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# ALLIANCE FOR ETRADE DEVELOPMENT

## MEASURING DEVELOPING COUNTRIES' ECOMMERCE ECOSYSTEMS

30 September 2023

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## MEASURING DEVELOPING COUNTRIES' ECOMMERCE ECOSYSTEMS

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## I. INTRODUCTION

Ecommerce – the sale and purchase of goods and services online domestically and across borders – is opening new opportunities for African micro, small, and medium-sized enterprises (MSMEs) to grow their sales, export, and create new jobs. Booming amid the COVID-19 crisis as the region’s consumers have migrated online, ecommerce is empowering new players, opportunities, and job-creation in the region’s logistics, financial services, payments, and IT sectors. Ecommerce is also emerging as a critical component of African governments’ work on MSME resilience and economic recovery from COVID.

These ecosystem services are increasingly vibrant in developing countries and help MSMEs to transact online and fulfill orders, and the Alliance will continue studying them and their effects.

In addition, as the Alliance deepens its work on promoting MSME ecommerce ecosystems in various countries, we will bring the various data on ecosystem players together to develop an country-level index of ecommerce ecosystems that enables us to understand the density and diversity of different countries’ ecommerce ecosystems as a whole, and systematically study (1) what policies and interventions enable robust ecommerce ecosystems that support MSMEs in ecommerce; and (2) what the impacts are of different types of ecommerce ecosystems on MSME ecommerce, cross-border ecommerce, and attraction of FDI in developing countries’ ecommerce ecosystems.

Unlike the Alliance’s ecommerce policy index that measures the adoption of policies conducive to MSME ecommerce, the ecosystem index measures the number, growth and sophistication of businesses in developing countries’ ecommerce ecosystems. Indeed, this paper correlates the ecosystem index with our prior work on ecommerce ecosystems.

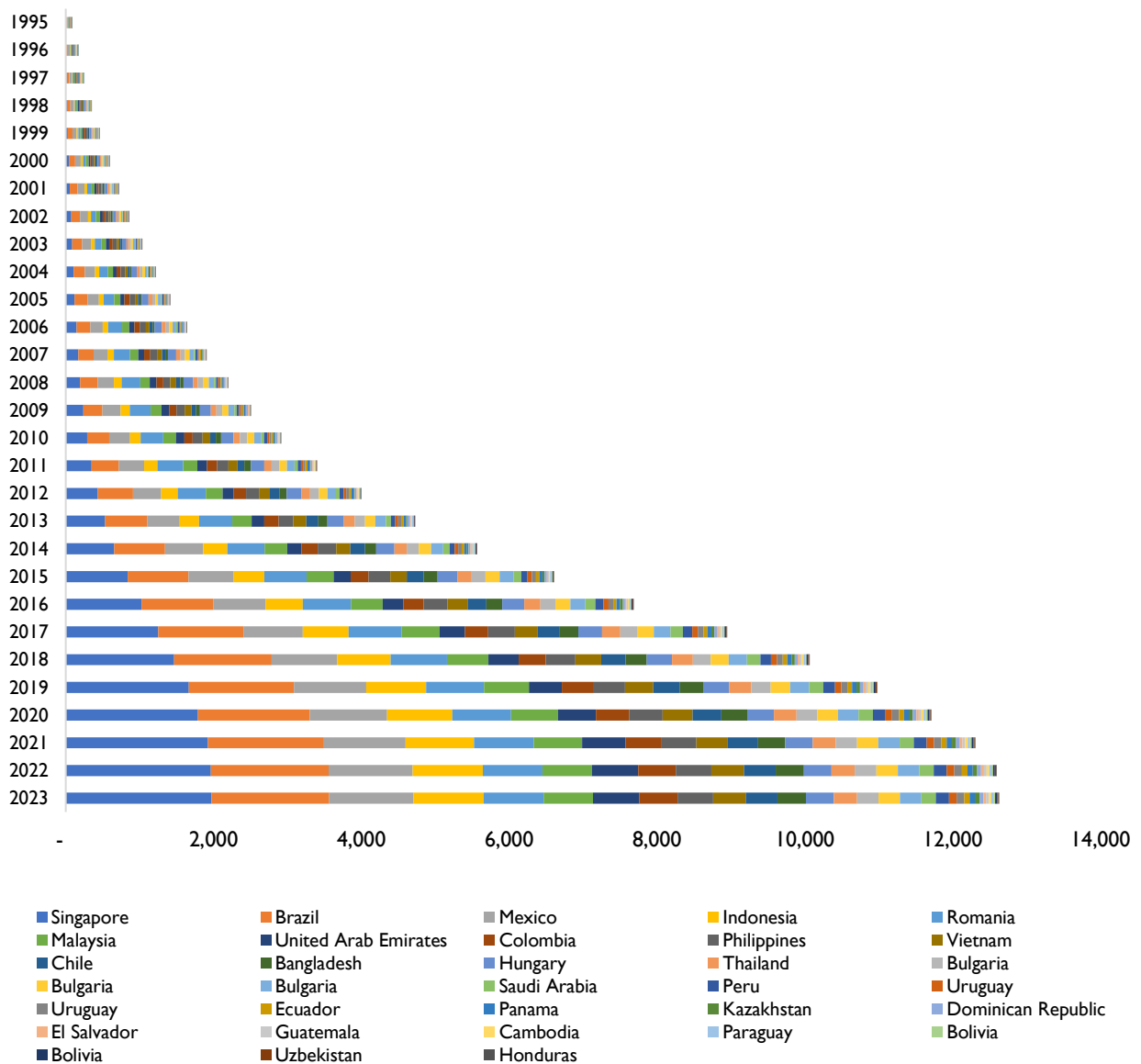
This report is envisioned as the first attempt to measure ecosystems maturity, develop interventions that bolster countries’ ecommerce ecosystems, and measure the impact of these interventions on ecommerce ecosystem.

The following section discusses the growth of ecommerce in Africa and how MSMEs use ecommerce in their businesses, and the challenges they face to growing through ecommerce. Section three discusses how African governments are already addressing these challenges, and proposes further concrete goals and initiatives in these areas for the next five years. Section four concludes.

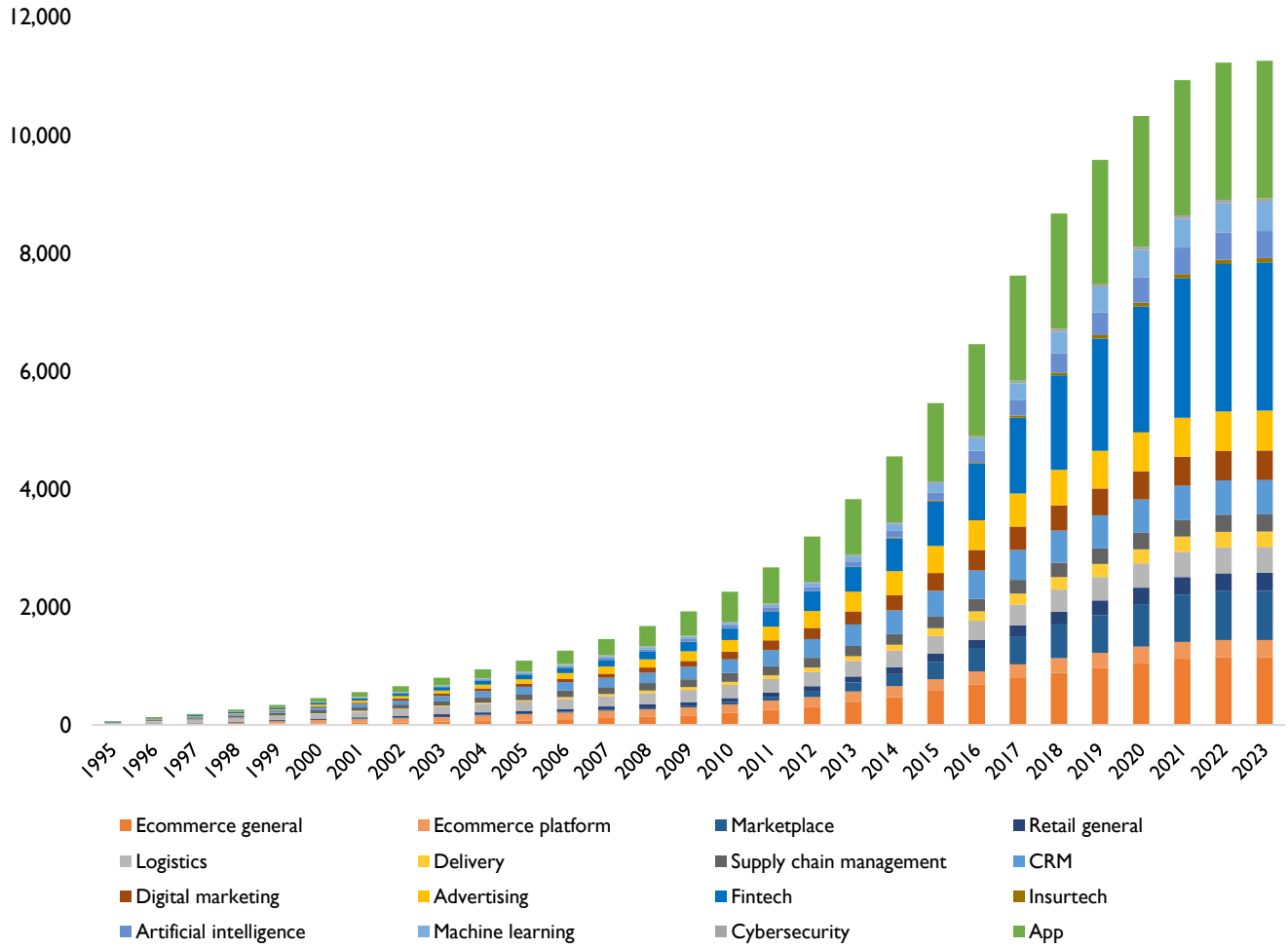
## II. DEVELOPMENT OF ECOMMERCE ECOSYSTEMS

In a review of Crunchbase data on businesses around the world, we identified over 15,000 firms that make up the global ecommerce ecosystem. Most of these are in apps, mobile, and platforms and financial services, but also numerous in logistics and transport and (figure 1). The firms are concentrated in advanced economies, especially the United States (figure 2).<sup>1</sup> The number of firms in ecosystem also correlates with ecommerce use and ecommerce revenue in the market (figures 3-4).

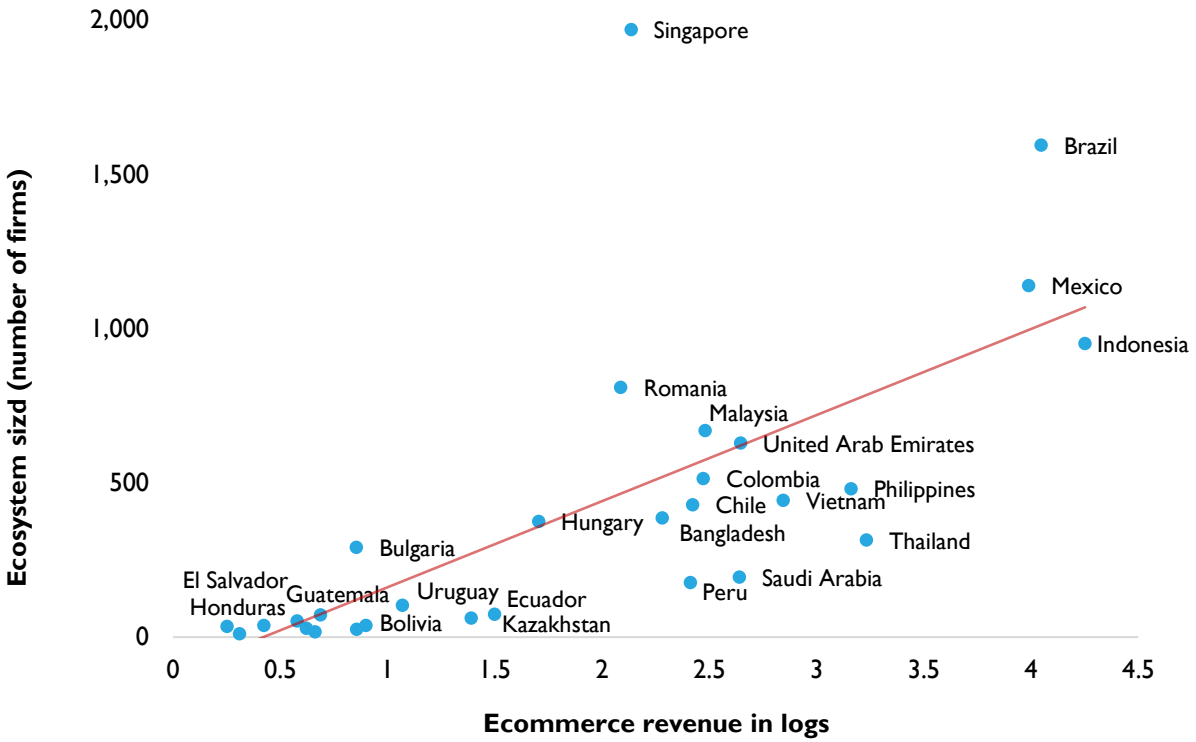
**Figure I – Ecommerce ecosystem growth in 1995-2023 in 33 countries, by country (cumulative number of ecosystem firms)**



**Figure 2 – Ecommerce ecosystem growth in 1995-2023 in 33 countries, by sector (cumulative number of ecosystem firms)**

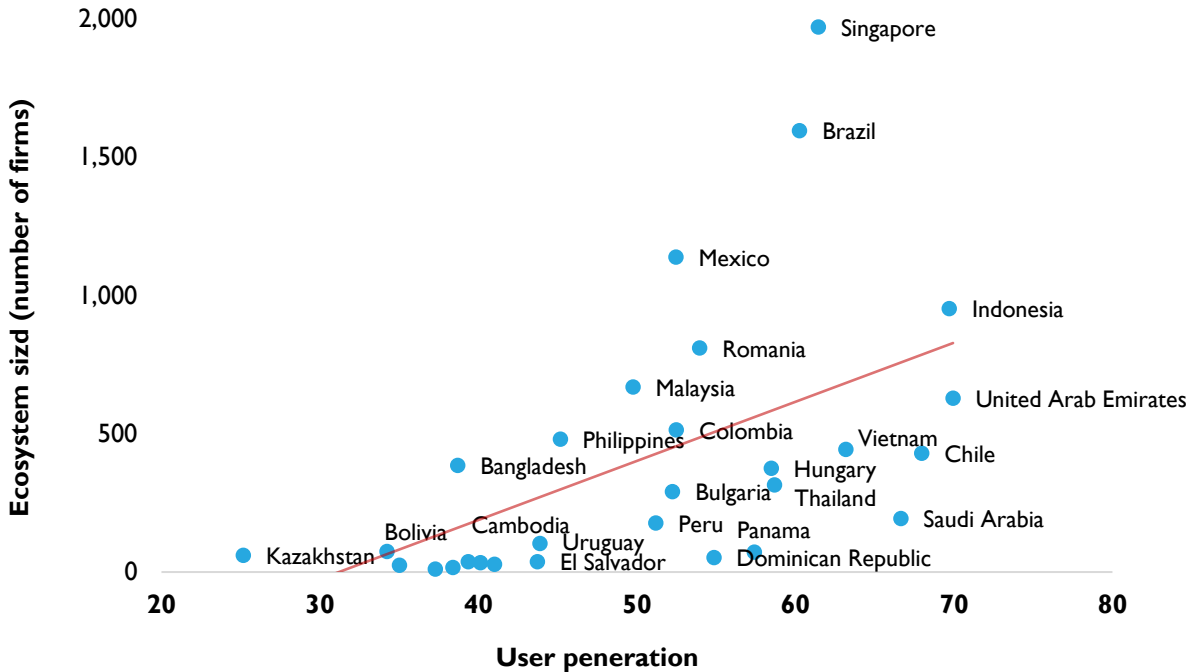


**Figure 3 – Ecommerce Ecosystem Size and Ecommerce Revenue in 2023**



Source for ecommerce revenue: Statista.

**Figure 3 – Ecommerce Ecosystem Index and ecommerce user penetration in 2023**



Source for user penetration: Statista.

Are there generalizable patterns in ecosystem development? Typically the ecosystem is started by a few large players that spawn the first solutions. Consumers are often already purchasing online but from foreign platforms; some merchants may be using global social media platforms and ecommerce marketplaces (table I, case 1). As the ecosystem matures, it tends to diversify, with many smaller specialized service providers in payments, logistics, and digital marketing emerging. In some markets such as Mexico, large foreign ecommerce companies and retailers have been key. Industry events such as Cyber Mondays have also helped propel the ecosystem (case 2). At some point the industry experiences consolidation, with large players acquiring smaller ones. Figures 5-7 illustrate these journeys further.

**Table I – Patterns in ecommerce ecosystems development, selected countries**

| Country          | Key patterns  |
|------------------|---|
| <b>Brazil</b>    | <ul style="list-style-type: none"> <li>• Ecosystem started through platforms such as Submarino and Americanas in 1999</li> <li>• Rise of fintechs and logistics technology companies such as PagSeguro and Correios followed</li> <li>• Significant diversification during the mid-2000s to early 2010s, featuring rise of online marketplaces like Mercado Livre and OLX.</li> <li>• Consolidation in major players as B2W Digital, parent company of Americanas and Submarino, acquired beauty and cosmetics company Uni.co and Mercado Livre acquired logistics company Kangu.</li> </ul>  |
| <b>India</b>     | <ul style="list-style-type: none"> <li>• Started between late 1990s and early 2000s with IndiaMART, Baazee.com, and Rediff.com</li> <li>• In 2007, the rise of online marketplaces like Flipkart and Amazon’s entrance into the Indian market after acquiring Junglee followed</li> <li>• Significant growth and diversification as major ecommerce players like Paym, Alibaba, and Myntra were either founded or entered the Indian market.</li> </ul>   |
| <b>Indonesia</b> | <ul style="list-style-type: none"> <li>• Indonesia’s ecommerce ecosystem began later in the early 2000s through the growth of the internet and emergence of pioneer companies like Bhinneka and Multiply.</li> <li>• Its growth and diversification began in the 2010s with major marketplaces like Tokopedia, Lazada, Bukalapak and Shopee leading the pack through their large catalog of product categories. At the same time, payment and logsitics companies began to adapt to the growing demand for e-commerce services</li> <li>• Rapid expansion followed with startups like Gojek and Grab expanding their services to include food delivery, ecommerce delivery, and digital payments.</li> <li>• Social commerce and livestream shopping gained popularity</li> </ul> |
| <b>Mexico</b>    | <ul style="list-style-type: none"> <li>• Emergence between the late 1990s and early 2000s through limited product-offerings</li> <li>• Further growth through companies like MercadoLibre, Linio, and Amazon entering the market in the 2000s</li> <li>• Transition to mobile commerce gained traction and ecommerce platforms began developing mobile apps and payment methods evolved to include digital wallet and mobile payment options</li> <li>• Increased competition between players led to further discounts, promotions, and marketing campaigns by companies to attract more customers while integration of fintechs became more common.</li> </ul>   |
| <b>Nigeria</b>   | <ul style="list-style-type: none"> <li>• In the 2000s, Nigeria saw its first ecommerce players, like BuyRightAfrica and Kalahari.</li> </ul>  |



|                   |   |
|-------------------|---|
|                   | <ul style="list-style-type: none"> <li>• Larger and more prominent players like Jumia and Konga took the stage in the 2010s and they paved the way for ecommerce in Nigeria today. As internet penetration continued to grow and mobile phone usage increased, more ecommerce platforms started to invest in improving their businesses</li> <li>• Global ecommerce giants like Amazon, Alibaba, and eBay entered the Nigerian market either directly or indirectly through partnerships and it led to increased competition among players.</li> <li>• Fintech integration with companies like Stripe and Flutterwave became essential in enabling online payments.</li> </ul>                      |
| <b>Bangladesh</b> | <ul style="list-style-type: none"> <li>• Bangladesh saw its first ecommerce companies emerge in the mid-2000s with CellBazaar, ClickBD, and AmarDesh24.com who started off as small online stores that offered limited products</li> <li>• Few local and international online marketplaces gained attention in the mid-2010s and by the late 2010s, Bangladesh saw a rise in more local ecommerce platforms like Evaly, PriyoShop, and Bagdoom.</li> <li>• In the early 2020s, the Bangladesh government introduced policies that began to support the growth of ecommerce within the country that would further facilitate digital payments and a more defined logistics infrastructure</li> </ul> |
| <b>Vietnam</b>    | <ul style="list-style-type: none"> <li>• The first ecommerce companies in Vietnam were launched in the early 2000s, with SieuThiBan.com and BuaBanNhanh.com</li> <li>• By the mid-2010s, large, regional online marketplaces like Lazada and Shopee entered the Vietnamese market and introduced new features like secure payment gateways, buyer protection, and nationwide delivery services</li> <li>• By the late 2010s, more local ecommerce platforms like Tiki, Sendo, and Thegioididong gained market share.</li> <li>• In the early 2020s, improvements in payments, logistics, mobile commerce, and social commerce helped Vietnam’s ecommerce ecosystem continue to grow.</li> </ul>     |

**Case I – Ecommerce ecosystem journeys: Brazil, Mexico, India, Nigeria**

*Brazil*

Throughout the past ten years, Brazilians have started to feel safer using mobile phones to pay for items and shop online. The increase in internet access and increase in credit options through different financial companies has allowed for growth in the ecommerce market. Brazil’s e-commerce market is the largest in Latin America, with 109 million online shoppers in 2022.<sup>2</sup> The market has grown immensely and is expected to reach \$79 billion in 2025.<sup>3</sup>

Brazil’s ecommerce ecosystem is made up of major players areas like marketplaces, payment processors and fintech solutions, logistics and delivery, ecommerce platforms, and more.

Most people have access to online purchases through online marketplaces like MercadoLibre, B2W, and Amazon. According to a global survey conducted by Miraki, a SaaS platform, 86% of Brazilians found online marketplaces as the most convenient way to buy online.<sup>4</sup> In the same survey, it was found that 48% of online purchases were through marketplaces in 2021. The growth of online marketplaces became attractive for retailers because it was relatively costless to sell their products on these platforms. There’s a sense of stronger reliability and security when purchasing from an online

marketplace due to its expanded logistics and online infrastructure. Smaller merchants can rely on the ecommerce ecosystem to ensure their products are sold and delivered efficiently to customers instead of having to take orders, take care of inventory, and ship their products all on their own. Cross-border ecommerce has also grown in the past ten years as there was more demand from consumers for imported goods due to competitive pricing and product variety benefits.

Cross-border ecommerce allowed for more opportunities for international sellers to reach Brazil. AliExpress, eBay, and Amazon Global Store allowed for Brazilian consumers to purchase products directly from foreign sellers. The improvement of shipping and delivery logistics offered faster shipping options, better tracking, and more competitive shipping rates to Brazilian customers.

Fintechs and payment solutions in Brazil have also grown throughout the years. Since 2016, the use of credit and debit cards have slowly declined for online purchases.<sup>5</sup> The use of e-wallets and digital/mobile wallets have steadily increased, with 18% of shoppers opting to pay using that method in 2022. Bank transfers through Pix, a payment method developed by the Central Bank of Brazil, enables instant payments to be made to merchants and is the most popular way Brazilian consumers pay for their ecommerce goods and services. The Pix payment system launched in 2020 and its adoption was driven by the COVID-19 pandemic since more people were making online purchases. According to a report released by Brazil's Ministry of Development, Industry, Trade and Services Secretariat for Micro and Small Businesses and Entrepreneurship, Brazil has over 21 million SMEs.<sup>6</sup> Fintechs like Nubank and Cora look to support entrepreneurs because many of them are underserved by larger banks. Payment platforms and fintech companies have also improved to make it easier for Brazilians to make transactions in foreign currencies.

There has been explosive growth in logistics technology companies like RoutEasy, who has just invested in using AI to expand its business.<sup>7</sup> Other logtechs like Frenet and Intelipost provide tech solutions for ecommerce SMEs and help them optimize shopping operations.

## *Mexico*

The COVID-19 pandemic accelerated the adoption of online shopping in Mexico. The Mexican Association of Online Sales (AMVO) found that during COVID, 5 out of 10 consumers in Mexico expected to spend the same or more on online purchases. AMVO's research showed that not only were Mexicans buying online for better prices, but also for the convenience.<sup>8</sup>

With the uptick of online purchases in recent years, retailers have found ways to make ecommerce available for their customers. Marketplace giants like MercadoLibre, Amazon, and Walmart Mexico have played a dominant role in the shift toward ecommerce due to the wide range of products offered. Payment methods in Mexico also changed. While cash is still a popular payment method in Mexico, credit and debit cards are currently the most popular payment methods that consumers choose to use. Mexico has its own instant payment system called CoDi, but it has encountered barriers to adoption from consumers. CoDi was launched by the Bank of Mexico in 2018 and reached about 7 million registered users in a country with a population of 130 million as of 2022.<sup>9</sup> This is in part due to the prevalence of cash reigns and a large unbanked population, and lack of interest in CoDi among banks.

Mexico faced further challenges related to logistics infrastructure, security, and the need for digital literacy among certain demographics of the country. Ecommerce companies in Mexico worked to improve their logistics capabilities to meet the demands of online shoppers. 99minutos is a logistics service company for ecommerce vendors in Latin America and has utilized technology solutions like route tracking and optimization to improve its services to customers. There have been efforts to

expand fulfillment centers, optimize last-mile delivery, collaborate with local courier services, and streamline the customs clearance process to improve the flow of goods for international sellers. The Mexican government has taken steps to facilitate e-commerce logistics by implementing measures to simplify customs procedures to reduce regulatory hurdles for cross-border shipments. Mexico's implementation of laws like the Electronic Signature Law and Federal Consumer Protection Law has improved the ecommerce environment in Mexico, allowing ecommerce transactions have legal validity and consumers to be protected in ecommerce transactions.

### *India*

India has also faced a change in its ecommerce ecosystem over the years, especially through mobile phone adoption. As of October 2022, it was reported that there were 1.143 billion mobile connections.<sup>10</sup> Ecommerce is thought to further spread through the launch and adoption of the 5G network, the launch and adoption of ONDC, and improved hyperlocal delivery in India.

Overall, online marketplace giants Amazon India and Flipkart account for over 60 percent of the Indian ecommerce market, but there has been increased competition between marketplaces like Meesho, Myntra, Tata Group, and Alibaba-backed Paytm Mall. The emergence of domestic online marketplaces like Flipkart, Snapdeal, and Myntra in the early 2000s to mid 2010s pioneered online shopping in India and helped built strong customer bases. Global giants like Amazon India had been supported with substantial investments that let them rapidly gain market share.

The Indian e-commerce market has experienced various mergers, such as Walmart's purchase of a majority stake in Flipkart, which enables Walmart to compete with Amazon in India and give Flipkart the opportunity to leverage Walmart's omnichannel expertise.<sup>11</sup> Online grocery and food delivery services also experienced growth in India and became significant players in India's ecommerce ecosystem. Ecommerce retailers also started to focus on Tier 2 and Tier 3 cities in India, expanding their reach to smaller cities and towns. By targeting the untapped potential of these smaller geographical areas, it has increased their market penetration. These smaller towns and more rural areas have seen increased market penetration and possible disposable income, allowing them to shop online more regularly. Ecommerce retailers have optimized their local logistics and delivery networks to ensure timely and reliable deliveries in these hard-to-reach areas. These rural areas also prefer cash transactions. Some of these retail companies have retained cash on delivery options to cater to these preferences.

Ecosystem events have also bolstered transactions, For example, Flipkart offers a "Big Billion Days" sale, which is an annual shopping event, similar to Amazon's Prime Day. It is among the largest and most anticipated shopping days in India, where Flipkart offers a wide range of products at significantly discounted prices. There are discounted products, exclusive deals, flash sales, bank offers, exchange offers, free shipping, early access for members, and large-scale marketing campaigns spanned across multiple days. Due to the increased traffic and number of transactions, Flipkart takes additional security measures, but that does not end the criticism from consumers claiming that their orders have been cancelled due to the influx of orders being received.

### *Nigeria*

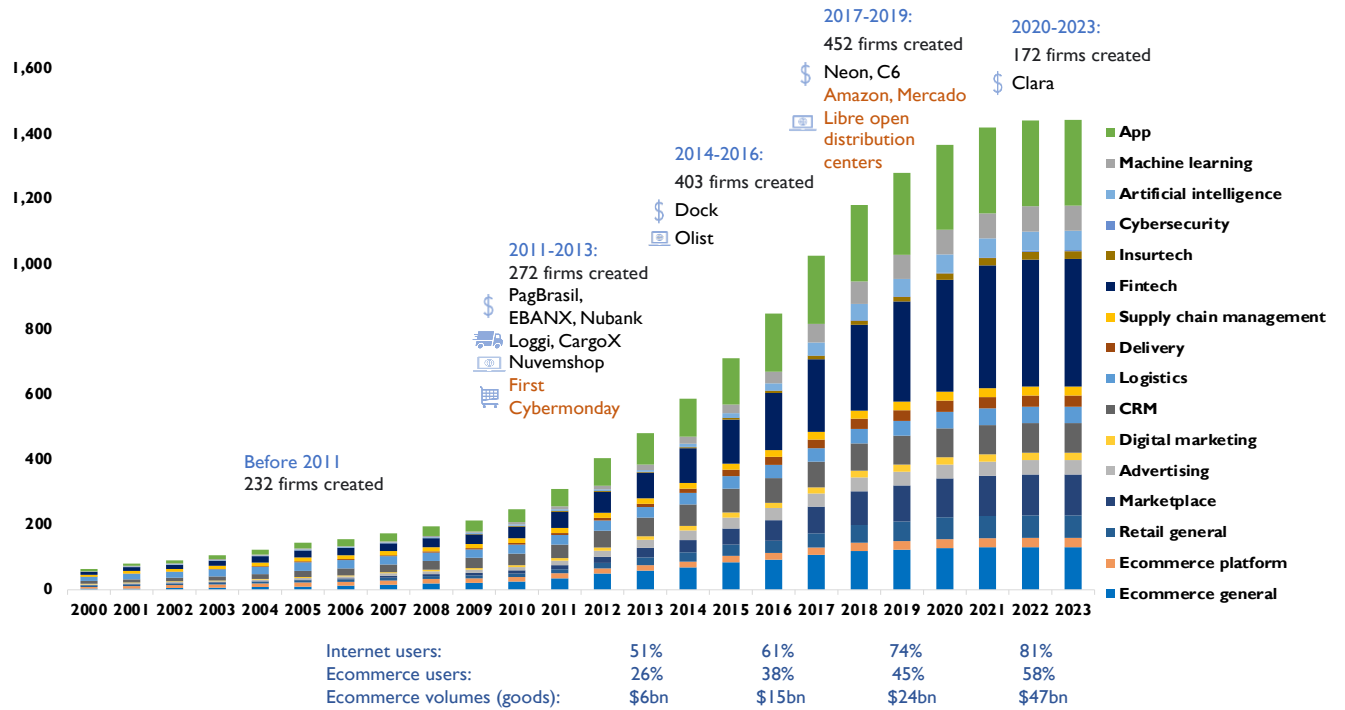
Nigeria's ecommerce ecosystem has seen rapid growth and investment in the past ten years, despite economic challenges during this same period. From 2015-2021, Nigeria experienced two economic recessions and its GDP growth averaged 1.1 percent.<sup>12</sup> The ecommerce market is dependent on access to internet, and while internet access might be a challenge, connectivity is improving. Nigeria has the largest mobile market in Sub-Saharan Africa, but there is limited connectivity in rural areas, leaving those

in marginalized segments of the population without access. According to the National Communication Commission, 89 percent of those online also make purchases online.<sup>13</sup> Revenue in the ecommerce market is expected to reach \$46.7 million in 2023 and penetration is expected to reach over 45 percent.<sup>14</sup> There currently isn't a set regulatory framework in place for the ecommerce market, despite introducing consumer protection laws, data security regulations, and tax laws to address the ecommerce sector. The Nigerian government signed the Cybercrime Bill into law in 2015 to prohibit and prevent fraud in the ecommerce sector. It was meant to protect e-business transactions, but internet fraud is still prevalent in Nigeria, proving how the law was not as effective.

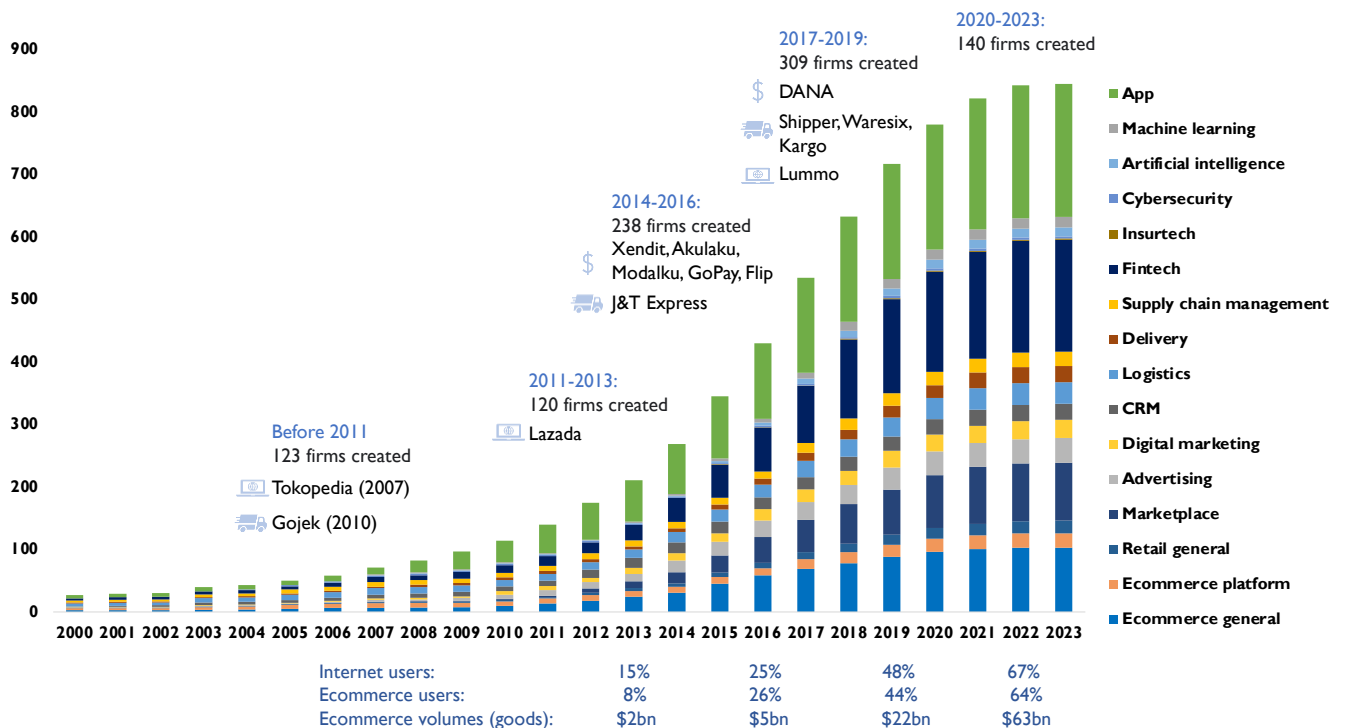
Compared to other countries mentioned, Nigeria's ecommerce ecosystem is still underdeveloped, but there have been efforts to expand it. Online marketplace players like Konga and Jumia laid the foundation for ecommerce in Nigeria. As time went on, there were more investments from local and international investors. Jumia grew to become the Amazon of Africa. Jumia introduced many Nigerians to online shopping and has remained a market leader. It offers a wide range of products across different categories and has a strong national reach among Nigerians, showing presence in urban centers and smaller towns. Larger online marketplaces like Jumia have the capacity to build out extensive logistics and delivery networks across the country.

Over the years, there has been an adoption of electronic payments, which encourages more payment service providers to invest more in Nigeria. However, foreign exchange restrictions set by the Central Bank of Nigeria have limited the foreign spending capacity of Nigerians.<sup>15</sup> Nigeria has its own instant payment system in place, called NIP. The number of digital payment transactions have increased in recent years. Despite increased digital payment transactions, there are still a large number of Nigerians that are financially excluded and don't have the means to make online purchases. Some ecommerce retailers have continued to offer cash on delivery options for its customers, but it can prove to be complicated and unreliable if payments aren't exact.

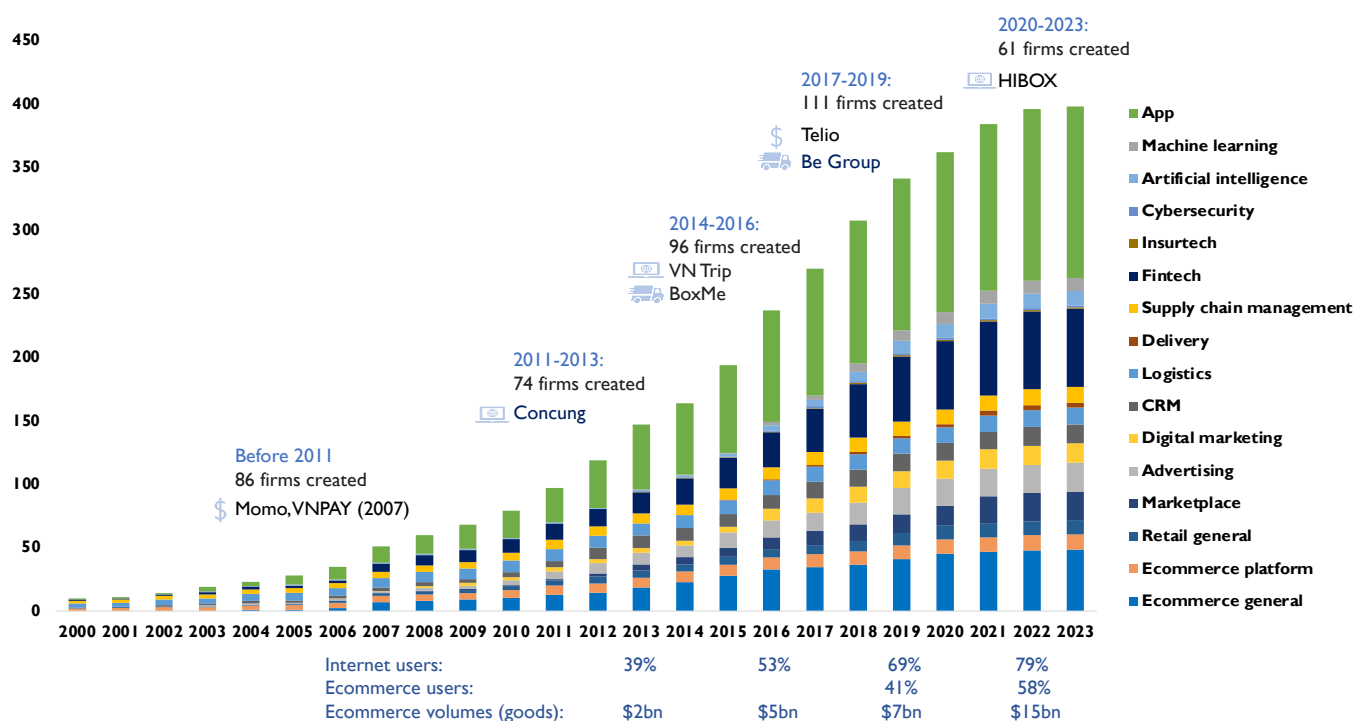
**Figure 5 – Ecommerce ecosystem growth and milestones in Brazil in 2000-23 (cumulative numbers of ecosystem companies by sector)**



**Figure 6 – Ecommerce ecosystem growth and milestones in Indonesia in 2000-23 (cumulative numbers of ecosystem companies by sector)**



**Figure 7 – Ecommerce ecosystem growth and milestones in Vietnam in 2000-23  
(cumulative numbers of ecosystem companies by sector)**



## Case 2 – Cyber Monday

In 2005, the U.S. National Retail Federation officially popularized the term “Cyber Monday” after online shopping became more commonplace.<sup>16</sup> It referred to the Monday following the U.S. Thanksgiving weekend, where online stores had a chance to offer special promotions and discounts to consumers. Previously, online retailers often missed out on the benefits of Black Friday because those were usually reserved for physical retailers. As a result, the first official Cyber Monday took place in 2005 and has grown to be the biggest day for online shopping sales each year.

Offering discounts and promotions on Cyber Monday has allowed retailers to increase web traffic and increase exposure to a multitude of other products that are on sale that the customer would have otherwise not known about. It is also common for online retailers to bundle a number of products together for a discounted price.

Cyber Monday is a highly anticipated shopping event each year, drawing millions of eager shoppers seeking unbeatable deals from the comfort of their screens. According to Adobe Analytics, Cyber Monday in November 2022 reached \$11.3 billion in online sales.<sup>17</sup> There was a 5.8 percent increase in sales compared to the previous year, with \$10.7 billion in online sales. Cyber Monday sales surpassed Black Friday sales back in 2010 and has since been the highest-grossing shopping day in the United States.

During Cyber Mondays, retailers are competing fiercely to provide the best offers, leading to more innovative marketing strategies. Retailers have also invested into their online infrastructure to ensure that their online

platforms can handle the surge in online traffic on Cyber Monday. This includes website optimization, cybersecurity, larger server capacity, and enhance logistics – which in turn promotes the entire ecommerce ecosystem. Retailers have also needed to optimize their supply chains to meet customer expectations during the day, and manage returns in the following days.

Cyber Monday has since spread around the world. According to Investopedia, about 28 countries around the world celebrate Cyber Monday, including Australia, Japan, Canada, the United Kingdom, Italy, Germany, Spain, and Colombia.<sup>18</sup> Also U.S. retailers have participated, building out their websites in different languages and offering international shipping. For example, Cyber Monday was first held in Colombia in 2012 through the Colombian Chamber of Electronic Commerce and Ministry of IT and Telecommunications. There are two editions that occur during the year, with the first being held between April and July, and the second in either October or November. In Mexico, large industry players like Amazon have decided to offer its special discounts for Cyber Monday too. There is also an uptick of Cyber Monday deals to promote tourism in Mexico, with airlines and hotels offering special discounts for people looking for their next vacation spot. Cyber Monday in Brazil began in 2012 and is synonymous with Black Friday, with the ecommerce event lasting over a week. Since more stores have integrated an omnichannel store system and flexible payment plans like installment options, the shopping event has significantly grown to be the most popular ecommerce day of the year.

### III. MEASURING ECOMMERCE ECOSYSTEMS

The data on firms in the ecommerce ecosystem lends itself to an analysis of various policy-relevant dimensions in countries’ ecommerce ecosystems such as ecosystem size, innovation, funding, presence of large technology companies that bring to market services at scale, and internationalization, or the presence of global technology companies that help cultivate ecommerce talent, offer world-class solutions to other players in ecosystem, and also purchase services from the ecosystem (table 2).

**Table 2 – Dimensions in Ecommerce Ecosystems**

| Dimension                   | Definition  |
|-----------------------------|---|
| <b>Size</b>                 | Number of firms in the ecosystem per million people                             |
| <b>Robustness</b>           | Median firm’s size  |
| <b>Innovation</b>           | Share of firms that have been funded of all firms                               |
| <b>Funding</b>              | Average funding of firms in the ecosystem                                       |
| <b>Superstars</b>           | Share of highly diversified ecosystem “anchor” firms of all firms               |
| <b>Internationalization</b> | Number of offices of the world’s top-30 technology companies per 100,000 people |

How do ecommerce ecosystems then rank based on these data? In order to easily compare ecosystems across countries, we translate the raw data into a 0-100 index following the “distance from the frontier” measure, where the world’s best performer in any one dimension receives a score of 100 and the worst performer receives a score of zero. This requires some assumptions on whether a high or low value is positive. For example, ecosystems with large firms may mean the ecosystem is established, but also that it may have old “dinosaur” companies that are not necessarily as innovative as smaller and more nascent firms. We however here take higher actual values as superior.

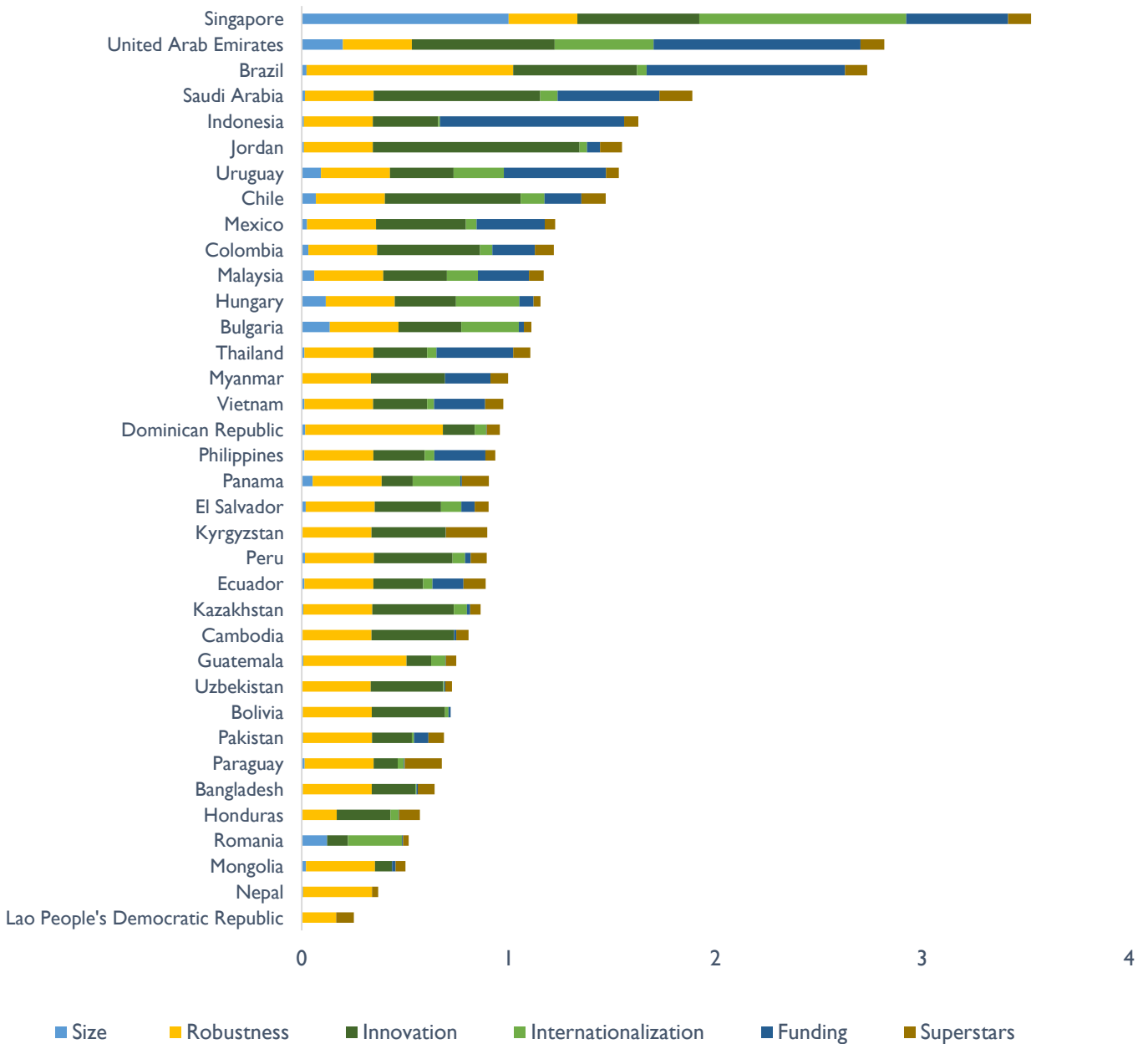
The analysis results in the following findings:

- Advanced economies lead on the index, while developing countries in Africa, the Middle East, and South Asia tend to lag behind (figure 8). Overall, most East Asian and Latin American countries are about 75 percent from the global frontier (Singapore and other advanced countries), while the less developed countries in Africa, South Asia, Southeast Asia, and Latin America are 50 percent from advanced countries.



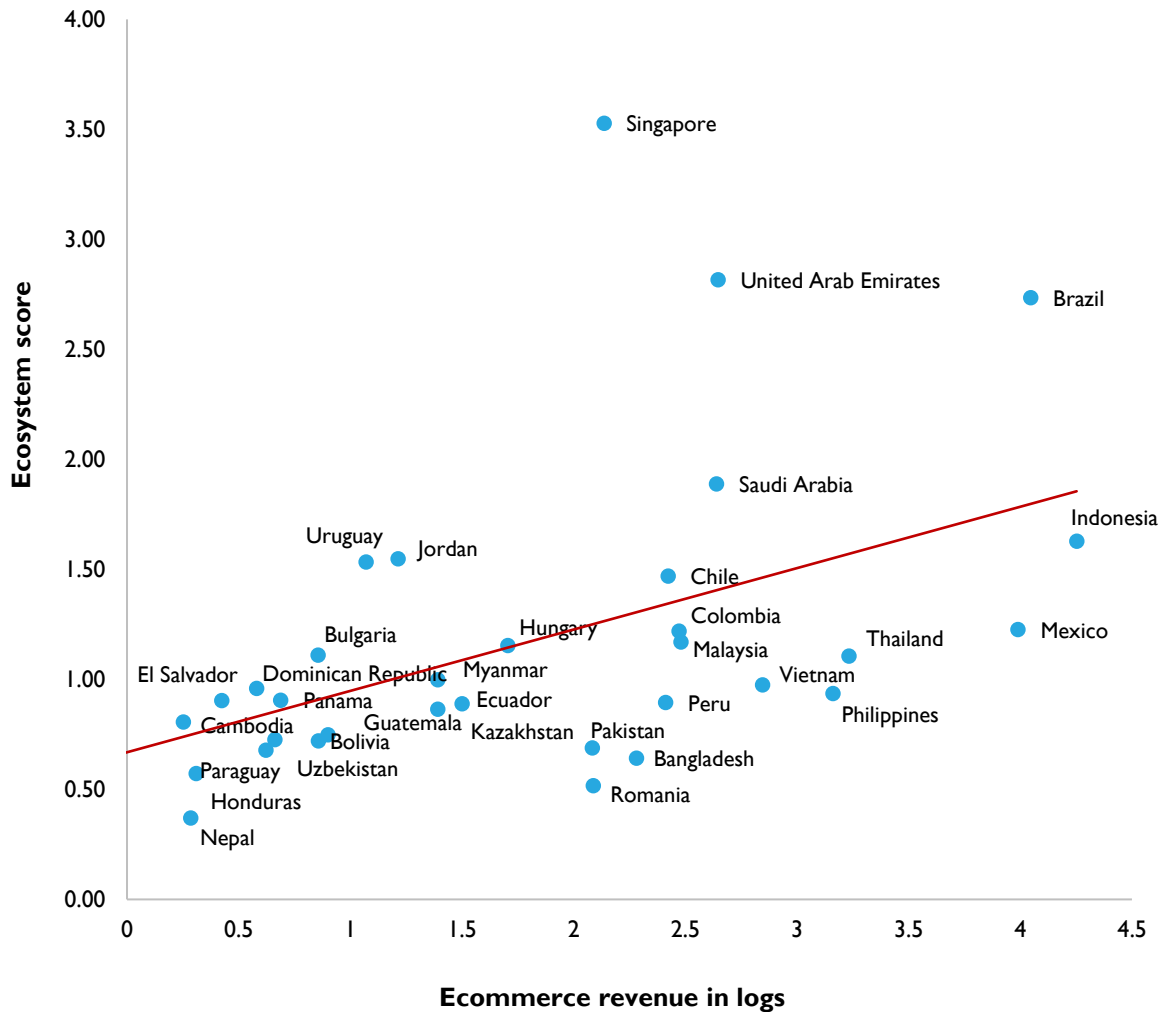
- The various dimensions are elements of strengths for East Asia and Latin America are age and maturity. These economies lag behind advanced nations especially in ecosystem size and the size of firms in it.
- There are positive surprises. For example, with the OECD nations in the top quartile of countries are economies such as India, Brazil, Malaysia, Colombia, Thailand, Costa Rica, and Indonesia. However, many sub-Saharan African economies are far behind, with very small and undiversified ecommerce ecosystems.

**Figure 8 – Ecommerce ecosystem index, by country**

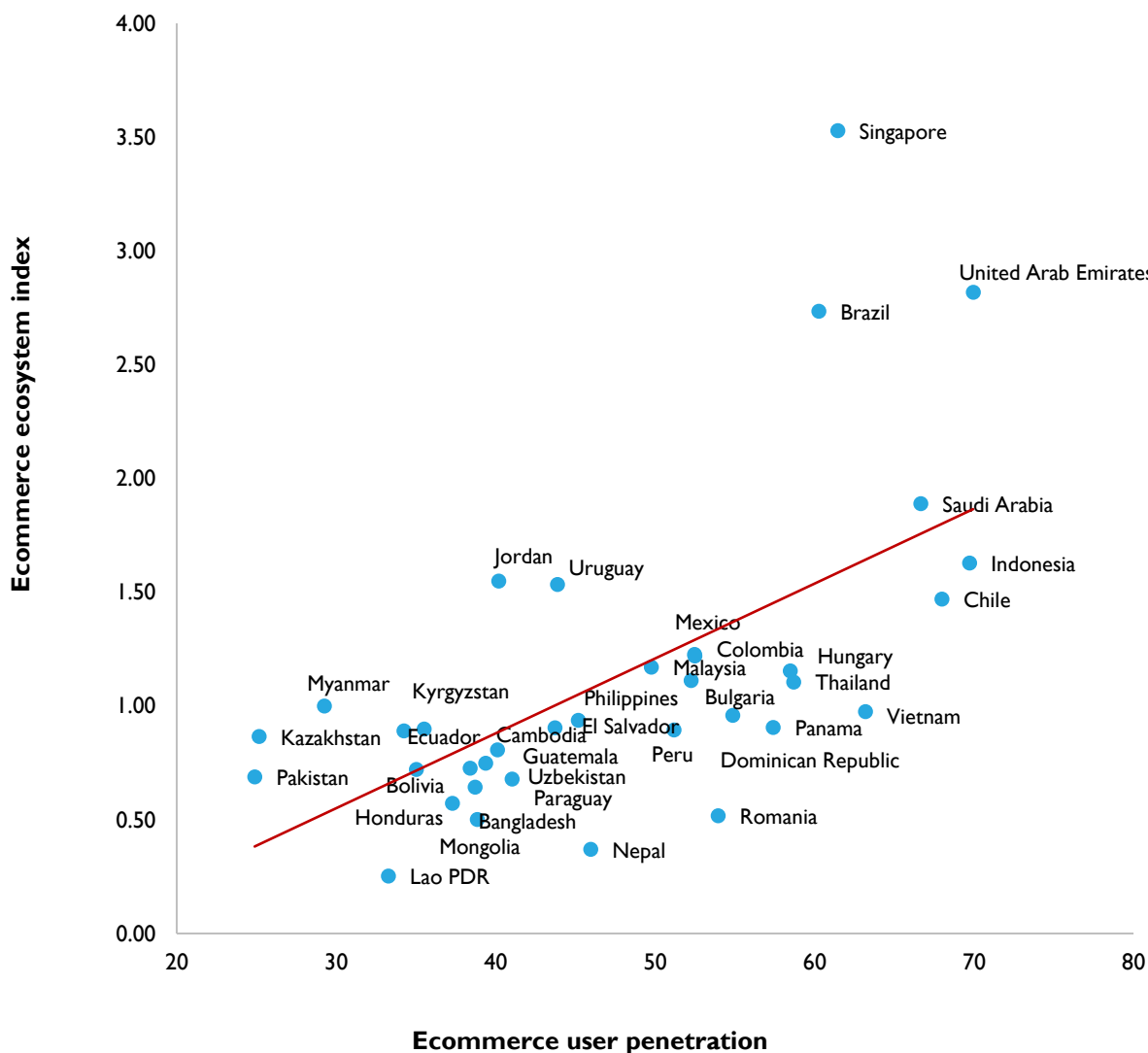


Unsurprisingly, the ecommerce ecosystem index is correlated with data on ecommerce penetration (share of population that uses ecommerce), and total ecommerce revenues of goods (figures 9-10).<sup>19</sup>

**Figure 9 – Ecommerce Ecosystem Index and ecommerce revenue in 2023**



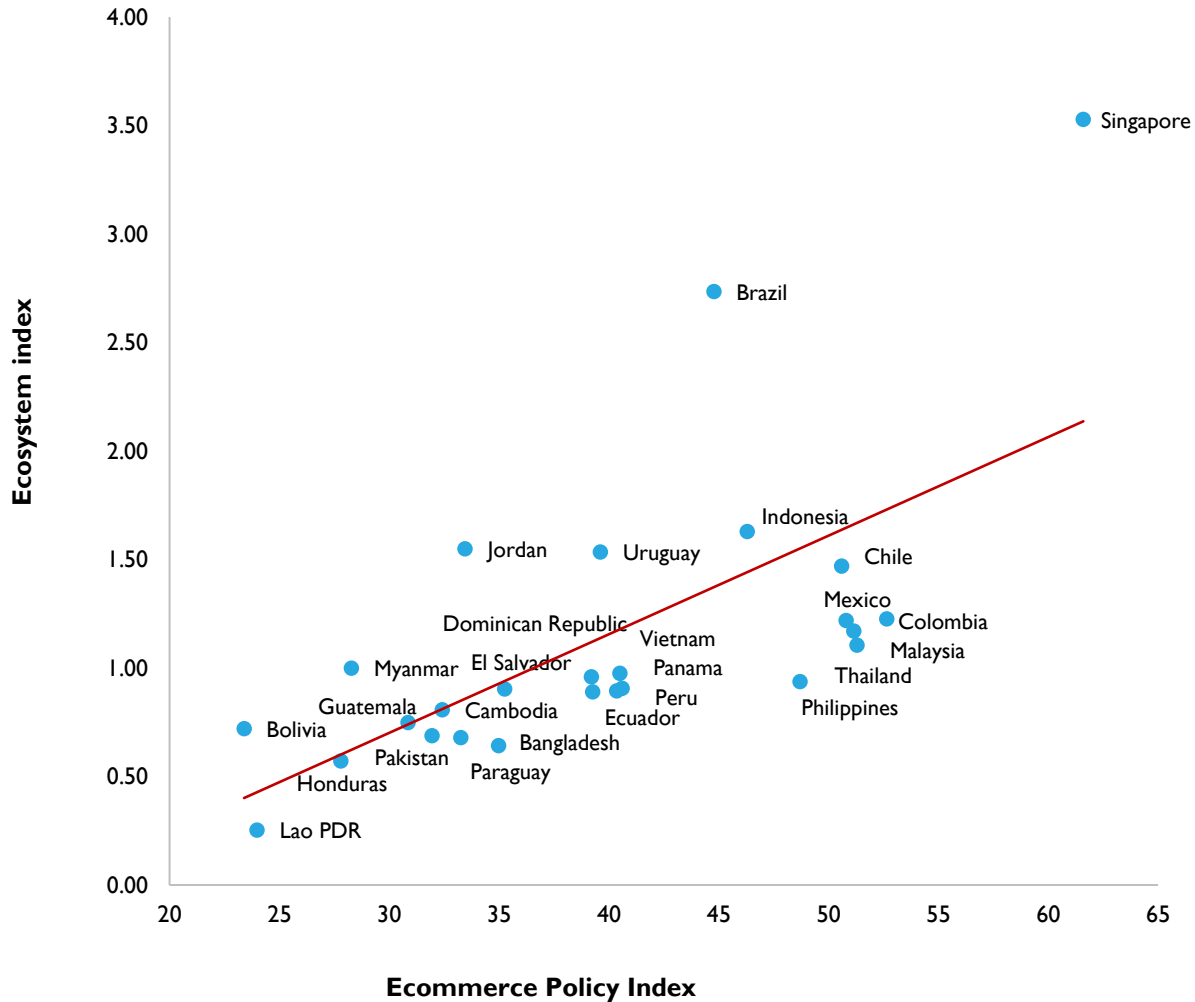
**Figure 10 – Ecommerce Ecosystem Index and ecommerce user penetration in 2023 (out of 100 people)**



What then contributes to the growth of ecosystems? What should development agencies and businesses interested in cultivating countries' ecosystem do, to promote their growth?

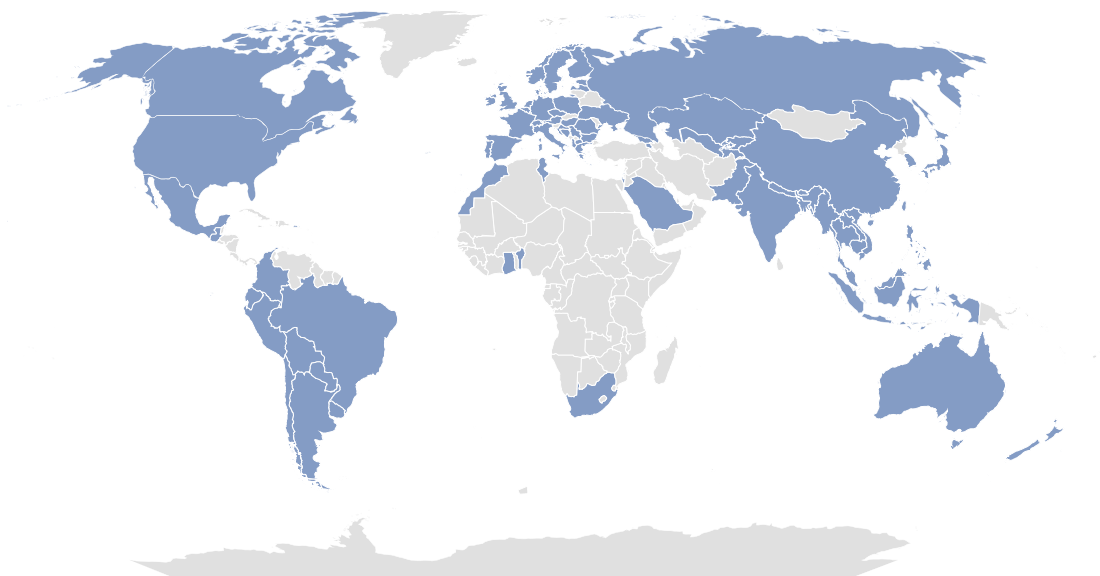
One part of the answer is an enabling policy environment. The Ecosystem Index correlates with the eTrade Alliance's 2021 digital and ecommerce policy index which maps out the adoption of 100 policies and programs that enable MSMEs in ecommerce in 10 policy areas such as digital transactions, online content, ecommerce-related trade facilitation, and MSME ecommerce promotion, and covers 52 mostly emerging and developing economies around the world (figure 11).<sup>20</sup>

**Figure 11 – Ecommerce Ecosystem Index and eTrade Alliance’s Ecommerce and Digital Policy Index 2021**



To be sure, while good policies enable ecosystem businesses to operate with ease, countries with robust ecommerce ecosystem also have in the ecommerce ecosystem an advocacy group that promotes pro-ecommerce policies, perhaps in the form of an ecommerce association. There are some 79 ecommerce associations around the world (figure 13). Countries in Europe, Latin America, and Southeast Asia especially have formed ecommerce associations, while Africa is noticeably without—though there are regional organizations such as Ecommerce Forum South Africa which represent the entire continent.

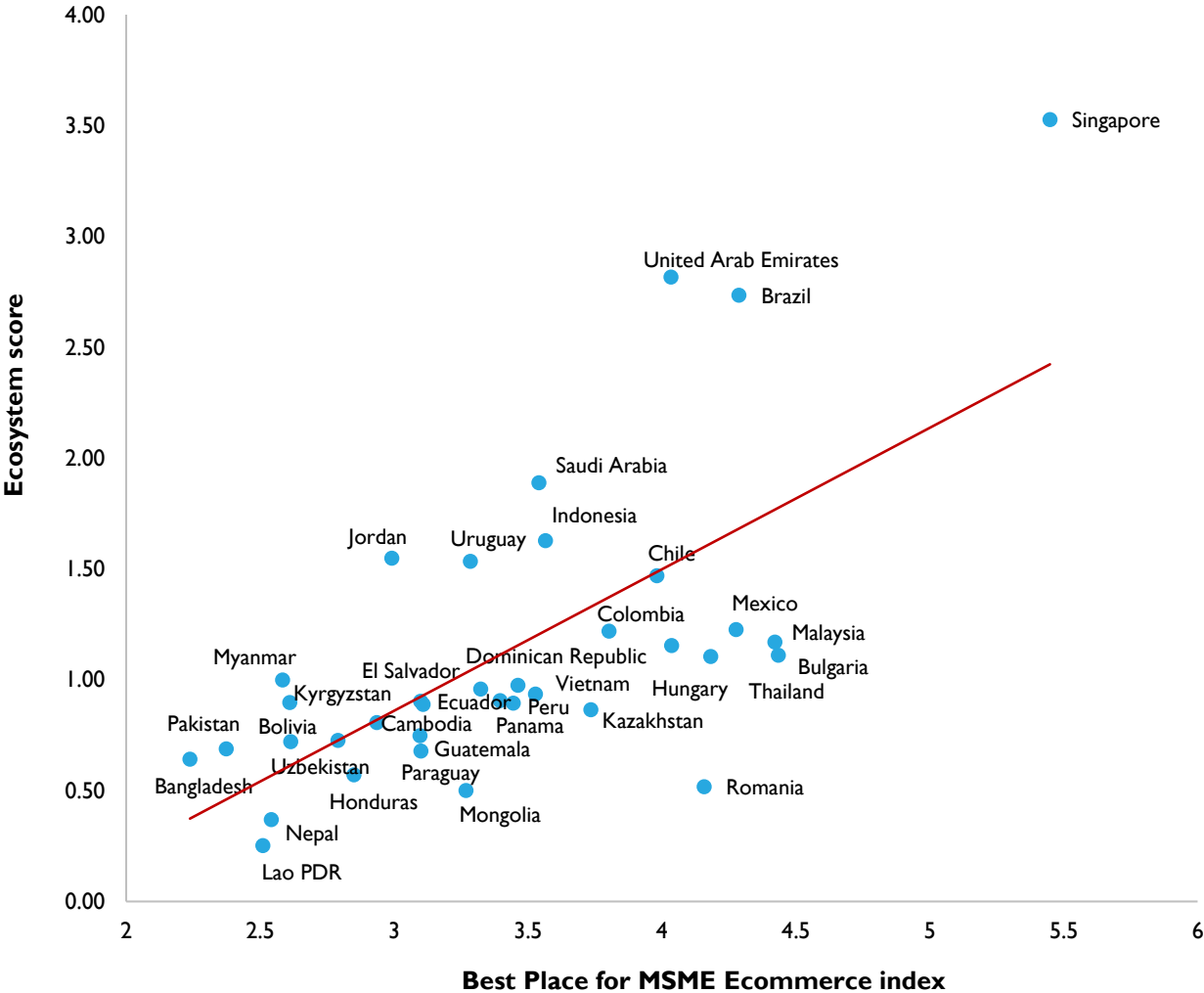
**Figure 13 – Ecommerce associations around the world**



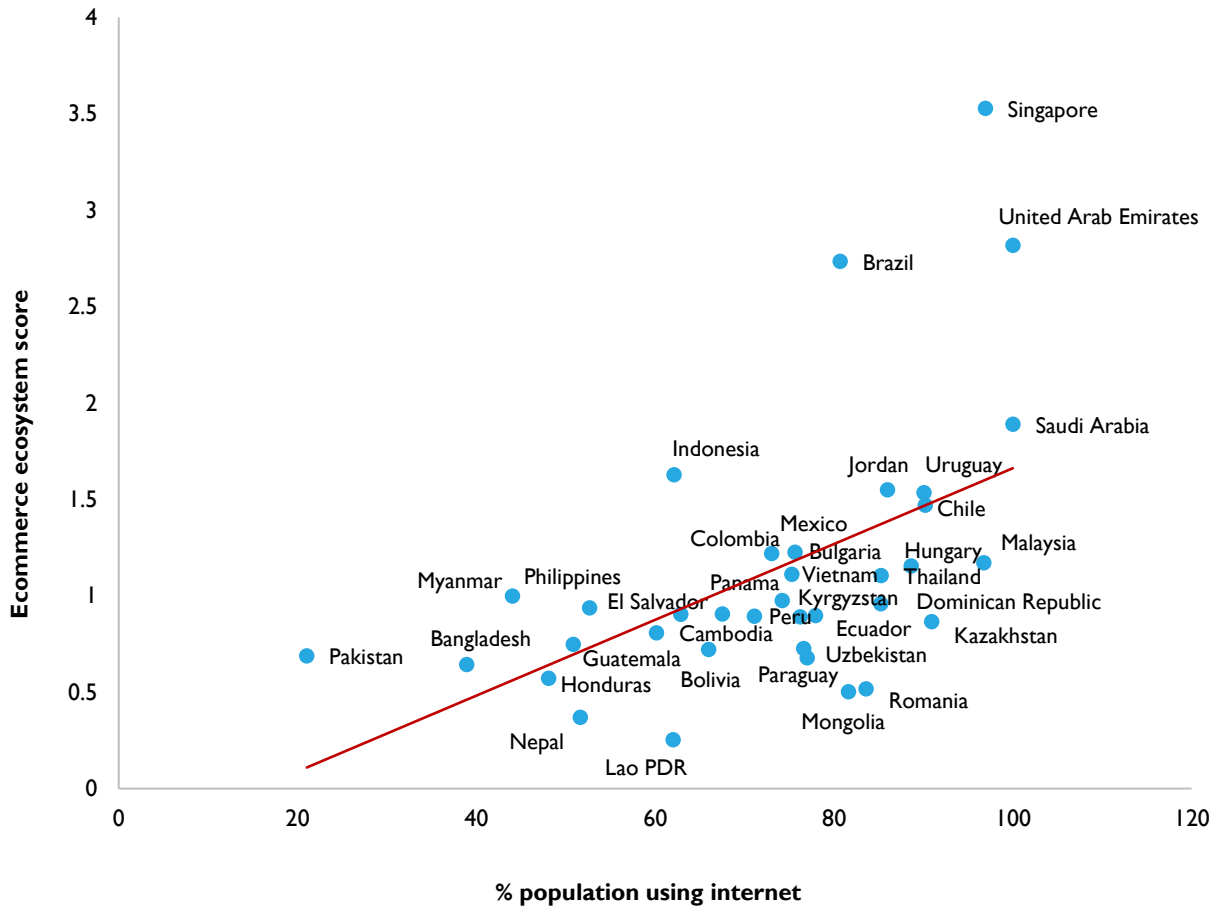
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The Ecosystem index also correlates with the eTrade Alliance’s “Best Place for MSME Ecommerce”-index built in 2021 and based on 50 policy *outcome* variables in such areas as internet connectivity, logistics quality, presence of leading technology companies – outcomes that make an economy especially hospitable for doing ecommerce (figure 14).<sup>21</sup> To single out a few variables from the index, ecosystems are also closely correlated to the digital infrastructure such as internet connectivity and access to devices (figure 15).

**Figure 14 – Ecommerce Ecosystem Index and enabling environment for ecommerce:  
eTrade Alliance’s Best Place for MSME Ecommerce Index**



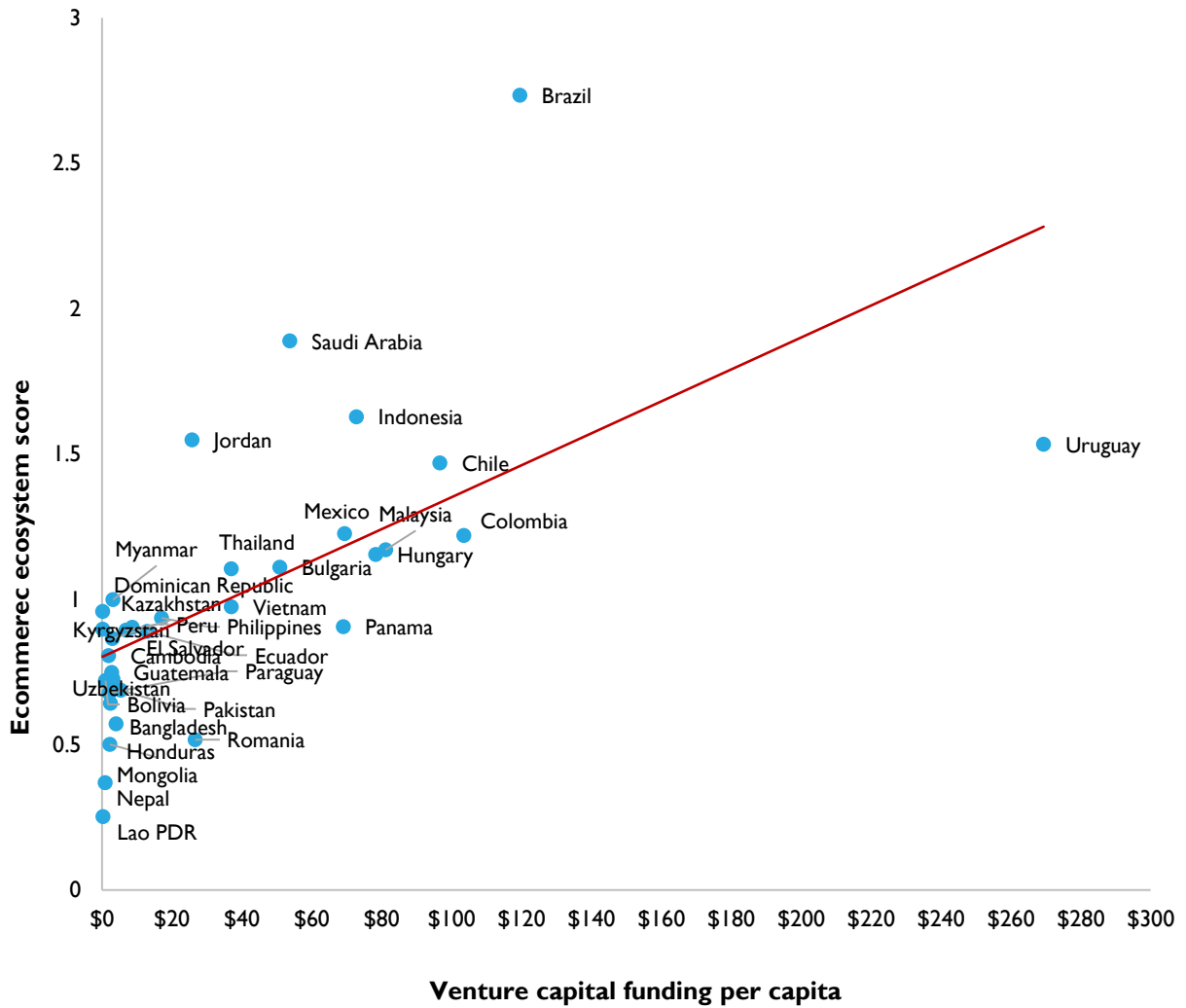
**Figure 15 – Ecommerce Ecosystem Index and internet connectivity in 2021**



Source: For internet use, World Development Indicators.

The availability of venture capital and presence of foreign investors could also be hypothesized to promote ecommerce ecosystems – VCs can invest in innovative companies and propose their growth, while foreign businesses can bring new technologies and foster talent in the ecosystem, and also purchase local ecommerce-related solutions. For example, Walmart Latin American became one of the first truly global customers on Brazilian ecommerce platform VTEXT and propelled VTEX’s early growth.

**Figure 16 – Ecommerce Ecosystem Index and cumulative venture capital per capita in 2000-22**



Source: Nextrade Group on the basis of Crunchbase.

Certain players in countries' economies also in some ways are the ecosystem. A prominent example are "composable commerce" companies that bring together an ecommerce platform and various solutions and integrations for logistics, payments, financing, and so on (case 3). Some ecosystem players such as MercadoLibre in Latin America have started as a marketplace but diversified into multiple other sectors supporting their merchants such as payments, financing, and logistics (case 4).



### **Case 3 – Composable commerce platforms as ecommerce ecosystems personalized to each user**

Over the last 10 years, ecommerce has grown dramatically. Traditional ecommerce platforms had different commerce components built into one back and front-end experience. As the next step, headless ecommerce (where stores are not connected to a marketplace) has enabled merchants to sell on the internet with greater flexibility. This approach permits vendors to disconnect their ecommerce functionalities from content management systems and website operations, offering heightened flexibility in online selling.<sup>22</sup>

While headless ecommerce is a step in the right direction toward impactful personalization for merchants and their business, it is not fully customizable. The next iteration in ecommerce selling is composable commerce, which enables merchants to integrate various software components or services to create a more flexible and customized ecommerce ecosystem for themselves. These customizable digital commerce solutions include such components as product catalog management, checkout processes, payment gateways, inventory management, customer data management, recommendation engines, and more. Composable commerce lets businesses focus on delivering unique customer experiences while maintaining a technology stack that suits their specific needs.

A crucial element for effective composable commerce systems involves commerce data, such as purchase history, style, price, brand, and more. These data help businesses match the most relevant products to their potential customers. For example, if a customer lands on a website looking to purchase new shoes, based on the types of shoes they search for and click on, more relevant recommendations will be shown to them. If data shows that inventory is always low for specific products, a merchant might want to start using an inventory management system as part of the composable commerce stack. If the customer makes the purchase, the business owner can then send follow-up emails or texts about similar products to get them to purchase again.<sup>23</sup>

There are various composable commerce companies. VTEX is a cloud-based composable commerce platform that helps businesses manage their ecommerce operations. It offers different components that make a successful online retail store like product catalog manager, order processing, and more.<sup>24</sup> It also provides a range of Application Programming Interfaces (APIs) that define how different software components interact with each other. By adopting a composable commerce approach, VTEX has been able to support over 3,400 online stores and 18 operating locations. The VTEX platform is scalable and can support multiple sellers and products through its online marketplaces because it allows customers to build on their platform without coding experience and connect various data sources.<sup>25</sup>

A Seattle-based company Fabric utilizes a headless commerce platform, applications, and APIs to assist developers, operators, retailers, and customers in connecting and building a better ecommerce experience.<sup>26</sup> Another company Builder.io is particularly easy to use. It is a visual headless content management system, designed to enable developers, marketers, product managers, and retailers to create flexible multi-channel apps and websites.<sup>27</sup> Users can drag and drop visual components onto their content management systems.

### **Case 4 – MercadoLibre as an ecosystem company powering the Latin American ecommerce market**

MercadoLibre (MeLi) is often referred to as the Amazon of Latin America and is the largest ecommerce company across Latin America. It launched in 1999 in Argentina and has reached over 132 million users across 18 countries in the region.<sup>28</sup> There are five main business segments that MercadoLibre owes its success to: its online marketplace, payment services (Mercado Pago), credit services (Mercado Credito), ad

hosting (Mercado Publicado), and online selling (Mercado Shops). It also has a few smaller business segments like its logistics vertical, Mercado Envios, who works with third-party parcel companies to achieve economies of scale.<sup>29</sup> Mercado Envios offers drop shipping, cross-docking, fulfilled by MELI, and Flex services that provide unique capabilities to further serve merchants and consumers.

MercadoLibre's focus on digital payments through MercadoPago has allowed it to branch off into providing fintech, credit card, and payment terminal services. This has become MercadoLibre's most profitable business segment. Mercado Pago has become one of AWS's major customers because it runs its big data processing through the system.<sup>30</sup>

Through Mercado Pago, users can place orders using credit cards, bank transfers, cash vouchers, and more. It has become the largest payment platform in Mexico. Users are able to create a personal account and use it as an online wallet at no cost, and also a seller account that gives access to exclusive tools and services for their business. While only available in 7 Latin American countries currently, MercadoPago offers customized payment solutions for each country by considering its economic, legislative, and consumer landscapes.<sup>31</sup>

MercadoLibre has managed to dominate the local market share of ecommerce platforms. It previously held a strategic partnership with eBay back in 2001 and eBay even purchased a 19.5% stake into the company, but that has since been sold and both companies still work together to support sellers in Latin America. Over the years, Mercado Libre has acquired different companies to grow its portfolio. Its expertise in the region also makes it a market leader. They are able to tailor its products and services to meet customer needs, more so than foreign competitors. Foreign competitors like Amazon and Alibaba are investing in the Latin American market, as well as other global markets, so MercadoLibre must continue to invest in its own market to maintain its large market share.

Industry events that bring the ecosystem together help promote the ecosystem – one prominent example is the eTrade Alliance partner eCommerce Institute that has for years held eCommerce Days across Latin America, bringing the industry together to hear presentations, explore solutions and network (case 5). In 2023, the eCommerce Institute organized with the eTrade Alliance the first eCommerce Day Africa in Nairobi, Kenya. In addition, national events such as Cyber Mondays that have been adopted in many economies to promote ecommerce transactions can foster the ecommerce ecosystem and awareness of various players in it.

### **Case 5 – Ecommerce Days as promoting ecommerce ecosystem in Latin America and Africa**

The eCommerce Institute is a non-profit organization operating within various Latin American countries, and serves as an association of Latin America ecommerce associations. Its mission is to foster the ecommerce ecosystem in the region by endorsing projects that strengthen and advance online business activities. It provides ecommerce courses, shares knowledge, success stories, and best practices in the ecommerce space, provides ebooks on the initiatives of ecommerce projects, podcasts from experts in the ecosystem, and even an ecommerce award that distinguishes the best ecommerce businesses at a regional level.

In 2008, the eCommerce Institute launched the eCommerce Day Tour. The tour covers 16 countries and is a 1-2 days of meetings, panels, and networking among a country's ecommerce ecosystem. It brings together thousands of people in large markets like Brazil and Argentina, and hundreds in the smaller economies in Central America. Each eCommerce Day Tour event has different initiatives that develop specific actions linked to the digital ecosystem of each country, among them:

- **Business Case Capsule:** Presentation of success stories at the regional level, with an analytical and precise view, with real figures, concrete strategies, and specific results.
- **eCommerce IT Camp:** Talks and conferences on ecommerce exclusively for system professionals and technical profiles.
- **Meet & Greet:** An exclusive meeting with the main leaders of the industry.
- **I to I Site Clinic Experience:** An exclusive opportunity offered by important marketplaces and brands in the industry within the framework of the eCommerce Day Tour 2023 to personalize, deepen, and expand the digital retail ecosystem.
- **eCommerce Awards:** To distinguish companies and ventures for their work in the digital commerce sector and online businesses, recognizing the best of online businesses at a regional level.
- **eCommerce Startup Competition:** With the goal of promoting digital entrepreneurship and providing support to Latin American projects with greater development potential in the ecosystem of Electronic Commerce and Internet Business.
- **eGlobal Selling Competition:** initiative that promotes the growth of cross-border electronic commerce and provides support to companies and organizations with the greatest development potential in the international ecosystem of Electronic Commerce and Internet Business.
- **Retail Digital Commerce Acceleration Cluster Program:** Its objective is to create a favorable environment for a group of retailers and brands from different countries and industries, collaboratively, to “accelerate” in the challenge of achieving sustainable double-digit profitability.
- **eCommerce Day Experience:** Technical visits to leading companies to learn about the “end to end” operation of an ecommerce and interact with the teams that carry out the areas of Marketing, Commercial, Operations, SAC and Logistics.

The largest retailers and brands from each country in the region have joined this initiative, along with international leaders in ecommerce. During Covid-19, the eCommerce Day Tour started to offer an online option that, in each country, had three days of training, more than 20 workshops, more than 20 speakers and more than 1,000 attendees throughout the broadcast. With the return of in-person events, the Blended format made it possible for some of the activities to return to the traditional model and others to also be transmitted by streaming, allowing those who could not attend in person to still obtain valuable content live or online.

Ecommerce Days have enabled actors in the Latin American ecommerce industry to be better prepared to respond to demand, to incorporate new technologies, to be flexible in the face of changes, and to continue with the mission of disseminating, promoting, and evoking reflection on all aspects that impact the life, work and business of people and companies in the region.

In September 2023, the eCommerce Institute, in partnership with the American Chamber of Commerce of Kenya and the eTrade Alliance, will be bringing the eCommerce Day Tour to Africa. The 3-day event in Nairobi, Kenya featured virtual and in-person activities designed to promote ecommerce within Africa among industry professionals, government officials, and entrepreneurs. Over 300 professional participated in the event and more than 90 percent found that their knowledge about how to do ecommerce had significantly improved as a result.

There have also been a number of development projects to foster ecommerce ecosystems. For example, the eTrade Alliance has been working in Ecuador to promote women-led firms' ecommerce use in partnership with a local bank Banco Pichincha, and a local ecommerce platform Pardux. The program is hoped to promote ecosystem solutions where Pardux is able to support women-led firms that are Banco Pichincha's customers to engage in ecommerce. The program is hoped to catalyze long-term partnership with the bank and Pardux to cultivate women-led firms in Ecuador, and, through

further scale, enable Pardux to create a program that trains companies to use its services and service MSMEs at scale and at lower cost. The Alliance is pursuing similar ecosystem initiatives with local partners key to the ecosystem win Central America (with platform Nidux) and Bolivia (with platform Tienda Llave).

## V. CONCLUSION

Ecommerce ecosystems have grown in developing countries, enabling MSMEs to transact online and fulfill orders, and the Alliance will continue studying them and their effects.

This report has sought to pioneer in measuring the robustness of ecommerce ecosystems – and thereby support development interventions that bolster countries' ecommerce, finding that:

- Advanced economies lead on the index, while developing countries in Africa, the Middle East, and South Asia tend to lag behind.
- Most East Asian and Latin American countries are about 75 percent from the global frontier (Singapore and other advanced countries), while the less developed countries in Africa, South Asia, Southeast Asia, and Latin America are 50 percent from advanced countries.
- There are positive surprises. For example, with the OECD nations in the top quartile of countries are economies such as India, Brazil, Malaysia, Colombia, Thailand, Costa Rica, and Indonesia. However, many sub-Saharan African economies are far behind, with very small and undiversified ecommerce ecosystems.

The paper has found that a range of digital policies conducive to MSME ecommerce, digital infrastructure, ecommerce use, and availability of venture capital facilitate to rise of ecommerce ecosystem, as do proactive ecommerce associations and local events that galvanize consumers' interest in ecommerce such as Cyber Monday. Composable commerce applications and marketplaces such as MercadoLibre that have evolved into hubs of services for sellers are very useful private sector solutions to promote ecommerce and useful partners for donor organizations.

# ANNEX

**Table I: Alliance's' Digital and Ecommerce Policy Index components**

## Digital Infrastructure

|  |  |
|--|--|
| Government national broadband plan or initiatives                      | 1 = yes ; 0 = not in place (or not found)  |
| Government initiatives for women-led firms to use and innovate in tech | 1 = yes ; 0 = not in place (or not found)  |
| 5G strategy published or initiatives announced                         | 1 = yes ; 0 = not in place (or not found)  |
| 5G service has been rolled out   | 1 = yes; 0 = not in place (or not found)   |
| 5G spectrum auctioning has happened already                            | 0.5 = spectrum assigned ; 0.25 = auction planned ; 0 = not in place (or not found) |
| 5G piloted/trials have taken place                                     | 0.25= yes; 0 = not in place (or not found)   |
| 4.5G rolled out  | 0.5 = yes; 0.25 = in planning ; 0 = not in place (or not found)                    |
| Competition among fixed wireless broadband providers                   | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition among fixed satellite services                             | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition among mobile cellular                                      | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition among mobile satellite services                            | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition among internet services                                    | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition in international gateways                                  | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Competition in wireless local loop                                     | 0.2 = full ; 0.1 = partial ; 0 = monopoly, or N/A                                  |
| Universal access/service policy adopted                                | 0.25 = yes; 0 = no   |
| Caps on FDI in wireless and fixed telecommunications                   | -0.5 = some limits or caps on FDI found, such as in certain sectors                |
| Information Technology Agreement member                                | 1 = yes ; 0 = no   |
| 2018 applied tariffs on cellphones                                     | distance from frontier: 1 = best, 0 = worst or N/A                                 |
| 2018 applied tariffs on laptop computers                               | distance from frontier: 1 = best, 0 = worst or N/A                                 |

## Digital regulations on online transactions

|   |  |
|---|--|
| Fully digital business registration available                 | 1 = yes; 0.5 = part of process can be done online, or only certain cities provide the service, or only certain kinds of companies can register online; 0 = not online at all, including even if there is a "one stop shop" |
| Electronic signatures admissible, legal, and enforceable      | 1 = yes ; 0 = not in place (or not found)  |
| Digital or electronic invoice implemented                     | 1 = yes ; 0 = not in place (or not found)  |
| eID/digital ID in place (including for e-government services) | 1 = yes ; 0.5 = in development/piloted ; 0 = not in place (or not found)   |
| National digital corporate ID tested or in place              | 1 = yes ; 0 = not in place (or not found)  |
| Tax exemptions for new businesses                             | 1 = yes ; 0 = not in place (or not found)  |

## Digital regulations on online behavior

|   |   |
|---|---|
| Net neutrality: ISPs barred from limiting Internet content in their networks              | 1 = yes ; 0 = not in place (or not found)   |
| Liability exemptions/safe harbors for internet intermediaries from copyright infringement | 1 = yes ; 0.5 = in draft, or is party to treaty that requires safe harbor regulations though not in place (or not in place (or not found))to have adopted in national legislation yet ; 0 = not in place (or not found), law does not mention internet intermediary liability, or law implies high liability risk i.e. EU directive |
| Copyright limitations and exceptions - use of "fair use" standard                         | 1 = yes ; 0.5 = not officially but abide by Berne Convention ; 0 = not in place (or not found)  |
| Restrictive OTT regulations affecting Internet services                                   | -1 = yes ; 0 = not in place (or not found)  |
| Caps on FDI by foreign marketplaces   | -0.5 = some limits or caps on FDI found, such as in certain sectors   |
| Data transfer allowed (or no law in place)  | 1 = yes, allows data transfer, whether by law or implicitly because there is no law   |
| Data transfer limits to certain sectors   | -0.2 = yes ; 0 = not in place (or not found)  |
| Data transfer always requires jurisdictions to be branded "adequate"                      | -0.2 = adequacy always required ; -0.1 = adequacy can be required but not always i.e. if there is user consent, or a special exception ; 0 = not in place (or not found)  |
| Data transfer always requires user consent  | -0.2 = user consent always required ; -0.1 = user consent can be required but not always i.e. if there is adequacy standard in place, or a special exception ; 0 = not in place (or not found)  |

### Digital regulations on online behavior (cont.)

|   |  |
|---|--|
| VAT/GST Tax   | distance from frontier: 1 = best, 0 = worst                  |
| Digital tax/rate discussed or implemented   | -1 = yes ; -0.5 = Proposed ; 0 = not in place (or not found) |
| Consumer protection regulation in place   | 1 = yes ; 0.5 = in draft                                     |
| Consumer protection law explicitly applies to ecommerce                             | 1 = yes ; 0 = not in place (or not found)                    |
| <i>Legal/regulatory prohibitions on companies using unfair or deceptive acts</i>    | <i>0.25= yes ; 0 = not in place (or not found)</i>           |
| <i>Anti-spam law in place</i>   | <i>0.25= yes ; 0 = not in place (or not found)</i>           |
| <i>Online contracts are to be drafted in clear and simple language</i>              | <i>0.25= yes ; 0 = not in place (or not found)</i>           |
| <i>Forms of redress - consumer's right to return items purchased</i>                | <i>0.25= yes ; 0 = not in place (or not found)</i>           |
| Companies have a Trust certificate or companies / governments certify trusted firms | 1 = yes ; 0.5 = Planning ; 0 = not in place (or not found)   |
| Consumer complaints can be filed online   | 1 = yes ; 0 = not in place (or not found)                    |
| Digital / video-based court proceedings for consumer issues                         | 1 = yes ; 0 = not in place (or not found)                    |

### Payment regulations

|   |   |
|---|---|
| E-payments law in place   | 1 = yes ; 0 = not in place (or not found)   |
| Risk-based approach (RBA) KYC regime in place   | 1 = yes ; 0.5 = in process of implementing ; 0 = not in place (or not found)        |
| <i>Regulatory requirements differentiated by type of service and its respective risks</i> | <i>1 = yes ; 0.5 = in process of implementing ; 0 = not in place (or not found)</i> |
| Demonetization programs to promote digital payments                                       | 1 = yes ; 0 = not in place (or not found)   |
| Regulations or programs to fuel interoperability of online payments                       | 1 = yes ; 0 = not in place (or not found)   |

### Trade facilitation for ecommerce

|  |   |
|--|---|
| <i>De minimis</i> threshold for entry of goods   | distance from frontier: 1 = best, 0 = worst or N/A  |
| Publication of existing import-export regulations on the internet                      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Stakeholders' consultation on new draft regulations (prior to their finalization)      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Advance publication of new trade-related regulations before their implementation       | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Advance ruling on tariff classification and origin of imported goods                   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Risk management  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Pre-arrival processing   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Post-clearance audits  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Independent appeal mechanism   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Separation of release from final determination of duties, taxes, fees and charges      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Establishment and publication of average release times                                 | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Trade facilitation measures for authorized operators                                   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Expedited shipments  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Acceptance of copies of original documents required for import, export or transit      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Electronic Single Window System  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Alignment of working days and hours with neighboring countries at border crossings     | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Alignment of formalities and procedures with neighboring countries at border crossings | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Provides B2B and/or G2B services as shared trade ecosystem platform                    | 1 = yes ; 0 = not in place (or not found)           |
| Use of blockchain and/or AI in customs   | 1 = yes ; 0 = not in place (or not found)           |
| Innovative postal services, such as drones, collaboration with ecommerce platforms     | 1 = yes ; 0 = not in place (or not found)           |
| UPU Postal Development Index   | distance from frontier: 1 = best, 0 = worst or N/A  |



### Trade facilitation for ecommerce

|  |   |
|--|---|
| <i>De minimis</i> threshold for entry of goods   | distance from frontier: 1 = best, 0 = worst or N/A  |
| Publication of existing import-export regulations on the internet                      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Stakeholders' consultation on new draft regulations (prior to their finalization)      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Advance publication of new trade-related regulations before their implementation       | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Advance ruling on tariff classification and origin of imported goods                   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Risk management  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Pre-arrival processing   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Post-clearance audits  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Independent appeal mechanism   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Separation of release from final determination of duties, taxes, fees and charges      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Establishment and publication of average release times                                 | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Trade facilitation measures for authorized operators                                   | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Expedited shipments  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Acceptance of copies of original documents required for import, export or transit      | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Electronic Single Window System  | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Alignment of working days and hours with neighboring countries at border crossings     | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Alignment of formalities and procedures with neighboring countries at border crossings | 1 = Yes ; 0.5 = Partially ; 0.25 = Planning ; 0= No |
| Provides B2B and/or G2B services as shared trade ecosystem platform                    | 1 = yes ; 0 = not in place (or not found)           |
| Use of blockchain and/or AI in customs   | 1 = yes ; 0 = not in place (or not found)           |
| Innovative postal services, such as drones, collaboration with ecommerce platforms     | 1 = yes ; 0 = not in place (or not found)           |
| UPU Postal Development Index   | distance from frontier: 1 = best, 0 = worst or N/A  |

### MSME capacity-building and export promotion for ecommerce

|   |  |
|---|--|
| Export promotion agency programs/guidelines for ecommerce available           | 1 = yes; 0.5 = planning to implement ; 0 = not in place (or not found) |
| Online ecommerce export services, such as channel management platform         | 1 = yes; 0 = not in place (or not found)                               |
| Subsidized digital transformation funding for firms to use ecommerce          | 1 = yes; 0 = not in place (or not found)                               |
| Public-private collaboration (e.g. with marketplaces) to build SMEs' capacity | 1 = yes; 0 = not in place (or not found)                               |
| Programs for women-led firms to learn to export (ex: e-commerce)              | 1 = yes; 0 = not in place (or not found)                               |
| Programs for rural companies to engage in ecommerce                           | 1 = yes; 0 = not in place (or not found)                               |
| Help with MSME logistics for cross-border ecommerce                           | 1 = yes; 0 = not in place (or not found)                               |

### MSME finance

|   |   |
|---|---|
| Regulatory sandboxes for FinTech  | 1 = yes; 0.5 = in development ; 0 = not in place (or not found) |
| Open banking regulations  | 1 = yes; 0.5 = in development ; 0 = not in place (or not found) |
| Regulatory framework for equity crowdfunding  | 1 = yes; 0.5 = in development ; 0 = not in place (or not found) |
| Government credit guarantees for micro and small working capital loans offered to banks | 1 = yes; 0 = not in place (or not found)                        |
| Government credit guarantees for working capital loans offered to Fintechs              | 1 = yes; 0 = not in place (or not found)                        |
| Direct loans from government to small or micro firms                                    | 1 = yes; 0 = not in place (or not found)                        |
| Equity for tech and digital businesses (gov't as GP)                                    | 1 = yes; 0 = not in place (or not found)                        |
| Equity for tech and digital businesses (gov't as LP or fund of funds)                   | 1 = yes; 0 = not in place (or not found)                        |
| Specific equity programs for exporters (or VC investments expressly for exporting)      | 1 = yes; 0 = not in place (or not found)                        |
| Programs to finance/guarantee ecommerce transactions                                    | 1 = yes; 0 = not in place (or not found)                        |
| Financing programs or entities for women-led companies - grants, debt or equity         | 1 = yes; 0 = not in place (or not found)                        |

**Government eprocurement promotion for MSMEs**

|  |   |
|--|---|
| Procurement tenders and bid documents available online                               | 1 = yes; 0.5 = only tenders or bid docs online; 0 = not in place (or not found) |
| Procurement bid submission online  | 1 = yes; 0 = not in place (or not found)  |
| Procurement bid process and notices electronic                                       | 1 = yes; 0 = not in place (or not found)  |
| Online, transparent and/or simple bidding search for low-value procurement contracts | 1 = yes; 0 = not in place (or not found)  |
| Initiatives to increase SME procurement bids and contracts                           | 1 = yes; 0 = not in place (or not found)  |
| Initiatives to increase women-led SME procurement bids and contracts                 | 1 = yes; 0 = not in place (or not found)  |
| Complaint mechanism in place, for example about unfair procurement bidding process   | 1 = yes; 0.5 = observer status; 0 = no  |
| Member or observer of plurilateral Agreement on Government Procurement               |   |

**MSME cybersecurity readiness**

|   |  |
|---|--|
| National cybersecurity strategy in place                              | 1 = yes, including if standalone or part of larger strategy; 0.5 = in draft; 0 = not in place (or not found) |
| Cybercrime legislation in place                                       | 1 = yes, if standalone or part of a law i.e. Criminal Code; 0.5 = in draft; 0 = not in place (or not found)  |
| Computer Emergency Response Team (CERT) in place                      | 1 = yes; 0 = not in place (or not found)   |
| Educational campaigns to SMEs on cybersecurity/SME focused assistance | 1 = yes; 0 = not in place (or not found)   |
| Cybersecurity capacity building for governments                       | 1 = yes; 0 = not in place (or not found)   |
| Ratified Budapest Convention  | 1 = yes, 0 = no  |

**Ecommerce strategy and statistics**

|  |   |
|--|---|
| Government digital strategy in place             | 1 = yes; 0.5 = in draft/development ; 0 = not in place (or not found) |
| Government ecommerce strategy in place           | 1 = yes; 0.5 = in draft/development ; 0 = not in place (or not found) |
| Ecommerce flow and/or usage statistics collected | 1 = yes; 0 = not in place (or not found)                              |

**Table II: Variables for the eTrade Alliance’s Best Place for MSME Ecommerce-Index**

| Area                           | Variable   | Source                                   |
|--------------------------------|--|--|
| Connectivity                   | Internet quality - speed   | Opensignal                               |
| Connectivity                   | Broadband cost   | Cable                                    |
| Connectivity                   | Tariffs on ICT products  | WITS                                     |
| Connectivity                   | Taxes on digital services  | Various                                  |
| Payments                       | PayPal is available 1= to send; 2 = send and receive; 3 = send, receive, w ithdraw                   | PayPal                                   |
| Labor                          | Hourly labour costs in US dollars (converted using 2011 PPPs)  | ILO                                      |
| Labor                          | Labor law flexibility  | World Bank Doing Business                |
| Labor                          | GDP per person employed (constant 2017 PPP \$)   | World Bank                               |
| Labor                          | Labor skills levels - % of technicians   | ILO                                      |
| Labor                          | English proficiency  | EF EPI                                   |
| Labor                          | Digital talent - proxy: Patent applications, residents   | World Bank World Development Indicators  |
| Labor                          | Digital talent - proxy: ICT service exports  | World Bank World Development Indicators  |
| Facilities                     | Office space cost  | CBRE                                     |
| Security                       | Crimes per population  | United Nations Office on Drugs and Crime |
| Ease of doing business         | Doing business - starting a business (score)   | World Bank Doing Business                |
| Ease of doing business         | Total tax and contribution rate (% of profit)  | World Bank Doing Business                |
| Ease of doing business         | Time spent on tax filings  | World Bank Doing Business                |
| Cybersecurity                  | Cybercrimes (malicious email per capita)   | Symantec                                 |
| Ease of trading across borders | Paperless trade score  | United Nations paperless trade database  |
| Ease of trading across borders | Crossborder paperless trade score  | United Nations paperless trade database  |
| Ease of trading across borders | Time to export - documents   | World Bank Doing Business                |
| Ease of trading across borders | Time to export - compliance  | World Bank Doing Business                |
| Market access                  | Regional trade agreements (number)   | WTO                                      |
| Logistics                      | First mile efficiency  | UPU                                      |
| Logistics                      | Logistics performance index: Ease of arranging competitively priced shipments (1=low to 5=high)      | World Bank Logistics Performance Index   |
| Logistics                      | Logistics performance index: Ability to track and trace consignments (1=low to 5=high)               | World Bank Logistics Performance Index   |
| Logistics                      | Lead time to export, median case (days)  | World Bank Logistics Performance Index   |
| Logistics                      | Logistics performance index: Quality of trade and transport-related infrastructure (1=low to 5=high) | World Bank Logistics Performance Index   |
| Logistics                      | Commercial air connectivity  | World Bank World Development Indicators  |
| Logistics                      | Amazon fulfillment center  | Amazon                                   |
| Finance                        | Access to finance - see commercial bank branches per 1000 km2  | International Monetary Fund              |
| Finance                        | Collateral requirements  | World Bank Enterprise Surveys            |
| Finance                        | Depth of Fintech ecosystem - National fintech ranking 65 countries                                   | Findexable                               |
| Finance                        | Doing business - credit bureau coverage (% of adults)  | World Bank Doing Business                |
| Crossborder payments           | Stripe available   | Stripe                                   |
| Quality of digital ecosystem   | Google office  | Google                                   |
| Quality of digital ecosystem   | Amazon offices   | Amazon                                   |



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