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Scope of Digital Trade Integration for Pakistan and Central Asian States: An Action Plan

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Abbreviations

APEC	Asia-Pacific Economic Cooperation
APTTA	Afghanistan–Pakistan Transit Trade Agreement
CAREC	Central Asia Regional Economic Cooperation
COVID-19	Coronavirus 2019
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRII	CAREC Regional Integration Index
CSP	Certification Service Provider
DCO	Digital Cooperation Organization
DSM	Digital Single Market
ECAC	Electronic Certification Accreditation Council
ECO	Economic Cooperation Organization
EFTA	European Free Trade Association
FGD	Focus Group Discussion
FTAs	Free Trade Areas
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GVCs	Global Value Chains
ICT	Information and Communications Technology
IPR	Intellectual Property Rights
IT	Information Technology
ITU	International Telecommunication Union
KIIs	Key Informant Interviews
OICCI	Overseas Investors Chamber of Commerce and Industry
PCT	Patent Cooperation Treaty
PTA	Preferential Trade Agreement
RCEP	Regional Comprehensive Economic Partnership
RTA	Regional Trade Agreement
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asia Free Trade Area
SATIS	SAARC Agreement on Trade in Services
SCO	Shanghai Cooperation Organisation
SME	Small and Medium-Size Enterprise
USMCA	United States–Mexico–Canada Agreement
WTO	World Trade Organization

Executive Summary

This report sheds light on the significance of digital trade integration for Pakistan and selected Central Asian countries including Afghanistan, Kazakhstan, Tajikistan, and Uzbekistan. Digital trade integration involves regulatory structures/policy designs, digital technologies, and business processes along the entire global/regional digital value chain (UNESCAP, 2021). Digital trade integration requires free cross-border movement of not only digital products, services, and technologies but also other manufactured goods, data, capital, talent, and ideas along with the availability of integrated physical and virtual infrastructure. Hence, digital trade integration requires the removal of digital trade barriers as well as extensive technology, and legal and policy coordination between member states.

Countries around the world have actively engaged in establishing new and progressive bilateral and regional trade agreements to boost trade and economic growth. The significance of digital trade has increased considerably after the COVID-19 pandemic. Improvement in digital connectivity, ease in regulations, and skilled workers are key factors to facilitate trade integration and promote the growth of the e-commerce sector. The report examines the regional trade agreements of Pakistan and selected Central Asian countries and their relevance for digital trade integration. It also scrutinizes the challenges faced by the public institutions of Pakistan in the implementation of digital trade policy. Besides this, the report also observes the challenges faced by SMEs dealing with digital trade-related products.

The findings show that Pakistan and selected Central Asian countries are at different levels of digital adoption, including mobile connectivity index and download speed of mobile and broadband. Kazakhstan and Pakistan have a higher export and import volume compared with other countries. However, neither country has any major trading partner from the countries selected in this study, which demonstrates the lack of regional cooperation and the need for regional trade agreements to boost bilateral and regional trade.

The report discusses the e-commerce laws of Pakistan and selected Central Asian countries, whereas domestic policies and measures to increase digital trade are also reviewed. The countries are at a different level in terms of implementing digital trade facilitation measures. Lack of effective enforcement of intellectual property rights, non-tariff measures, foreign investment restrictions in digital space, data and information costs, cyber security, and tax policy and administration are all key policy issues that influence digital trade integration.

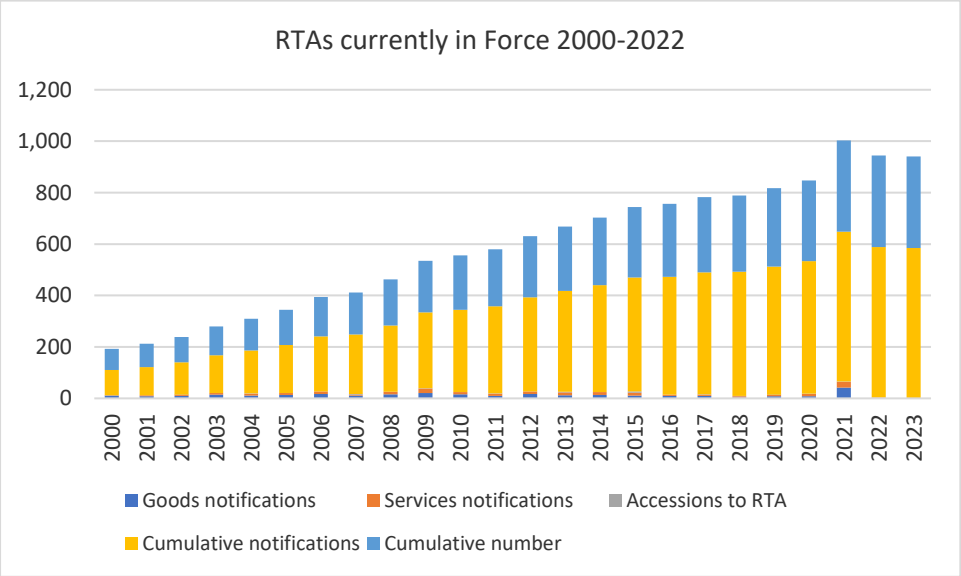
The study offers a way forward in which action points are provided for governments, the non-governmental sector (notably, business associations and networks), academia and think tanks, and development partners. The need for more government-to-government and business-to-business engagements is also highlighted. The role of knowledge brokers such as CAREC in expediting digital trade integration is also part of our discussion and recommendations.

1. Introduction

The last few decades have observed significant growth in economic integration around the world as the network of regional trade agreements (RTAs) and free trade areas[1] (FTAs) has expanded considerably (Crawford & Fiorentino, 2005). Currently, RTAs cover most international trade and operate alongside global multilateral agreements under the World Trade Organization (WTO).[2] In recent years, various countries have actively engaged in establishing new and progressive bilateral and regional trade agreements that focus on promoting trade and economic growth. The European Free Trade Association (EFTA), United States–Mexico–Canada Agreement (USMCA), and The South Asian Association for Regional Cooperation (SAARC) are examples of major regional trade agreements that develop free trade and economic integration between member nations (WTO, 2011). The Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) are other major free trade agreements that promote trade integration between countries from different regions.

RTAs are broader in nature than multilateral rules and cover areas such as investment, movement of persons and capital, e-commerce, state-owned enterprises, and intellectual property rights. They promote trade by increasing domestic production capacity, improving institutions, increasing preferential access to desirable markets, and introducing technical know-how into the domestic market.

Figure 1: Regional Trade Agreements in Force



Source: World Trade Organization

The number of RTAs grew significantly over time including an increase in large plurilateral agreements. As of 1 December 2022, 356 cumulative regional trade agreements were in force

[1] A free trade area is an agreement aiming to decrease or eliminate trade barriers among the member countries having separate national tariff schedules (Krugman & Obsfeld, 2006).
[2] World Trade Organization, https://rtais.wto.org/UI/PublicMaintainRTAHome.aspx

(Figure 1). Many members of the World Trade Organization (WTO) continue to be involved in discussions to create new regional trade agreements.

Table 1: Regional Trade Agreements (selected sample for this study)

Country/Territory	Goods Notifications (RTAs)	Goods Notifications (Accessions)	Services Notifications (EIAs)	Services Notifications (Accessions)	No of RTAs
Afghanistan	2	1	0	0	2
Kazakhstan	11	2	2	2	11
Pakistan	10	1	2	0	10
Tajikistan	2	0	0	0	2
Uzbekistan	4	0	0	0	4

Source: World Trade Organization

Table 1 indicates that, of the selected countries, Kazakhstan has the greatest number of regional trade agreements (11). Coronavirus 2019 (COVID-19) has increased the significance of digital trade integration, and governments and businesses are now keen to become part of it. Improvements in digital connectivity at home and across borders are helping trade integration systems become more effective. Market-friendly regulations, enabling infrastructure, and availability of relevant skills are important factors that influence the ability of economies to integrate into digital trade.

The key objective of this research is to assess the digital trade integration between Pakistan and selected Central Asian countries. The key objectives of this research are to examine the following:

- How regional trade agreements can be helpful to overcome gaps owing to a lack of multilateral digital trade integration framework.
- The challenges faced by public institutions in implementing the digital trade policy of Pakistan.
- How SMEs dealing in digital trade related products (Annex A) can benefit from RTAs.
- Development of an action plan to assist Pakistan to achieve successful and sustainable regional digital trade integration while improving south–south cooperation.

This report provides recommendations on accessing the potential ways in which south–south and triangular cooperation could help digital trade integration between selected countries. The report examines bilateral and multilateral cooperation among member states and how such cooperation can promote the digital trade integration process. A review of provisions in domestic policies and recent measures related to digital trade integration is included. A set of policy guidelines is to be developed to strengthen south–south and triangular cooperation at regional level.

2. Research Methodology

This study focuses on how RTAs can help overcome the gaps owing to the lack of a multilateral digital trade integration framework. In the initial phase, the study explored the trade agreements across Afghanistan, Kazakhstan, Tajikistan, Uzbekistan, and Pakistan in terms of their use to utilize digital trade. The study reviews the challenges faced by the public sector in Pakistan's digital trade policy. Besides, the study examines the potential benefits of RTAs for SMEs dealing with digital

trade-related products. Furthermore, an action plan is developed based on information extracted through 20 key informant interviews (KIIs) and 2 virtual focus group discussions (FDGs).

The purpose of this action plan is to achieve successful and sustainable regional digital trade integration while improving regional cooperation. A survey of 50 SME firms from Pakistan and 50 from selected Central Asian countries in e-commerce and digital trade-related sectors is carried out. The analysis included foreign direct investment (FDI) in digital space, government spending in information and communications technology (ICT), domestic challenges for firms in the digital sector, digital trade regulations, cross-border trade facilitation, and e-commerce legislation. The rationale behind selecting these firms is to collect input from a representative number of respondents. By including firms from Pakistan and other Central Asian countries, the study aims to capture diverse opinions.

A mixed-method approach is used in the study in which different approaches within qualitative analysis were applied along with the assessment based on existing data and literature. KIIs were carried out with representatives of provincial chambers of commerce and industry, planning and development departments, and SME development authorities. Qualitative information through KIIs is used to analyze recent trends and dynamics in digital trade integration. The literature and data provided the background for and demonstrates the volume of digital trade between Pakistan and Central Asian countries. The study also identifies the key policy measures taken by Pakistan and Central Asian countries by reviewing the policy documents of the respective countries.

In the initial phase, the focus was on evaluating the measures through which regional trade agreements can promote trade integration among member countries. This exercise is also useful in highlighting the gaps in existing trade agreements. The articles and provisions associated with e-commerce and other digital products in national legal and policy framework documents are also examined, including consumer protection, paperless trade, improvement in digital connectivity, ease in regulation, data protection, and skilled workers.

The minutes of high-level and government-to-government meetings between Afghanistan, Kazakhstan, Tajikistan, Uzbekistan, and Pakistan are examined in detail. Follow-up mechanisms for approved minutes were also examined. The study investigates issues related to defining, classifying, and scheduling digital trade-related products. In the absence of a clear classification of digital goods and services, it is not possible to benefit from regional agreements.

3. Cooperation for Digital Trade Integration

Digital trade integration indicates the integration of rules, regulations, principles, processes, and technologies in digital trade. The study by Andrew and Neha (2020) indicated five pillars of digital trade integration, which include reducing digital trade barriers; digital trade facilitation; digital trade regulatory framework; digital trust policies; digital development and inclusion; and institutional coordination mechanisms. The movement of digital services/technologies, capital, goods, and integrated physical and virtual cyber-infrastructure are all part of digital trade integration.

The major drivers include connectivity and information exchange, exploiting socio-economic benefits, regulatory heterogeneity, and technological interoperability. Digital trade integration is useful in promoting trade cooperation among countries located in different regions. Cooperation can be in the form of multilateral or bilateral trade relations which increase cooperation between member countries. Lendle et al (2016) emphasize that digital trade helps in decreasing the distance between buyer and seller as online transactions enhance efficiency and reduce operational costs.

Digital trade facilitation is important for RTAs, which rely on electronic payments, facilitating electronic transactions for cross-border digital trade and paperless trading, and logistics and electronic commerce. However, current differences in electronic laws and policies between CAREC countries create inefficiencies and barriers to trade (CAREC, 2021a).

Central Asia is home to low- and middle-income countries and, although they do not have competitively available technologies and access to mature value chains, they can attain the benefits from the prospects available through digital trade integration. Businesses, specifically SMEs, can enter and integrate with global or large firms by integrating into digital platforms.

Multilateral cooperation is significant in promoting the digital revolution and could substantially minimize the amount of public and private investment required for digital trade integration among Pakistan and Central Asian countries. CAREC members have introduced laws and policies regarding e-commerce; however, these laws are not always consistent or in line with best practice (CAREC, 2020). Examples of countries performing well in digital trade and the digital economy can be followed as guidelines to track and boost digital trade by adopting the usage of emerging technologies such as blockchain and artificial intelligence.

Pakistan is among the seven founding members of the Digital Cooperation Organization (DCO),[3] which aims to benefit from the experiences and observations of each other, and provide technology requirements for their citizens. DCO also promotes market opportunities through cooperation among member countries in the fields of education, commerce, agriculture, investment, and security. DCO launched Diplomatic Connect in April 2023, a new platform to promote digital diplomacy for its member states and international organization partners. The second Diplomatic Connect event was organized in October 2023 to promote digital diplomacy among member countries and international partner organizations. The organization currently has 13 member countries; however, Central Asian countries are not yet a part of it. The inclusion of the Central Asian states can foster cooperation between Pakistan and member countries where Pakistan can serve as a hub owing to its time zone, number of information technology (IT) professionals, and digital economy regulations.

Mitchel and Mishra (2000) pointed out that both south–south and triangular cooperation are vital for digital trade integration. According to the study, both forms of cooperation are significant for integrating regulatory structures, business processes, and digital technologies along the entire regional and global digital value chain. The second high-level United Nations conference on south–south cooperation was held in Argentina (2019), in which it was highlighted that cooperation is vital to achieving the Sustainable Development Goals 2030 agenda.[4]

South–south cooperation along with regional integration has become an important element across development policies; smart cities in South Asia, the Pan-African e-Network project, and China's Belt and Road Initiative are prime examples of such initiatives. Going further, south–south cooperation and regional integration can play a vital role in paving the way for a digital single market in the region. The cooperation can also bring forth inclusivity in economic gains as SME firms can find

[3] Bahrain, Jordan, Kuwait, Nigeria, Oman, Pakistan, and Saudi Arabia.
[4] 'BAPA +40 hails potential of south–south cooperation, calls for more support,' International Institute for Sustainable Development (IISD) 26 March 2019, https://sdg.iisd.org/news/bapa40-hails-potential-of-south-south-cooperation-calls-for-more-support/

support from the platform to integrate into the digital economy and value chains. The role of SMEs is important in the timely achievement of goal one and goal eight of the SDGs (Smith et al, 2022).

4. Assessment of Digital Economy Enablers

Different indicators related to the digital economy are explored and the performance of each country against these indicators is examined. These indicators are important aspects of digital infrastructure. Better digital infrastructure indicates the ability of an economy to integrate with the outside world and help businesses to connect with domestic and foreign customers. Countries are at varying levels of digital adoption; for landlocked Central Asian countries, digital infrastructure is even more important.

Table 2: Mobile Connectivity Index, 2021

Country	Cluster	Index Score	Enabler Score			
			Infrastructure	Affordability	Consumer Readiness	Content and Services
Afghanistan	Discoverer	28.41	40.35	41.13	26.81	14.64
Kazakhstan	Advanced	73.54	62.74	78.50	84.05	70.64
Pakistan	Emerging	43.96	55.41	46.52	26.52	54.60
Tajikistan	Emerging	45.55	52.37	38.62	58.14	36.60
Uzbekistan	Transitioner	50.85	57.04	47.47	64.94	38.03

Source: GSMA Mobile Connectivity Index[5]

GSMA classifies countries as leader, advanced, transitional, emerging, and discoverer based on the index value. The index score of Kazakhstan (73.54) is better than that of the other countries and it is in the 'advanced' cluster (Table 2). The study by Razzaq et al (2022) points out that digital infrastructure in Kazakhstan and Uzbekistan is better than that of the other member countries, whereas the digital infrastructure in Afghanistan needs to be improved.

Kickbusch and Berger (2010) point out that vulnerabilities and inequalities between countries can be minimized through promoting relationships to implementing science and technology cooperation. Wu (2017) highlights that capacities and movement towards sustainable digital trade integration can be achieved through building regional arrangements which promote e-commerce, online payments, smart cities, and e-government. Razzaq et al (2022) identified that many rural and remote areas in the CAREC region do not have access to digital infrastructure. The digital divide is an aspect which requires the urgent attention of the CAREC countries—especially the relatively large mobile broadband coverage gaps in countries such as Afghanistan and Uzbekistan (CAREC, 2021b).

Table 3: Speedtest Global Index, 2023

Country	Mobile (Mbps download) Rank	Download Speed (Mbps)	Fixed Broadband (Mbps download)	Download Speed (Mbps)
Afghanistan	137	4.46	179	2.31
Kazakhstan	72	30.62	101	40.73
Pakistan	120	16.34	149	11.22

[5] GSMA, https://www.mobileconnectivityindex.com/connectivityIndex.html#year=2021

Tajikistan	129	11.38	130	20.51
Uzbekistan	104	20.90	89	47.84

Source: Speedtest Global Index[6]

Table 3 indicates the download speed in each country for mobile and fixed broadband. Afghanistan has the lowest ranking for both indicators, whereas Kazakhstan has the best ranking for mobile (Mbps download) speed and Uzbekistan has the best fixed broadband (Mbps download) speed ranking compared to the other countries.

Table 4: Network Readiness Index, 2022

Country	Score	Rank	Technology	People	Governance	Impact
Kazakhstan	52.46	58.00	42.87	49.51	62.87	54.60
Tajikistan	34.73	111.0	29.41	26.89	34.69	47.92
Pakistan	42.70	89	46.47	37.72	37.85	48.78

Source: Portulans Institute

The Network Readiness Index 2022 covers 131 economies that account for 95 percent of global GDP. The top ten performing indicators confirm that advanced economies are among the world's most network-ready societies. There are 21 economies from Asia and the Pacific in this index. The index does not currently cover Afghanistan and Uzbekistan. The ranking of Kazakhstan is better compared to Tajikistan and Pakistan, whereas Pakistan has a better technology score (Table 4).

4.1. Trade Analysis

All the Central Asian countries in our analysis—including Afghanistan, Kazakhstan, Tajikistan, and Uzbekistan—are landlocked countries that depend on other regional countries for their trade. Pakistan is the only country in our study with a coastal line. Hence, the trade integration between Pakistan and Central Asian countries is even more important, not only for Pakistan but even more for the Central Asian Countries.

Table 5: Trade Statistics in Millions of USD, 2021

Country	Exports of Goods	Imports of Goods	Exports of Services	Imports of Services
Afghanistan	864 (2019)	6,777 (2019)	700	1,105
Kazakhstan	60,321	41,515	5,814	7,664
Pakistan	28,880	73,107	6,498	9,806
Tajikistan	1,787	4,217	147	532
Uzbekistan	15,287	28,264	2,257	4,723

Source: International Trade Centre

Kazakhstan has the highest export volume, whereas Pakistan has the highest import volume among the selected countries (Table 5). In terms of services trade, Pakistan has the highest export and

[6] Speedtest Global Index, https://www.speedtest.net/global-index

import volume. This indicates that the integration between Pakistan and the selected Central Asian countries can be beneficial for member countries, especially in trade of services.

4.2. Review of Trade Agreements

Bilateral, regional, and global trade agreements play an important role in enhancing digital trade integration by acknowledging the mutual understanding of rules and regulations that in turn facilitate the movement of digital goods and services. In the selected countries, Pakistan has a preferential trade agreement (PTA) with Uzbekistan and a transit agreement with Afghanistan (Afghanistan–Pakistan Transit Trade Agreement).

The Afghanistan–Pakistan Transit Trade Agreement (APTTA) covers conventional trade rules and procedures. It includes regulations on the right of transit, transit transport corridors, custom controls, general conditions for transport in transit, duties and taxes, payment procedure dispute settlement, creation of an Afghanistan–Pakistan Transit Trade Coordination Authority, and requirements for the admittance of road vehicles. However, there are no provisions about digital trade integration in APTTA or any specific facility for digital trade and digital trade platforms.

Pakistan and Afghanistan are part of the South Asia Free Trade Agreement (SAFTA); other countries include Bangladesh, Bhutan, India, the Maldives, Nepal, and Sri Lanka. The agreement is keen to eliminate tariffs and non-tariff barriers to trade and facilitate the cross-border movement of goods. It also focuses on establishing a framework for further regional cooperation to develop the mutual benefits of this agreement (Ahmed & Shabbir, 2016). However, SAFTA is related only to trade in goods; it does not address the services trade. The agreement does not have provisions explicitly related to digital trade and facilitation mechanisms for e-commerce, but it mentions generation facilitation measures such as simplification of banking procedures, transit and business visas, registration, and licensing.

Pakistan and Afghanistan are also members of the SAARC Agreement on Trade in Services (SATIS); other countries include Bangladesh, Bhutan, India, the Maldives, Nepal, and Sri Lanka. The agreement, signed in 2010, focuses on promoting trade in services. This framework for liberalization and the promotion of regional trade in services is in line with the General Agreement on Trade in Services (GATS). The key objective of the agreement is to increase trade in services among the member countries while ensuring that it is mutually beneficial. The agreement limits its scope and the benefits that the South Asian Association for Regional Cooperation (SAARC) countries can acquire from cross-border trade in services. Besides, the agreement impedes the SAARC countries from benefiting from the experiences of other countries in digital trade.

The PTA between Pakistan and Uzbekistan aims to eliminate the tariffs and non-tariff barriers on specific products. It also stresses the enhancement and promotion of trade through the harmonious development of economic relations between two countries. A joint committee is composed of representatives of Uzbekistan and Pakistan to review the progress achieved in the implementation of the agreement.

The Pakistan–Uzbekistan Transit Trade Agreement focuses on provisions of infrastructure and services to promote transit trade between two countries. This includes cooperation to establish a common portal to devise an interface between the Customs Information System. A coordination committee is to be set up to monitor, facilitate, and implement the agreement. Special provisions are included for the transportation of perishable goods. The agreement states that multiple entry

visas for up to one year are to be granted to vehicle drivers and persons engaged in international transit traffic operations.

Pakistan and selected Central Asian countries are members of the Economic Cooperation Organization (ECO).[7] ECO is an intergovernmental machinery and institutional arrangement through which member countries interact with emerging global challenges. The member countries are engaged in policymaking and operational frameworks to address regional and global issues. The strategic objective related to trade is to increase intra-regional trade and the share of ECO in the global trade particularly of exports, and to tap the potential of regional trade for economic growth.

Pakistan and Central Asian countries including Kazakhstan, Tajikistan, and Uzbekistan are part of the Shanghai Cooperation Organisation (SCO).[8] SCO aims for cooperation with international and regional organizations. During the SCO Summit[9] 2022, members agreed to promote trade in national currencies. Also, infrastructure development was focused on as a pathway to boost regional trade; it will support countries to access raw materials and decrease transportation costs. The construction of two railways—including Termez-Mazar-e-Sharif-Kabul-Peshawar—will open up the seaports of Pakistan on the Arabian Gulf to Uzbekistan.

Kazakhstan and Pakistan aim to sign a transit trade agreement to provide a legal framework for businesses and develop cooperation in the banking sector through agreement among banks of both countries.[10] Tajikistan and Pakistan negotiated and finalized an agreement including the trade and transit of goods through road and rail. The agreement will give access to Tajikistan and Kyrgyzstan to the seaports of Pakistan. The Transit Trade Coordination Committee was also established under the agreement.

4.3. Domestic Policies and Measures for Digital Trade

Afghanistan

Afghanistan has no e-transactions legislation and no privacy legislation. The country has amended its penal code to add or consolidate provisions on cybercrime that make up a comprehensive legal regime. Through the National Cybercrime Strategy of Afghanistan (2014), the country aims to protect and assure data, information, and IT infrastructure security in Afghanistan's cyberspace. The strategy also focuses on mitigating the risk of vulnerability, and damage from cyber threats and incidents through a variety of standardized institutional structures, policies, procedures, people, technologies, and administrative processes. The Law on Consumer Protection was passed in 2017 (MOCI) while the key area of protection includes the rights to safety, to be informed, to consumer education, and to create a healthy environment.

Afghanistan initiated the first Afghanistan National Trade Policy in 2019, which addresses challenges faced by Afghanistan businesses in accessing international markets. However, there are no

[7] Economic Cooperation Organization, https://eco.int/member-states/
[8] Shanghai Cooperation Organization, http://eng.sectsco.org/
[9] 'Shanghai Cooperation Organisation Summit 2022: key takeaways' ODI, 23 September 2022, https://odi.org/en/insights/shanghai-cooperation-organisation-summit-2022-key-takeaways/
[10] 'Kazakhstan to sign trade agreement,' *Express Tribune*, 12 February 2023, https://tribune.com.pk/story/2400756/kazakhstan-to-sign-trade-agreement

provisions related to digital trade; there is also no specific e-commerce policy to regulate and facilitate digital trade.

The Law on Electronic Transactions and Electronic Signature of Afghanistan was introduced in 2020, which provides regulations related to electronic signatures and transactions.[11] The law is significant if implemented effectively as it can benefit local businesses and lead to the development of a digital ecosystem in the country. Provisions regarding data message interchange, electronic transactions, electronic communications, electronic signatures, and contracts are included. The ICT policy for Afghanistan (2018-2022) aims towards a 'digital agenda for development and social change.' The policy focuses on an integrated approach with digital solutions through the involvement of multiple sectors.

Kazakhstan

Kazakhstan implemented the electronic document and electronic digital signature in 2003 (Government of Kazakhstan, 2003). An electronic digital signature is important as it authenticates the electronic document by providing evidence of integrity as well as origin. An electronic digital signature carries the same legal weight as a handwritten signature on paper if it is verified by a public key authenticated by a registration certificate issued by the accredited certification center that also created the signature. By law, a foreign electronic signature has a similar legal value as a handwritten one in Kazakhstan if the signature has been issued and certified by a foreign certification center registered as a trusted third party of the Republic of Kazakhstan.

Kazakhstan enacted privacy legislation in 2013 that was amended in 2020. The law termed personal data as publicly available, which may be made public with consent of the data subject. The free flow of personal data would be facilitated if neighboring states also provide similar degrees of protection. Article 227 of the Criminal Code of the Republic of Kazakhstan mentions many of the usual offenses related to computers (cybercrime). The offenses include unauthorized access to a computer—erasing, blocking, modifying, copying, or affecting computers. The Consumer Protection Law was enacted in 2010 and amended in 2020. The law gives consumers express rights to information and safe products and services, restricts the ability of suppliers to limit those rights, and provides for state and private enforcement.

The Digital Kazakhstan program 2018-22[12] is designed to boost the economy and enhance quality of life. Moreover, the program is intended to create an environment for the transition of the economy to a fundamentally new trajectory—the digital economy of the future. It provides an additional stimulus for the technological modernization of the country's flagship industries and creates conditions for large-scale and long-term growth in labor productivity. The key areas of the program include the digitization of economic branches, the transition to the digital state, the formation of an innovative ecosystem, the evolution of human capital assets, and the realization of the Digital Silk Way.

[11] The Law of Electronic Transactions and Electronic Signatures (2020). http://www.rlslegal.com/wp-content/uploads/2020/09/Draft-Law-on-Electronic-Transactions-and-Electronic-Signature-of-Afghanistan_English.pdf The law was published in the *Official Gazette* 1389, dated 15 October 2020. https://kakaradvocates.com/afghan-laws-regulations

[12] https://egov.kz/cms/en/digital-kazakhstan

Pakistan

Pakistan initiated an e-commerce policy in 2019 to create a feasible environment for the growth of the e-commerce sector in the country, including measures for national single window and cross-border e-commerce. An electronic transactions ordinance was adopted in 2002; it shows that the requirement for signatures 'shall be deemed satisfied' where electronic signatures or advanced electronic signatures are applied (GoP, 2002). The Electronic Certification Accreditation Council (ECAC) is the regulator of the accreditation system and is allowed to recognize or accredit foreign signatures and certificates. The regulations indicate that a certification service provider (CSP) formed in another country can get permission under corporate law to continue business in Pakistan, and then apply for accreditation. The ordinance permits the ECAC to make regulations regarding the privacy and protection of the personal data of subscribers and to recognize signature certificates from CSPs.

The e-commerce policy of Pakistan ensures support for the ecosystem by strengthening the digital sector. The policy empowers SMEs, youth, and women entrepreneurs by enhancing digital connectivity. An e-SME program for capacity building was launched that connected 50,000 SMEs in rural areas to online marketplaces. E-commerce policy envisions the establishment of e-Courts for a speedy resolution of consumer cases in the digital sector. The conversion of high levels of cash on delivery payments into e-payments within ten years and financial inclusion are other key features of the policy, which also discusses general sales tax on services that will be harmonized by provincial governments and revenue authorities.

The Prevention of Electronic Crimes Act of 2016 (GoP, 2016) forbids the unauthorized obtaining, possession, sale, transmission, or use of 'identity information' of a person. Cross-border sharing of personal data is more likely to be focused on the same security priorities than on protecting people from unnecessary commercial exploitation. The Prevention of Electronic Crimes Act of 2016 is the major source of cybercrime law. The law forbids most or all of the activities that the Budapest Convention of 2001 requires member countries to ban, including unauthorized access to information systems, interference with an information system, supplying of malware devices, unauthorized copying of data, forgery, supplying of malware devices, and fraud. The Cybercrime Act of Pakistan is the most extensive legislation on the topic among Central Asia Regional Economic Cooperation (CAREC) members (ADB, 2021).

Pakistan has no national consumer protection act. Each of the provinces, including the capital territory, has its own act on the subject. However, these acts were initiated mostly in the 1990s or earlier and do not apply directly to e-commerce. Only Sindh has a consumer protection law, enforced in 2015 (GoS, 2014), which covers safety issues.

Pakistan introduced a comprehensive policy framework to promote digital development and digitalization. The Digital Pakistan Policy 2019, the National Small and Medium Enterprise (SME) Policy 2021, the Strategic Trade Policy Framework (STPF) 2020-25 (Moc, 2021), and other business-enabling policies on public–private partnerships and industrial developments are significant measures to promote competitiveness in the private sector (Ahmed, 2018). Pakistan also has multiple export facilitation schemes to improve the competitiveness of exporting entities of SMEs (Khaver & Ahmed, 2023). The Ministry of Commerce, in coordination with the Trade Development Authority of Pakistan and other related organizations, is developing a one-window or single digital trade portal that will contain comprehensive information regarding e-trade rules and data for stakeholders.

Tajikistan

Tajikistan launched the single window system for registration of an export, import, and transit procedure. The Electronic Documents Act, initiated in 2002 and amended in 2014, permits an electronic document to be the functional equivalent of a written document. The law mentions that the 'special part' of an e-document consists of one or various electronic digital signatures or other means of identifying the originator, and not contradicting the law of the country. The electronic digital signature, initiated in 2007 (Government of Tajikistan, 2007) and amended in 2011, mentions that the law does not apply to any other alternatives to a handwritten signature (Government of Tajikistan, 2011). The use of uncertified electronic digital signatures with electronic documents for such an information system is not permitted. The electronic digital signature law also provides for the recognition of a foreign signature key certificate.

The Personal Data Protection Act was adopted in 2018 through which the collection of biometric information without the written consent of the subject is restricted. Personal data can be shared outside Tajikistan to places that have sufficient privacy protection. However, Tajikistan can control such sharing for several broadly stated reasons. The criminal code restricts illegal stealing by copying or compulsion to convey information through blackmail by threatening to disclose 'discreditable data' about somebody or through violence. Currently, no specific laws exist related to protecting online or offline consumers; however, standard preventions against fraud, forgery, and misrepresentation would apply to consumer transactions.

The first digital TIR movement from Tajikistan is a key measure towards greater transport digitalization and regional connectivity in Central Asia.[13] Tajikistan joins Kazakhstan and Uzbekistan, where digital TIR was launched in 2020. Greater TIR digitalization in the region will be beneficial in promoting secure, legal, and efficient trade and transit.

The entrepreneurs from Tajikistan and Kazakhstan signed various commercial contracts and agreements for promoting trade and integration between the two countries.[14] The agreements focus primarily on the agricultural industry and IT services. Tajikistan and Pakistan have also signed agreements and memorandums of agreement for promoting cooperation in trade, investment, tourism, information and broadcasting, and banking.[15]

Uzbekistan

The Electronic Commerce Law of Uzbekistan supports electronic commerce and provides flexibility in the creation of documents and signatures. The law regarding electronic signatures states that 'the use of certificates of keys of electronic digital signatures of foreign states is performed according to the procedure established by the legislation.' Personal Data Law 2019 (Government of Uzbekistan, 2019) protects the public from having decisions based on their personal data being subjected to 'automated personal data processing.' Personal data can be transferred out of Uzbekistan if the

[13] 'Tajikistan boosts regional connectivity in Central Asia with digital TIR' IRU, 10 May 2021, https://www.iru.org/news-resources/newsroom/tajikistan-boosts-regional-connectivity-central-asia-digital-tir
[14] 'Kazakhstan and Tajikistan sign agreements worth $1.8 billion' *The Astana Times*, 3 May 2023, https://astanatimes.com/2023/05/kazakhstan-and-tajikistan-sign-agreements-worth-1-3-billion/
[15] 'Pakistan, Tajikistan sign agreements on trade, investment' *Dawn News*, 18 September 2021, https://www.dawn.com/news/1646936

country of destination offers the same protection for it; in other cases, the consent of the subject is required.

Uzbekistan's criminal code prohibits acts or violations of information access, including 'illegal or unauthorized access to computer information,' the use and spread of malware, and the development of software or hardware for the illegal access of protected computer systems or telecommunications networks. Electronic commerce law states that an information intermediary shall 'provide electronic documents, electronic messages, and personal data with measures of protection from unauthorized accesses.'

The government has launched the e-commerce strategy in the roadmap for e-commerce sector development for 2023-27.[16] The strategy will promote the digital economy as it identifies priority activities that will enable the e-commerce environment for businesses. The capacity and skills development will help businesses achieve digital transformation. The strategy will enable businesses to access new markets and improve their business models, operations, and processes. By promoting the e-commerce sector, the government intends to provide job opportunities for youth, women, and people living outside major cities, particularly those in rural areas.

4.4. Digital Trade and Regional Integration

The emergence of COVID-19 affected the global south as trade levels decreased considerably. The surge in the digitalization of trade helped economies to overcome the situation. However, many countries in the south experienced a lack of general digital readiness, infrastructure, and regulatory framework to support online businesses.

Table 6: Digital and Sustainable Trade Facilitation, 2021

Country	Trade Facilitation Score for SMEs (%)	Paperless Trade (%)	Cross-Border Paperless Trade (%)
Afghanistan	33.30	14.81	16.67
Kazakhstan	40.00	66.67	38.89
Pakistan	46.70	59.26	22.22
Tajikistan	33.30	33.33	16.67
Uzbekistan	33.30	74.07	33.33

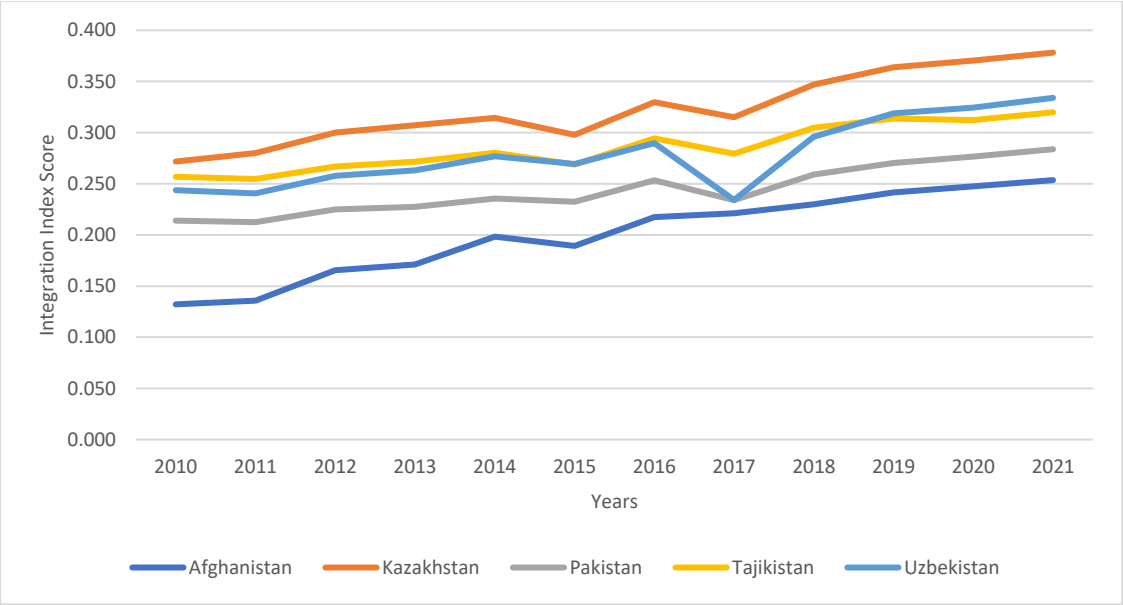
Source: UN Global Survey on Digital and Sustainable Trade Facilitation

The UN Global Survey on Digital and Sustainable Trade Facilitation covers 143 economies and 58 measures related to the WTO's Trade Facilitation Agreement. It also covers paperless trade and the UN treaty on cross-border paperless trade in Asia and the Pacific. A higher percentage score shows more engagement. Pakistan has the highest trade facilitation score for SMEs, whereas Uzbekistan has a better score in paperless trade (Table 6). In cross-border paperless trade, Kazakhstan's performance is best compared to the other countries. UNESCAP (2021) pointed out that significant

[16] 'Uzbekistan's new e-commerce strategy for better market access' International Trade Centre, 9 February 2023, https://intracen.org/news-and-events/news/uzbekistans-new-e-commerce-strategy-for-better-market-access

progress has been observed in digital trade facilitation measures in the CAREC region during 2019-2021.

Figure 2: Intra-Group Integration Between Afghanistan, Kazakhstan, Pakistan, Tajikistan, and Uzbekistan

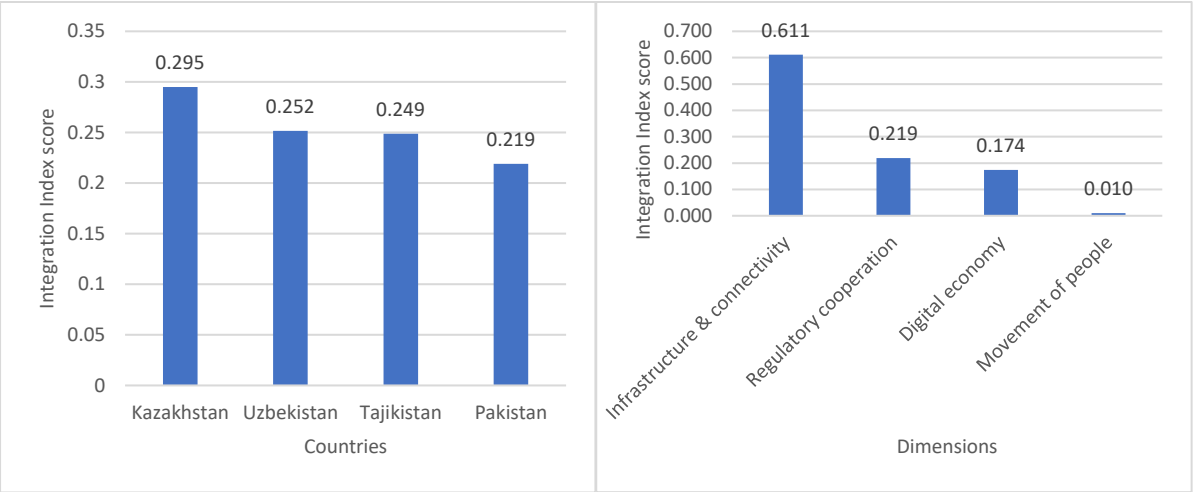


Source: UNESCAP, Regional Integration Analyzer[17]

It is observed that integration among the selected countries increased by 40 percent since 2010. The integration index ranges between 0 to 1 where 0 indicates no integration and 1 indicates maximum integration. Kazakhstan (0.38) and Uzbekistan (0.33) are the most integrated economies; however, the integration index of Uzbekistan decreased during 2017 owing to factors including tariff and trade barriers, inadequate transportation infrastructure, and geopolitical issues. The least integrated economies with other selected countries are Afghanistan (0.25) and Pakistan (0.28), which indicates that Afghanistan and Pakistan need to make extensive efforts to promote integration with their regional partners. The CAREC Regional Integration Index (CRII) also indicates that there was some acceleration in integration from 2013 until 2019, especially in terms of regional value chains and infrastructure and connectivity (CRII, 2021).

[17] UNESCAP, https://riva.negotiatetrade.org/?_gl=1*cbg9ui*_ga*MTQ2MzE0NjI1Ni4xNjc4MjYwMDAw*_ga_SB1ZX36Y86*MTY4NDc0MDE4Ny4xNS4wLjE2ODQ3NDAxODcuNjAuMC4w#/riintragroup

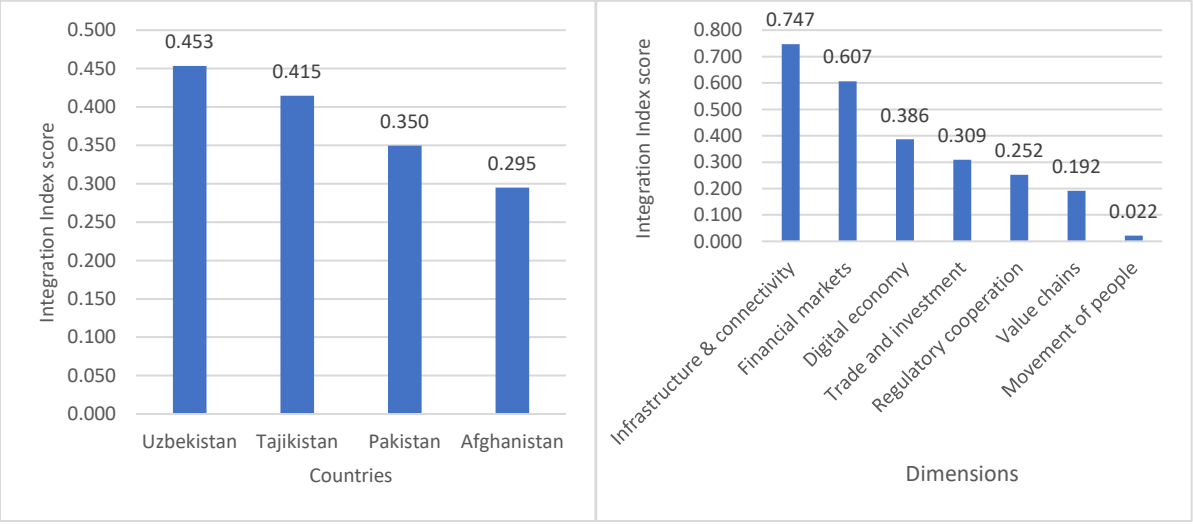
Figure 3: Afghanistan's Integration with the Group and by Dimension



Source: UNESCAP Regional Integration Analyzer

The regional integration score indicates that Afghanistan is more connected with Kazakhstan and least connected with Pakistan (Figure 3). In terms of dimensions, Afghanistan needs to pay attention towards movement of people with Kyrgyzstan, Pakistan, Tajikistan, and Uzbekistan. The youth-driven IT sector of Afghanistan can play a key role in this regard where it can not only empower entrepreneurs but also increase the movement of skilled workers within the region.

Figure 4: Kazakhstan's Integration with the Group and by Dimension

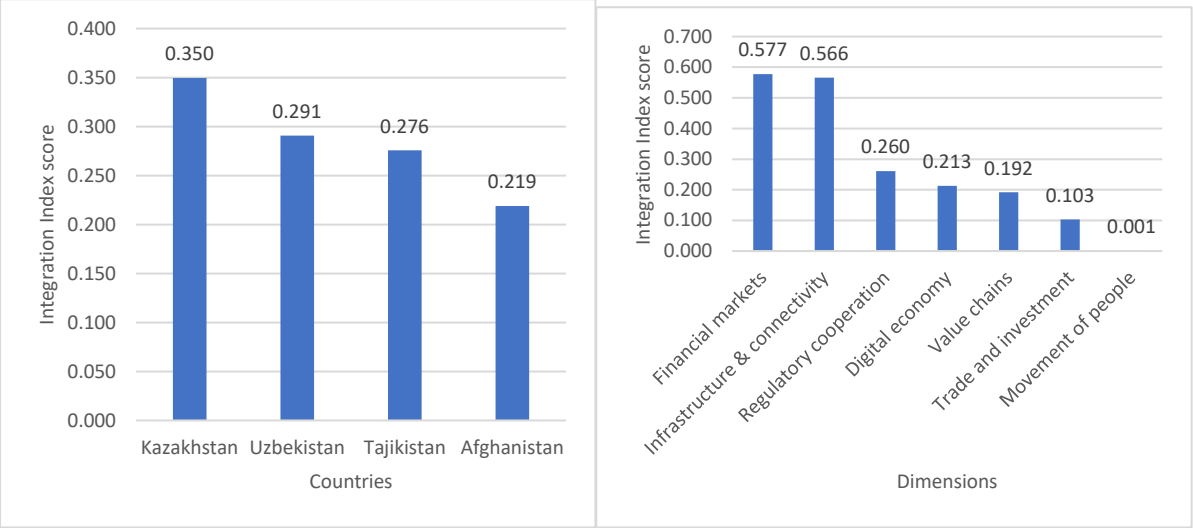


Source: UNESCAP Regional Integration Analyzer

Kazakhstan is most connected with Uzbekistan and least connected with Afghanistan (Figure 4). Kazakhstan is the least integrated with other selected countries in terms of movement of people. The government of Kazakhstan is committed to promote economic cooperation with Afghanistan

through trade and investment,[18] which will not only help to diversify the transport corridors of Kazakhstan but also support Afghanistan's integration with the region.

Figure 5: Pakistan's Integration with the Group and by Dimension

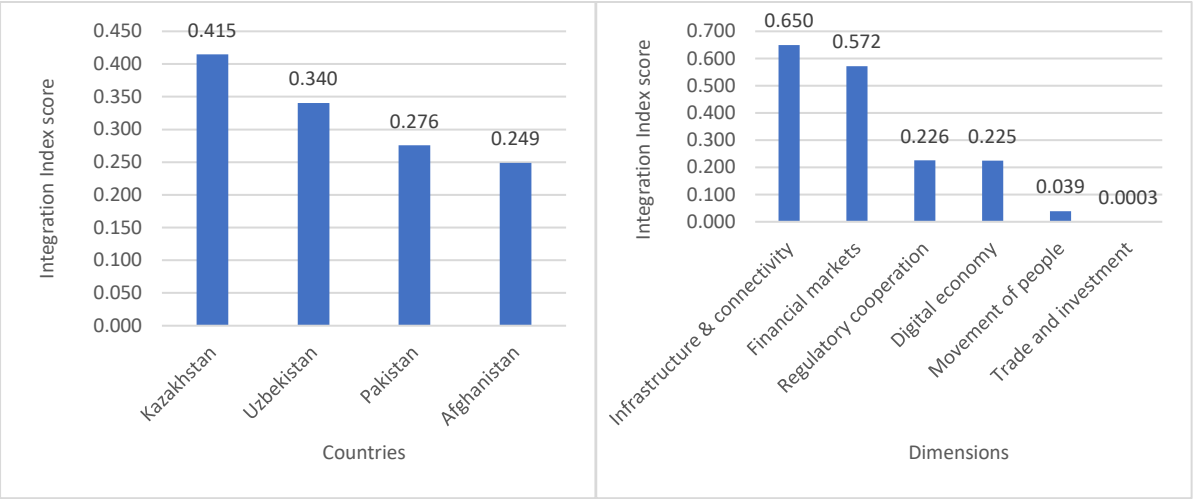


Source: UNESCAP Regional Integration Analyzer

Pakistan has most integration with Kazakhstan in the selected countries from Central Asia whereas its least integration is with Afghanistan (Figure 5). Recently, the government has authorized barter trade with countries including Iran, Afghanistan, and Russia on specific goods.[19] This will help to increase the volume of trade between Afghanistan and Pakistan. Pakistan needs to pay attention towards movement of people within Central Asia. Pakistan has the strongest integration with the selected Central Asian countries in the financial markets.

[18] 'Kazakhstan and Afghanistan seek to realign bilateral ties' *The Diplomat*, https://thediplomat.com/2023/03/kazakhstan-and-afghanistan-seek-to-realign-bilateral-ties/
[19] 'Pakistan allows barter trade with Iran, Afghanistan, Russia' VOA, 2 June 2023, https://www.voanews.com/a/pakistan-allows-barter-trade-with-iran-afghanistan-russia-/7120806.html

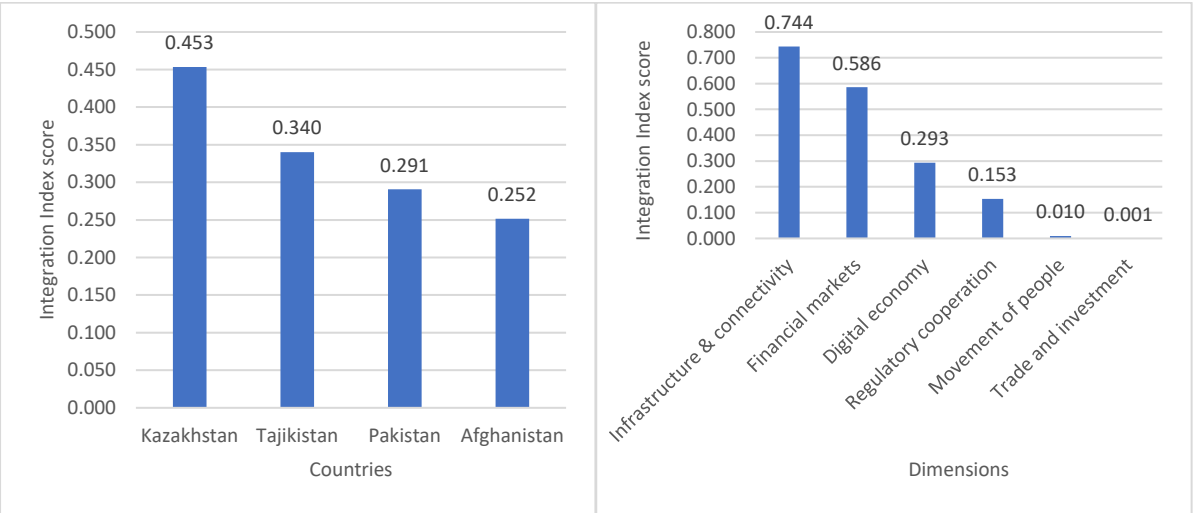
Figure 6: Tajikistan's Integration with the Group and by Dimension



Source: UNESCAP Regional Integration Analyzer

Tajikistan has the highest integration with Kazakhstan and the least integration with Afghanistan (Figure 6). However, Tajikistan's exports to Afghanistan increased significantly during 2022, which indicates the country is expanding its integration with Afghanistan. Tajikistan has the least integration with other selected countries in terms of trade and investment. This can be promoted through regional trade agreements which may have specific provisions to develop regional ties in these areas.

Figure 7: Uzbekistan's Integration with the Group and by Dimension



Source: UNESCAP Regional Integration Analyzer

Uzbekistan has the highest integration with Kazakhstan and the least integration with Afghanistan (Figure 7). The country needs to pay attention to trade and investment integration with other selected countries so that progress can be made in these areas. Pakistan and Uzbekistan have

exchanged goods through Afghanistan for the first time, which is a positive development towards regional economic integration.[20]

5. Findings from Firm-Level Survey

We provide country-wise perspectives or responses to our research questions. Firms operating in the digital space from Pakistan and selected Central Asian countries were approached for the survey. A survey of 50 SME firms from Pakistan and 50 from selected Central Asian countries was done in this regard. The questionnaire was shared with the high-level officials of these firms and the information was collected via email. Responses from Pakistan were collected through in-person meetings and via email.

Firms from Afghanistan highlighted that ICT affordability and accessibility is the key challenge in their regional digital trade integration. This is also affecting the growth of the e-commerce sector in the country. Government spending to promote ICT adoption in the country is not enough and the implementation of taxes on ICT affected the growth of ICT industry in the country. Firms rely on cash payments and in-house delivery as there is a lack of secure payment methods. The findings show that online payment options provided by the Afghanistan International Bank are quite expensive. However, some progress has been made in the e-commerce sector where online shopping, and delivery of food and clothing has increased in major cities in the recent past. Some businesses have also started by making digital payments up to a certain limit. Blumenstock et al (2018) observed similar findings that businesses in Afghanistan are now opting for digital payment methods including paying wages through digital modes.

The respondents from Kazakhstan said that a large number of graduates from technical universities are entering the IT and tech sector of Kazakhstan, which demonstrates the availability of a skilled workforce. Besides, the National Digital Economy Program is a key government initiative to promote digital skills among the public. Labor costs are relatively low, which makes Kazakhstan an attractive market for other countries to outsource their IT and tech related work. The government of Kazakhstan has taken effective measures to create a business-friendly environment through low taxes, simplification of regulations, and enforcing intellectual property rights. The government has invested in various projects to expand and improve the digital infrastructure of the country, including high-speed Internet and mobile networks. In addition, the government of Kazakhstan has provided support to the IT and tech sector through tax breaks, subsidies, and other incentives for businesses related to this sector.

The Government of Kazakhstan initiated the roadmap for the development of e-commerce for the period 2019-25, through which the share of e-commerce in total trade will increase. This will be done by public sector investment in improving the infrastructure of e-commerce and electronic export from Kazakhstan. The firms highlighted that e-commerce is growing extensively in the country; it is projected to have an annual growth rate of around 20 percent. The respondents said that the government has also enforced laws to develop the business environment and regulate trading activities to simplify e-commerce operations with other countries. Besides, several training programs are also launched by the government for local entrepreneurs. However, the key challenge

[20] 'Pakistan, Uzbekistan trade goods via Afghanistan in a landmark deal' 26 May 2021, https://www.rferl.org/a/pakistan-uzbekistan-trade-afghanistan-/31274167.html

that firms are facing is related to insecure systems of Internet payment and goods delivery that are affecting the growth of the e-commerce sector. The KPMG (2018) study covers the same issue—namely, that insecure payments resulted in data breaches and potential loss of trust among customers, which is detrimental to the expansion of the e-commerce sector.

Firms from Kazakhstan highlighted that an agreement is signed on the National Digital Investment Platform that will help to attract additional inflows of FDI in Kazakhstan FDI is expected to boost digital technologies and help the growth of the digital economy and digital trade from Kazakhstan. The respondents said that the National Digital Investment Platform will help to integrate consulting and information services and will provide guidance and easy access to virtual resources.

Firms from Pakistan pointed out that the major mode of payment is still cash on delivery owing to mistrust of online payments. E-commerce regulations are still in their early phase where the government is focusing on developing a framework for e-commerce activities. Firms identified that legal issues such as online transactions, dispute resolution, consumer protection, and intellectual property rights are affecting the growth of the e-commerce industry in Pakistan. Owing to complicated laws, foreign investment in the digital space could not be attracted to the country. Javed and Ahmed (2022) also emphasized that institutional infrastructure in Pakistan is a major hurdle in promoting digital entrepreneurship. The respondents pointed out that the tech, telecom, and IT sectors in Pakistan are facing various issues related to intellectual property rights. This includes copyright infringement, patent infringement, and trademark infringement. The unauthorized use of copyrighted material is causing revenue loss and negative implications for the reputation of firms, whereas the unauthorized use of patented technology prevents the firms from introducing new products and services to the market. Brand reputation is also affected by the unauthorized use of trademarks, which creates confusion among consumers regarding the original names and logos. Another related issue is the use of domain names identical or similar to trademarks owned by other firms. Firms also pointed out that cybercrimes such as hacking, data theft, and fraud are serious threats to the tech, telecom, and IT sector firms. Recently, Bykea—a popular ride-hailing and delivery app in Pakistan—faced a hacking incident that raised concerns among users regarding possible data breaches.[21]

Besides, there are too many regulations on foreign investors in Pakistan who also must obtain permits from multiple authorities. The respondents said that the lack of an internationally recognized payment gateway is affecting cross-border payments as well as entrepreneurs and freelancers. Javed (2020a) similarly observed that the lack of a payment gateway is the major challenge in the growth of the e-commerce sector. Fiscal restrictions including higher taxes and tariffs are restricting the growth of digital trade and the e-commerce sector. UNESCAP (2019) indicated that taxation at both federal and provincial level in Pakistan increases the cost of production and hinders the growth process of e-commerce firms. It concluded that there are multiple layers of taxation, where both federal and provincial level taxation are applied to firms operating in digital trade. The respondents appreciated the recent government measure to allow barter trade with Afghanistan. The respondents said that this approach will help to increase exports to Afghanistan; they highlighted that online channels helped them to export their products and overcome the challenges that they may otherwise have faced. Batool and Ahmed (2021) observed

[21] 'Bykea falls victim to hacking attack' *Express Tribune*, 16 June 2023, https://tribune.com.pk/story/2421644/bykea-falls-victim-to-hacking-attack

similar findings that fashion designers and entrepreneurs in Pakistan are using e-commerce platforms to export their products to regional countries.

The respondents from Tajikistan referred to the insufficient and costly digital connectivity as the major hurdles in digital development in the country. Currently, there is a lack of public investment in the digital economy, including hardware and software. Owing to the lack of public investment, there is a shortage of skilled workers, especially in the IT and tech sector. The government could not invest properly in education and training related to the IT and tech sector; because of this, skilled workers are leaving the country, thus causing brain drain. The respondents said that Internet penetration in the country is quite low, which restricts the potential of IT and tech businesses. Access to finance is another major challenge for SMEs operating in the IT and tech sector as there are not enough opportunities to acquire loans and venture capital. This is because the country does not have a well-developed financial sector and owing to high interest rates, which increases the cost of borrowing for smaller firms. The study by Aliyev (2020) validates that access to finance is major issue for firms—especially startups—in Tajikistan. The legal infrastructure related to e-commerce is also weak and needs to be improved to create a feasible environment for promoting digital economy in the country. The firms reported that e-commerce and digital transformation were boosted significantly after COVID-19. Respondents requested government tax breaks to aid the growth of the IT and tech sector.

Firms from Uzbekistan highlighted a lack of public investment in the telecommunications infrastructure, owing to which broadband Internet coverage is limited and there is a low level of mobile Internet penetration. This affected the efficiency of firms operating in the digital space owing to lack of demand. Respondents identified a lack of workers with English proficiency, which affects communication with global businesses. Government funding for digital projects is also limited; therefore, the expansion of digital business remains a challenge for firms. Moreover, slow and inefficient progress in government policy measures is a major barrier to the creation of a feasible business environment. Makhammmadkosim (2019) referred to the same issue—that the government and regulator are unable to formulate relevant policies for the ICT sector at the required pace. Respondents also pointed out legislative issues such as a lack of a digital base of international treaties. Domestic businesses face stiff challenges from foreign firms, including those in China and Russia, which make survival difficult for smaller firms.

6. Digital Trade Integration: Policy Priorities for Pakistan

The firms from Pakistan identified the following key issues that are hampering the growth of the IT, telecom, and tech sectors and the digital trade integration of Pakistan.

6.1. Intellectual Property Rights

Pakistan is not a member of the Patent Cooperation Treaty (PCT); however, it has been part of the Paris Convention for the Protection of Industrial Property since July 2004. The Overseas Investors Chamber of Commerce and Industry (OICCI) raised its concerns regarding counterfeiting, smuggling, and violation of intellectual property rights (IPR), including copyrights, trademarks, and patents. According to an estimate, foreign companies in Pakistan lose around 757 billion rupees every year because of IPR breaches.[22] Sales of counterfeit and pirated goods, including digital content and

[22] 'IPR violation costs foreign firms R757b annually', *Express Tribune*, 1 August 2019, https://tribune.com.pk/story/2025454/2-iprviolation-costs-foreign-firms-rs757b-annually

software, remain widespread in Pakistan (USTR, 2021). The rate of pirated software is reported to be very high in Pakistan, while several cable operators also provide pirated content in the country (Samad et al, 2018).

6.2. Non-Technical Non-Tariff Measures

Pakistan has banned the import of digital enhanced cordless telecommunication 6.0 phones and discs and tapes from all countries. BlackBerry Enterprise Server (BES)—renamed Blackberry Unified Endpoint Manager (UEM) in 2018—has been banned in the country since 2015 for security reasons, which shows the lack of capabilities for decryption in Pakistan. Import restrictions are also imposed on 3D printers, which can be imported only with prior permission from the Ministry of Interior. Non-tariff measures while importing digital products into Pakistan include custom duties, quarantine restrictions, technical regulations, and import licenses. Varying custom duties are applicable on digital products depending on the type of product—for instance, the custom duty rate for software is 10 percent, whereas it is 20 percent for hardware. Quarantine restrictions include testing, certification, and labeling requirements. The government of Pakistan demands that all imported software is certified by a recognized testing laboratory. The government of Pakistan demands that all imported hardware should meet the standards set by the Pakistan Standards and Quality Control Authority. The government demands that all imported software be licensed by the Pakistan Computer Bureau. These non-tariff measures increase the cost of importing digital products in Pakistan and make the importing process equally difficult. Although the government has taken measures to decrease the number of non-tariff measures, concrete steps are still required to improve the situation. Other sectors, such as textiles, also faced non-tariff measures as acquisition of certification is not only costly but also a difficult and time-consuming process (Manzoor et al, 2020).

6.3. Foreign Investment Restrictions in Digital Space

The Foreign Exchange Regulation Act 1947 restricts foreign investment in digital space. The conservative foreign exchange regime causes issues for a foreign firm in the transferral of working capital, profits, and fixed investment in and out of Pakistan. Layers of checks are involved by the federal and the central bank in the repatriation of profits, which is a time-consuming process. Entry of a foreign equity firm is subject to the approval of the central bank and security clearances from the relevant authorities. Foreign investors are required to obtain permission from the Board of Investment if they want to invest in the manufacturing of ICT devices. Ahmed et al (2021) reported that foreign investment in digital space in Pakistan is being affected by rules and regulations.

6.4. Public Procurement

There are various issues in public procurement, such as lack of awareness, preference for foreign firms, complex procurement processes, and unfair tendering practices. Officials are not fully aware regarding the capabilities of the tech, telecom, and IT sectors in Pakistan. This can affect the businesses of local firms as the government may overlook them while making procurement decisions. Public procurement officials generally prefer foreign firms, even on occasions when local firms can provide the same or better products or services. The reasons may include lack of trust in local firms, perception towards foreign firms as more reliable, or the intention of public officials to build relationships with foreign firms. The complex and time-consuming procurement process is a major hurdle for SME IT firms as they may not have sufficient resources to fulfill the procurement requirements. Manipulation of bidding criteria and awarding contracts to firms with political affiliations make it difficult for other IT firms to compete for government contracts.

6.5. Public Investment in Digital Space

No single anthology contains national-level consolidated details of public expenditure on digital sector uplift. The performance of state-owned enterprises in adopting digital trade is unsatisfactory. Various state-owned enterprises are installing enterprise resource planning systems and e-communication tools (Ahmed et al, 2021). This will be helpful in the progress of the public sector towards digital adoption and digital integration. Weak institutional infrastructure in Pakistan is a major hurdle in digital entrepreneurship (Javed & Ahmed, 2022).

6.6. Data and Information Costs

Data gaps in the digital sector's overall ecosystem, along with production and trade rules, restrict timely decisions in the public and the private sector. Data-sharing systems are limited among the central bank, non-financial regulators, and federal and provincial governments. Some kinds of data have overlapping ownerships across organizations and access that requires approval from multiple authorities. This whole process involves unanticipated time and cost. No data classification has been characterized as non-confidential in law owing to which the government departments treat most datasets available or desired by e-businesses as confidential. This approach restricts digital trade integration, to avoid which some businesses keep their data outside Pakistan (Ahmed et al, 2021).

6.7. Tax Policy and Administration

A complex tax regime restricts the entry and growth of startups in the digital space. Different sales tax regimes are imposed by provincial governments on the digital space, for which filing with multiple tax authorities is required. This serves as an additional transaction cost for businesses and consumers on the one hand and affects government revenues on the other hand. In most cases, cross-border investment promotion is not included in free trade agreements. To harmonize sales tax on services in Pakistan, The Federal Board of Revenue and provincial revenue authorities agreed to implement uniform 'Place of Provision of Services Rules 2023.' However, there is still a lack of clarity on the tax treatment of certain IT-related activities such as software development and cloud computing. This can give rise to uncertainty and disputes among businesses and tax authorities. Bias towards traditional industries and lack of understanding are key issues faced by IT firms in Pakistan as they face unfair treatment from the tax authorities. Furthermore, complex laws and needing to hire specialized professionals to comply with tax laws are other challenges confronted by SMEs in Pakistan (Javed, 2021).

6.8. Reliability of Payment Mechanisms

Lack of trust, inadequate infrastructure, high fees, currency fluctuations, and government regulations are some of the key issues related to payment mechanisms in Pakistan. Consumers often have a lack of trust in online payments owing to concerns about security and fraud. The payment infrastructure is not well developed, which makes it difficult for business to accept online payments. The high fees charged by payment processors and the volatile Pakistani rupee make it difficult for businesses to charge competitive prices. Besides, government regulations are complex and time-consuming for businesses to comply with.

6.9. Lack of Skilled Workers

The lack of skilled workers related to IT, e-commerce, and digital marketing make it difficult for businesses to compete in the global digital economy. Owing to insufficient investment in education

and training, the skilled workforce in Pakistan is small. Moreover, many skilled workers in the IT, telecom, and tech sectors are leaving the country for better opportunities elsewhere, which has further intensified the shortage of skilled workforce in the IT-related sectors. An outdated curriculum and a dearth of academia–industry linkages are creating a mismatch between skills and employer demand in the IT, telecom, and tech sectors. Workers in the IT-related sectors get lower wages compared to workers in other countries owing to the lack of competition in the IT, telecom, and tech sectors of Pakistan. As a result, employers have less incentive to pay higher wages to attract and retain skilled workers. Besides, workers have low productivity owing to the lack of investment in technology and lack of training for workers. Pakistan has taken some measures in this regard, such as the 'Youth Employment Program' from the provincial government of Khyber Pakhtunkhwa, which promotes digital skills among young people (Javed, 2020b).

7. Conclusion and Policy Recommendations

Regionalism and economic integration across the world have increased, particularly in the last two decades. Several countries have actively engaged in establishing new and progressive bilateral and regional trade agreements to accelerate trade and economic growth. Digital trade integration surged after COVID-2019, which increased the significance of digital platforms. Improvement in digital connectivity, ease in regulations, and availability of the relevant skills are important factors to facilitate trade integration and the growth of the e-commerce sector.

This report reviews the regional trade agreements of Pakistan and selected Central Asian countries and their relevance for digital trade integration. The report also accesses the challenges faced by public institutions of Pakistan in digital trade policy. The issues faced by SMEs dealing with digital trade-related products are also covered, for which a survey of 50 firms operating in the digital space from Pakistan and 50 from selected Central Asian countries was carried out. Key informant interviews and virtual focus group discussions were conducted to collect qualitative information in this regard.

The report concludes that Pakistan and selected Central Asian countries are at different levels of digital adoption in terms of mobile connectivity index and download speed of mobile and broadband. Trade analysis indicated that Kazakhstan and Pakistan do not have any major trading partners in export or import from the selected countries. This highlights the lack of regional cooperation among major trading countries and the need for regional trade agreements.

The report reviewed the e-commerce legislation of Pakistan and selected Central Asian countries along with domestic policies and measures to promote digital trade. Regional integration among the selected countries has increased by 40 percent since 2010, where Kazakhstan and Uzbekistan are the most integrated economies. The least integrated economies with other selected economies are Afghanistan and Pakistan. Pakistan and the selected Central Asian countries are at different levels in terms of implementing digital trade facilitation measures. Laws and regulations for electronic transactions are fully implemented only in Uzbekistan, whereas other countries have only partly implemented them. There is a lack of legislation among the selected countries regarding consumer protection, whereas the digital divide within the countries also needs the attention of respective governments. Javed and Javed (2023) reported that the digital divide in Pakistan is usually because of infrastructure gaps between rural and urban areas. The digital divide can be overcome by promoting regional cooperation between the member countries (Javed, 2019).

Challenges such as lack of effective enforcement of intellectual property rights, non-tariff measures, foreign investment restrictions in digital space, data and information costs, and tax policy and administration are key policy issues that affect digital trade integration in Pakistan.

The key recommendations of the study are as follows:

- Improvements in digital connectivity at home and across borders can help firms to reduce their costs and increase export volume.
- Common and harmonized rules to support cross-border digital trade—in particular, a provision creating a trusted environment for digital exchanges—providing swift and timely knowledge-sharing between Pakistan, and selected Central Asian countries is required. Samad and Ahmed (2014) emphasize that trade facilitation between Pakistan, Afghanistan, and regional countries requires the harmonization of custom procedures and regulatory frameworks.
- A working group dialog of Pakistan and Central Asian countries including Afghanistan, Kazakhstan, Tajikistan, and Uzbekistan can enforce a mutual understanding on product standards for trade among the member countries. The group can recommend a mid-term cooperation agenda for the trade of both digital goods and services. The key objective of such a dialog should be to promote intra-regional peer learning and technology exchange.
- Governments should ensure digital inclusion by reducing the urban–rural divide. Learning about digital inclusion could be sourced from within the selected countries and factored into domestic digital trade policy and regulatory frameworks.
- The effective engagement between the digital sector business associations of Pakistan and selected Central Asian countries is required to boost cross-country partnerships and joint ventures. B2B engagement was affected by the pandemic; however, the ministry of commerce of each country can play its role to improve business ties. Business associations could benefit from UNIDO's South–South and Triangular Industrial Cooperation (STIC) initiative to improve the linkages between governments, business associations, and development partners.
- Central Asian countries can develop their e-payment gateway by following the example of the Single Euro Payments Area. Pakistan and selected Central Asian countries can also collaborate to initiate a regional payment mechanism such as the Asian Payment Network.
- Specific ICT capacity-building programs are required for young people, women, and the public—particularly in rural areas—to provide practical training in e-commerce. The regional cooperation can assist and decrease the cost of capacity building and countries can learn from the experiences of other countries.
- Special funds or provisions from banks are required to fund digital trade startups. Regional cooperation between countries can provide capacity-building support. The Digital Trade Inventory by OECD can provide some funding and financing.
- Pakistan and selected Central Asian countries can establish a joint chamber of commerce for promoting business networks and bilateral trade. A prime example is the Pakistan Afghanistan Joint Chamber of Commerce and Industry, which is making effective efforts to promote bilateral trade between the two countries.
- Collaborating on aspects such as visa, compliance with standards, opening bank branches, harmonization of licences and permits can be helpful in promoting regional integration, for which more interaction among specialized national institutions is required (Ahmed et al, 2015).
- Governments should develop a dedicated e-commerce framework including a development strategy and programs that are aligned with SDG 9c (Razzaq, 2022).

- Governments should invest extensively in education and training in the IT, telecom, and tech sectors to overcome the lack of skilled workers and the mismatch among skills and demand. Academia–industry linkages through aligning the curriculum with employer requirements will be helpful for developing a skilled workforce. Besides, increasing wages will help businesses to attract and retain skilled workers in IT and related sectors. Governments should allocate sufficient funds for projects related to upgrading technology.

7.1. Recommendations for Bilateral and Regional Trade Agreements

- A comprehensive and multifaceted response is required to reduce digital trade barriers. The provisions for digital trade integration in bilateral and regional trade agreements can address this matter.
- Regional economic cooperation by mutually benefiting trade agreements and mechanisms for digital trade facilitation will help in effective integration, improved efficiencies, and reducing trade costs. Similarly, ADB (2014) emphasized that regional PTAs have the potential to play a key role in the economic diversification of Central Asian countries.
- The ministry of commerce in each country should work on improving trade ties to boost economic cooperation.
- The diversification of transport modes can increase trade and transit trade between Pakistan and Afghanistan (Shabbir & Ahmed, 2015). Holding annual trade summits will also be beneficial for the business community and investors of both countries (Ahmed & Shabbir, 2016).
- Pakistan and Uzbekistan signed a USD1 billion trade agreement to promote bilateral economic cooperation.[23] The agreement focuses on encouraging the exchange of goods and services, and economic cooperation in several fields including e-commerce, trade, investment, transport and communication, and tourism. Other countries can follow this welcome step by initiating bilateral and regional trade agreements.
- The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the Digital Single Market (DSM), and the Asia-Pacific Economic Cooperation (APEC) Digital Trade Facilitation Framework are examples of successful regional integration that Pakistan and Central Asian countries can follow by promoting digital trade agreements.
- Pakistan and Central Asian countries should integrate in the global value chains of the IT, telecom, and tech sectors. This can be done by including specific provision in regional agreements regarding those sectors.

7.2. Recommendations for South–South and Triangular Cooperation

- It would be beneficial for Pakistan and Central Asian countries to participate in policy dialogs and expert groups like the United Nations Network of Experts for Paperless Trade and Transport in Asia and the Pacific.
- Businesses and consumers should be informed about the risks of data breaches and other data security incidents. They should also take necessary steps to protect their data, including strong passwords, data storage in secure locations, and implementing proper access

[23] 'Pakistan Uzbekistan ink USD1 billion trade agreement in Tashkent,' *Daily Pakistan*, 24 February 2023, https://en.dailypakistan.com.pk/24-Feb-2023/pakistan-uzbekistan-ink-dollar-1-billion-trade-agreement-in-tashkent

controls. Businesses and consumers should stay alert while observing signs of data breaches such as unauthorized access to accounts and fraudulent transactions. They should immediately report these data breaches to the relevant authorities to minimize the possible damages.

- Governments should take effective measures to strengthen the legal framework for intellectual property rights protection by initiating the relevant laws as per international standards. It should be ensured that these laws are enforced by directing necessary resources to enforcement agencies. Governments should increase awareness about IPRs among businesses and consumers through education and outreach programs. The cooperation between businesses, consumers, and enforcement agencies to tackle intellectual property rights infringement can also play a significant role.

7.3. Country-Specific Recommendations

- Effective reforms are required to develop an efficient trade facilitation regime in Afghanistan. Basic ICT equipment should be exempt from taxes to decrease prices and improve accessibility and affordability. Besides, Internet prices should be decreased and the government should focus on increasing Internet speed to accelerate Internet penetration. Subsidies for new ICT startups can pave the way for digital integration with regional partners and promote the ICT industry domestically.
- The government of Kazakhstan should develop secure systems of Internet payment and goods delivery to boost the e-commerce sector. The government should also invest in digital infrastructure such as increasing mobile broadband coverage. It is also needs to improve cybersecurity to protect consumers and businesses. The regulatory burden should be reduced to develop fixed broadband markets. The government of Pakistan should digitalize the supply chain to address the challenges owing to traditional and outdated methods; this will help boost domestic and cross-border trade. Central bank should relax requirements to be met by firms, which will help in the expansion of online trading. Tax harmonization from federal and provincial authorities to reduce differential treatment will help to promote digital trade. The simplification of tax laws can make it easier for IT firms in Pakistan to understand and comply with tax obligations. The government should also decrease compliance costs for IT firms through simplified and automated tax filing options.
- The national trade facilitation strategy of Pakistan should be revised to accelerate accession to the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific. The government of Pakistan should invest in digital trade infrastructure such as Internet access, telecommunications, and logistics. Marel and Saez (2019) point out the same, that Pakistan needs to invest in human capital and ICT along with developing electronic infrastructure. This can be done through public–private partnerships. Javed (2020c) reported that, by allocating sufficient resources to technical institutes, Pakistan can develop a skilled workforce for IT and related sectors.
- The government of Pakistan can provide training to workers in IT, e-commerce, and digital marketing, which will help to improve digital trade integration. Furthermore, reforming government policies to make them more conducive to digital trade and addressing the security risks and cultural challenges faced by businesses can play a key role in digital trade integration. The government of Pakistan should implement a comprehensive data protection law with clear rules and regulations for businesses and individuals. A data protection authority should be established that is responsible for enforcing data protection laws and regulations. Training and resources for businesses and individuals can be helpful to create awareness regarding data protection. Collaboration between government, businesses, and

consumers can also play a key role in tackling data breaches and other data security incidences.

- The government of Pakistan should promote the use of digital payments among businesses and consumers by providing tax breaks to businesses that accept digital payments and through educating consumers regarding the advantages of digital payments. By investing in new technologies and collaborating with banks and other financial institutions, the government can also help to improve the payment infrastructure in Pakistan. Furthermore, the government should decrease the fees charged by payment processors. Regulating the payment sector or provision of subsidies to businesses that accept digital payments can be helpful in this regard. The simplification of government rules and regulations will make it easier for businesses to follow these procedures and encourage businesses to accept digital payments.
- The government of Pakistan should address non-tariff restrictions through conducive agreements. Streamlining the customs clearance process and automating the customs clearance process by decreasing the number of required documents can be helpful in this regard. Besides, the government should decrease the number of technical regulations applied to digital products. Aligning the technical regulations of Pakistan with international standards and providing more flexibility to businesses can be helpful in decreasing the technical regulations that are currently applied to digital products. Eliminating the import license requirement for digital products can make it easier for businesses to import digital products and decrease the cost of doing business in the country.
- The government of Pakistan should promote awareness among public procurement officials regarding the capabilities of the IT, telecom, and tech sectors through training and workshops. The government should prioritize local firms while making procurement decisions. Furthermore, streamlining the procurement process to make it transparent will also help domestic firms to compete for government contracts.
- International connectivity transit routes in Tajikistan are required to be diversified to attain greater digital resiliency and capacity. It needs to reach the unconnected region for which national telecom networks should be expanded, whereas network congestion should also be avoided. Local and foreign investments should be attracted in the country; for which, the institutional and policy environment needs to be made more conducive. The government should also focus on enhancing cybersecurity and data protection capacity to avoid cyber-attacks. Advanced digital skills are necessary to promote digital platforms, for which the government should focus on developing digital literacy in the country. There is also a lack of digital trust in online transactions, for which effective strategies to strengthen the data protection environment are required. Tajikistan initiated the Law on Personal Data Protection in 2018; only its effective implementation can build confidence among consumers and traders in using online services.
- The Uzbekistan government should focus on increasing investment in digital infrastructure. It should also provide sufficient funding to firms in the digital space to ensure the expansion of trading activities. Besides, effective legislation is required to address the modern challenges related to the digital economy and digital trade. Engaging with other regional countries in the form of international treaties can be helpful in boosting regional cooperation.

7.4. Firm-Specific Recommendations

- SMEs in the south should exchange their experiences and learning regarding data and information protection.

- Firms should focus on following practices to ensure consumer protection and promote consumer confidence that digital transactions are secure and transparent.
- In the case of disputes, firms should follow a transparent procedure to facilitate consumers.
- Firms should involve in research and development activities along with investing in promotion of workforce skills to enhance productivity.
- The role of business associations is important in this regard as they can provide market access and information, policy advocacy, and organize capacity-building activities for SMEs, which can help small businesses to improve their integration with other regional partners.

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Annex A: List of Digital Trade-Related Items

S. No	HS code	Description
1	370510	For offset reproduction
2	370520	Microfilms
3	370590	Other
4	370610	Of a width of 35mm or more
5	370690	Other
6	482110	Printed
7	490110	In single sheets, whether folded or not
8	490191	Other: dictionaries and encyclopedias, and serial instalments thereof
9	490199	Other
10	490210	Appearing at least four times a week
11	490290	Other
12	490300	Children's picture, drawing, or coloring books.
13	490400	Music, printed or in manuscript, whether bound or illustrated or not
14	490510	Globes
15	490591	Other: In book form
16	490599	Other
17	490600	Plans and drawings for architectural, engineering, industrial, commercial, topographical or similar purposes, being originals drawn by hand; hand-written texts; photographic reproductions on sensitized paper and carbon
18	490700	Unused postage, revenue, or similar stamps of current or new issue in the country to which they are destined; stamp-impressed paper; banknotes; cheque forms; stock, share or bond certificates and similar documents
19	490810	Transfers (decalcomanias), vitrifiable
20	490890	Other
21	490900	Printed or illustrated postcards; printed cards bearing personal greetings, messages or announcements, whether illustrated or not, with or without envelopes or trimmings
22	491000	Calendars of any kind, printed, including calendar blocks
23	491110	Trade advertising material, commercial catalogs and the like
24	491191	Other: Pictures, designs and photographs
25	491199	Other
26	852410	Gramophone records
27	852432	Discs for laser reading systems: For reproducing sound only
28	852439	Discs for laser reading systems: Other
29	852440	Magnetic tapes for reproducing phenomena other than sound or images
30	852451	Other magnetic tapes: Of a width not exceeding 4mm
31	852491	Other: For reproducing phenomena other than sound or image

32	854150	Other semiconductor devices
33	854212	Monolithic digital integrated circuits: Cards incorporating an electronic integrated circuit (smart cards)
34	950410	Video games of a kind used with a television receiver
35	950430	Other games, coin- or disc-operated, other than bowling alley equipment
36	950440	Playing cards
37	950490	Other

Annex B: Exports and Imports of Digital Trade-Related Items in USD1,000 (2017-2021)

HS code	Afghanistan		Kazakhstan		Pakistan		Tajikistan		Uzbekistan	
	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp
370510	-	-	-	-	-	-	-	-	-	47.23
370590	-	-	20.4	33.99	-	9.19	-	0.32	-	200.46
370610	-	-	-	2.75	-	-	-	-	-	-
370690	-	-	-	-	-	135.62	-	-	-	-
482110	-	-	773.82	66,935	4,780.19	19,968	0.81	7,428.52	1,754.01	5,780.84
490110		113.14	795.66	28,179	1,852.37	1,619.5	0.21	2,190.03	33.92	5,909.57
490191	-	-	26.32	2,556.2	134.10	243.30	-	28.21	159.90	199.10
490199	-	-	2,018.4	191,137	9,970.79	145,073	35.71	5,316.32	680.13	36,941.59
490210	-	-	1.04	241.97	12.78	6.88	-	0.64	-	60.37
490290	0.86	31.05	2,055.2	18,587	199.14	1,622.14	-	18.78	0.14	271.24
490300	15.66	1,134.65	162.65	22,987	41.36	1,190.99	-	259.88	1.83	827.05
490400	-	-		75.50	0.16	0.35	-	0.09	-	0.70
490510	-	-	2.85	456.53	1.05	61.64	-	12.30	-	248.59
490591	-	-	0.01	171.46	15.37	3.98	-	0.70	-	0.57
490599	-	0.16	3.29	582.48	746.77	224.14	-	13.38	0.02	1,168.38
490600	-	-	0.02	14,940	243.50	22,850.6	12.35	5.62	0.17	960.42
490700	4.24	882.74	32,426.2	11,306	1.45	138,221		49.49	9,651.37	79,977.80
490810	-	-	-	21.53	1,221.69	1,858.53	0.82	0.26	-	1,537.98
490890	-	-	12.13	569.25	122.97	3,532.91	-	31.75	2.99	1,189.52
490900	-	15.92	12.42	1,498.8	91.01	133.04	0.04	29.47	0.003	694.53
491000	0.15	0.90	50.81	2,345.9	64.85	765.49	-	69.95	5.49	209.72
491110	0.30	6.91	2,611.5	26,538	339.85	7598.41	0.37	2,397.82	93.90	2,758.63
491191	-	-	103.74	8,783.0	319.46	292.89	-	168.99	28.39	1,142.50
491199	-	-	3,327.68	99,158	876.99	13038.8	3.31	18,866.58	234.65	9,704.04
852410	-	-	25.74	2567.52	366.85	9,581.98	-	-	-	638.70
852432	-	-	-	-	-	-	-	-	-	-
852439		1.11	-	-	-	-	47.53	1,923.59	-	21,271.11
854150	-	-	1.21	809.98	37.78	2,122.50	-	30.87	0.29	172.49
854212	-	-	1,499.15	93,742	0.46	127,991	-	9,869.10	356.25	239,307.8
950410	-	-	-	-	-	-	-	115.53	-	68.53
950430	-	-	328.63	10,360	224.14	2,735.39	-	306.05	6.55	3,789.02
950440	-	-	36.72	3,918.7	41.76	3,261.16	-	194.55	-	559.53
950490	-	-	2,475.09	129,287	687.98	4,507.57	0.41	365.00	201.72	3,556.96
Total	21	2,187	48,772	737,792	22,395	508,650	102	49,694	13,212	419,195

Exp = exports, imp = imports
Source: WITS

Annex C: Major Trading Partners, 2021

Country	Export Partners	Import Partners
Afghanistan	India, Pakistan, China	Iran, China, Pakistan
Kazakhstan	China, Italy, Russia	Russia, China, Germany
Tajikistan	Switzerland, Kazakhstan, Türkiye	Russia, Kazakhstan, China
Pakistan	USA, China, UK	China, UAE, Indonesia
Uzbekistan	Russia, China, Türkiye	China, Russia, Kazakhstan

Source: International Trade Centre

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