Digitalization and Services Trade: A Way Forward for Inclusive Growth in Asia -Pacific Countries

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Abstract

Digital technology is changing the global trade pattern and digital service trade is increasingly becoming important across globe. The paper investigates the role of digitalization in services trade in the context of Asia-Pacific region. The empirical analysis is based on panel data of 31 countries from 2000-2022. Based on the results of panel ARDL, the study indicates that higher digitalization improves the services trade. The results indicate that the digitalisation efforts taken by the Asia-Pacific region has contributed in promoting services trade performance over the sample period. The findings call for further policy efforts to enhance digitalization efforts across the region.

Keywords: Digitalisation; Services trade; Panel ARDL

JEL Codes: F10; F14; O33

Introduction

Technological innovations and digitalization has accelerated the transformation of global trade in the recent era. The digital revolution is changing the way people, enterprises or government interact. There is an increasing effort to understand how digital transformation and trade are connected. The extent of a country's export volume of goods and services is positively associated with internet connectivity (United Nations, 2016).

The high entry costs in trade enables only the most productive firms to engage in trade (Melitz, 2003). However, the use of Information and Communication Technologies (ICT) and digitalization helps in reducing the transaction costs and enables more efficient logistics. This has been discussed mostly in the context of manufacturing exports. However, services exports and the role of digitalization in services sector exports are not empirically explored. There is no consensus on the definition of Digital trade. However, the empirical evidence suggests that digital trade enable digital transactions in trade in goods and services. Digitally enabled

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services denotes the services that can be supplied via electronic networks. The recent developments in network connectivity has enabled services to be tradable globally.

Over the past 20 years, services has developed has one of the most important contributor to employment, trade and GDP. Service sector contributes more than 50% of global trade in value added terms (WTO report, 2023). Out of the total global services trade, 54% of services exports were delivered digitally in the year 2023. The contribution of services in globally has increased overtime with service sector share in global GDP increased from 53 percent to 67 percent between 1970 to 2021. Trade in commercial services has expanded at higher pace than the trade of goods during the period 2011 to 2019. Further, the growth rate of exports of commercial services of developing economies has been stronger. The rapid increase in trade in services has contributed to the emergence of new venues for export lagging countries to enhance their trade and development. In a globalising world with development of Information and Technology (ICT), the nature of service exports has also changed. With more advent of digitalisation in services the contribution of digitalised services exports are also increasing across the globe.

Services play an important role in economic growth across the Asia pacific region by contributing more than half of Asia pacific economies GDP on average. Further, with increasing technologies and digitalization which helps to facilitate the cross border supply services, service sector is at the forefront of the growth strategies of these economies. During the period from 2005 to 2022, the share of global commercial services exports of Africa, Europe, Latin America and the Caribbean, and North America all declined, while those of Asia increased from 19.5 percent to 24.2 per cent. (WTO, 2023).

The share of services exports from each of the Asia pacific countries has marked an increase over the merchandise trade. At the country level, the region's trade in services is more concentrated in few large economies. As on November 2023, the top 10 contributors are China (24%), India (15%), Singapore (15%), Japan (10%), Republic of Korea (7%), Hong Kong, China (4%), Turkiye (4%), the Russian Federation (3%), Australia (3%) and Thailand (3%). These countries together accounts for 89% and 87% of the services exports and imports in the region. The travel sector owing to the easing of travel restrictions has been among the most important contributors to the services exports of the region. In 2022, the travel sector experienced a growth of 68.7%. The services trade restrictiveness as measured by OECD Services Trade Restrictiveness Index (STRI) indicates that Asia Pacific region has a significantly higher STRI (0.28).

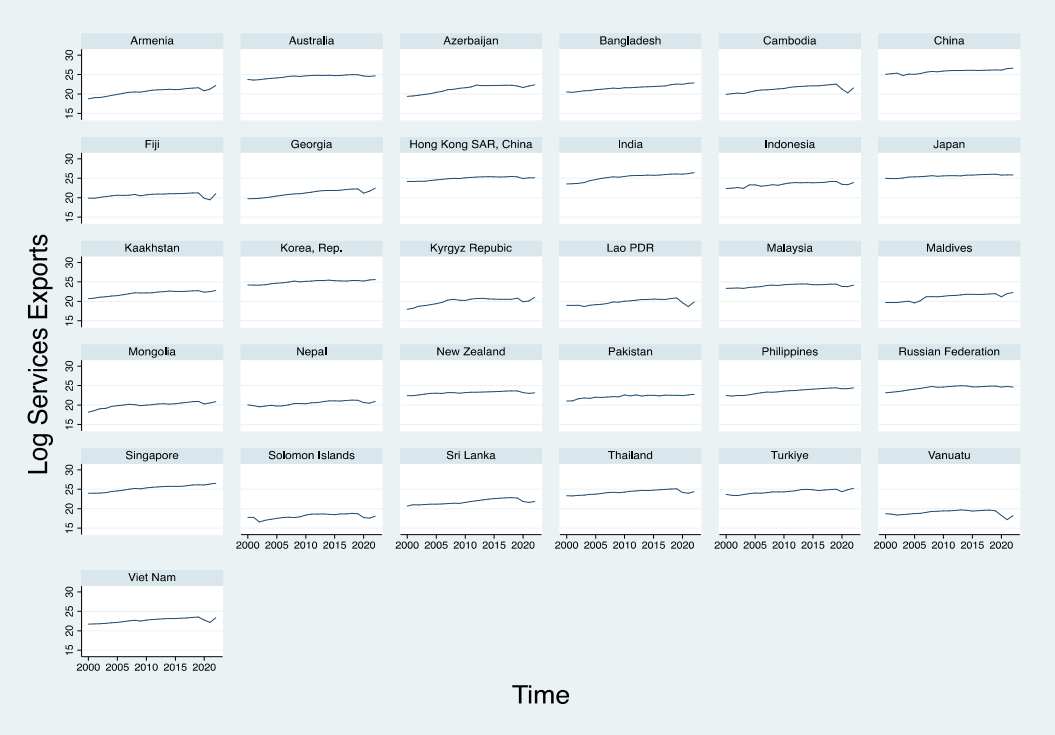
The rapid expansion with less contribution of traditional services mirrors the strong recent growth of digitally delivered services. The digitally deliverable services has grown more than the total trade and trade in services. The digitally deliverable services exports increased from US$ 654 billion which accounts for 57% of the region's commercial services exports by 2021, from around US$ 492 billion or 44 per cent in 2017. Digitally deliverable services exports are particularly important for the South and South West and South East Asian economies.

Recent policies of the region also indicates the move towards reduced restrictions in services trade and digitalisation of services trade. The APEC Services Competitiveness Roadmap (ASCR) outlines three targets to be achieved by 2025; (1) progressively reduce restrictions to services trade and investment, (2) increase the share of services exports from APEC economies in the total world services exports and (3) increase trade in services to exceed 6.8 percent and exceed the value-added of the services sector of the total GDP of the APEC region.

The current study is an attempt to understand how digitalization impacts trade in services in the context of Asia-pacific countries. Few studies have analysed the role of digitalization in exports. Various studies uses different indicators or proxy variables for digitalization such as telecommunication access, internet access, technological infrastructure and quality (Freunda and Weinbold 2004; Abedini 2013). Few studies have also used ICT development index to indicate digitalization level of a country.

The paper is structured as follows. Section 2 discuss the recent policy efforts in exports and trade restrictiveness and in digitalized services trade in the context of Asia-Pacific region. Section 3 summarises the existing research on the role of digitalisation in services exports. Section 4 details the data and methodology used. Section 5 discuss the findings of the study and section 6 concludes.

Figure 1. Services Trade (by country)



Source: Author

2. Digitalisation Efforts- Asia-Pacific Region

Digitalisation has become a crucial driver of economic growth and innovation across the globe. Countries are increasingly adopting digital strategies to enhance their economic competitiveness and improve service exports. This summary highlights key digitalisation policy efforts globally, with a particular focus on the Asia-Pacific region, and connects these efforts to the trends in digitalised service exports.

Globally, digitalisation policy efforts are evident in regions such as Europe, North America, and Africa. In Europe, the Digital Europe Programme aims to boost digital capabilities and infrastructure across member states, focusing on areas such as artificial intelligence (AI), cybersecurity, and advanced digital skills (Gaweł & Mińska-Struzik, 2023). This has led to an increase in the export of digital services, including fintech, digital health, and e-government solutions. The United States has prioritised digital innovation through initiatives such as the National AI Initiative and the American Broadband Initiative, aiming to enhance digital infrastructure, promote AI research, and expand broadband access (Rodríguez-Crespo & Martínez-Zarzoso, 2019). Consequently, the U.S. is a leading exporter of digital services, including software, cloud computing, and digital entertainment. In Africa, the Digital

Transformation Strategy for Africa (2020-2030) promotes digital transformation across the continent, focusing on digital infrastructure, e-governance, and digital skills development (Banga, 2022). African countries are beginning to export digital services such as mobile banking, e-commerce, and digital health solutions, driven by the growth of mobile internet access.

In the Asia-Pacific region, several countries have implemented extensive digital strategies that significantly influence their service exports. China has expanded its 5G networks and developed smart cities, investing heavily in AI and big data technologies (Priharsari et al., 2023). This has diversified China's service exports to include e-commerce, fintech, and cloud computing services, making it a global leader in online retail and mobile payments (ESCAP, 2023). India's Digital India programme aims to transform the country into a digitally empowered society, focusing on digital infrastructure, digital literacy, and e-governance (Priharsari et al., 2023). India is a major exporter of IT services, including software development, IT consulting, and business process outsourcing (BPO), and is expanding its presence in digital health and fintech services (ESCAP, 2023).

South Korea's Digital New Deal, launched in 2020, aims to accelerate digital transformation across various sectors, including healthcare, education, and manufacturing, focusing on building digital infrastructure, fostering digital innovation, and enhancing cybersecurity (Priharsari et al., 2023). South Korea has seen a rise in the export of digital content, including K-pop, online gaming, and digital education services, and is also a major exporter of IT services and solutions (ESCAP, 2023). Singapore's Smart Nation initiative focuses on digital government services, data analytics, and cybersecurity, aiming to become a global hub for digital innovation and entrepreneurship (Priharsari et al., 2023). Singapore's service exports include digital financial services, cybersecurity solutions, and digital health services, and it is also a leading exporter of professional services such as legal and consultancy services (ESCAP, 2023).

Japan's Society 5.0 initiative aims to create a super-smart society by integrating physical and digital spaces, investing in AI, IoT, and robotics to drive innovation (Priharsari et al., 2023). Japan's service exports include advanced technologies in robotics, digital manufacturing solutions, and digital content such as anime and gaming, and the country is also a key player in the export of digital health technologies (ESCAP, 2022).

The connection between digitalisation efforts and the growth of digitalised service exports is evident in several trends. The expansion of digital infrastructure and the adoption of e-commerce platforms have enabled countries like China and Japan to become major players in global e-commerce, facilitating cross-border trade and allowing businesses to reach international customers more easily (Lovelock & Pedrosa, 2023). The growth of fintech services in countries such as China, India, and Singapore has led to the export of digital payment solutions, blockchain technologies, and financial management tools, driven by the need for efficient and secure financial transactions (Mishra & Valencia, 2023). Countries like South Korea and Japan have become major exporters of digital content, including music, movies, and online games, driven by the popularity of K-pop and anime (ESCAP, 2022). The development of strong IT service sectors in countries such as India and Australia has led to the export of cloud computing, software development, and IT consulting services, essential for businesses undergoing digital transformation across industries (ESCAP, 2022). Additionally, digital health and education services are emerging as significant export sectors, with countries like Singapore and India leveraging their digital infrastructure to provide telemedicine, online education, and e-learning solutions to international markets (ESCAP, 2023).

2. Literature Review

Digitalization has profoundly transformed global trade dynamics, influencing both goods and services exports. The integration of digital technologies into trade processes has enabled firms to improve efficiency, reduce costs, and access new markets. This literature review explores the relationship between digitalization and export performance, focusing on three main themes: the general impact of digitalization on exports, the specific influence on services exports, and the role of Information and Communication Technology (ICT) in enhancing trade. Additionally, the review highlights other relevant areas such as digital finance, e-commerce, and the implications of digitalization during crises.

2.1.Digitalization and Exports

The relationship between digitalization and export performance has garnered significant attention in recent years, particularly in the context of firm-level capabilities and macroeconomic impacts. Several studies have highlighted how digital transformation can enhance a firm's export performance by improving efficiency, reducing transaction costs, and facilitating access to international markets. Luu (2023) examines the role of digital transformation in enhancing export performance through firm digital capabilities. The study

outlines a process mechanism where digital tools and technologies enable firms to streamline operations, innovate, and expand their market reach. Similarly, Vadana et al. (2019) emphasize the importance of digitalization for international entrepreneurship and marketing, indicating that digital tools can significantly boost a firm's ability to compete globally.

Moreover, Zahoor and Lew (2023) discuss how strategic flexibility and the adoption of digital technologies can enhance the export performance of emerging market SMEs, especially during crises. Their findings suggest that digital technologies enable SMEs to remain agile and responsive to market changes, thereby improving their international competitiveness. In the manufacturing sector, Al-Khatib (2023) provides empirical evidence on how digital transformation impacts export performance, highlighting that digital tools can lead to more efficient production processes and better quality control. This, in turn, makes manufacturing firms more competitive in the global market.

2.2.Digitalization and Services Exports

The impact of digitalization on services exports is another critical area of study, with research indicating that digital services trade can significantly boost a country's export performance and economic growth. Wen, Chen, and Zhou (2023) investigate the relationship between digital service trade and technological innovation, finding that increased digital service exports are associated with higher levels of innovation in various sectors. Gnangnon (2021) explores the role of services export diversification and its stability in the context of trade openness. The study suggests that a diversified digital services export portfolio can enhance revenue stability and reduce vulnerability to global market fluctuations.

Gaweł and Mińska-Struzik (2023) focus on the gender implications of digital services trade, proposing that digitalization can act as a gender equalizer by enabling more female entrepreneurs to participate in international trade. This participation is facilitated by the lower entry barriers and increased flexibility offered by digital platforms. The work of Qiu, Yu, and McCollough (2023) further examines how digital service trade can promote the high-quality development of global manufacturing, emphasizing the existence of mechanisms through which digital services enhance manufacturing efficiency and innovation.

2.4.Digitalization, ICT, and Exports/Service Exports

The integration of Information and Communication Technology (ICT) into trade processes is pivotal for understanding the broader impacts of digitalization on exports and service exports. Rodríguez-Crespo and Martínez-Zarzoso (2019) analyze how ICT influences trade, particularly in complex products, concluding that ICT adoption can significantly enhance export performance by simplifying complex trade logistics and improving communication. Yushkova (2014) studies the impact of ICT on trade across different technology groups, finding that ICT adoption positively influences trade flows, especially for high-technology products. This is corroborated by Xing (2018), who investigates the effects of ICT and e-commerce on bilateral trade flows, highlighting that ICT infrastructure and e-commerce platforms play a critical role in facilitating international trade. In the context of the Asia-Pacific region, the Economic and Social Commission for Asia and the Pacific (ESCAP, 2023) reports that digital trade facilitation measures have substantial potential to boost trade and investment for sustainable development. This is supported by Sinha and Sengupta (2022), who empirically demonstrate that ICT expansion, alongside foreign direct investment, significantly contributes to economic growth in developing Asia-Pacific countries. Finally, Jang (2021) explores the readiness of the Asia-Pacific region for digital growth and inclusion, suggesting that while the region shows strong potential for digital trade expansion, there are still challenges related to digital inclusion that need to be addressed to fully leverage the benefits of digitalization.

2.5.Other Aspects of Digitalization and Export

Several studies have also explored other dimensions of digitalization and their impact on exports. For instance, digital finance has emerged as a critical factor in enhancing export performance. Li and Hu (2024) examine the role of digital finance in promoting export growth and sustainability in Chinese manufacturing enterprises. They find that digital finance solutions can improve firms' access to capital, thereby facilitating export activities.

The COVID-19 pandemic has also highlighted the importance of digitalization in maintaining export performance during crises. Thuy et al. (2023) investigate whether digital transformation acted as a barrier to export reduction during the pandemic in a developing country context. Their findings suggest that firms that had embraced digital transformation were better able to sustain their export levels during the crisis. E-commerce has similarly been shown to play a significant role in international trade. Shanmugalingam et al. (2023) provide evidence from

Asian countries, demonstrating that e-commerce can significantly boost trade by reducing transaction costs and facilitating market access.

The reviewed literature underscores the transformative potential of digitalization on both goods and services exports. The integration of digital technologies not only enhances firm-level capabilities and competitiveness but also contributes to broader economic growth and stability. As digitalization continues to reshape global trade dynamics, ongoing research and policy focus will be crucial to fully harness its benefits and address associated challenges.

3. Data and Empirical Methodology

3.1. Data

To examine the impact of digitalization on services, we use a panel data of 17 Asia and Pacific countries exports from 2000 to 2022. The selection of the sample is based on the data availability. In line with the objectives of the study, we use Internet usage (percentage of total population) as the indicator for the digitalization level in services exports. The dependent variable is the logarithm of the current value of services exports. To measure the digitalization, we use the internet usage (percentage of total population) as the independent variable. Mobile subscription (percentage of total population) is used as an alternative indicator for digitalisation. In addition to that we use the control variables such as GDP per capita, Inflation, governance indicators (voice and accountability and political stability) as the determinants of services exports as per the existing literature. Table 1 reports a summary of the variables used in the analysis, along with their descriptive statistics and data sources.

Table 1. Variable Definition and Descriptive Statistics

Variable	Description	Data source	Observations	Mean	Minimum	Maximum
SEREXP	Log of Services exports	WDI	713	22.48	16.58	26.64
INTUS	Internet usage (percentage of total population)	WDI	713	37.53	0.047	97.57
MOBSUB	Mobile subscription (percentage of total population)	WDI	713	84.84	0.041	96.28
GDPPC	Log of GDP per capita	WDI	713	25.21	19.99	30.42
INFL	Inflation	WDI	713	5.29	-3.685	72.30
VA	Voice and Accountability	WDI	713	-0.26	-1.815	1.6786
VPS	Violence and Political stability	WDI	713	-0.178	-2.810	1.599

Source: Author

3.2. Econometric Methodology

3.2.1. Cross Sectional Dependence Test

When we use panel data for analysis, two issues have to be considered, i) cross-sectional dependence (CSD). i.e., a shock that effects one country may affect other country also in the panel. The cross-sectional dependence in the errors may arise to the presence of common shocks and unobserved components that ultimately become part of the error term (Hoyos and Sarafidis, 2006). The panel data estimation ignoring cross-sectional dependence are inconsistent. The common test used for panel unit root test is Harris-Tzavalis which do not account for the CSD and heterogeneity issues. Cross Sectionally Augmented Dickey-Fuller (CADF) Test deals with only CSD but not heterogeneity. And the conventional cointegration approaches ignore CSD and slope heterogeneity. The CSD test is implemented using xtcsd command in Stata. The null hypothesis of the test is no cross sectional dependence in the panel.

3.2.2. *Panel Unit root Tests*

Panel Unit Root Test

The first generation unit root tests do not account for CSD. However the second generation unit root tests allow us to account for the CSD. The cross-sectional augmented IPS (CIPS) tests adds current and lagged cross-sectional averages of the dependent variables and their changes to the usual ADF equation. We have also carried out CADF test also to test the stationarity of variables in the presence of cross-sectional dependence. The CIPS equation is represented as follows.

3.2.3. Panel cointegration and ARDL

After having confirmed the variables are cointegrated, we estimate the long-run and short-run estimates using the Pooled Mean Group Estimator (PMG) through the ARDL model. In the presence of cointegration in a panel framework, the PMG estimator can be used to empirically examine the role of digitalization in services exports of Asia-Pacific countries. The equation estimated is as follows.

$$LnSEREX_{i,t} = \beta_0 + \beta_1 INTUS_{i,t} + \beta_2\, GDPPC_{i,t} + \beta_2\, INFL_{i,t} + \beta_2\, VA_{i,t} + \beta_2\, PS_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where the dependent variable is log of services exports and independent variables are internet usage as the digitalization indicator and other control variables are GDPPC, inflation, the governance indicators namely., voice and accountability and violence and political stability.

Cross Sectional -ARDL

We employ the cross-sectionally augmented autoregressive distributed lag (CS-ARDL) modelling technique, originally proposed by Pesaran and Smith (1995) and later improved by Chudik and Pesaran (2015). Using CS-ARDL, the long run coefficients are measured. The panel ARDL estimator is the common panel data estimator, but it fails to address the potential cross-sectional dependence. This method outperforms the other cointegration methods. The CS-ARDL equation is specified as follows

$$\Delta Y_{it} = \varphi_i + \sum_{t=1}^{p} \varphi_i \, \Delta Y_{i,t-1} + \sum_{t=0}^{p} \varphi_i \, EXV_{s,i,t} + \sum_{t=0}^{1} \acute{\varphi}_i \, \overline{CSA}_{i,t-1} + \varepsilon_{i,t} \qquad (2)$$

Where $\overline{CSA}_t$ is the cross sectional dependence.

4. Empirical Results and Findings

Table 2 reports the results of Cross sectional dependence test (Pesaran, 2015). By rereferring to the CD test and its corresponding probability values , it can be verified that various CD test values are significant leading to rejection of null hypothesis of cross-sectional independence. This implies that there is cross-sectional dependency among all variables across all countries in the sample. This indicates the application of second generation panel unit root tests that accounts for cross-sectional dependence. In this study, we use Pesaran's CADF and CIPS tests to check for the stationarity of variables.

Table 2. Cross sectional Dependence Test

Pesaran (2004) CD Test		
Variable	**CD-Test**	**p-value**
SEREXP	45.23	0.000
INTUS	50.59	0.000
MOBSUB	31.22	0.000
GDPPC	55.90	0.000
INFL	38.76	0.000
VA	-1.85	0.064
VPS	-1.15	0.072

Table (3) reports the results of second-generation stationarity tests of CADF and CIPS which hare robust in the presence of cross-sectional dependence. The test is cariied out using constant plus trend for al variables. The unit root test results at levels indicate that some variables are stationary at the level I(0) and all variables become stationary at I(1).

Table 3. Unit root Tests (Level and First Difference)

Variable	CADF		CIPS	
	I (0)	I(1)	I(0)	I(1)
SEREXP	-1.89	-4.469***	-1.89	-4.469***
INTUS	-2.29	-2.085**	-1.379	-4.026***
MOBSUB	-2.14	-2.83**	-2.29	-2.035**
GDPPC	-1.974	-2.064***	-2.20	-3.42***
INFL	-1.77	-2.847***	-2.95	-4.897***
VA	-2.12	-2.655**	-3.58***	-5.174***
VPS	-2.81***	-3.017***	-3.74***	-5.884***

Note: *** indicate rejection of the respective null hypothesis at the 5% and 1% significance levels, respectively.

We also employed an alternative estimation of panel cointegration using Westurland (2007) method. Table (5) reports the output of Westerlund (2007) cointegration test. The group mean coefficient statistics (Gt) and the panel statistics (Pa) rejects the null hypothesis of no cointegration. The results indicate that the test statistics are higher than the critical values. Hence the null hypothesis of no cointegration can be rejected at and it is appropriate to conclude that there exists a long run relationship among the variables.

Table 4. Results of Cointegration Test

Westurland (2007) Test for Panel Cointegration		
Statistic	Value	P value
Ga	--11.47	0.824
Gt	-2.372	0.025
Pa	-9.153	0.078
Pt	-9.920	0.441

Since the variables are cointegrated in the long run, next step is to estimate the short run and long run relationship and the error correction term using the panel ARDL. Table (4) reports the panel ARDL estimation using PMG estimations. We adopted the Hausman test and the results accept the alternative hypothesis , providing the evidence that the PMG estimator is consistent. The results show that internet usage is positively and strongly associated with the services exports. This result suggests that digitalization contributes to increase of services exports. Therefore, easy access to information and technology have an impact on services exports. This relationship has important implications as it includes the externalities that contribute to economic growth, development and social modernisation (Nour 2005). Similarly, the control

variables GDPPC, and political stability has got a positive and significant effect on services exports.

The column (1) and (2) reports the results of PMG estimator. Column (1) reports the results with internet usage as the indicator for digitalisation. Column (2) represents the results with mobile subscription as the digitalisation indicator. Panel A represents the long run parameter estimates of PMG and CS-ARDL and panel B reports the short-run estimates. Column (3) to (4) represents the results of CS-ARDL model with internet usage and mobile subscription as the indicators of digitalisation. The results are consistent with that of PMG estimation results. First, the coefficients of lagged service exports are positively signed and significant at 5% level, implying that the past exports play a significant role in explaining current exports. Secondly, the coefficients of digitalisation indicators (internet and mobile subscription) are positive and significant at 5% . This suggest that digitalisation exert a positive influence on the services exports. Specifically, when digitalization increases by one unit , the services exports increase by 0.29 and 0.14 in the long run and short run respectively.

The positive effect of digitalization on export can be explained by the advantages in the foreign markets due to the technological advancement, cost reduction or due to high industrial efficiency (Azar and Ciabuschi, 2017; Porter and Heppelmann, 2014; Dalenogare et al., 2018). The results are consistent with previous studies (Ozsoy et al., 2022; Solomon and Klyton, 2020) in the context of developing countries and African countries. Third, the estimated coefficients of macro-economic variables such as GDP per capita, inflation has a positive and negative effect respectively. The short run coefficients are reported in the panel B. The presence of long-run equilibrium is confirmed by the significant Error correction term (ECM). The negative and significant ECM value confirms the long run convergence. The governance indicators voice and accountability and political stability also shows a significant effect on services exports. The results also supports the recent policy efforts and increased contribution of Asia-Pacific nations in the services exports in recent years.

Table 5. Panel ARDL Estimations (PMG and CS-ARDL)

	PMG		CS-ARDL	
Variable	**(1)**	**(2)**	**(3)**	**(4)**
Panel A: Long run Coefficient				
SEREXP	0.219**	0.141**	0.293**	0.513**
	(2.331)	(2.162)	(2.118)	(2.037)
INTUS	0.152**		0.148**	
	(2.309)		(1.562)	
MOBSUB		0.421*		0.211**
		(0.382)		(1.319)
GDPPC	1.757***	0.064**	0.430**	0.263**
	(0.430)	(1.334)	(1.120)	(0.324)
INFL	-0.041**	-0.065	-0.042*	-0.265
	(0.020)	(0.041)	(0.039)	(0.033)
VA	3.78***	4.530*	3.214*	0.126*
	(1.752)	(0.525)	(1.633)	(1.242)
PS	3.58	2.931**		0.025*
	(5.761)	(2.610)		(1.142)
Panel B: Short-run coefficient				
ΔSEREXP	0.173*	0.136**	0.322**	0.361**
	(0.654)	(0.340)	(2.152)	(2.132)
ΔINTUS	0.043*		0.143**	
	(0.276)		(1.09)	
ΔMOBSUB		0.012**		0.125**
		(0.534)		(3.190)
ΔGDPPC	0.237***	0.631**	0.962**	0.375**
	(0.109)	(0.644)	(0.061)	(1.333)
ΔINFL	-0.038*	-0.465	-0.094**	0.037***
	(0.232)	(0.233)	(0.026)	(0.121)
ΔVA	0.460	0.146*	-0.481	-0.024*
	(2.750)	(1.462)	(4.208)	(0.243)
Δ PS	-0.172	0.125*	3.06*	0.226
	(1.589)	(2.100)	(0.31)	(1.420)
ECT (-1)	-0.045***	-0.124***	-0.213***	-0.172***
	(-0.106)	(-0.073)	(-3.014)	(-1.589)

Note: This table reports the short-run and long-run effects of digitalisation using PMG and CS-ARDL estimators. The parentheses reports the t-values.

5. Conclusion and Policy Implications

The study is an attempt to examine the role of digitalization using internet usage as the indicator on the services exports in Asia-Pacific countries. The findings indicate that lower digitalization reduces the services exports. This indicates that efforts towards digitalization improves the service sector exports and the findings call for more policy interventions in to promote the digitalization efforts. The analysis shows that digitalisation has a significant positive impact on services exports. This implies that the level of digitalization of countries is a factor that accelerates the access of countries to new information and thus contributes to the increase of

services exports. On the policy front, by identifying the opportunities of digitalization in exports, the government can support for the promotion of exports through acceleration of digital transformation.

In conclusion, the Asia-Pacific region is rapidly advancing in digitalisation, with countries implementing various strategies to enhance their digital economies. This transformation is reflected in the evolving landscape of service exports, with a growing emphasis on digital services such as e-commerce, fintech, digital content, and IT services. These efforts not only boost economic growth but also position the region as a global leader in digital innovation. The findings of the study further indicates the need of digitalization in enhancing services trade.

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