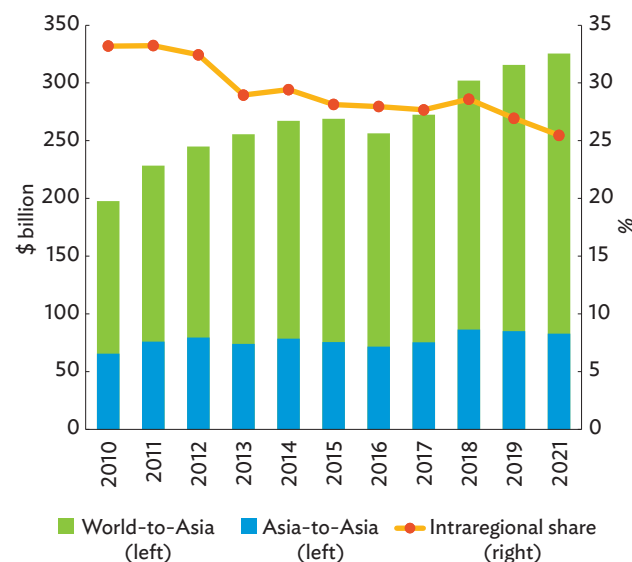
Source: ADB calculations using data from World Bank-KNOMAD (Global Knowledge Partnership on Migration and Development. http://www.knomad.org/data/remittances (accessed December 2023).

amount, double the Sustainable Development Goal's 3.0% target (Figure 5.11a). In Asia, the rate had gone down to 5.2% in the first quarter of 2023 from 6.2% in the same period of 2020, with significant variations across regions. Costs in South Asia have been lower than other regions

Figure 5.10: Intraregional Profile of Remittance Sources of Asian Economies
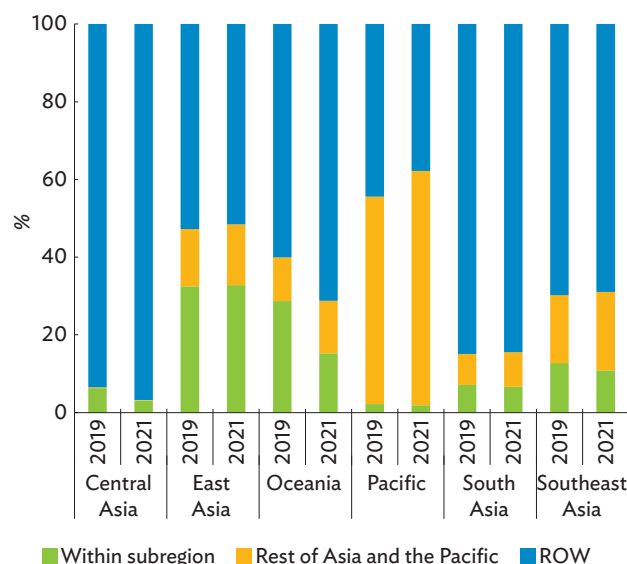
ROW = rest of the world.

Source: ADB calculations using data from World Bank-KNOMAD (Global Knowledge Partnership on Migration and Development. http://www.knomad.org/data/remittances (accessed December 2023)

due to the proliferation of remittance service providers. In the Pacific, rates historically are higher than both the global rates and the Asian average as its small market size prevents providers from scaling operations, leading to high transaction costs. The global trend of de-risking (that is, banks severing ties with high-risk financial institutions and clients to avoid potential liabilities) and enhanced regulatory pressures pushed correspondent banking relationships to shrink by 30% between 2011 and 2022—with a 60% decline for Pacific economies (Davies 2023). This raised Pacific banks' costs to service cross-border transactions and kept remittance fees high.

Especially relative to cash, digital remittances are among the most affordable payment instruments. Fees averaged 4.4% in Asia and globally as of the first quarter of 2023 (Figure 5.11b).

Digital remittances are typically sent digitally and received either in cash or digitally.

Digital remittances refer to "the electronic transfer of money from one person or entity to another, typically across international borders. The transfers are made through online platforms, mobile apps, and other digital channels that allow individuals to send and receive money quickly and securely."[34] The definition varies by institution, and the scope for estimating digital remittance volumes could vary as well (Table 5.1).
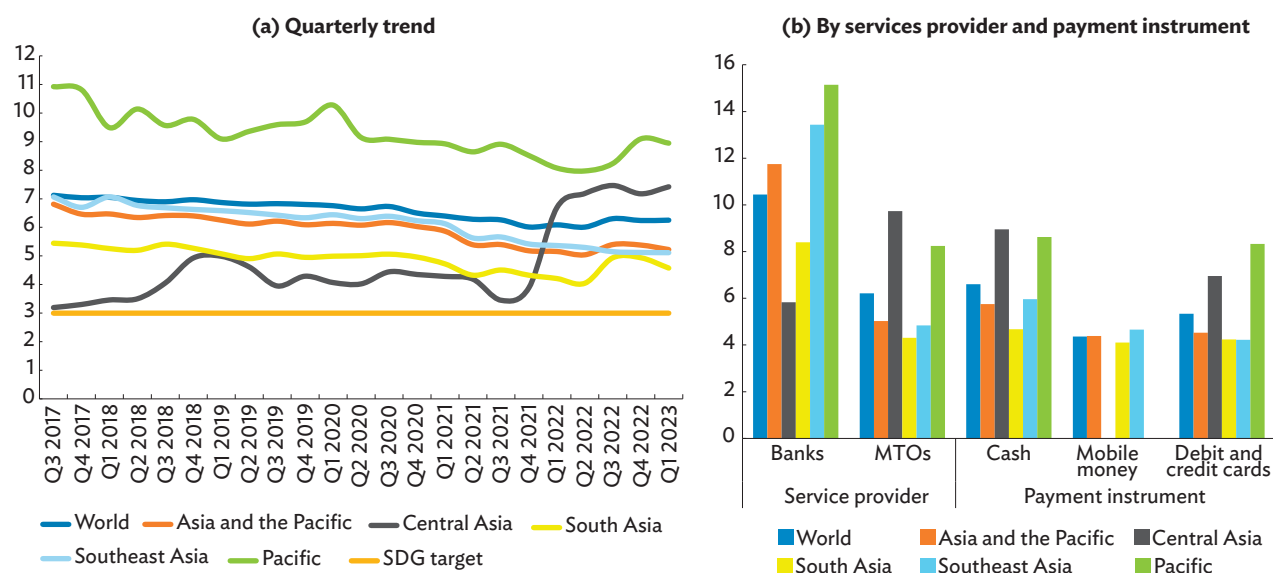
The pandemic accelerated the use of digital channels, notably in 2020, among emerging markets.

Efforts to digitalize remittances were under way before the pandemic. Lockdowns and social distancing rules in 2020 and 2021 boosted the use of digitalized remittance channels, and also lifted the capture of formal remittance data (ADB 2023a). Particularly in 2020, policy directions encouraged the use of digital channels for payments and remittances among emerging markets as did the use of digital banking and even digital fundraising for capitalization purposes (Cambridge Centre for Alternative Finance, World Bank, and World Economic Forum 2022).

Despite rapid growth, digital remittances remain limited, constituting less than 20% of total remittances. Publicly available estimates indicate that digital remittances grew at a rate of around 20% year-on-year from 2017 to 2023 (Figure 5.12). Yet the share of digital remittances to total remittances in 2023 was only around 18.5%. Transfers through online money transfer operators more than doubled to $135.2 billion in 2023 from $56 billion in 2017. Mobile money-enabled remittances increased sixfold from $3.8 billion in 2017 to $23.7 billion in 2023, thanks to the rise in internet and smartphone usage. Of the total usage of mobile money services, cross-border remittances accounted for only $15.9 billion or about 1% of global transaction volume in 2021, with usage in Asian economies

---

[34]   This definition is from Statista. Digital Remittances - Worldwide. https://www.statista.com/outlook/dmo/fintech/digital-payments/digital-remittances/worldwide.

Figure 5.11: Average Total Cost of Remitting $200, as of Q1 2023

(a) Quarterly trend

(b) By services provider and payment instrument

MTO = money transfer operator, Q = quarter, SDG = Sustainable Development Goal.

Note: Average cost is the simple and unweighted average of the total transaction costs of sending $200 in percentage.

Source: ADB calculations using data from World Bank. Remittance Prices Worldwide. https://remittanceprices.worldbank.org/ (accessed July 2023).

Table 5.1: Definition of Digital Remittances, by Institution

Source	Definition	Sending/Receiving Method	Transaction Estimate
World Bank	Digital remittances are sent online or self-assisted, received into accounts, like bank accounts, non-bank accounts, mobile money, or e-money	Sending digitally—receiving either in cash or digitally	–
International Organization for Migration	Digital remittances are made online using bank or money transfer operator apps or via bank card on bank or mobile operator websites	Sending digitally—receiving either in cash or digitally	–
Global System for Mobile Communications Association	Mobile money-enabled international remittances sent via mobile money to acquaintances	Sending digitally—receiving digitally	$21 billion in 2022
Visa Economic Empowerment Institute	Digital remittances are online transfers made via computer, mobile browser, or app, without in-person bank or money transfer operator visits	Sending digitally—receiving either in cash or digitally	34% as of second quarter 2022; 10% is digital end to end while 21% is digitally initiated
Statista	Online cross-border personal transfers, excluding payments for goods and domestic peer-to-peer transactions	Sending digitally—receiving either in cash or digitally; Does not include mobile money remittances	$200 billion in 2022

– = not available.

Sources: Global System for Mobile Communications Association (2023a); International Organization for Migration (2021); Statista Research Department. https://www.statista.com/ (accessed October 2023); Visa Economic Empowerment Institute (2022); and World Bank (2021).

Figure 5.12: Share of Digital Remittances in Total Remittances
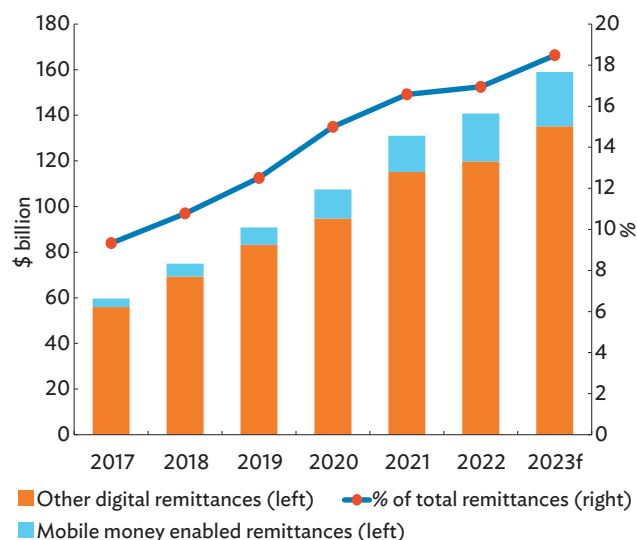
Other digital remittances (left)   —●— % of total remittances (right)
Mobile money enabled remittances (left)

Notes: Other digital remittances refer to the electronic transfer of money from one person or entity to another, typically across international borders. The transfers are made through online platforms, mobile apps, and other digital channels that allow individuals to send and receive money quickly and securely.

Sources: Global System for Mobile Communications Association (2023a), and Statista Research Department (2023a).

being much lower than in Africa (Figure 5.13; De Soyres et al. 2018; Mas and Radcliffe 2010; and Vodafone 2021). Meanwhile, Asia's usage of other digital remittances (20.4%) is the third largest globally, after Europe and North America (Figure 5.14).

The presence of a basic digital infrastructure is the minimum requirement for adoption of digital remittance.

The effective functioning of both hard and soft components of a foundational digital infrastructure is key to facilitating the widespread adoption of information and communication technologies, which has a notable impact on remittances (Gascon, Larramona, and Salvador 2023). Efficient and widespread internet connectivity, mobile phone ownership, improved mobile internet penetration, and affordable cost of using mobile internet are crucial elements to increase the utilization of mobile money for remittance transactions (Chokossa 2023). A well-functioning financial market facilitates the inflow of remittances through lower transaction costs (Bang, Mitra, and Wunnava 2013), provides access to financial services (Orozco and Yansura 2015), and creates options for sending and receiving remittances (Bare et al. 2022).

Figure 5.15 explores the relationship between digital remittances and factors including income, digital connectedness, and financial market development. This suggests a positive correlation between digital remittances and gross domestic product per capita, internet penetration as well as the Mobile Connectivity Index, which includes key enablers like infrastructure, affordability, readiness, and content and services.

**Figure 5.13: Global Usage of Mobile Money Services, 2021**
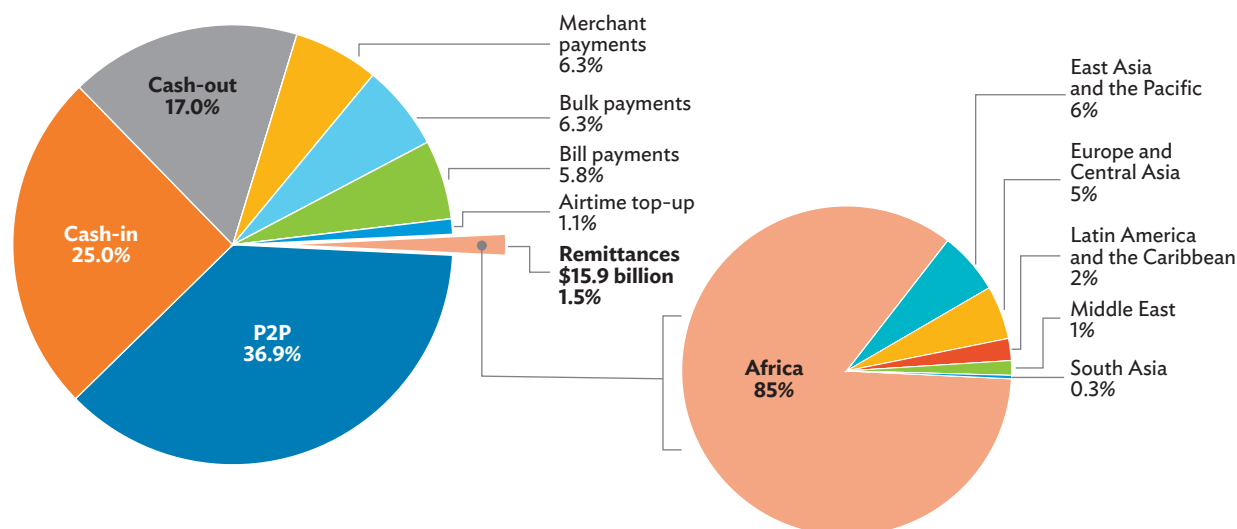
P2P = peer-to-peer.

Source: Global System for Mobile Communications Association (2021).

Digital remittance growth is limited by the digital ecosystem, infrastructural and regulatory challenges, and banking dominance.

Lack of a supportive ecosystem for digital payments limits the space for digital remittances to take root (Bank for International Settlements 2022). Especially in rural areas, information and communication technology infrastructure is weak and channels for receiving transfers digitally are limited (McKinsey & Company 2022). If funds received digitally must be converted to cash because many places do not accept digital payments, then cash remains more convenient. The cost of internet connectivity and phone ownership is also an issue for disadvantaged groups such as women-led households and rural communities.

Figure 5.14: Share of Other Digital Remittances by Sending Region, 2022
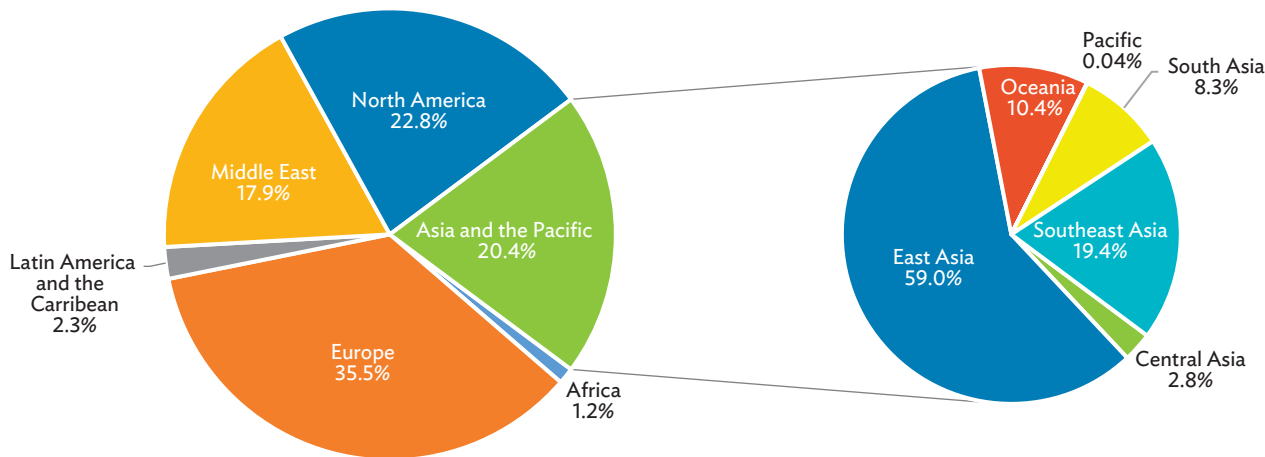
Notes: Other digital remittances refer to the electronic transfer of money from one person or entity to another, typically across international borders. The transfers are made through online platforms, mobile apps, and other digital channels that allow individuals to send and receive money quickly and securely.

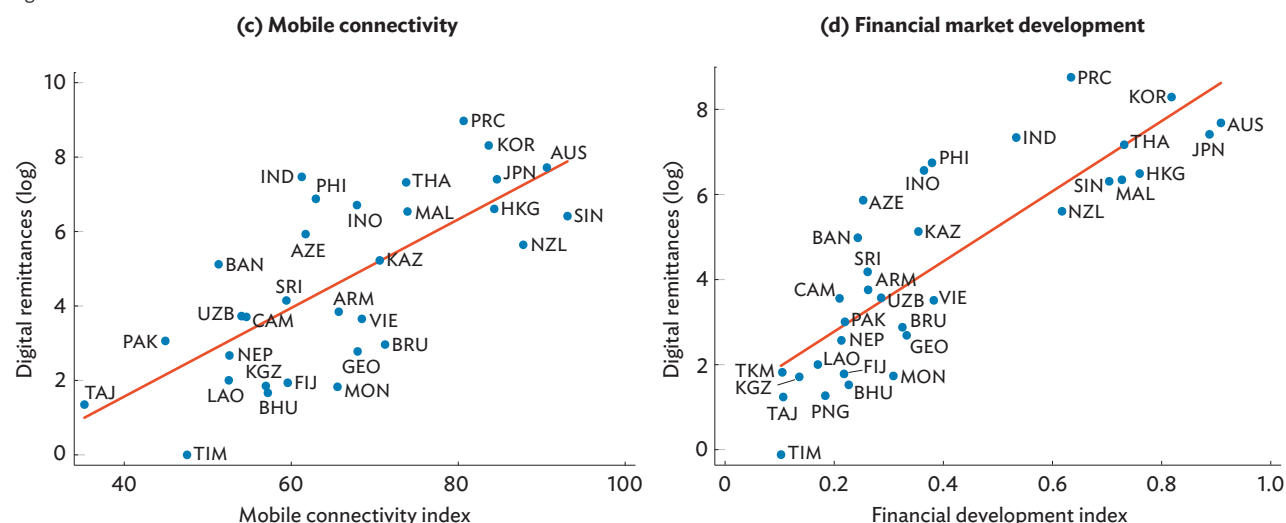Source: Statista Market Insights. https://www.statista.com/outlook/dmo/fintech/digital-payments/digital-remittances/worldwide?currency=usd (accessed November 2023).

Figure 5.15: Digital Remittances and Their Correlates—Asia and the Pacific, 2022

Figure 5.15 continued

(c) Mobile connectivity

(d) Financial market development
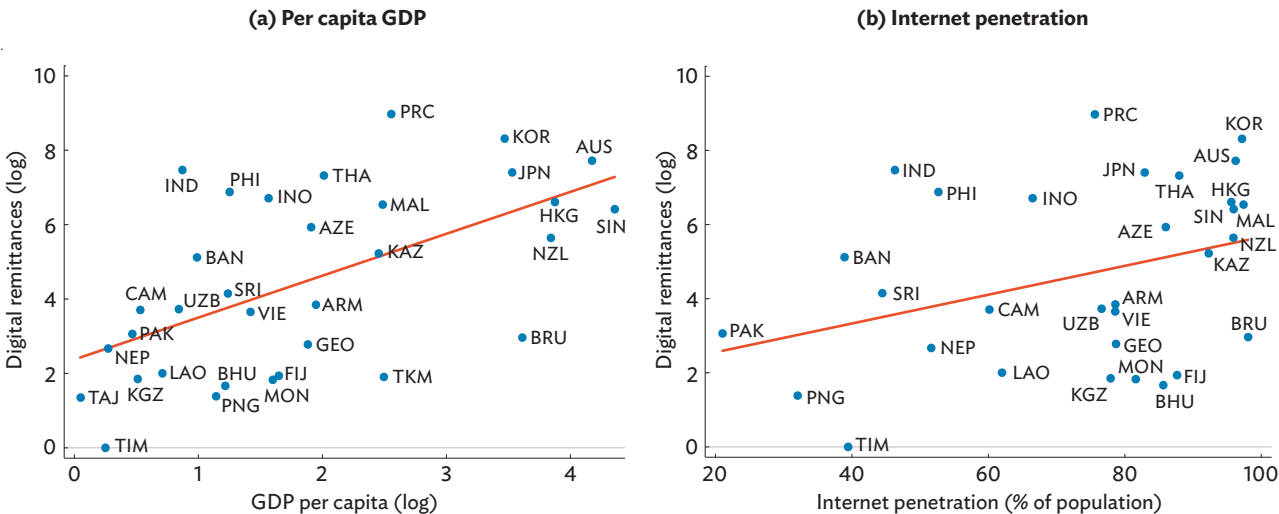
ARM = Armenia; AUS = Australia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; BRU = Brunei Darussalam; CAM = Cambodia; FIJ = Fiji; GDP = gross domestic product; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; JPN = Japan; KAZ = Kazakhstan; KOR = Republic of Korea; KGZ = Kyrgyz Republic; LAO = Lao People's Democratic Republic; MAL = Malaysia; MON = Mongolia; NEP = Nepal; NZL = New Zealand; PAK = Pakistan, PNG = Papua New Guinea; PRC = People's Republic of China; SIN = Singapore; SRI = Sri Lanka; TAJ = Tajikistan; THA = Thailand; TIM = Timor-Leste; UZB = Uzbekistan; VIE = Viet Nam.

Notes: For internet penetration, data refer to the year 2022 for GEO, HKG, INO, KAZ, KOR, MAL, PRC, SIN, THA, and VIE. For the rest of the economies, data refer to 2021.

Sources: ADB calculations using data from Statista Market Insights. https://www.statista.com/outlook/dmo/fintech/digital-payments/digital-remittances/worldwide?currency=usd (accessed November 2023); World Bank. World Development Indicators. https://databank.worldbank.org/ (accessed October 2023); Global System for Mobile Communications Association (2023a); and International Monetary Fund. Financial Development Index Database. https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b (accessed October 2023).

Lack of access to financial services also limits both the number and access to transaction accounts. Many remittance sending and receiving households lack bank accounts, deposit-taking nonbank accounts, and mobile money for secure payment reception and value storage. This underscores the need to ramp up financial inclusion efforts.

Current and potential users of digital remittances have limited knowledge of digital products and tools, making cash the default and convenient option. Giving migrants more information about their options could also spillover to their beneficiary families.

The predominance of traditional banks in financial services can slow the pace of innovation even as the strongest recent advances have come from nonbank payment service providers.

The presence of foreign exchange controls could also make some consumers gravitate toward unregulated services, which offer greater convenience and even favorable exchange rates or require less documentation.

Fragmented Collection Methods for Digital Remittances Are a Major Challenge

According to the World Bank's Remittance Prices Worldwide, senders pay prominent online money transfer operators high service fees to transfer funds to bank accounts, credit cards, or debit cards, all accessed through the Internet. At the receiving end, cash is the most popular pick-up method, as observed in remittance corridors surveyed by the World Bank. Cash is followed by bank accounts, which are likely used for subsequent cash withdrawals. However, the share of direct cash pick-up declined to 30% to 40% in 2022 during the pandemic (Figure 5.16). Mobile wallets, which represent a completely digital transaction method, make up around 10%. This underscores the challenges of fully transitioning to digital transfers, especially at the receiver's end, where cash remains a favored option.

Figure 5.16: Trends of Pick-Up Methods for Remittances Sent Through Digital-Only Money Transfer Operators, Global Share (%)
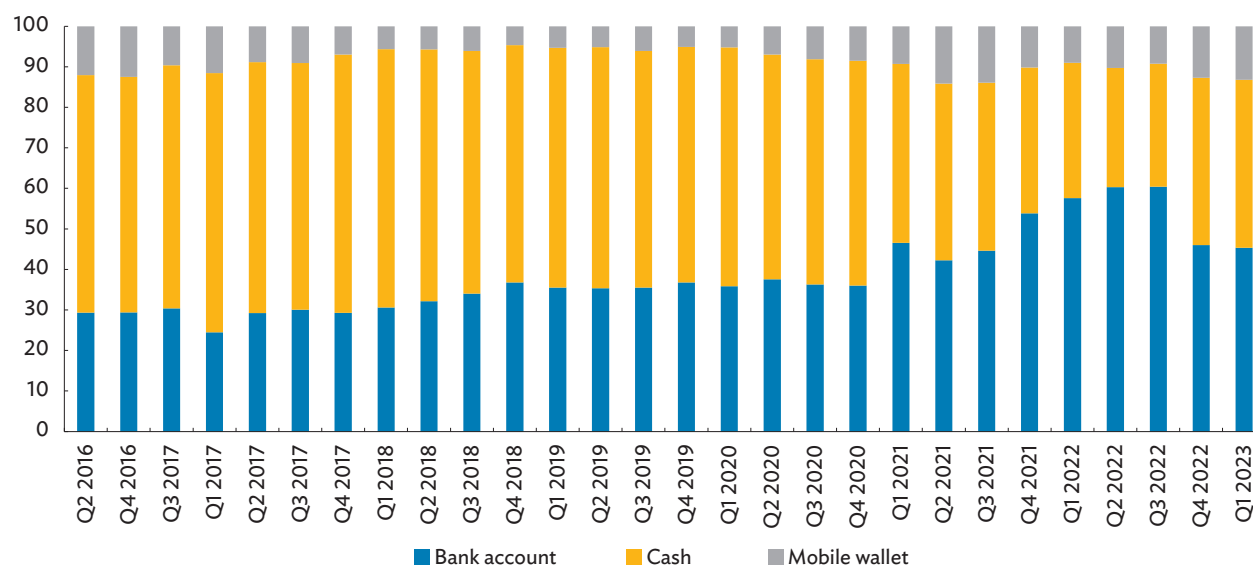
MTO = money transfer operator, Q = quarter.

Notes: Digital-only MTO includes five digital-only MTOs: Wise, Remitly, WorldRemit, InstaReM, and Xoom. The figures are based on the number of receiving channels available in the surveyed corridors. Sending is done through the internet only.

Source: ADB calculations using data from World Bank. Remittances Prices Worldwide. https://remittanceprices.worldbank.org/ (accessed July 2023).

Policy Implications

Expanding access to banking services could help hit the twin goals of greater financial inclusion and digital remittance uptake. Migrants and their families often lack access to banking services. Typically, their first interactions with the regulated finance sector come through remittance transactions. Digitalizing these can pave the way for financial inclusion and reduce remittance costs (Ardic et al. 2022). By transitioning to digital methods, like account-to-account transfers, policymakers and service providers can deepen financial inclusion and open entry point to financial services such as savings, insurance, and credit.

Enabling digital infrastructure is essential to transition successfully toward a more digitalized remittance market. Developing digital infrastructure for the remittance market requires governments to invest intensely in information technology infrastructure and human capital to build, manage, and deliver digital solutions. Governments can engage more private capital through public–private partnerships and incentives to keep capital flowing, and secure sufficient financial resources to keep data and technology expertise available.

Initiatives to standardize methods for collecting, processing, and reporting remittance data could optimize efforts to digitalize the remittance environment. Consolidating approaches toward collecting and compiling remittance data through internationally agreed standards and definitions is a step in the right direction. Strengthening bilateral remittance statistics would not only improve the flow analysis of remittance markets, but more timely remittance data could enhance evidence-based policymaking toward achieving remittance-related Sustainable Development Goals.

An enabling regulatory environment is crucial for wider mobile services adoption, potentially leading to increased use of remittances. A more facilitative regulatory environment is associated with greater mobile money usage, especially for women (Bahia, Sanchez-Vidal, and Taberner 2020). On the other hand, onerous regulations could stifle mobile money adoption (Evans and Pirchio 2015). The potential impact of favorable regulation on mobile adoption extends to enhanced financial inclusion and lower average transaction costs, while helping bridge the mobile gender divide (GSMA 2023b).

Increased international cooperation is essential for further reducing remittance costs and enhancing payment systems. While remittance costs have been lowered through the promotion of nonbanking payment systems, enhanced consumer financial literacy, and expanded market access for both providers and consumers, the role of shared commitments is becoming increasingly important. This shared focus includes improving cross-border payment infrastructure and arrangements. Key initiatives aim to reduce remittance transaction costs to below 3% and to eliminate high-cost corridors (Figure 5.17). Efforts are also being channeled into developing innovative payment systems for underserved groups, fostering digital inclusion, ensuring system interoperability, refining regulatory frameworks, and standardizing data and messaging protocols.

All remittance stakeholders can benefit from robust and widespread knowledge-sharing. The potential impact of digital remittances must be known not only to remittance senders and their beneficiaries and remittance providers, but also among regulators and policymakers. Remittance knowledge packs, particularly digital remittance tools, must be part of the emigration strategy of migrant-sending economies. Better-informed regulators can pave the way for effecting laws and guidelines on digital technology and digital remittance tools, more investments, better state of competition, and improved access to finance.

International Tourism

Tourism Recovery Should Be Matched with Greater Resilience

International tourism in Asia continues to recover lost ground, with arrivals and receipts climbing rapidly toward pre-pandemic levels. Global arrivals of 1.3 billion in 2023 herald a strong recovery globally for the second consecutive year, with total arrivals recovering around 88% of the 2019 level. This is despite continuing economic and geopolitical challenges (UNWTO 2024).[35] Among the six major regions, Europe and Latin America and the Caribbean have recovered at least 90% of pre-pandemic tourist arrivals in 2023 (Figure 5.18a). North America has recovered around 85% while Africa and the Middle East have fully recovered their pre-pandemic tourist arrivals.
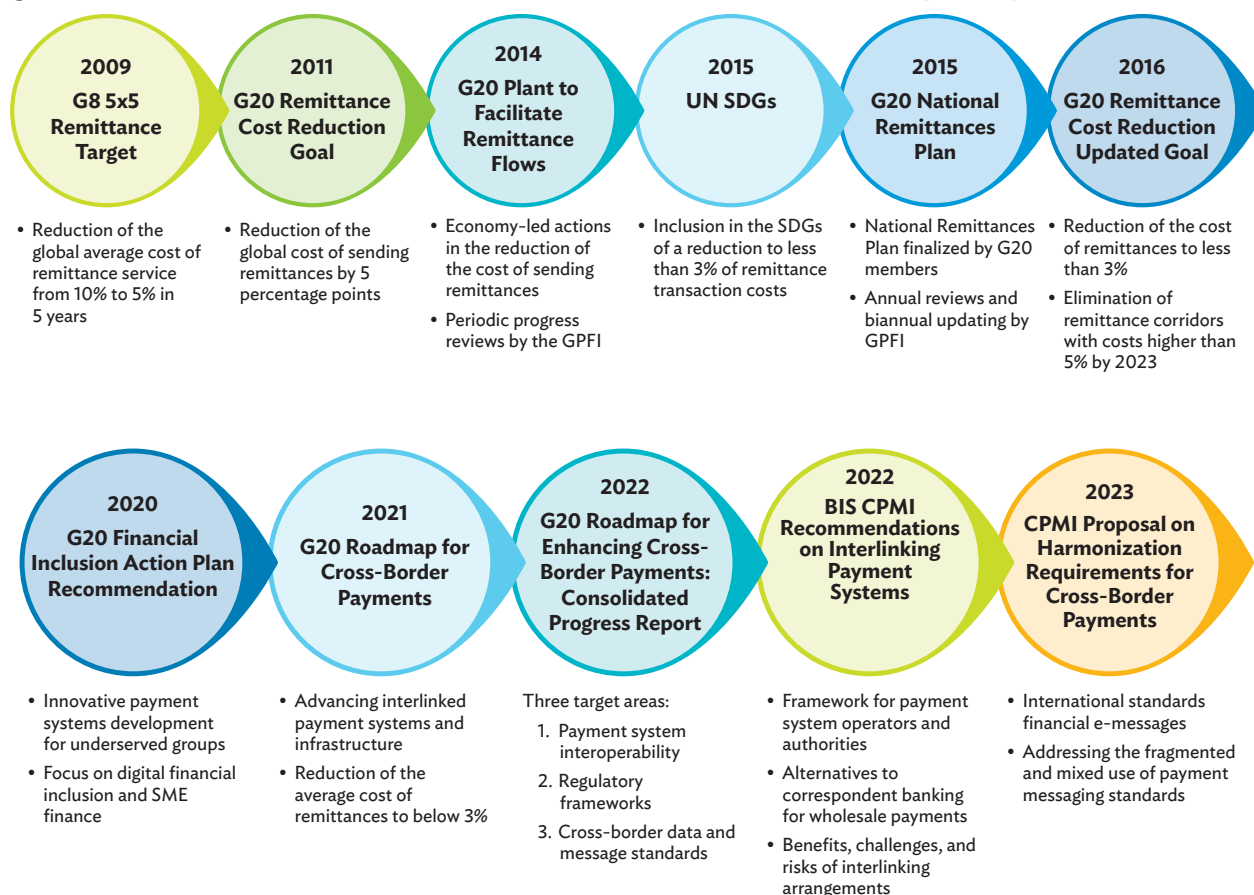
Asia is the slowest region to recover, with tourist arrivals in 2023 reaching 73.2% of the 2019 numbers. This is considerable given that, during the same period in 2021 and 2022, the region recovered only 4.9% and 28.8% of its prepandemic arrivals, respectively (Figure 5.18b).

International tourism receipts have also recovered across regions, with the global total of $1.4 trillion estimated for 2023 (UNWTO 2024). Pent-up travel and the lifting of border restrictions across major destination economies boosted visitor spending and passenger transport fares and had reached $1.6 trillion in 2023, compared to $1.3 trillion in 2022. Leading the tourism receipts recovery in 2023 is the Middle East—it exceeded its pre-pandemic tourism earnings by 31.5% at $137 billion over $104 billion in 2019 (Figure 5.19). Asia, reflecting the pace of tourist arrivals, improved its tourism receipts profile in the last 2 years, but remains behind other major regions.

Various factors have contributed to Asia's laggard tourism recovery in 2023.
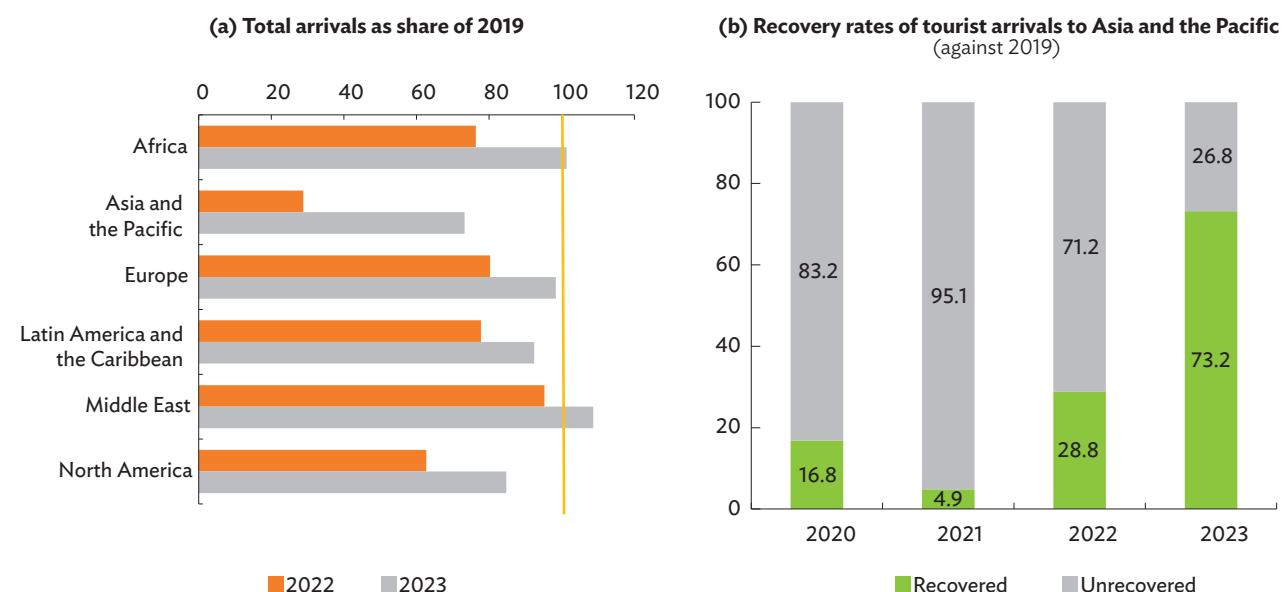
Many Asian destinations remained restricted to nonessential travel as late in the pandemic as 2022. Domestic policies on travel restrictions in Asia and the reopening of borders came later than in other regions, were staggered, and varied across destinations. Until the early months of 2023, the PRC's strict zero-COVID policy severely decreased visitor arrivals (ADB 2023a). Inflation also reduced purchasing power and discretionary income, making tourists more discerning in their travel plans.

---

[35] According to the United Nations World Tourism Organization (UNWTO) Panel of Tourism Experts, these economic and geopolitical challenges include the current conflict in the Middle East, the Russian invasion of Ukraine, persistent inflation, high interest rates, volatile oil prices, trade disruptions, and staffing shortages (UNWTO 2024).

Figure 5.17: Global Initiatives to Lower Remittance Costs and Enhance Cross-Border Payment Systems

2009
G8 5x5 Remittance Target

- Reduction of the global average cost of remittance service from 10% to 5% in 5 years

2011
G20 Remittance Cost Reduction Goal

- Reduction of the global cost of sending remittances by 5 percentage points

2014
G20 Plant to Facilitate Remittance Flows

- Economy-led actions in the reduction of the cost of sending remittances
- Periodic progress reviews by the GPFI

2015
UN SDGs

- Inclusion in the SDGs of a reduction to less than 3% of remittance transaction costs

2015
G20 National Remittances Plan

- National Remittances Plan finalized by G20 members
- Annual reviews and biannual updating by GPFI

2016
G20 Remittance Cost Reduction Updated Goal

- Reduction of the cost of remittances to less than 3%
- Elimination of remittance corridors with costs higher than 5% by 2023

2020
G20 Financial Inclusion Action Plan Recommendation

- Innovative payment systems development for underserved groups
- Focus on digital financial inclusion and SME finance

2021
G20 Roadmap for Cross-Border Payments

- Advancing interlinked payment systems and infrastructure
- Reduction of the average cost of remittances to below 3%

2022
G20 Roadmap for Enhancing Cross-Border Payments: Consolidated Progress Report

Three target areas:
1. Payment system interoperability
2. Regulatory frameworks
3. Cross-border data and message standards

2022
BIS CPMI Recommendations on Interlinking Payment Systems

- Framework for payment system operators and authorities
- Alternatives to correspondent banking for wholesale payments
- Benefits, challenges, and risks of interlinking arrangements

2023
CPMI Proposal on Harmonization Requirements for Cross-Border Payments

- International standards financial e-messages
- Addressing the fragmented and mixed use of payment messaging standards

BIS = Bank for International Settlements, CPMI = Committee on Payments and Market Infrastructure, G8 = Group of Eight, G20 = Group of Twenty, GPFI = Global Partnership for Financial Inclusion, SDG = Sustainable Development Goal, SMEs = small and medium-sized enterprises.

Sources: Ardic et al. (2022); BIS (2023a, 2023b); Financial Stability Board (2022); G20 Development Working Group (2021); and GPFI (2018, 2023).

Figure 5.18: International Tourist Arrivals (%)

(a) Total arrivals as share of 2019

(b) Recovery rates of tourist arrivals to Asia and the Pacific (against 2019)

Notes: Includes economies with complete data for 2019, 2022, and 2023. The regional classification of ADB's Asian Economic Integration Report was used.

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Data Dashboard. https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard (accessed January 2024).

Figure 5.19: International Tourism Receipts by Region (% of 2019)
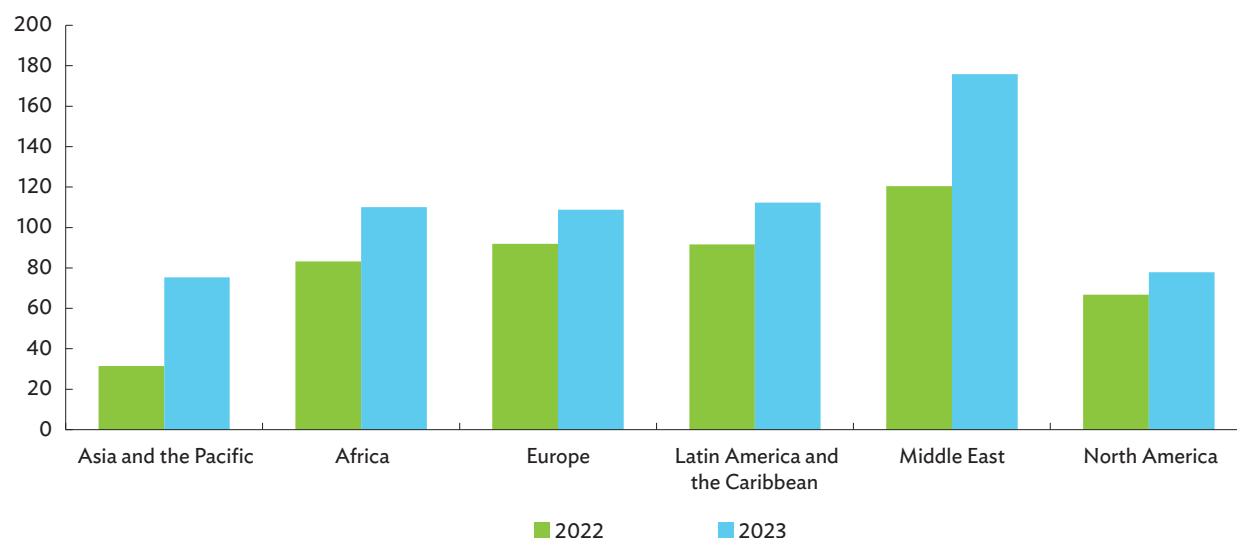
Note: Includes economies with complete data for 2019, 2022, and 2023. The regional classification of ADB's Asian Economic Integration Report was used.

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Data Dashboard. https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard (accessed January 2024).

Even with reopened borders, the resumption of international tourism flows into the region was slowed by air connectivity issues, flight capacity challenges, and the reinstatement of visa arrangements between and among economies. International air seat capacity of Asia continues to lag behind other regions (Richter 2022). Airlines are slow in restoring capacity as fleets got retired during the pandemic and international flight seat capacity remains far below pre-pandemic levels in Asia (66% of that in 2019).[36] This is keeping air fares elevated and pushing travelers to postpone their overseas travel.

Labor and staffing issues continue to beset the air travel and tourism sectors. The COVID-19-induced exodus of tourism staff in 2020 led to 62 million job losses in travel and tourism. Staff shortages are compromising efficient airline and airport operations especially during peak travel season. In Asia, lost tourism staff has been a major impediment for tourism recovery. Thailand lost 3.9 million tourism workers in the pandemic who show little sign of returning to their old jobs. In Singapore, tourism staffing is at 78% of what it was in 2019.

More importantly, the region experienced low tourist flows from the PRC in 2021 because of travel restrictions for outbound tourists (Box 5.1).

Within Asia, variation remains among the subregions.

Recovery rates in total arrivals in 2023 were strongest for Central Asia and the Pacific—around 95% of the total arrivals in 2019—followed by South Asia and Oceania (Figure 5.20). Strong marketing and government support raised destination attractiveness for the Cook Islands, Fiji, Palau, and Samoa in the Pacific enabled the subregion to recover its 2019 tourism receipts in 2023 (Figure 5.21). During the same period, stronger arrivals to India and Nepal helped raise tourism income flows to South Asia, while vibrant receipts of Armenia, Georgia, Tajikistan, and Uzbekistan resulted in Central Asia surpassing its tourism receipts in 2023.

---

[36]   United Nations World Tourism Organization. Tourism Data Dashboard. https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard (accessed January 2024).

Box 5.1: Post-Pandemic Outbound Tourism from the People's Republic of China: Implications for Asian Destinations

The People's Republic of China (PRC) is a major player in global tourism. In 2019, 154.6 million outbound Chinese tourists spent $254.6 billion. On average, that is higher than those of United States tourists, and almost twice as much as German and British tourists (United Nations World Tourism Organization 2022). The zero-COVID policy and prolonged travel restrictions during 2020–2021 had kept much of the PRC's borders closed to international tourism. With the announcement of border reopening in January 2023, and even as the approach to opening travel destinations was staggered, it generated much optimism for a tourism recovery in Asia and the Pacific in 2023.

Asia accounted for about 60% of total outbound travel from the PRC from 2015 to 2019. These were most significant to East Asian economies, particularly Hong Kong, China where 67% of tourist arrivals were from the PRC (box figure 1). The resumption of PRC outbound travel was seen to stimulate demand in Asian destinations, particularly those dependent on PRC tourists.

However, the impact of outbound tourism from the PRC has been overshadowed by global macroeconomic uncertainties and inflation. A sluggish PRC economy and weaker yuan is curtailing demand for overseas travel. The revival in PRC visitors is happening at a slower pace than expected (box figure 2). Challenges in restoring flight capacity, visa processing times, and managing COVID-19–entry rules in destination economies have also dampened recovery. Although the PRC's international airline capacity was 4.8 million seats in November 2023, this was only 57% of the 2019 level (Official Airline Guide 2024).

In 2020–2022, the Asian economies most dependent on PRC visitors suffered as PRC tourism spending shrank by an estimated aggregate $145 billion per year. Palau, the Pacific economy most dependent on PRC tourists, suffered an average annual loss of $42 million (about 15% of its 2019 GDP) for 2020–2022. By Asian subregion, Southeast Asia suffered the most at 1.5% of its 2019 GDP (equivalent to $48 billion [box figure 3]).

1: Average Share of the People's Republic of China in Asian Economy's Total Tourist Arrivals, 2015–2019 *(%)*
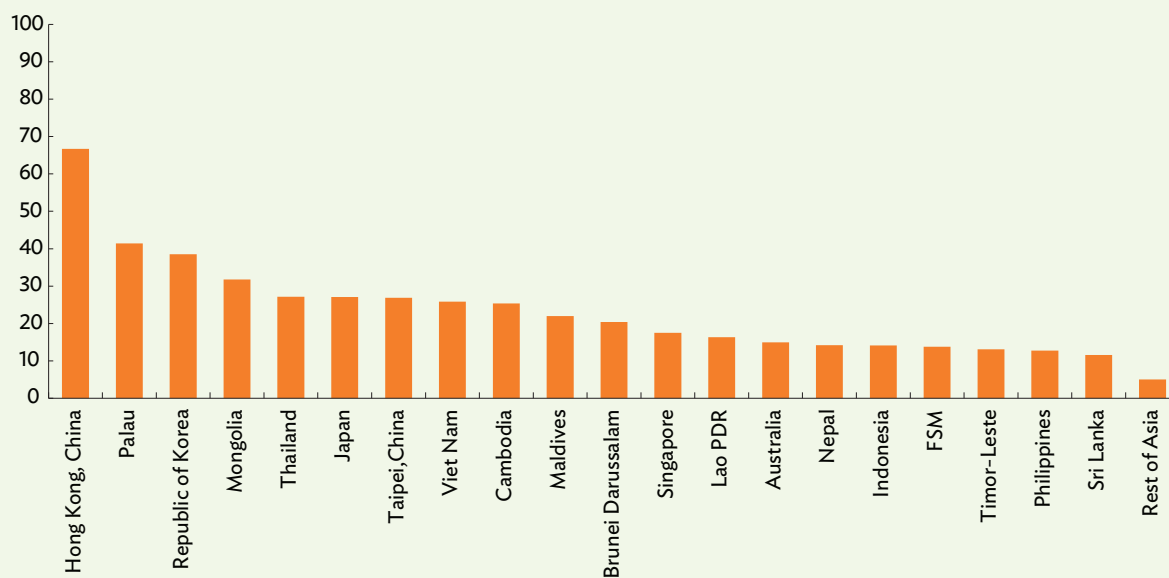
FSM = Federated States of Micronesia, Lao PDR = Lao People's Democratic Republic.

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Satellite Accounts. http://statistics.unwto.org (accessed January 2024).

Box 5.1 continued

Though expectations were for PRC outbound travel to pick up in the second half of 2023, the slower than anticipated recovery has led some to predict that the PRC will surpass its 2019 total in 2025 with 179 million outbound tourists (Bowerman 2023). On top of this, with the PRC economy still struggling to recover from the pandemic, PRC tourists are more conscious of spending when abroad (Martin 2023).

The attitudes of PRC outbound tourists are changing. McKinsey and Company's (2023) latest Survey of Chinese Tourist Attitudes shows that 40% of PRC tourists want to visit developed destinations in Asia such as Australia, New Zealand, and Japan. A similar survey found Australia and Thailand among top destinations for potential PRC overseas visitors (Parulis-Cook 2023). Preferences are changing as many Chinese people choose to travel in smaller groups or more with family members. They also favor technology-assisted and/or technology-enhanced tourism. Tourism authorities and travel agencies in destination economies should consider these factors, alongside solutions to bottlenecks in tourism flows, in redesigning their strategies to attract tourists from the PRC.
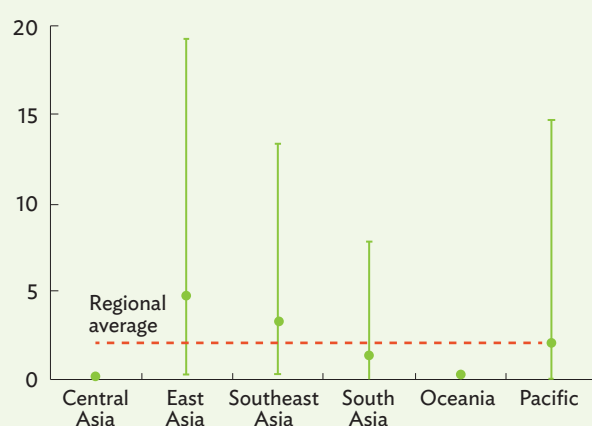
2: Tourist Arrivals from the People's Republic of China to Selected Asian Economies (% of total tourist arrivals)
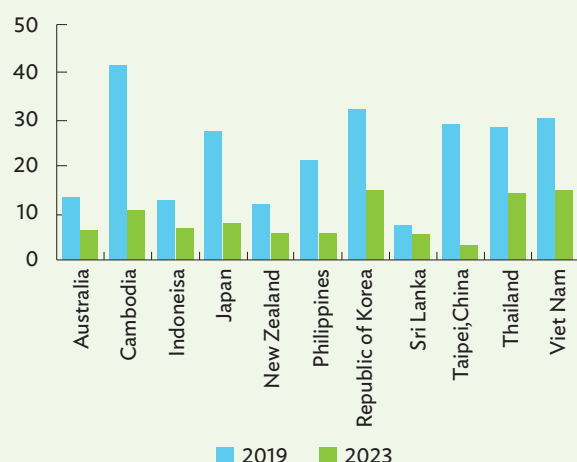
Source: ADB calculations using data from CEIC Data Company (accessed January 2024).

3: Estimated Decline in the Tourism Expenditure of the People's Republic of China in Asian Subregions, 2020–2022 (% of 2019 GDP)

GDP = gross domestic product.

Notes: For each subregion, maximum (upper line), average (thick dot), and minimum (lower line) values are reported. The horizontal line denotes Asia's regional average of 2.1%.

Sources: ADB calculations using data from CEIC Data Company; International Monetary Fund. World Development Outlook Database. https://www.imf.org/en/Publications/WEO/weo-database/2023/October; and United Nations World Tourism Organization. Tourism Satellite Accounts. http://statistics.unwto.org (all accessed November 2023).

Sources: Bowerman (2023); CEIC Data Company; Martin (2023); McKinsey and Company (2023); Official Airline Guide (2024); Parulis-Cook (2023); United Nations World Tourism Organization (2022); and World Tourism Organization. Tourism Satellite Accounts. http://statistics.unwto.org (accessed November 2023 and January 2024).

Subregional arrivals could influence the degree of tourism cooperation within subregions.

Intraregional tourism flow is key for many ADB subregions. In 2019, intrasubregional flows (i.e., source and destination economies from same subregion) were particularly high in East Asia (72.4%) while Southeast Asia had similar intrasubregional flows (56.5%) and intersubregional flows (i.e., the source and destination of tourists are different subregions) (Figure 5.22). This did not vanish altogether during the crisis. From 2020 to 2022, Southeast Asia had stronger intrasubregional flows (averaging 76.8%), in large part due to the efforts of ASEAN member economies to restart tourism. Strong intrasubregional ties could expedite subregional tourism strategies, while robust intersubregional ties allow for better exploration of alternative markets within the whole Asian region.
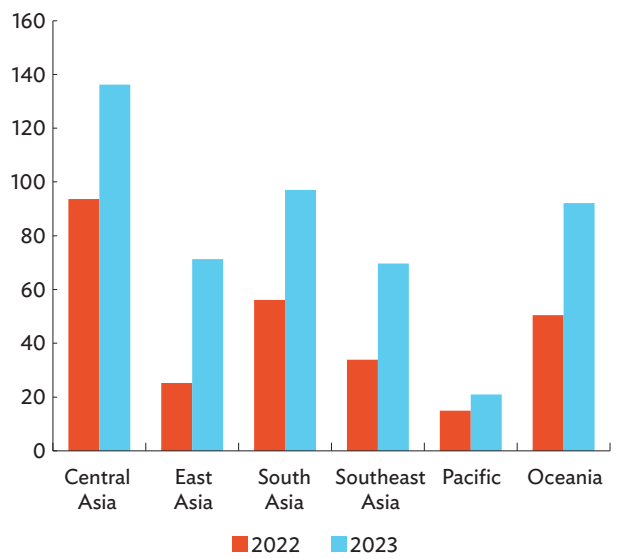
Figure 5.20: International Tourist Arrivals by Asian Subregion (% of 2019)
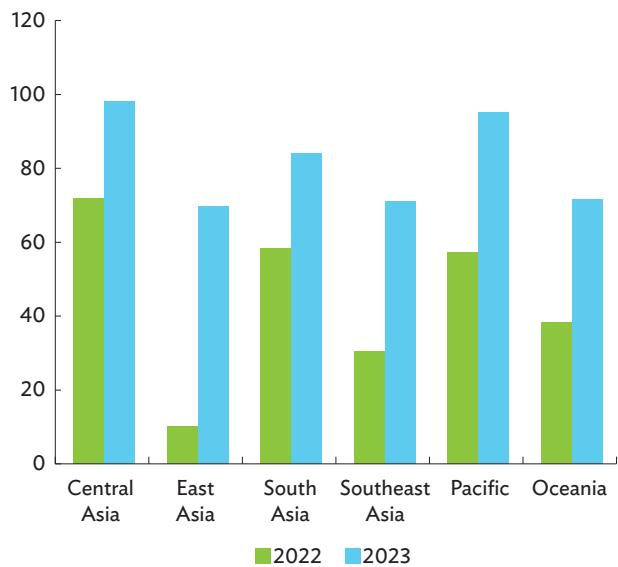
Note: Includes economies with complete data for 2019, 2022, and 2023. The regional classification of ADB's Asian Economic Integration Report was used.

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Data Dashboard. https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard (accessed January 2024).

Figure 5.21: International Tourism Receipts by Asian Subregion (% of 2019)

Note: Includes economies with complete data for 2019, 2022, and 2023. The regional classification of ADB's Asian Economic Integration Report was used.

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Data Dashboard. https://www.unwto.org/tourism-data/un-tourism-tourism-dashboard (accessed January 2024).

Figure 5.22: Source Markets for Tourism in Asia and the Pacific
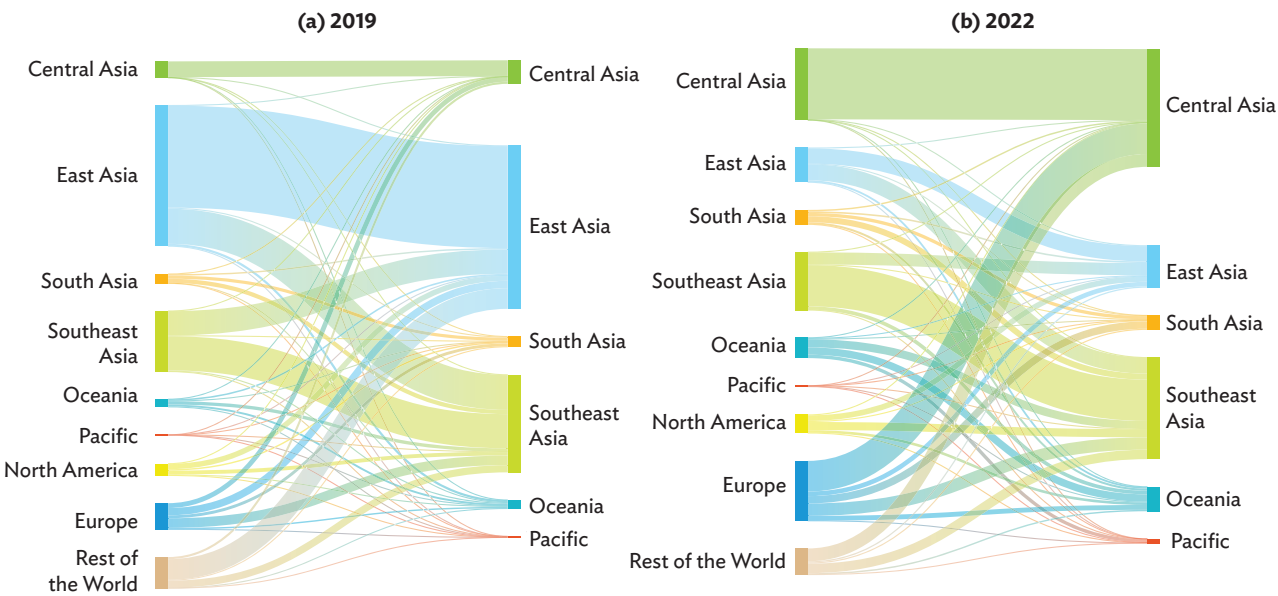
(a) 2019

(b) 2022

Source: ADB calculations using data from United Nations World Tourism Organization. Tourism Satellite Accounts. http://statistics.unwto.org (accessed January 2024).

Despite the recovery momentum in tourism activities, challenges to growth persist.

Soon after the World Health Organization declared in March 2023 that the coronavirus was no longer a public health emergency of international concern, most economies lifted their COVID-19-related restrictions. Even so, some challenges remained for the global tourism economy. According to the UNWTO Panel of Tourism Experts survey of barriers to the international tourism recovery, challenges have eased for most of the listed categories shown in Figure 5.23 between September 2022 and September 2023, except for transportation and accommodation costs. The slight uptick in consumer confidence in this period is not surprising given the limited recovery of air traffic capacity, labor shortages, and inflation.

Given the diversity of the Asian destination economies and the lingering pandemic impact, inflation, and ongoing geopolitical tensions, Asia's full return to its pre-pandemic tourism status could take until the end of 2025. Of the UNWTO Panel of Experts Survey, 41% pointed to a 2024 return while 50% believed it will take up to 2025 or later, given the comparatively slower recovery despite recent reopening of several destinations within the region (UNWTO 2023c). The UNWTO Confidence Index also indicated that 67% of tourism professionals believe that tourism will perform better in 2024 than in 2023

(UNWTO 2024). Meanwhile, the Pacific Asia Travel Association is foreseeing robust annual growth until the end of 2025 during which Asia would achieve its pre-COVID period statistics (*Travel Weekly Asia* 2023).

Digital Technology Holds Promise for Tourism Sector Recovery and Resilience

With tourism on its way to recovery, policymakers are paying attention to both short-term and long-term policy reforms. In the short-term, governments are prioritizing to get back the tourism economies and livelihoods quickly back on track to pre-pandemic level. For the long-term, governments are laying the path to "build forward better." This involves implementing recovery policies that encourage applications of digital technology to stimulate investment and behavioral changes that build resilience against future shocks. Strengthening regional cooperation in tourism has become more important than ever and is increasingly seen as being supported by digital economy cooperation.

The tourism economy was among the first sectors to digitalize on a global scale by consistently riding the waves of information and communication technology innovation and the ubiquity of internet-enabled devices. For instance, online travel agents have captured around

Figure 5.23: Barriers to the Recovery of Global Tourism
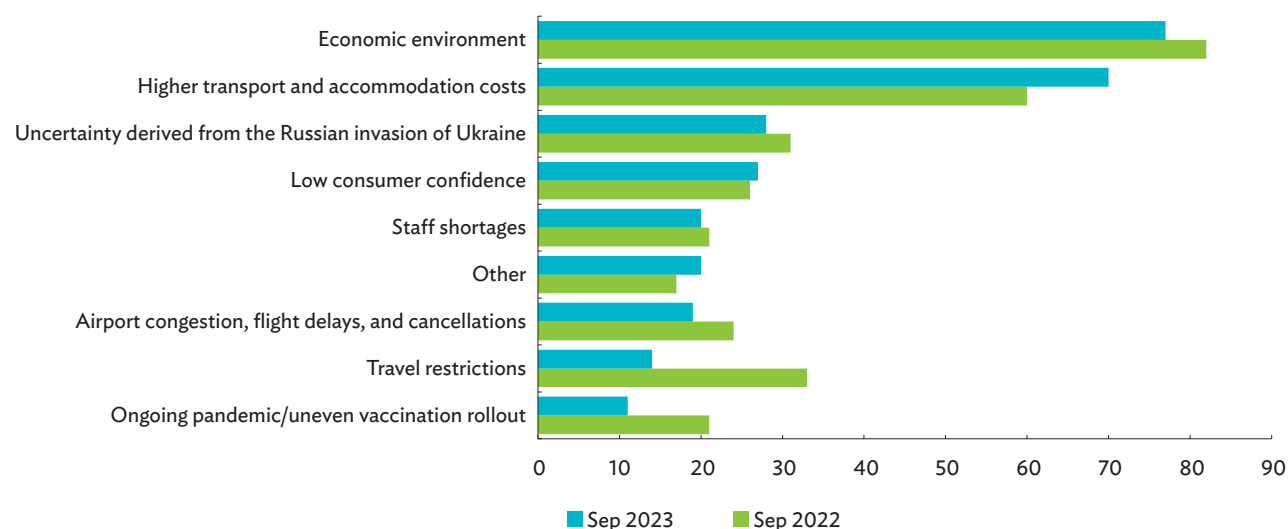
Sources: United Nations World Tourism Organization (2023a, 2023b).

40% of the global travel market (CBI 2022). From an estimated market size worth $521 billion in 2023, the online travel market is predicted to grow to $1 trillion by 2030 (Statista 2023). This exponential transformation of the tourism sector through digital innovation underscored its power to generate new business which underpin the growth, competitiveness, and sustainability of the sector. Digitalization of key aspects in aviation, travel, and tourism could generate industry profits of up to $305 billion, reallocate $100 billion of market value from traditional competitors to new players, and produce net sector and social benefits worth up to $700 billion (World Economic Forum 2017).

The imperative to transform traditional tourism into smart tourism through digitalization rests on the premise that smart tourism could help ensure the competitiveness and sustainability of current and future destinations. Australia's long-term strategy for sustainable visitor growth, THRIVE 2030, follows this premise, aiming to grow visitor spending to $230 billion by 2030. Singapore is turning one of its tourism hubs, Sentosa Island, into a hotbed for innovation and smart tourism technologies.

Given the multilayered network of the tourism economy among numerous market players and stakeholders, how much of the wide spectrum of tourism supply chains can be digitalized for efficiency and net development gains? Indeed, all smart travel facilitation and smart tourist destination activities are highly amenable to digitalization (ADB 2023c).[37] A variety of technology solutions are available (Figure 5.24). Use of these smart technology tools should help increase the flow of tourists to destinations, improve the performance of tourism businesses, enhance the tourist experience, and boost overall resource management efficiency.

However, Asian economies are not all at the same level of digital maturity to embrace digitalization of the entire value chain of tourism activities, which explains the differences in their uptake of digital technology. Transitioning to a smart tourism ecosystem requires tackling challenges beyond the digital divide. While some economies in the region are in the initial stage of building telecom infrastructure—raising internet and computer usage among its population—some are in the intermediate stage of improving digital literacy, developing regulations for cybersecurity, privacy, and

Figure 5.24: Application of Smart Tools across Tourism Value Chain

Smart Tools	Smart Travel Facilitation		Smart Tourist Destination			
	Travel organization and booking	Transportation	Accommodation	Foods, beverages, and other shops	Tourism assets	Leisure, excursions, and tours
Smart Identity	Automated check in, smart visas, health certificates	Tourist passes, facial verification	Automated check-in and check-out	Thermal screening	Thermal screening, tourist passes	Thermal screening, tourist passes
Smart Platforms	Aggregators, marketing, chatbots, payment system	Sharing economy, aggregators, payment system	Sharing economy, aggregators, payment system	Online ordering, reservations, reviews and ratings, payment system	Information dissemination, ticket booking, payment system	Information dissemination, ticket booking, payment system
Smart Logistics	Smart baggage management	Integrated traffic management, autonomous vehicles	Smart baggage management	Food delivery systems	Crowd management	Crowd management
Smart Experience	…	…	Virtual tours	Interactive menus	Virtual tours, metaverse	Virtual tours, metaverse
Smart Devices	…	Baggage tracking, fleet management	Smart rooms	Inventory management	Smart sensors for tracking	Personalized experience

Illustrative and non-exhaustive

Source: ADB (2023c).

---

[37]   Smart travel facilitation comprises of travel registration and booking; and transportation. Smart tourist destination includes accommodation; food, beverages, and other shops; tourism assets; and leisure, excursions, and tours.

building e-commerce/ e-payment systems. The final stage, the most advanced, is where most activities happen online and stakeholders are encouraged to innovate and leverage advanced technology in data analytics for business and policy decisions. Accordingly, economies vary in the extent of their intensity and level of technology and digital application for tourism services (Box 5.2).

Box 5.2: Digital Tools and Smart Tourism in Asian Economies

Economies in Asia and the Pacific are driving their pandemic recovery agendas by incorporating digital technology into smart tourism strategies. Smart tools range from identity systems such as facial verification to virtual tours promoting efficient and sustainable tourism. The Philippines in May 2023 began using the eTravel system to do away with paper-based arrival and departure cards. Cambodia is studying the use of citizen identification cards instead of passports for Thai tourists. Malaysia introduced biometrics and facial recognition technology in 2020 and the Malaysia Digital Arrival Card in October 2023 to streamline visitor arrival procedures. And Singapore has launched a new biometrics system for its citizens to clear immigration (Online Travel Evisa 2023; *Khmer Times* 2023; and Redins 2023).[a]

On a global scale, IATA (2022) reported that the International Civil Aviation Organization has obliged all its members to implement the Advance Passenger Information (API) system, which includes digital data on passengers collected by air carriers and transmitted to border control agencies before the flight. This enables border control agencies to work on security and so allows faster processing of low-risk passengers. In Asia and the Pacific, 26 economies have an API system in place. Despite its advantages, high costs and inadequate technical skills hinder some economies from implementing API.

Moving to smart destination technology, Singapore has been using facial recognition technology by providing seamless tourist/guest access to popular destinations since 2020 through contactless verification at the Universal Studios Singapore (Reuters 2020). In November 2023, Singapore also rolled out the Tourism (Attractions) Industry Digital Plan to local attractions.

Thailand has also embraced digital tools to market itself as a smart destination. The Tourism Authority of Thailand (2023) has partnerships with online platforms Agoda, Alipay, Klook, and KKday for a joint marketing initiative to revitalize tourism and promote sustainability. In 2022, Thailand launched its smart pier project featuring an intelligent passenger management system that registers tourists upon their purchase of ticket and stores the information in the marine department's cloud system (Chuenniran 2022).

Since 2020, Viet Nam has partnered with technological giants such as Facebook and Google to help promote destinations and digital transformation toward a "new normal" in tourism (Vietnam+ 2020). In transport, the economy's City Tour Hop On-Hop Off double-decker bus service in Ho Chi Minh City combines digital data on transportation and tourist preferences to design tour routes, sell tickets and accept payments virtually, provide free Wi-Fi, and multilingual narration at tourist sites (*Voice of Vietnam 2023*). Some tourism-centric villages have also started using blockchain and 3D technologies to promote history, crafts, and related information for visitors, businesses, and residents (*Vietnam Investment Review* 2023).

On the financial side, economies and digital platforms are forming partnerships to better connect local merchants with international visitors through digital payment systems. In November 2023, for instance, the Singapore Tourism Board partnered with the digital payment platform Alipay+ and the eWallet company TNG Digital to promote travel in Singapore among Malaysian visitors (Er 2023). The National Central Bank of Cambodia signed a memorandum of understanding with Alipay to give users of its "bakong" digital currency access to 83 million merchants worldwide through the Alipay network (Andersen 2023). Malaysia and the PRC also enabled cross-border digital payments for travelers with Alipay+ supported wallets from seven economies (*TTG Asia* 2023).

Incheon, billed as the Republic of Korea's first smart tourism city, introduced audio guides in English, Chinese, and Japanese through its Incheon Easy smart mobile application to help tourists navigate the city's main attractions (*Newswire* 2023).

Meanwhile, in South Asia, India's Ministry of Tourism (2022) crafted the National Digital Tourism Mission to set standards and promote cooperation in providing digital services and set up the National Integrated Database of Hospitality Industry as a platform to classify services and geotag heritage monuments.

[a] See also Online Travel Evisa. https://etravel.gov.ph/signin (accessed November 2023); and Malaysia Digital Arrival Card. https://imigresen-online.imi.gov.my/ (accessed November 2023).

Sources: ADB using Andersen (2023), Chuenniran (2022), Er (2023), Government of India, Ministry of Tourism (2022), IATA (2022), *Khmer Times* (2023), *Newswire* (2023), Redins (2023), *Reuters* (2020), Tourism Authority of Thailand (2023), TTG Asia (2023), *Vietnam+* (2020), *Vietnam Investment Review* (2023), and *Voice of Vietnam* (2023).

Gaps in digitalization phases between economies add an extra layer of challenge to seeking points of convergence in devising the region's smart tourism strategies.

It also hampers the coverage and depth of regional cooperation of elements under the digital economy, which hinders sectoral efficiency and curtails improved user experience from smart tourism practices. Consider, for example, Singapore's digital agreements with some economies in the region: Digital Economy Partnership Agreement between Singapore, Chile and New Zealand; Singapore–Australia Digital Economy Agreement; and Korea–Singapore Digital Partnership Agreement (Table 5.2). However, the elements present in each of these digital economy agreements have wider coverage than the regular regional agreements like the Regional Comprehensive Economic Partnership

and the Comprehensive and Progressive Trans-Pacific Partnership, which are not uniform in nature (ADB 2023c). Meanwhile, the recently concluded framework for the ASEAN Digital Economy Framework Agreement is just the kind of push the subregion needs to accelerate digital initiatives and achieve a digital economy worth $3 trillion by 2030.

Policy Recommendations

Riding on the momentum of post-pandemic tourism recovery, governments in Asia should strengthen regional cooperation and leverage digital technology for greater efficiency and resilience. Economies should seize the opportunity to "build back better" or "build forward better" by developing tourism through

Table 5.2: Digital Economy Agreements of Singapore and the Association of Southeast Asian Nations

Key Features/ Elements	Singapore			ASEAN	
	DEPA	SADEA	KSDPA	Core Target	Core Element
Artificial intelligence	✓		✓	Accelerate growth	Digital trade; cross-border e-commerce
Cross-border data flows	✓		✓		
Cryptography			✓		
Data innovation (and regulatory sandboxes)	✓		✓		
Digital identities	✓	✓		Drive interoperability across ASEAN	Payments and e-invoicing; Digital identification and authentication
Digital inclusion	✓		✓		
E-invoicing	✓	✓	✓		
E-payments	✓		✓		
E-certification		✓		Ensure responsible digital growth	Cross-border data flows and data protection; online safety and cybersecurity
Online consumer protection	✓	✓	✓		
Open government information	✓	✓	✓		
Paperless trade	✓	✓	✓		
Personal data protection	✓	✓	✓		
Prohibiting data localization			✓	Strengthen cooperation between economies	Cooperation on emerging topics; talent mobility and cooperation; competition policy
SMEs, cooperation	✓	✓	✓		
Source code protection			✓		
Submarine cables					
Trade facilitation		✓			

ASEAN = Association of Southeast Asian Nations, DEPA = Digital Economy Partnership Agreement, KSDPA = Korea–Singapore Digital Partnership Agreement, SADEA = Singapore–Australia Digital Economy Agreement, SMEs = small and medium-sized enterprises.

Sources: Government of Singapore, Ministry of Trade and Industry. https://www.mti.gov.sg/Trade/Digital-Economy-Agreements (accessed November 2023); and ASEAN Secretariat (2023).

greater use of technology and digital innovation. Three key actions are involved: building digital infrastructure, strengthening regional initiatives around digital regulations, and enhancing digital skills.

Building digital infrastructure for improved availability and accessibility is key to facilitating a smart tourism ecosystem. This includes hard infrastructure (such as submarine cable, broadband, mobile and Wi-Fi networks), physical-digital infrastructure (i.e., devices and networks, and soft infrastructure (i.e., regulations around cybersecurity, privacy, and others). According to the International Telecommunications Union, Asia's digital infrastructure varies widely. The gap between high-income economies and the rest of the world when it comes to the affordability of fixed and mobile internet services is wide. Connectivity services cost nearly 10 times as much in lower-middle-income economies and nearly 30 times as much as in low-income economies, after adjusting for differences in gross national income per capita (ITU 2022). The divide needs to be narrowed for all aspects of digital infrastructure. Governments should ensure that quality internet services support videos and digital applications and that the right regulations are in place to protect consumer interests. It is important to ensure that digital participation leads to net positive development outcomes, which for tourism also translates to improved user experience and engagement.

Strengthening regional cooperation around digital regulations for safe and seamless cross-border travel is important. Aligning digital rules and standards and facilitating interoperability between digital systems need greater attention. For example, harmonizing policies and standards around data protection and privacy is paramount since international tourism deals with large amounts of data based on transactions across different tourism agents, from traveler to tour agency, airlines, hotels, governments, and others. Thales Group (2022) found that only 24% of travel consumers spend time implementing security measures. This makes it imperative that data are well protected and provided to authorized parties only on user's consent. In a similar vein, regional cooperation should facilitate a balance between security and privacy concerns while

governments should collaborate with technology companies to explore solutions that enable lawful access to encrypted data while preserving security and privacy.

Enhancing digital skills is a must to achieve the desired development outcome. This will be across all firm sizes, governments, and other stakeholders. More particularly, the small and medium-sized enterprises (SMEs) spread across multiple activities from tour operators to food and beverage and retail business face significant challenges. Many lack capacity to adopt new digital practices and they tend to digitalize general administration or marketing functions before incorporating technology in other aspects of business (OECD 2021). This implies that SMEs lack capacity in resources and skills transfer for advanced technologies such as data analytics or for broader matters like enterprise resource planning for process integration. In this scenario, to build tourism resilience and safeguard SMEs, interests, governments should help SMEs adapt to the digital ecosystem through policy interventions These include assisting with training and technology adoption; access to finance; support for targeted digital solutions; facilitation of data centers, incubators for startups and networking programs; regulatory reforms (e.g., data protection); e-government and one-stop-shops; and infrastructure investment. While many of these should be started at the economy level, expansion at the regional level will promote greater international travel with assured confidence.

In conclusion, the tourism economy requires a comprehensive approach to policymaking and governance. While technology adoption is important, so are the right safeguard policies, keeping in mind the diverse interests of consumers and businesses. Discussions of digitalization in tourism are often fragmented—digital payments, digital visa/immigration, online travel bookings—and transitioning from silos to shared and interoperable systems could optimize the cross-cutting nature of digital technologies. This shift must be accompanied by greater focus on the availability and accessibility of digital products and tools across the entire value chain of tourism activities. The amalgamation of these key elements could deliver a stronger tourism economy that is inclusive, efficient, and more resilient to shocks.

References

Andersen, D. 2023. Cambodian Digital Currency Bakong Amps Up Use Case with Alipay Agreement. *Cointelegraph*. 20 November. https://cointelegraph.com/news/cambodian-digital-currency-bakong-use-case-alipay-agreement.

Ardic, O., H. Baijal, P. Baudino, N. Y. Boakye-Adjei, J. Fishman, and R. A. Maikai. 2022. The Journey So Far: Making Cross-Border Remittances Work for Financial Inclusion. World Bank Group and Bank for International Settlements. Financial Stability Institute FSI Insights on Policy Implementation. No. 43. June. Basel.

Association of Southeast Asian Nations (ASEAN) Secretariat. 2023. ASEAN Launches World's First Regionwide Digital Economy Framework Agreement. 23 September. https://asean.org/asean-launches-worlds-first-regionwide-digital-economy-framework-agreement/.

Asian Development Bank (ADB). 2023a. *Asian Economic Integration Report 2023*. Manila.

———. 2023b. *Asian Development Outlook 2023 Special Topic*. Manila.

———. 2023c. *Promoting Smart Tourism in Asia and the Pacific Through Digital Cooperation*. Manila.

Asian Development Bank Institute (ADBI), Organisation for Economic Co-operation and Development (OECD), and the International Labour Organization (ILO). 2021. *Labour Migration in Asia: Impacts of the COVID-19 Crisis and the Post-Pandemic Future*. Tokyo, Paris, and Bangkok.

Bahia, K., M. Sanchez-Vidal, and P. Taberner. 2020. Exploring the Relationship Between Mobile Money Regulation and Usage. *TPRC48: The 48th Research Conference on Communication, Information and Internet Policy*. 10 December.

Bang, J. T., A. Mitra, and P. V. Wunnava. 2013. Financial Liberalization and Remittances: Recent Longitudinal Evidence. *IZA Discussion Papers*. No. 7497. Bonn: Institute for the Study of Labor.

Bank for International Settlements (BIS). 2022. *Interlinking Payment Systems and the Role of Application Programming Interfaces: A Framework for Cross-Border Payments*. Basel.

———. 2023a. ISO 20022 Harmonisation Requirements for Enhancing Cross-Border Payments. Basel.

———. 2023b. Interim Report to the G20: Linking Fast Payment Systems Across Borders: Considerations for Governance and Oversight. https://dwgg20.org/app/uploads/2021/09/g20-plan-to-facilitate-remittance-flows.pdf.

Bare, U. A. A., Y. Bani, N. W. Ismail, and A. Rosland. 2022. Does Financial Development Mediate the Impact of Remittances on Sustainable Human Capital Investment? New Insights from SSA Countries. *Cogent Economics & Finance*. 10 (2078460).

Bedford, C. 2023. Pacific Labour Mobility Over the Last Year: Continued Growth. *Devpolicy Blog*. 8 August. https://devpolicy.org/pacific-labour-mobility-over-the-last-year-continued-growth-20230808/.

Bowerman, G. 2023. 2023: A Vital Year for Tourism in Asia Pacific. Asia Media Centre. 3 February. https://www.asiamediacentre.org.nz/features/2023-a-vital-year-for-tourism-in-asia-pacific/.

Cambridge Centre for Alternative Finance, World Bank, and World Economic Forum. 2022. The Global COVID-19 Fintech Market Impact and Industry Resilience Report, University of Cambridge. https://www.jbs.cam.ac.uk/wp-content/uploads/2022/06/2022-global-covid19-fintech-market-study.pdf.

Centre for the Promotion of Imports from developing countries (CBI). 2022. 10 Tips to Go Digital in the Tourism Sector. 19 January. https://www.cbi.eu/market-information/tourism/tips-go-digital.

Chokossa, C. 2023. The Normalisation of Mobile Money in Sub-Saharan Africa. *Euromonitor International*. 17 March. https://www.euromonitor.com/article/the-normalisation-of-mobile-money-in-sub-saharan-africa.

Chuenniran, A. 2022. Phuket Marine Safety Goes Hi-tech with 'Smart Pier.' *Bangkok Post*. 9 June. https://www.bangkokpost.com/thailand/general/2322766/phuket-marine-safety-goes-hi-tech-with-smart-pier.

Davies, M. 2023. Correspondent Banking in the South Pacific. Reserve Bank of Australia. https://www.rba.gov.au/publications/bulletin/2023/jun/pdf/correspondent-banking-in-the-south-pacific.pdf.

De Soyres, F., M.A. Jelil, C. Cerruti, and L. Kiwara. 2018. What Kenya's Mobile Money Success Could Mean for the Arab World. *World Bank Blog*. 3 October. https://www.worldbank.org/en/news/feature/2018/10/03/what-kenya-s-mobile-money-success-could-mean-for-the-arab-world.

Er, B. P. 2023. STB Looks to Attract Malaysian Tourists with Curated Deals and Cashless Payment Options. *Marketing Interactive*. 15 November. https://www.marketing-interactive.com/stb-alipay-tng-digital-malaysian-tourism.

Evans, D. and A. Pirchio. 2015. An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most. *Coase-Sandor Working Paper Series in Law and Economics*. University of Chicago Law School.

Fildes, N. 2022. Australia Raises Immigration Cap to Address Labour Shortage. *Financial Times*. 2 September. https://www.ft.com/content/4f6196d1-5dac-498f-b18b-840c2258da18.

Financial Stability Board. 2022. G20 Roadmap for Enhancing Cross-Border Payments: Priorities for the Next Phase of Work. https://www.fsb.org/2022/10/g20-roadmap-for-enhancing-cross-border-payments-priorities-for-the-next-phase-of-work/.

G20 Development Working Group. 2021. Financial Inclusion and Remittances. G20 Plan to Facilitate Remittance Flows. https://dwgg20.org/app/uploads/2021/09/g20-plan-to-facilitate-remittance-flows.pdf.

Gascon, P., G. Larramona, and M. Salvador. 2023. The Impact of Digitalization on Remittances. Evidence from El Salvador. *Telecommunications Policy*. 47 (4).

Global Partnership for Financial Inclusion (GPFI). 2018. 2018 Update to Leaders on Progress Towards the G20 Remittance Target. https://www.gpfi.org/sites/gpfi/files/documents/2018%20Update%20to%20Leaders%20on%20Progress%20Towards%20the%20G20%20Remittance%20Target.pdf.

———. 2023. 2023 Update to Leaders on Progress Towards the G20 Remittance Target. https://www.gpfi.org/sites/gpfi/files/News%20C%29%20-%202023%20Update%20to%20Leaders%20on%20Progress%20Toward%20the%20G20%20Remittance%20Target.pdf.

Global System for Mobile Communications Association (GSMA). 2021. *Status of the Industry Report on Mobile Money 2021*. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/GSMA_State-of-the-Industry-Report-on-Mobile-Money-2021_Full-report.pdf.

———. 2023a. *The State of the Industry Report on Mobile Money.* https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2023/04/GSMA-SOTIR-2023_Web-1.pdf.

———. 2023b. *GSMA Mobile Gender Gap Report 2023*. https://www.gsma.com/r/wp-content/uploads/2023/07/The-Mobile-Gender-Gap-Report-2023.pdf.

Government of Australia, Department of Home Affairs. https://www.homeaffairs.gov.au/ (accessed October 2023).

Government of Australia, Department of Foreign Affairs and Trade. Pacific Engagement Visa. https://www.dfat.gov.au/geo/pacific/people-connections/people-connections-in-the-pacific/pacific-engagement-visa.

Government of Bangladesh, Bureau of Manpower, Employment, and Training. http://www.old.bmet.gov.bd/BMET/stattisticalDataAction (accessed November 2023).

Government of Canada. Temporary Residents: Temporary Foreign Worker Program (TFWP) and International Mobility Program (IMP) Work Permit Holders – Monthly IRCC Updates - Canada - International Mobility Program Work Permit Holders by Gender, Occupational Skill Level and Year in which Permit(s) Became Effective. https://open.canada.ca/data/en/dataset/360024f2-17e9-4558-bfc1-3616485d65b9 (accessed November 2023).

Government of India, Ministry of Tourism. 2022. Setting up the National Digital Tourism Mission. https://tourism.gov.in/sites/default/files/2022-09/National%20Digital%20Tourism%20Mission_2022.pdf.

Government of India, Ministry of External Affairs. Performance Smartboard. https://meadashboard.gov.in/ (accessed November 2023).

Government of Japan, Ministry of Foreign Affairs. https://www.mofa.go.jp/mofaj/ca/fna/ssw/us/ (accessed October 2023).

Government of Malaysia, Migrant Worker Protection Agency (Badan Pelindungan Pekerja Migran Indonesia). https://bp2mi.go.id/ (accessed November 2023).

Government of Nepal, Department of Foreign Employment. https://dofe.gov.np/DetailPage.aspx/id/425/lan/ne-NP (accessed November 2023).

Government of Nepal, Ministry of Labour, Employment and Social Security. 2022. Nepal Labor Migration Report 2022. https://moless.gov.np/storage/files/post_files/Nepal%20Labour%20Migration%20Report_2022.pdf.

Government of New Zealand, Immigration New Zealand. https://www.immigration.govt.nz/new-zealand-visas/visas/visa/skilled-migrant-category-resident-visa (accessed November 2023).

Government of Pakistan, Bureau of Emigration and Overseas Employment. https://beoe.gov.pk/reports-and-statistics (accessed November 2023).

Government of the Philippines, Philippine Statistical Authority. Survey of Overseas Filipinos (2020, 2021, 2022, 2023). https://psa.gov.ph/statistics/survey/labor-and-employment/survey-overseas-filipinos.

Government of Singapore, Ministry of Trade and Industry. https://www.mti.gov.sg/Trade/Digital-Economy-Agreements (accessed November 2023).

Government of Sri Lanka, Central Bank of Sri Lanka. https://www.cbsl.gov.lk/en/statistics/statistical-tables/external-sector (accessed January 2024).

Government of the United Kingdom, Home Office. https://www.gov.uk/government/organisations/home-office (accessed October 2023).

Government of the United States, Bureau of Labor Statistics. Job Openings and Labor Turnover Survey. https://www.bls.gov/jlt/ (accessed October 2023).

Government of the United States, Department of State, Bureau of Consular Affairs. https://travel.state.gov/content/travel/en/legal/visa-law0/visa-bulletin/2024/visa-bulletin-for-october-2023.html (accessed November 2023).

International Air Transport Association. 2022. Passenger Data – Air Carriers. https://www.icao.int/MID/Documents/2022/FAL%20Webinar/PPT%204.4%20-%20Presentation_API_PNR_ICAO-IATA.pdf.

International Labour Organization (ILO). 2021. ILO: Uncertain and Uneven Recovery Expected Following Unprecedented Labour Market Crisis. ILO Newsroom. 25 January. https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_766949/lang--en/index.htm.

International Monetary Fund (IMF). World Development Outlook Database. https://www.imf.org/en/Publications/WEO/weo-database/2023/October (accessed October 2023).

———. Financial Development Index Database. https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b (accessed October 2023).

International Organization for Migration (IOM). 2020. The Power of Digitalization in the Age of Physical Distancing (DISC Digest 4th Edition). https://migrationnetwork.un.org/sites/g/files/tmzbdl416/files/resources_files/disc_digest_4th_edition_digitalization_and_migrant_inclusion_final.pdf.

———. 2021. The Role of Digital Remittances. https://publications.iom.int/books/role-digital-remittances-consolidated-findings-supply-and-demand-research.

International Organization for Migration (IOM) Thailand. 2022. https://thailand.iom.int/sites/g/files/tmzbdl1371/files/documents/iom-promise-brochure_1.pdf.

International Telecommunication Union (ITU). 2022. Facts and Figures 2022. https://www.itu.int/itu-d/reports/statistics/facts-figures-2022/.

Karki, B. 2023. Singapore Upgrades Digital Solutions to Better SMEs and Tourist Experience. 8 November. https://eturbonews.com/singapore-upgrades-tourist-experience/.

Khmer Times. 2023. Cambodia Prepares for Peak Tourist Season. 5 October. https://www.khmertimeskh.com/501371744/cambodia-prepares-for-peak-tourist-season/.

Malaysia Digital Arrival Card. https://imigresen-online.imi.gov.my/ (accessed November 2023).

Martin, N. 2023. Chinese Tourists Return with an Eye on Budget, Safety. *DW.com*. 26 November. https://www.dw.com/en/chinese-tourists-return-with-an-eye-on-budget-safety/a-67407148.

Mas, I. and D. Radcliffe. 2010. Mobile Payments Go Viral: M-PESA in Kenya. World Bank. https://documents1.worldbank.org/curated/en/638851468048259219/pdf/543380WP-0M1PES1BOX0349405B01PUBLIC1.pdf.

McKinsey & Company. 2022. Mobile Wallets: Southeast Asia's New Digital Life Hacks. 25 May. https://www.mckinsey.com/industries/financial-services/our-insights/mobile-wallets-southeast-asias-new-digital-life-hack.

———. 2023. Outlook for China Tourism 2023: Light at the End of the Tunnel. 9 May. https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/outlook-for-china-tourism-2023-light-at-the-end-of-the-tunnel.

Newswire. 2023. Incheon Tourism Organization Is Promoting Smart K-Tours With 'Incheon Easy' App. 4 January. https://www.newswire.com/news/incheon-tourism-organization-is-promoting-smart-k-tours-with-incheon-21912102.

Official Airline Guide. 2024. China Outbound: Are We Nearly There Yet? 26 January. https://www.oag.com/webinars/china-outbound-are-we-nearly-there-yet-webinars-oag.

Online Travel Evisa. https://etravel.gov.ph/signin (accessed November 2023).

Organization for Economic Co-operation and Development (OECD). 2021. *The Digital Transformation of SMEs.* Paris: OECD Publishing.

Orozco, M. and J. Yansura. 2015. Remittances and Financial Inclusion: Opportunities for Central America. Inter-American Dialogue. February. https://www.thedialogue.org/wp-content/uploads/2015/06/RemitFinancialInclusion_FINAL_223.pdf.

Parulis-Cook, S. 2023. Key Developments for Chinese Tourism in 2023. *Dragon Trail International*. 22 March. https://dragontrail.com/resources/blog/must-know-developments-for-chinese-tourism-in-2023.

Peri, G. and R. Zaiour. 2022. Labor Shortages and the Immigration Shortfall. *Econofact*. 11 January. https://econofact.org/labor-shortages-and-the-immigration-shortfall.

Philippine News Agency. 2023. PBBM: ASEAN Must Address Brain Drain in Healthcare Sector. 13 April. https://www.pna.gov.ph/articles/1199385.

Redins, L. 2023. Singapore Announces Passport-Free Biometric Clearance at Borders from 2024—Updated. *BiometricUpdate.com*. 8 May. https://www.biometricupdate.com/202305/singapore-announces-passport-free-biometric-clearance-at-borders-from-2024-updated.

Reuters. 2020. Singapore's Universal Studios Deploys Facial Recognition for Entry. 3 August. https://www.reuters.com/article/us-singapore-universal-studios-idUSKBN24Z15D/.

Richter, F. 2022. This Chart Shows How Global Air Travel Is Faring. World Economic Forum. https://www.weforum.org/agenda/2022/12/this-chart-shows-how-global-air-travel-is-faring/.

Statista Market Insights. https://www.statista.com/outlook/dmo/fintech/digital-payments/digital-remittances/worldwide?currency=usd (accessed November 2023).

Statista Research Department. https://www.statista.com/ (accessed October 2023).

———. 2023. Online Travel Market Size Worldwide 2020-2030. https://www.statista.com/statistics/1179020/online-travel-agent-market-size-worldwide/.

Statistics Canada. 2022. Job Vacancies, Second Quarter 2022. https://www150.statcan.gc.ca/n1/daily-quotidien/220920/dq220920b-eng.htm?CMP=mstatcan.

Thales Group. 2022. Lack of Consumer Trust Across Industries to Protect Their Personal Data, New Research from Thales Has Revealed. 3 October. https://www.thalesgroup.com/en/countries-europe/romania/press_release/lack-consumer-trust-across-industries-protect-their-personal.

Tourism Authority of Thailand. 2023. TAT Joins Leading Online Platforms to Boost Tourism to Thailand. 28 March. https://www.tatnews.org/2023/03/tat-joins-4-leading-online-platforms-to-boost-tourism-to-thailand/.

Travel Weekly Asia. 2023. Tourism's Road to Recovery: We're Not There Yet. 1 June. https://www.travelweekly-asia.com/Travel-News/Association/Tourism-road-to-recovery-We-are-not-there-yet.

TTG Asia. 2023. Malaysia Launches Cross-Border Digital Payments. 14 November. https://www.ttgasia. com/2023/11/14/malaysia-launches-cross-border-digital-payments/.

United Nations World Tourism Organization (UNWTO). 2022. *Compendium of Tourism Statistics, Data 2016–2020, 2022 Edition.* Madrid.

———. 2023a. World Tourism Barometer. Volume 21. Issue 1. January.

———. 2023b. World Tourism Barometer. Volume 21. Issue 3. September.

———. 2023c. World Tourism Barometer. Volume 21. Issue 4. November.

———. 2024. World Tourism Barometer. Volume 22. Issue 1. January.

———. Tourism Satellite Accounts. http://statistics. unwto.org (accessed January 2024).

———. Tourism Dashboard. https://www.unwto.org/ tourism-data/unwto-tourism-recovery-tracker (accessed January 2024).

Vietnam+. 2020. Digital Transformation Helps Revive Tourism Industry. 7 October. https://en.vietnamplus.vn/digital-transformation-helps-revive-tourism-industry/191116.vnp.

Vietnam Investment Review. 2023. New Digital Transformation Initiatives for the Tourism Industry. 10 November. https://vir.com.vn/new-digital-transformation-initiatives-for-the-tourism-industry-106766.html.

Visa Economic Empowerment Institute. 2022. The Economic Empowerment of Digital Remittances: How to Unlock the Benefits of Innovation and Competition. https://usa.visa.com/content/dam/ VCOM/regional/na/us/sites/documents/veei-economic-empowerment-digital-remittances.pdf.

Vodafone. 2021. Milestone Cements M-Pesa as Africa's Largest Fintech Platform. 7 September. https:// www.vodafone.com/news/services/M-Pesa-celebrates-reaching-50-million-customers.

Voice of Vietnam. 2023. Tourism Works to Adapt and Leverage Digital Technology. 22 October. https:// english.vov.vn/en/travel/tourism-works-to-adapt-and-leverage-digital-technology-post1054252.vov.

World Bank. World Development Indicators. https://databank.worldbank.org/ (accessed October 2023).

———. 2021. *Remittance Prices Worldwide Quarterly*. Issue 40. December. https://remittanceprices. worldbank.org/sites/default/files/rpw_main_ report_and_annex_q421.pdf.

———. Remittance Prices Worldwide. https:// remittanceprices.worldbank.org/ (accessed July 2023).

World Bank-KNOMAD (Global Knowledge Partnership on Migration and Development). http://www. knomad.org/data/remittances (accessed December 2023).

World Economic Forum. 2017. Digital Transformation Initiative: Aviation, Travel and Tourism Industry, White Paper. Geneva. http://reports.weforum.org/ digital-transformation/wp-content/blogs.dir/94/ mp/files/pages/files/wef-dti-aviation-travel-and-tourism-white-paper.pdf.