ALLIANCE FOR ETRADE DEVELOPMENT

HOW CAN DEVELOPING COUNTRIES' LOCAL GOVERNMENTS ENABLE ECOMMERCE?

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HOW CAN DEVELOPING COUNTRIES' LOCAL GOVERNMENTS ENABLE ECOMMERCE?

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I. INTRODUCTION

While ecommerce enables small businesses to reach customers around the world, businesses' ability to engage in ecommerce is critically shaped by their location. In practically any one country, online sellers in large metropolitan areas with first-rate connections, logistics networks, talent, and financial and IT services have an edge over sellers in small rural and remote areas that often lack robust local ecommerce ecosystems and the logistics infrastructure to access local and global markets.

Of course, leading metropolitan areas, even ones with first-class internet connections and access to international trade corridors, also face new challenges generated by ecommerce. Most micro, small, and medium-sized enterprises (MSMEs) in developing country cities are still social sellers that do not use formal ecommerce stores and marketplaces that would enable them to scale their sales. Large metropolises also face a certain "curse of the riches"—the explosive growth of ecommerce transactions that can exacerbate existing challenges such as congestion and cybersecurity threats. In addition, cities are in a race against each other to attract investment in ecommerce-related sectors, such as from large online retailers, logistics companies, and technology firms that can employ tens of thousands of people and create useful knowledge spillovers.

The purpose of this report is to address the challenges for developing countries' rural regions and leading cities to enable ecommerce as a means of promoting MSMEs' sales and exports, attracting investment, and creating new jobs. In particular, this report:

- Reviews the challenges facing firms seeking to engage in ecommerce in different types of developing country cities and subregions, including rural areas;

- Discusses emerging solutions and best practices to these challenges, drawing especially on ongoing activities by cities and regions in advanced economies and larger emerging markets; and

- Presents new ideas for developing country city governments, corporations, and the international development community to promote ecommerce in different types of cities in developing countries.

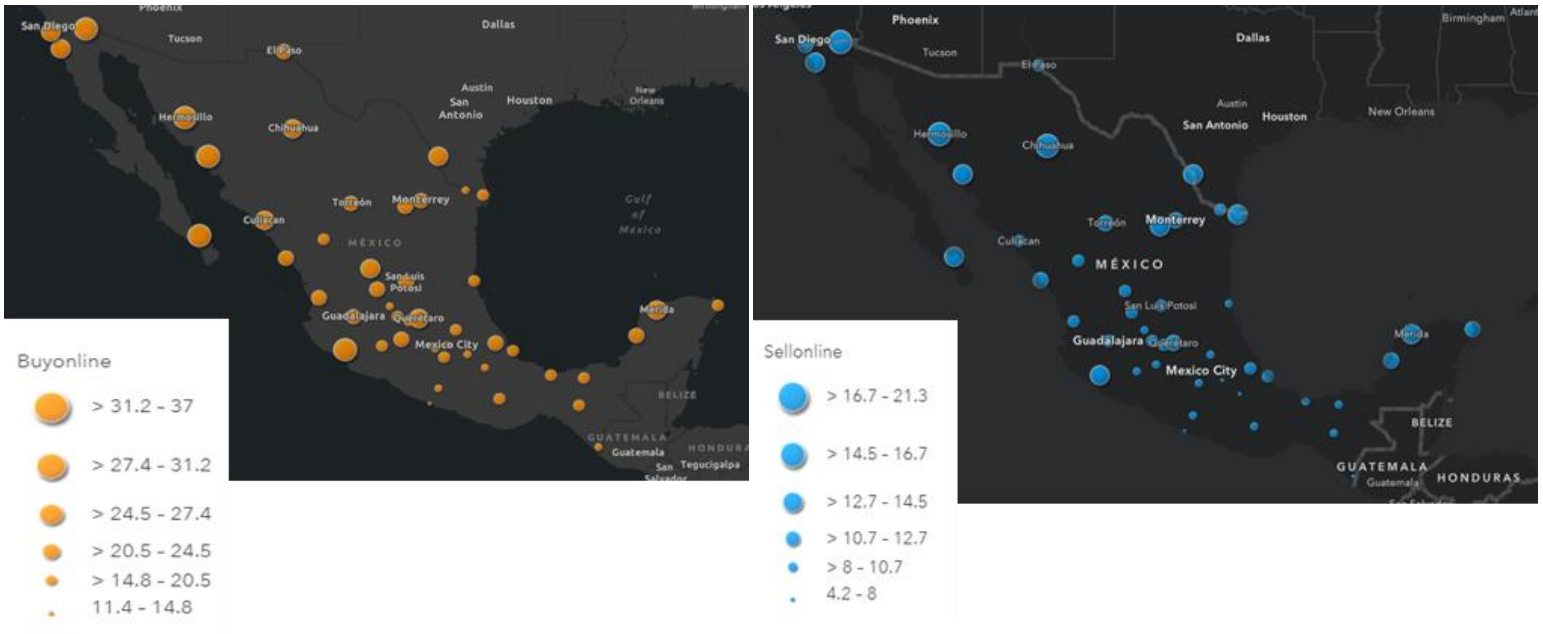
This paper was developed in the context of the U.S. Agency for International Development (USAID)-backed Alliance for eTrade Development, which consists of 12 leading private-sector partners and aims to enable MSMEs in developing countries to engage in ecommerce. Among its activities, the Alliance pursues extensive analytical and programmatic work to identify and bridge in-country disparities in digital trade across geographies and genders and looks to engage local and city governments in targeted programming championing women-led firms.

Section two discusses the in-country disparities in various developing countries regarding ecommerce use and the enabling environment for ecommerce. Section three analyzes opportunities and models for three developing country archetype cities. Section four discusses models that the development community and developing country governments can use to enable local ecommerce development, including with the local and global private sector. Section five concludes.

II. TALE OF THREE CITIES: HOW DO DEVELOPING COUNTRY FIRMS IN DIFFERENT PLACES USE ECOMMERCE?

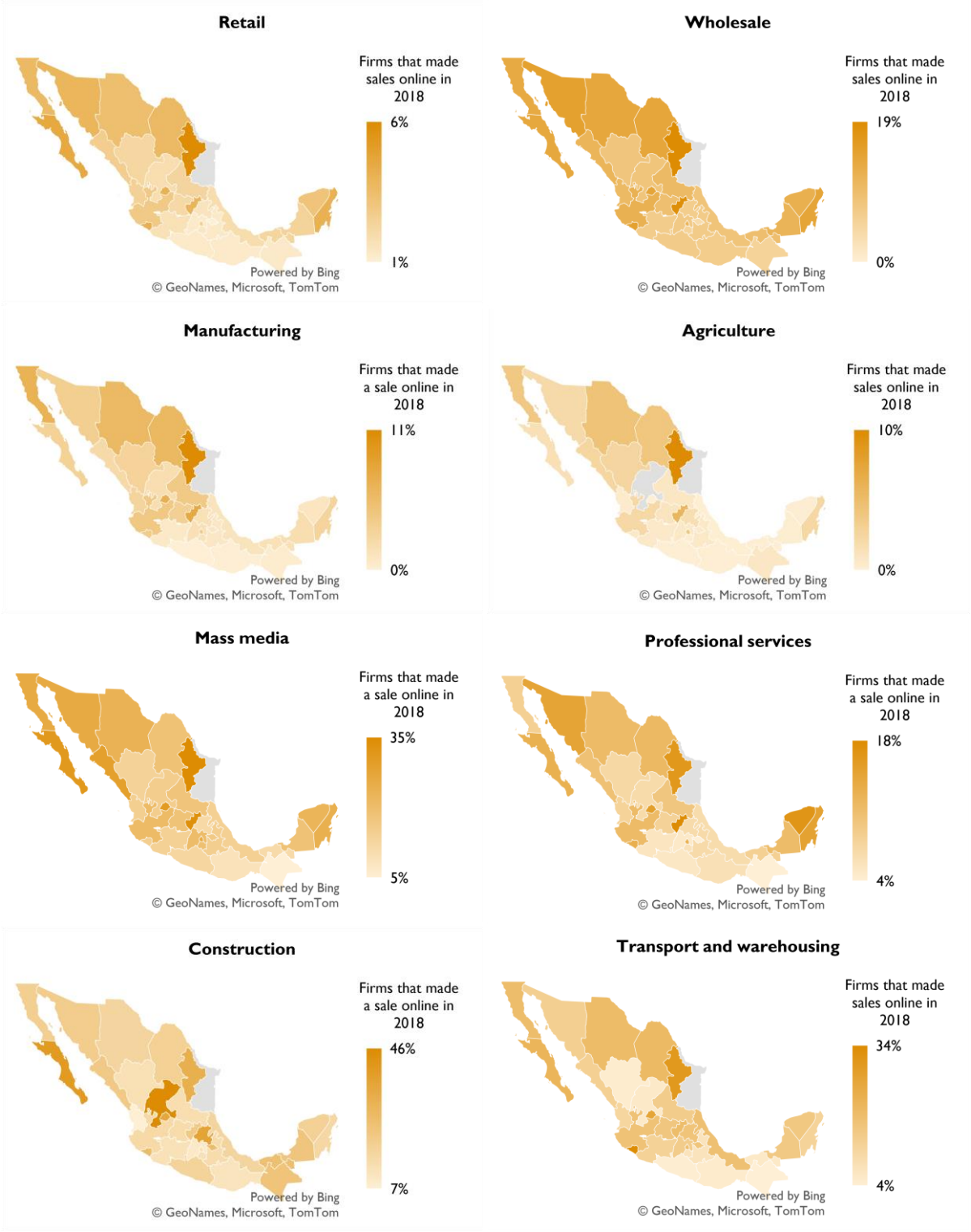
There are significant differences in firms' use of ecommerce and participation in cross-border ecommerce—and trade in general—across geographies within countries. However, to date, there exists little data on these in-country disparities in ecommerce use. One exception is Mexico, which has produced both survey data on households' use of ecommerce in 50 cities, and census data on firms' use of ecommerce across states. These data reveal that income levels, population, and share of people using ecommerce are highly correlated—in other words, shoppers in large, more prosperous urban areas are particularly poised to use ecommerce. Similarly, firms across industries in wealthier states and cities are already using ecommerce, while firms in the poorer and more rural states are less likely to use ecommerce and have less of their revenues stemming from online sales (figures 1 and 2).

Figure 1: Percentage of households in Mexico that use ecommerce to buy and sell online, by largest cities city



Source: author based on INEGI (2019), *Encuesta nacional sobre disponibilidad y uso de tecnologías de la información de los hogares* [National survey on the availability and use of information technologies within homes] (ENDUTIH).

Figure 2: Firms' use of ecommerce to sell goods and services in Mexico, by state and sector



Source: Author based on INEGI (2019), Censos económicos [Economic censuses].

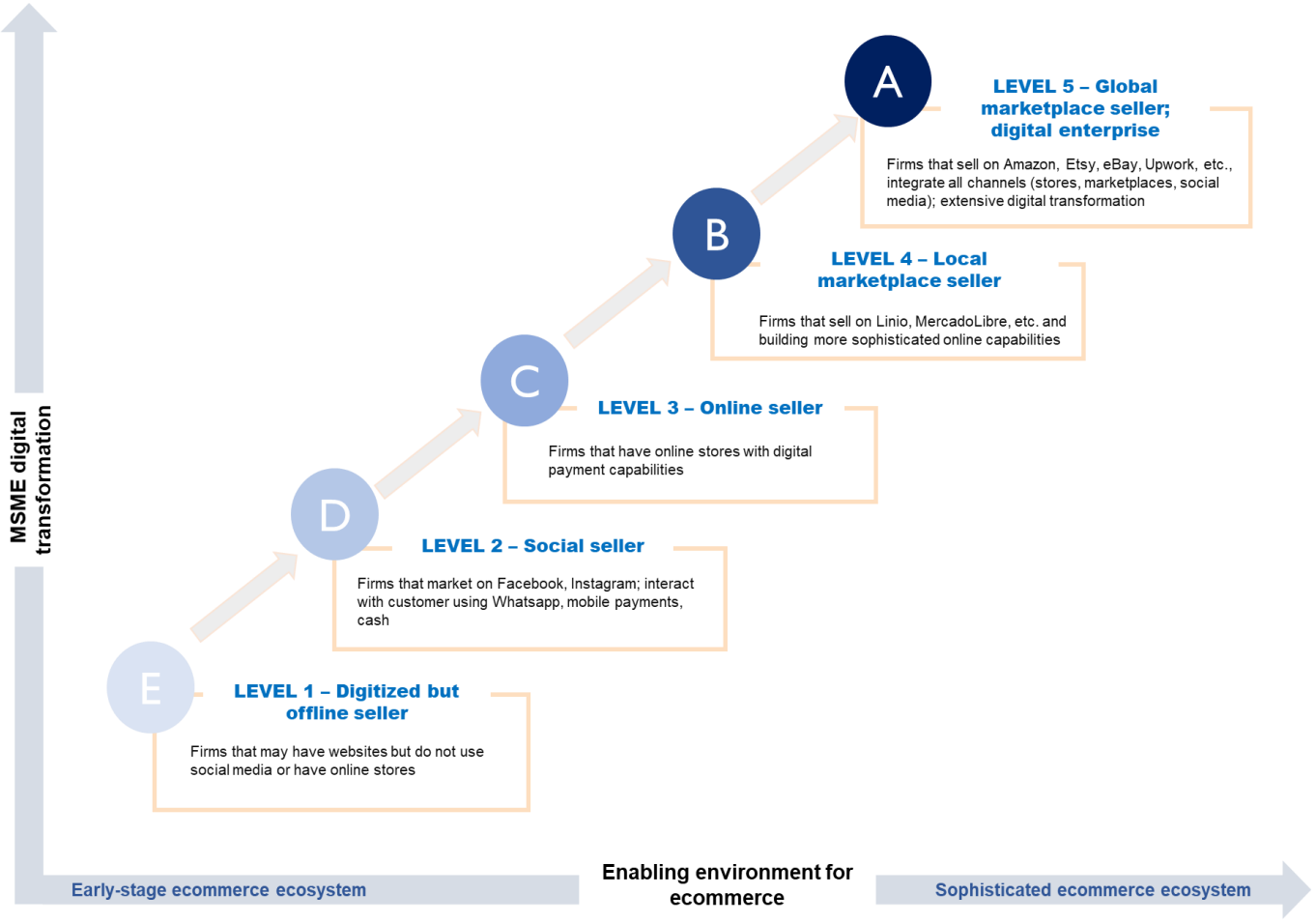
The kind of data produced by Mexico provides useful insights for policymakers and the development community, and enables analysts to trace the sources of regional disparities in ecommerce use to key variables such as digital and transportation infrastructures and education levels. Here, we deepen this data through surveys with over 6,700 developing country firms across 11 countries, based on business surveys conducted in 2020 and 2021 (appendix I), and seek to elucidate the relationship between firms' ecommerce use and local geospatial variables.

A. IN-COUNTRY PATTERNS IN ECOMMERCE USE

Survey after survey that we have conducted in developing countries reveals five firm archetypes. The most digitized firms, type "As" in figure 3, typically make up some 10–15 percent of firms in any one country. They use sophisticated software across company functions, rely on digital services such as fintechs, and sell their goods and services on global online marketplaces and, if selling goods, direct to consumer platforms. Many of these firms also operate in B2B digital services sectors. These tend to be large and medium-sized firms that are located in major cities, have typically been in business for at least 5–6 years, and are led by teams containing at least one executive with a university degree. They deal with technology-savvy customers and thus likely have high returns on technology adoption.

At the other end of the spectrum are type "Es," or incipient digitizers that have barely set out on their digital journeys and tend to struggle with the basics of doing ecommerce, such as reliable internet connections and basic knowledge about online platforms. These firms are also a small minority. The largest set of developing country firms are type "Ds," which sell and market their goods and services on social channels but do not yet use online stores or marketplaces. These are younger, smaller, slower-growing, and more heavily staffed by women than As and Bs, and more focused on B2C services. They are also more prevalent as a share of all firms in rural areas than in urban firms. Their payoffs from digitizing may be less as their customer base is more local and, especially in rural areas, less digitized than the customer bases of the other groups.

Figure 3: The digital journeys of online sellers and the drivers for these



Source: Nextrade Group.

The survey data strongly suggest that subregions within countries vary by ecommerce use and the importance of the different online seller segments. Here, we consider sellers in three archetype subregions:

- **First-tier metropolitan cities**. Over 230 developing country and emerging market cities have populations of more than a million people, and 29 have ones of more than 10 million. These bustling cities have large, rapidly growing numbers of online shoppers and significant volumes of purely local online transactions, such as online grocery and local IT services. Consumers and firms in these cities also make purchases from foreign marketplaces and retailers. These cities often have major congestion challenges, exacerbated by mushrooming ecommerce deliveries.

- **Second- and third-tier cities**. These are over 2,500 cities with 100,000–1 million inhabitants in developing countries and emerging markets. Online sales are growing fastest in these locations in many countries, as firms and consumers use ecommerce to access goods and services from major metropolises and foreign markets. In India, the growth of ecommerce in

second- and third-tier cities is outpacing that of first-tier cities.[1] Also, local ecommerce ecosystems in these cities are starting to grow, and major retailers from urban areas are increasingly establishing a presence in larger second-tier cities to better service customers and orchestrate logistics.

- **Small cities and rural areas**. Rural ecommerce is growing fast, even explosively, in markets such as China and India, where consumers use ecommerce to access bundles of goods and services that are available to their urban peers, and a growing number of firms are leveraging online channels to reach foreign customers directly.

Empirically, first-tier cities have higher concentrations of global marketplace sellers (type A firms) at both the national level and as a share of all firms in first-tier cities, while a larger share of rural firms are Ds and Es (figure 4).[2] Firms in rural areas are less digitized and less likely to use ecommerce and online payments than comparable firms (that is, firms in the same sectors and size categories) in first-tier cities and metropolitan regions. They may also only have limited numbers of sales channels and have to transact through expensive intermediaries. The intensity of ecommerce use among firms that use ecommerce in urban and rural areas is also different—urban online sellers derive a larger share of their sales online than do rural sellers (figure 5).

Figure 4: Distribution of sellers in first-tier cities, second- and third-tier cities, and rural areas, by developing country regions

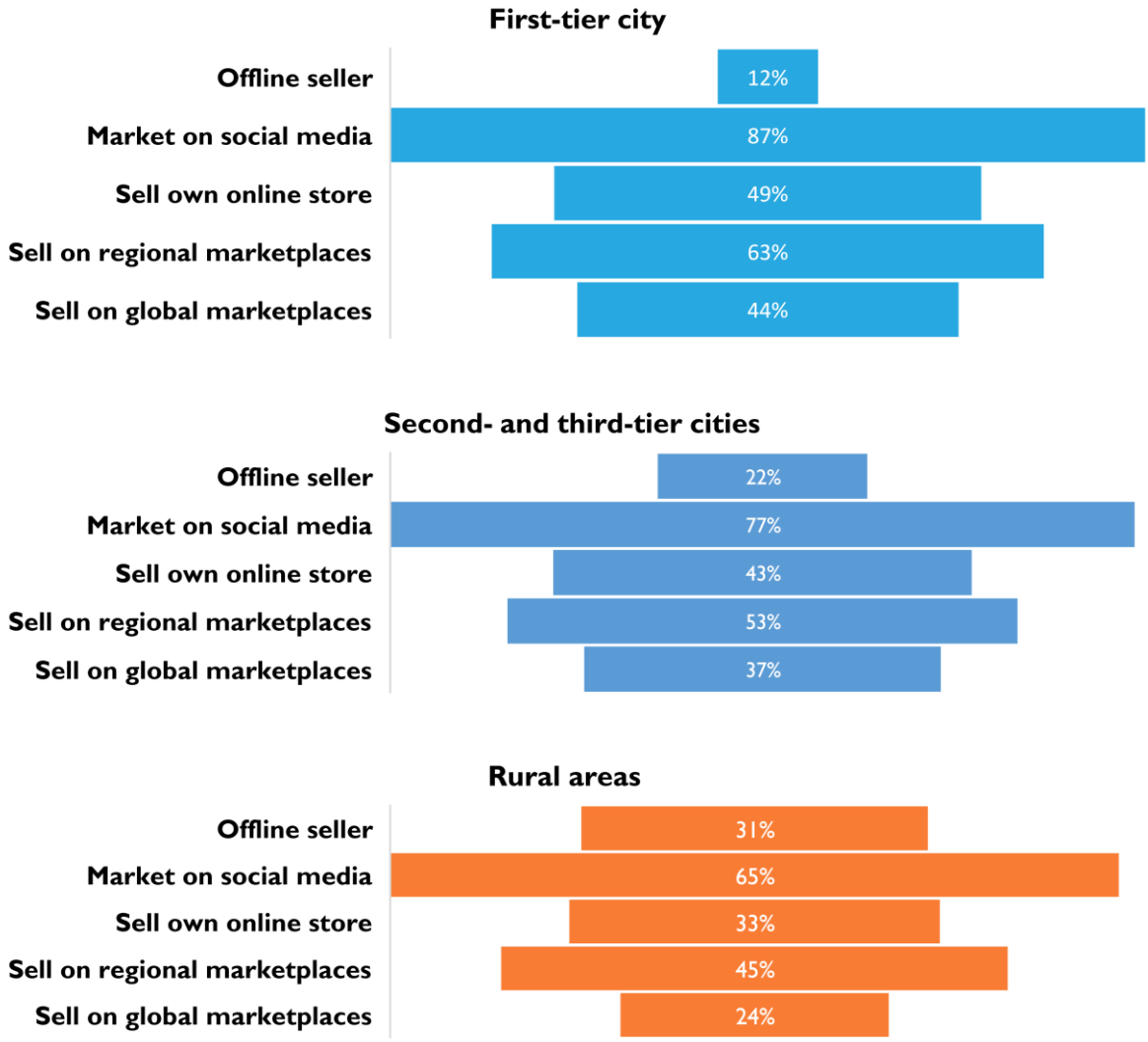
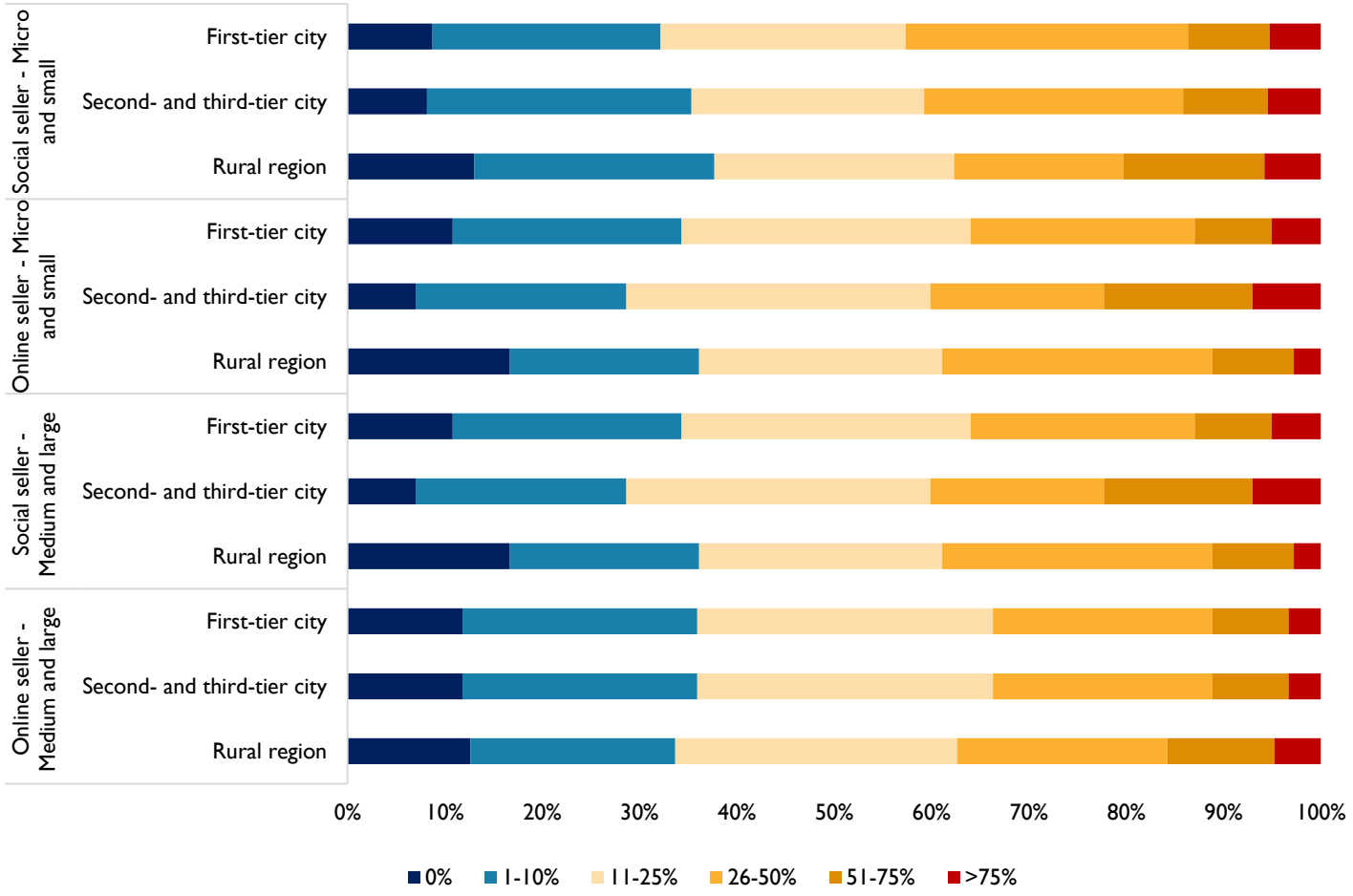


Figure 5: Ecommerce intensity of social and online sellers in first-tier cities, second- and third-tier cities, and rural areas, by developing country regions



Online sellers are generally likelier to export and sell to a wider range of markets than pure social sellers (figure 6). Rural online sellers have quite similar export participation rates to comparable urban firms – but micro and small rural social sellers are much less export-driven than comparable urban firms, suggesting that selling online through marketplaces helps level the playing field between rural and urban firms in terms of export participation.

The patterns are somewhat similar on the import side (figure 7). Rural enterprises can benefit from ecommerce as a means to access the same bundles of goods and services that are available to their urban peers. However, while the surveyed micro and small rural online and social sellers do import—about half of micro sellers and one-third of small sellers do so—urban sellers are likelier to import and to do so from a wider range of markets. Of course, this does not mean that rural sellers do not use imports—instead of importing directly, they may purchase imported parts, components, and other inputs indirectly from urban importers.

Figure 6: Export participation and diversification of social and online sellers in first-tier cities, second- and third-tier cities, and rural areas, by developing country regions

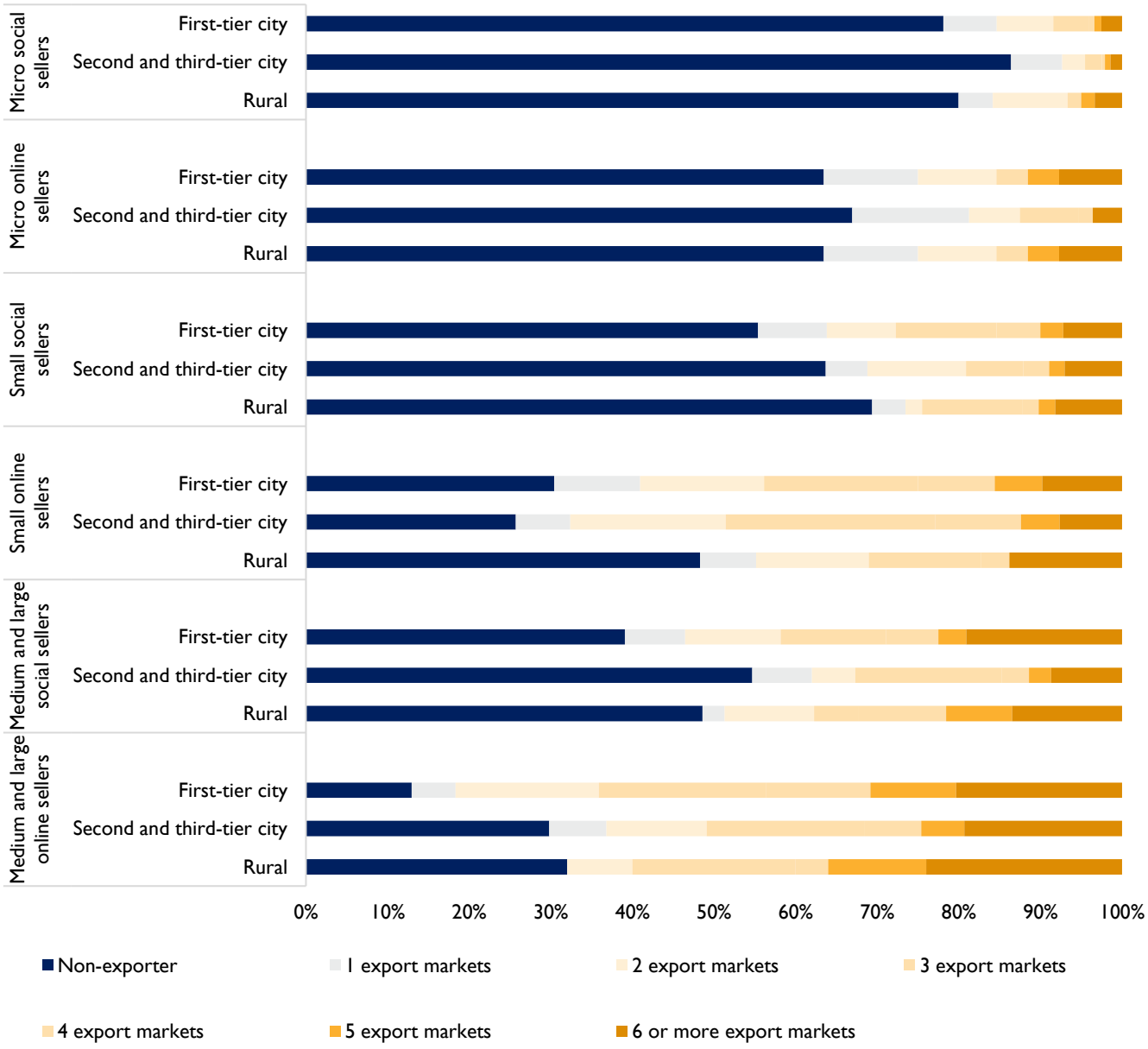
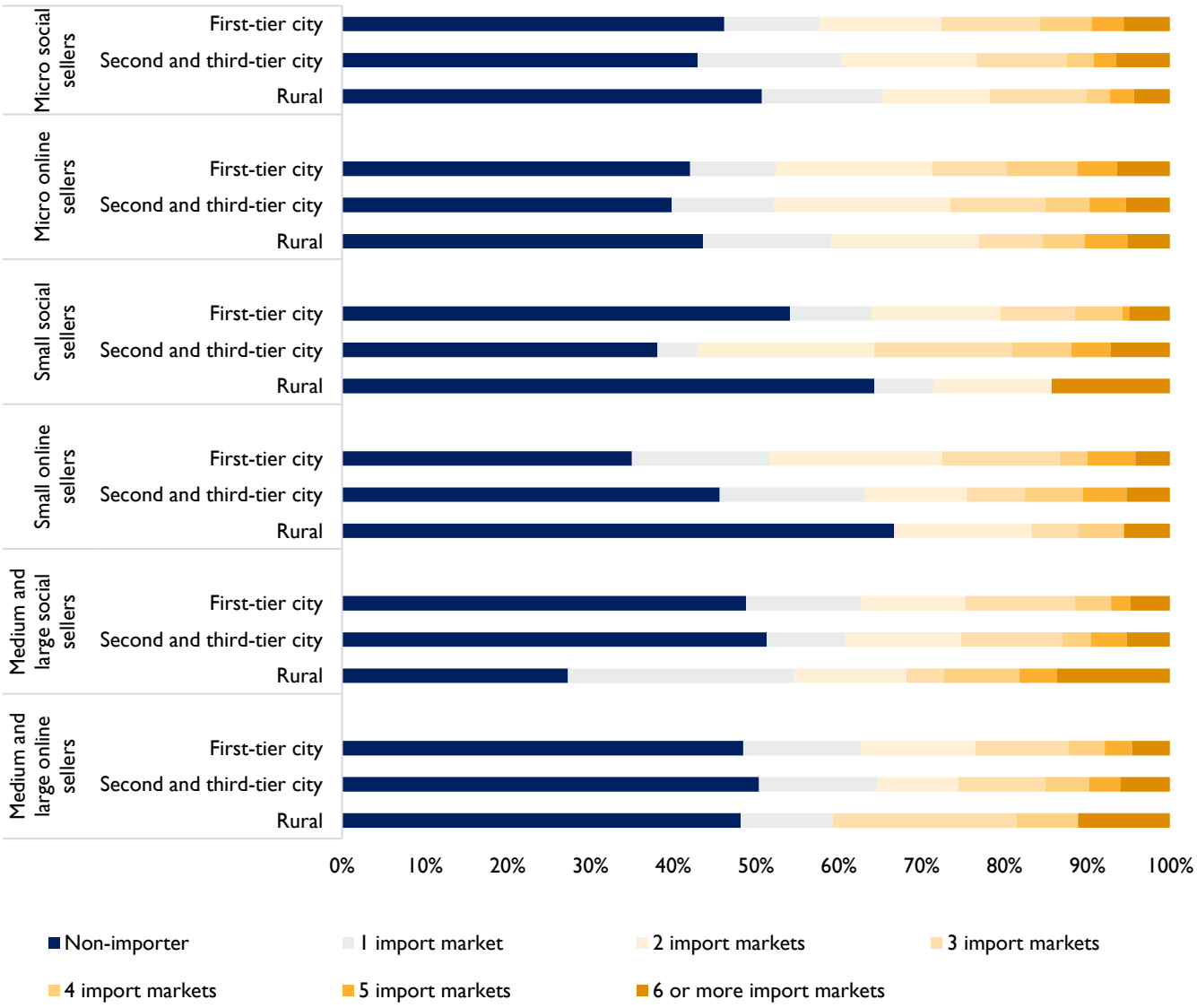


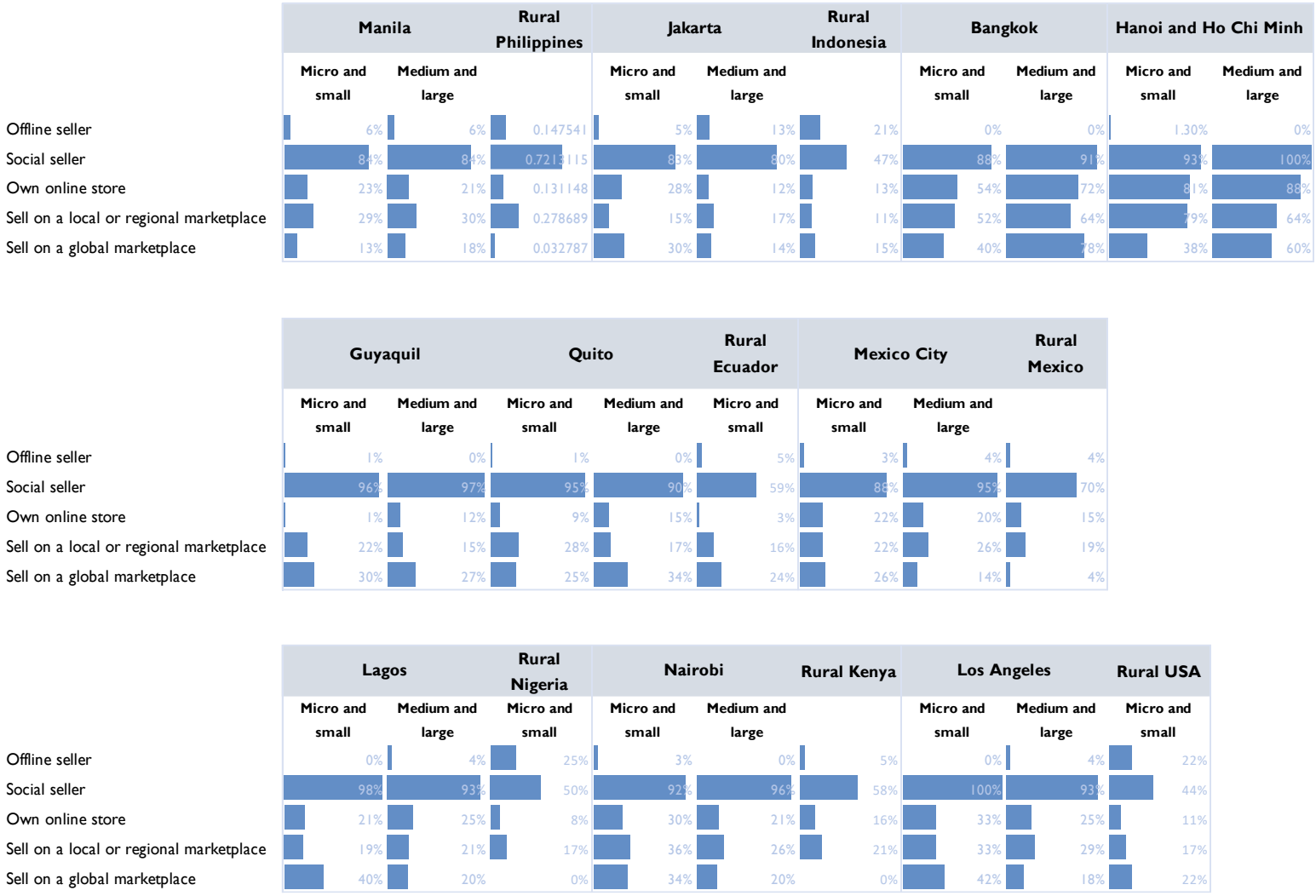
Figure 7: Import participation and diversification by social and online sellers in first-tier cities, second- and third-tier cities, and rural areas, by developing country regions



Granted, Covid-19 has accelerated the adoption of online sales capabilities among firms. While proportionately fewer rural firms use ecommerce than urban firms do, their adoption especially of services platforms such as Fiverr and Freelancer has been growing fast (albeit starting from a lower base than in first-tier cities) (figure 11 and 12). Meanwhile, urban sellers have onboarded both services and goods marketplaces.

Granted, this exploration of the differences between urban and rural firms is not intending to imply that starting and running a thriving ecommerce business in a first-tier city is easy. Most firms in practically all first-tier cities are still social sellers rather than formal online sellers (figure 10).

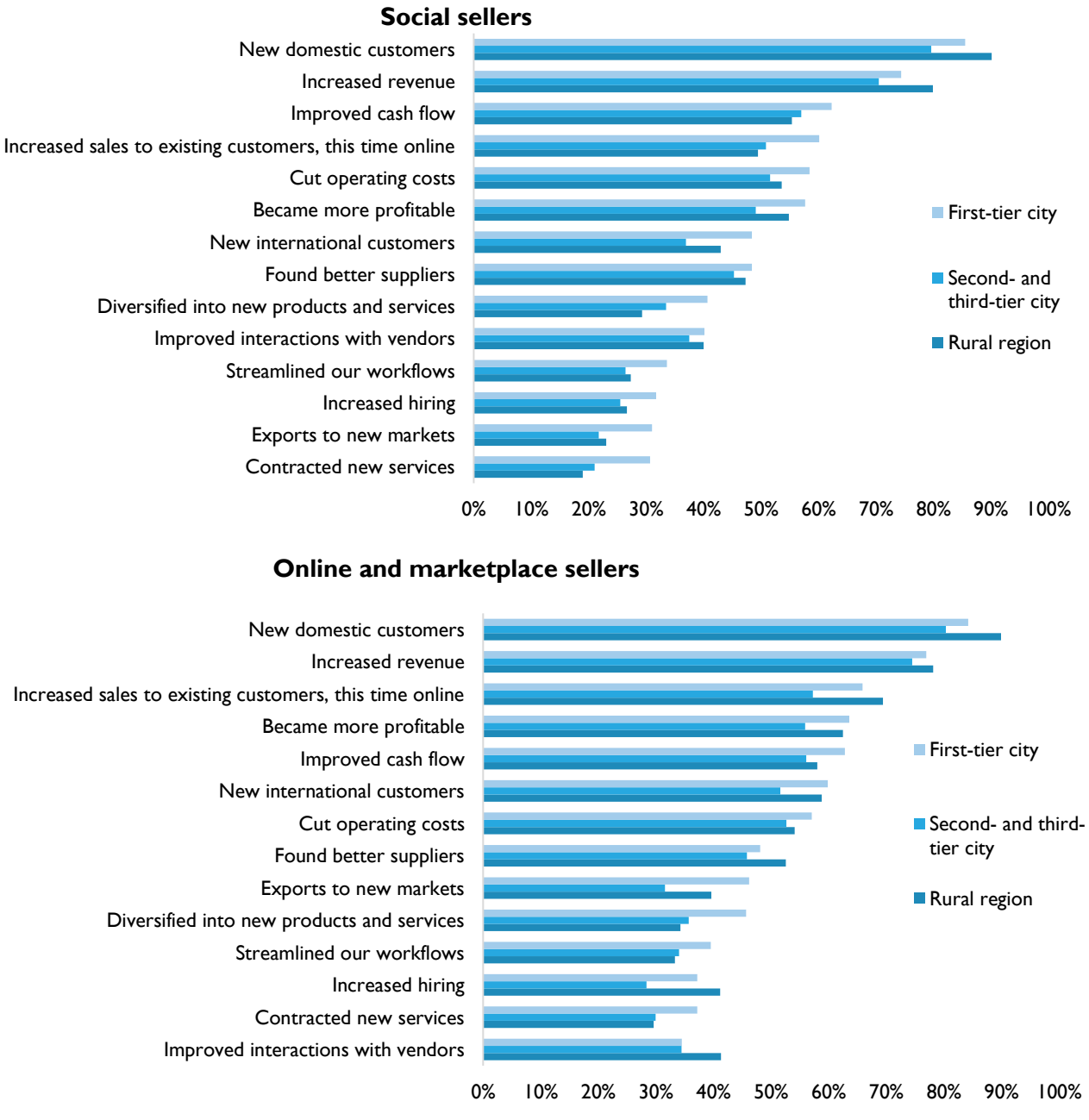
Figure 10: Distribution of different types of sellers in selected metropolitan regions and remote areas



B. DRIVERS OF THE VARIATION IN ECOMMERCE USE WITHIN COUNTRIES

Firm in both cities and rural areas have gained from ecommerce and online presence, even from social media use, especially in terms of new customers, revenues, profit margins, and better cash flow (figure 11). Typically larger online sellers in both urban and rural regions also report new export opportunities.

Figure 11: Gains from using online platforms to sell online for micro and small firms in first-tier cities, second- and third-tier cities, and rural areas



Why, then, are not all firms yet using ecommerce to sell online? And why are firms in rural regions trailing their urban counterparts in ecommerce adoption? Key explanations for the variation in the use of ecommerce and cross-border ecommerce across the three sets of geographies—first-tier cities, second- and third-tier cities, and rural regions—have to do with a number of variables, such as:

- Payoffs from digitization
- Technology utilization
- Access to high-quality services
- Access to world class talent
- Connectivity – digital and physical

First, firms' capabilities for and payoffs from digitization and ecommerce use shape ecommerce adoption. For example, in smaller and rural communities, the payoffs from using ecommerce may be less especially in B2C services are still likely to take place in person, and B2B agricultural transactions are still more likely to be paper-based than might be the case for the transactions of an urban IT services firm. Firms in wealthier urban regions may have an incentive and capabilities to be "born digital" and start their lives as marketplace sellers, while rural firms may spend years as social sellers with limited online sales capabilities.

Second, urban online sellers (ones that use their own online stores and/or marketplaces) and social sellers are likelier than their rural peers to have adopted bundles of technologies that enable them to scale and streamline their online sales and grow their online presence. For example, the share of firms that use various types of digital payments in developing country urban areas is considerably higher than in rural areas (figure 12), and micro and small online and social sellers located in first-tier cities tend to use cloud computing, ERP systems, and software for accounting and inventory management as well as online lending and crowdfunding more readily than their peers in rural regions—which are likely less exposed to these technologies even if they are available online (figure 13). Even rural firms that sell online on marketplaces and derive a larger share of their revenue from online sales use these technologies less than comparable urban firms.

Granted, the data can be interpreted also to reflect different starting points: rural sellers are less engage in ecommerce today simply because they started to digitize later. Urban firms have been earlier adopters of technologies that are "gateways" to ecommerce use, such as mobile payments and social media.

Figure 12: Use of digital payments by firms in first-tier cities, second- and third-tier cities, and rural areas

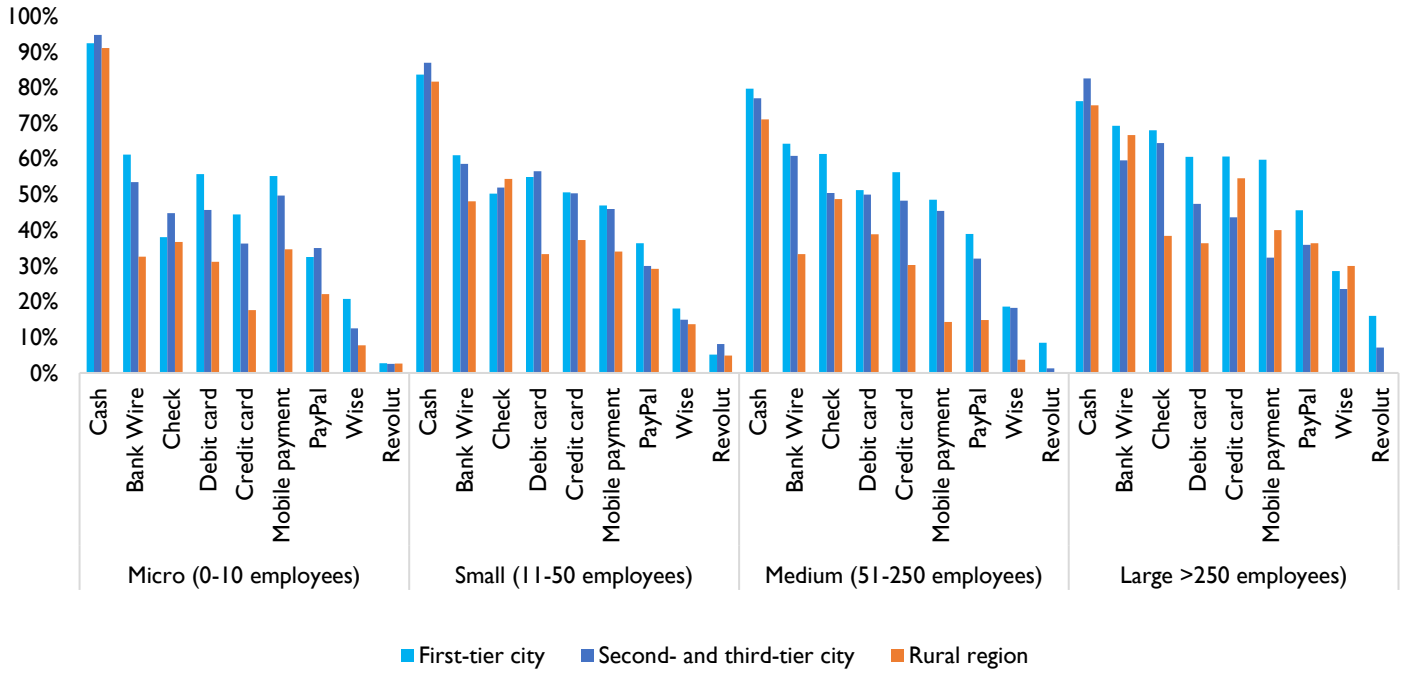
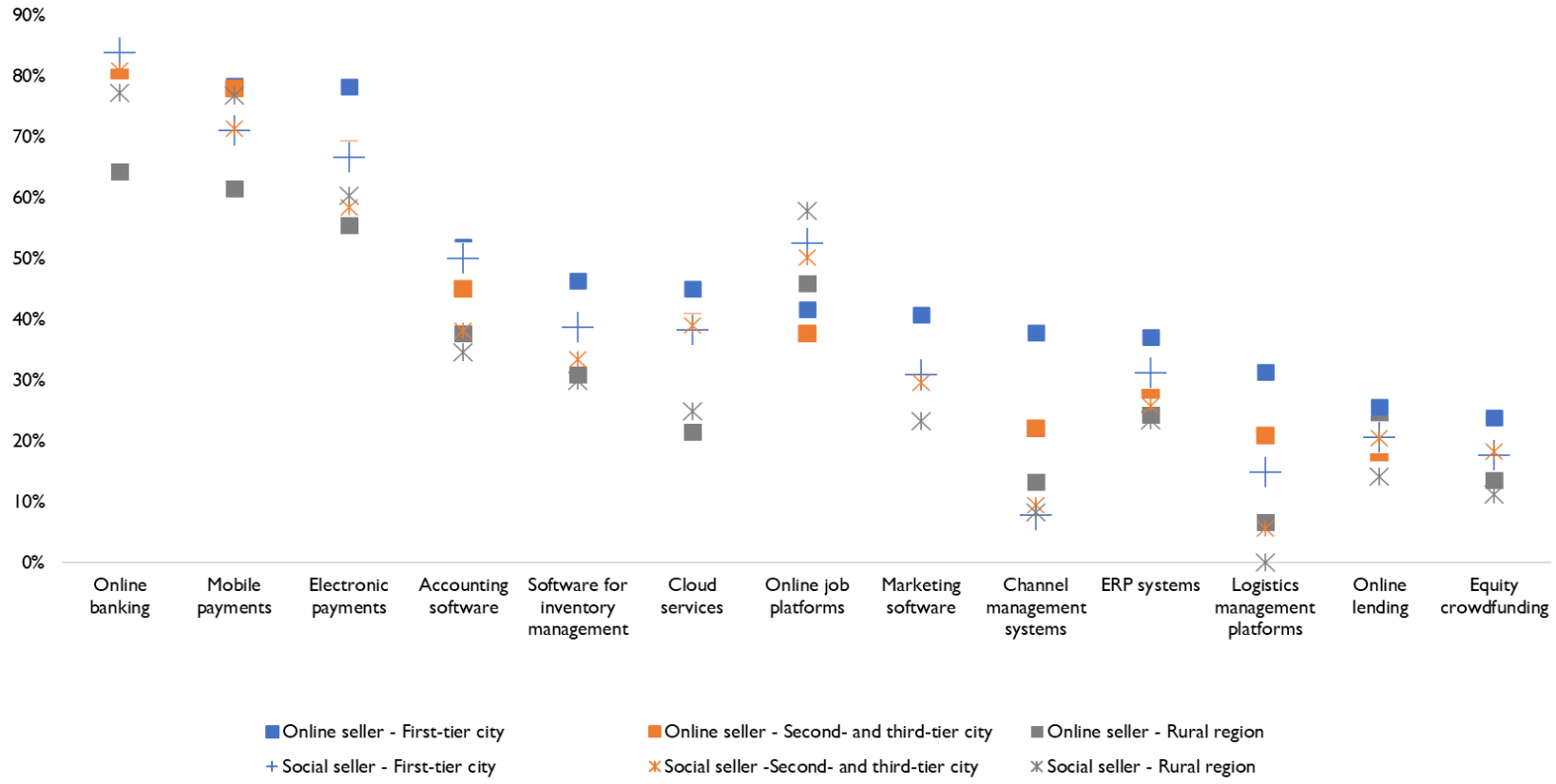
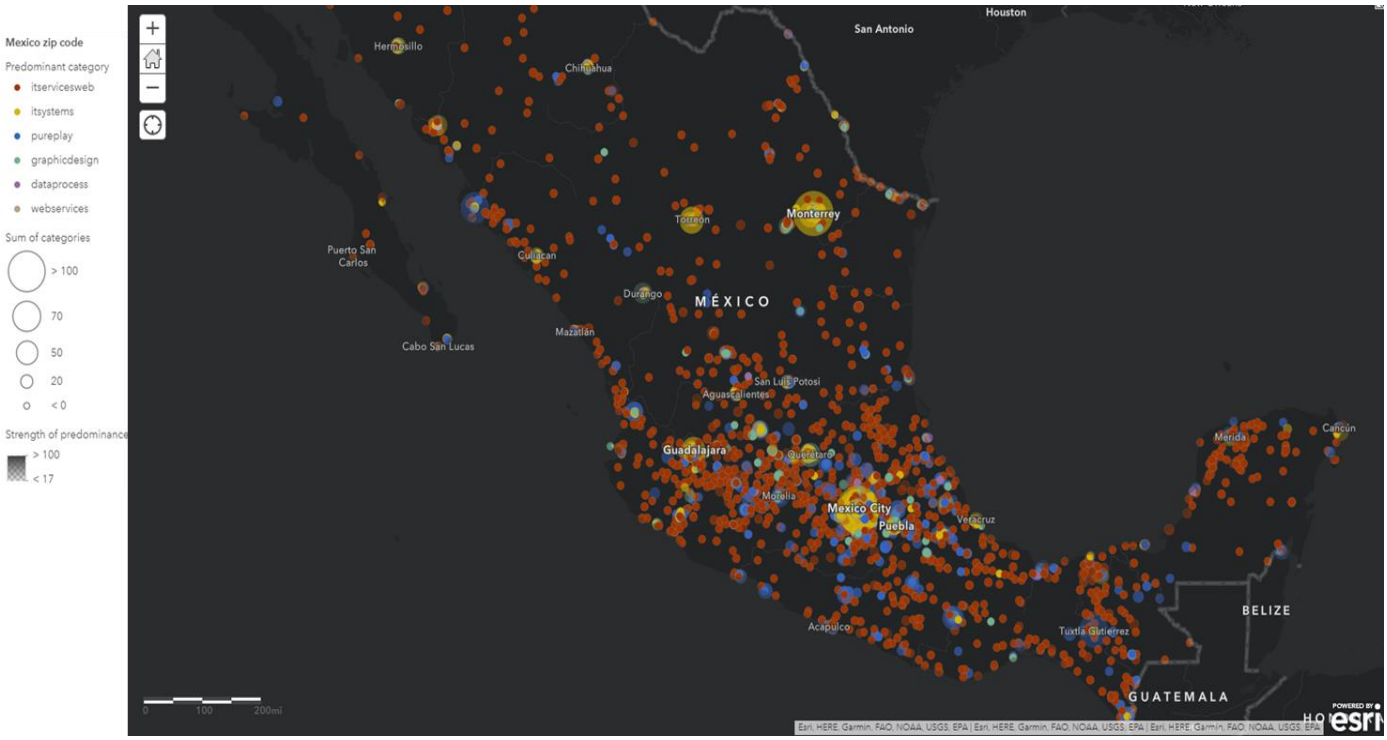


Figure 13: Use of technologies by micro and small online and social sellers in first-tier cities, second- and third-tier cities, and rural areas



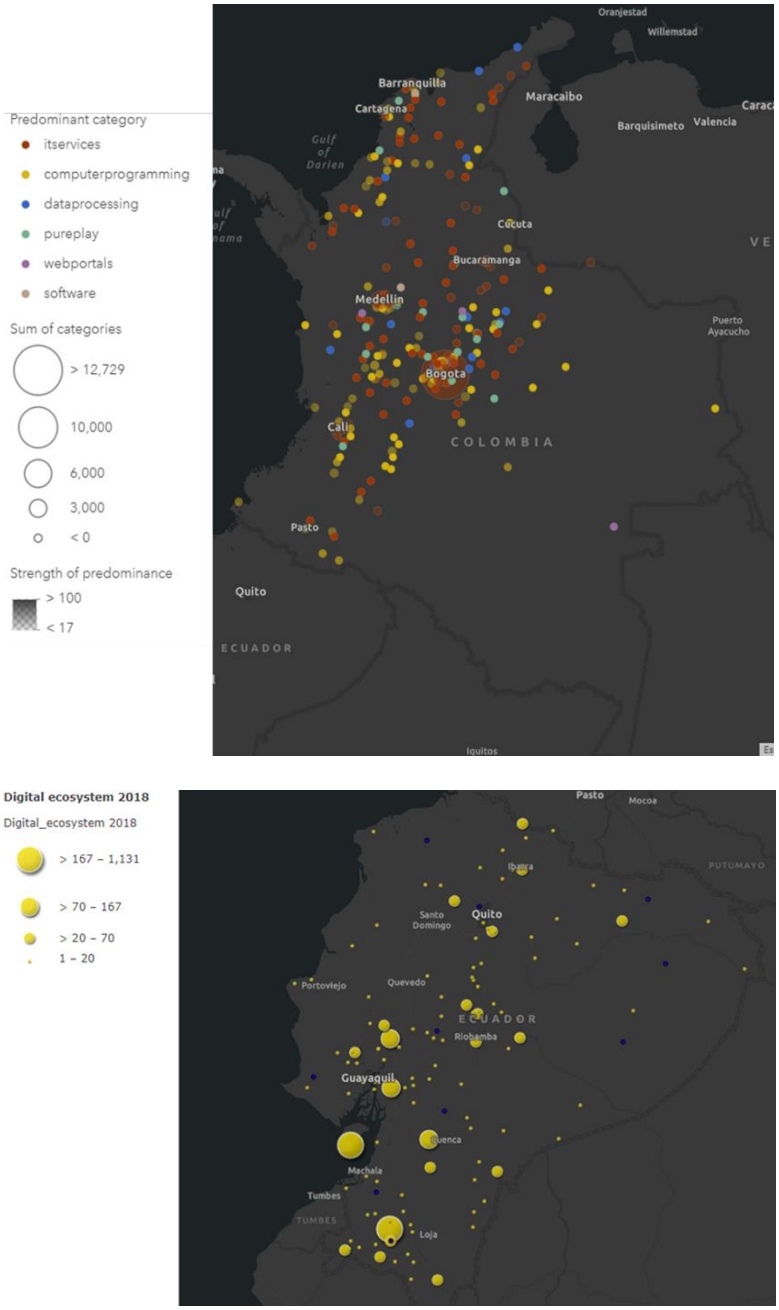
Third, still another reason why firms in rural regions are less likely to use ecommerce and are less technology-intensive are the differences in rural and urban firms' levels of exposure to the ecosystem of digital services that enable them to get online and successfully transact there, create new efficiencies, and scale their sales. Enterprise-level data from Colombia, Ecuador, and Mexico show that ecommerce ecosystem businesses such as digital marketing companies are present in major metropolitan areas but far less visible and prominent in rural areas (figures 14 and 15). For example, while there are basic web design services across the country, the more sophisticated services are centered around a few hubs with strong internet connections, technical talent, and superior services (which the talent can enjoy). There are digital hubs with concentrations of IT services, graphic designers, data processing services, and pure-play online sellers (retailers with no physical stores) in the regions around Monterrey, Mexico City, Puebla, and Guadalajara.

Figure 14: Digital ecosystems in Mexico, by number of firms by dominant sectors



Source: Author based on INEGI (2018), Directorio estadístico nacional de unidades económicas [National statistical directory of economic units].

Figure 15: Digital ecosystems in Colombia and Ecuador, by number of firms and sectors



There are also hubs within cities, typically wealthier enclaves of cities, such as in La Condesa in Mexico City or San Pedro Garza Garcia in Monterrey. This is not surprising: high-tech sectors have traditionally been located in core urban areas with access to human capital, ideas, knowledge, and specialized services (case 1).[3] Granted, two trends are reshaping these patterns to some degree. First, suburbanization has pushed economic activity outward and created more "polycentric" cities, especially

in Europe, and second, the growth in remote working, which has allowed employees to be located anywhere.[4] Still, innovative tech clusters with large numbers of companies and innovations are more pronounced and concentrated than manufacturing clusters, for example.

While many digital and ecommerce ecosystem services are by their very nature available online, surveys suggest that rural firms tend to be less familiar with them, likely because they and their immediate peers are less exposed to them—or perhaps rural firms see fewer payoffs from investing in digital services. In other words, it may be that proximity pays—digital hubs typically have valuable talent, ideas, and knowledge spillovers that, even today, may be easier to grasp and capture in person.

Case 1: Agglomeration pattens in the tech sector

Why is it that firms congregate in cities and often cluster in the same cities—such as financial services in New York and digital marketing and design in Los Angeles?

For the past 130 years, international economics has noted that industries cluster or "agglomerate." After all, clustering with their peers enables companies to tap talent in the industry, access a wider range of suppliers and inputs, gain ideas and insights into new technologies, and access talent. Workers in clusters cross-pollinate information and ideas across firms and move quickly to faster-growing and higher-performing firms, propelling productivity gains in their industries. Not only are companies disproportionately concentrated in major cities, but so is export activity. One study finds that as more productive firms locate in larger cities and then become even more productive as a result of agglomeration, they are also better able to absorb the fixed costs associated with exporting. Thus empirically, a larger share of firms in large cities become exporters.[5]

The technology sector has had similar clustering, even to a greater extent than the manufacturing sector. As the IT revolution and reduction in trade costs in the 1990s enabled manufacturing firms to gradually disperse their activities and human resources, including locate parts of their production to overseas markets, in technology sectors, agglomeration patterns have persisted: tech clusters are more pronounced than industrial clusters.[6] One way academics have sought to measure this phenomenon is through patents issued by cities. In the United States, the top 10 metropolitan areas account for about 70 percent of the inventors with the most computer science patents.[7] This concentration of innovators supports the production of innovations in comparison with a counterfactual in which innovators are distributed more equally across the United States.

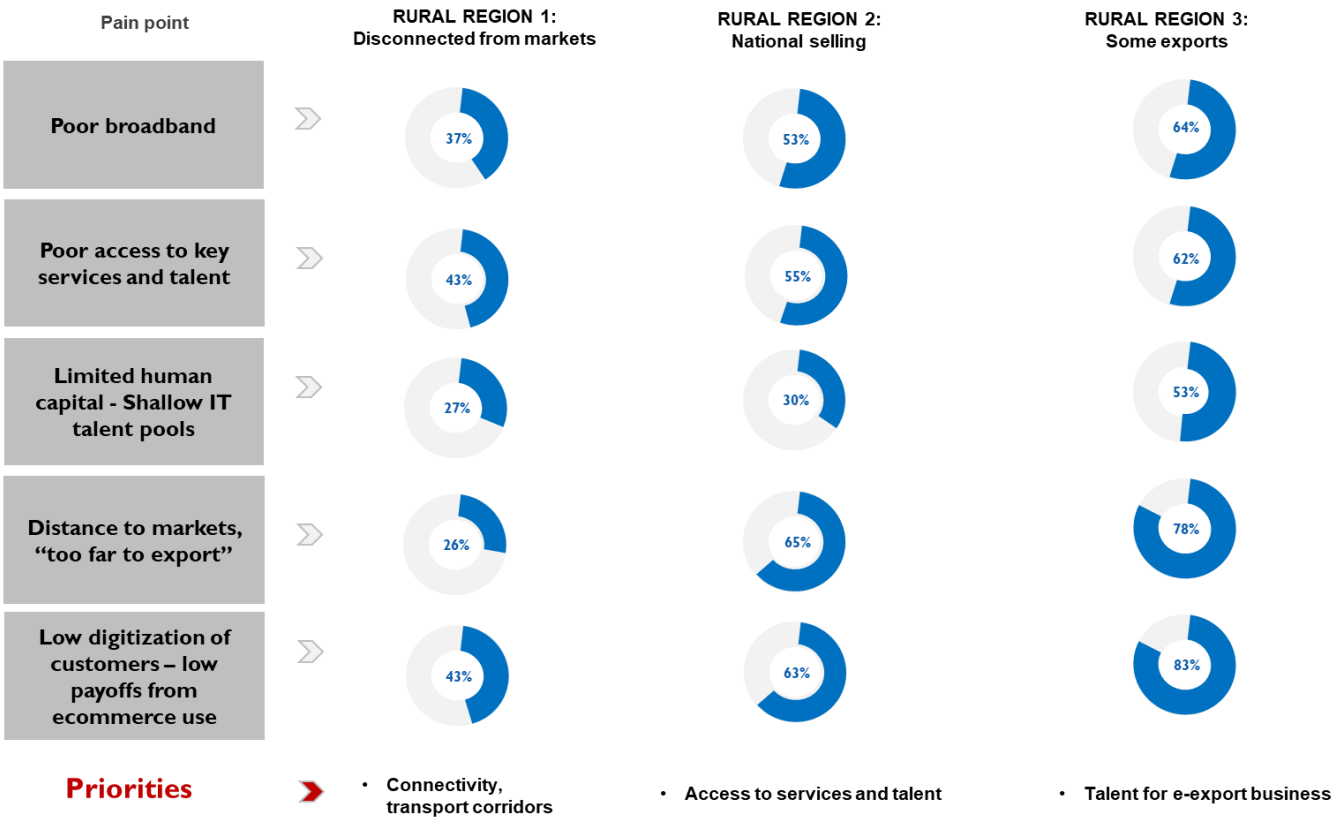
The fourth likely reason behind the geospatial differences in firms' use of ecommerce is stark disparities in the overall enabling environment. Rural and poorer regions are devoid of the kinds of broadband connections, technological talent, and logistics, fulfillment, and distribution networks that their urban peers have access to. In Mexico, where there is strong data on these enabling environment variables at the municipality level across over 1,800 municipalities, there exist strong correlations between numbers of pure-play online sellers, density of IT firms, the availability of broadband, technological talent, and physical infrastructure such as networks of primary and secondary roads, and international air connections (table 1). There are also stark, well-known disparities across the different regions in Mexico that are highly correlated with per-capita incomes.

Table 1: Correlations between pure-play online sellers, IT ecosystems, and enabling environment variables across 1,835 Mexican municipalities

	All digital firms	Pureplay onine sellers	IT firms	Technical workers	Industrial workers	Services workers	Agricultural workers	Federal paved roads	Paved primary roads	Paved secondary roads	Postal services	Broadband availability	National airports	Int' airport	Commercial flights
All digital firms															
Pureplay onine sellers	0.97														
IT firms	0.90	0.93													
Technical workers	0.38	0.39	0.34												
Industrial workers	-0.06	-0.06	-0.05	-0.08											
Services workers	0.05	0.05	0.03	0.23	-0.01										
Agricultural workers	-0.23	-0.23	-0.19	-0.70	-0.49	-0.61									
Federal paved roads	-0.06	-0.08	-0.07	-0.15	-0.05	-0.02	0.13								
Paved primary roads	0.27	0.25	0.18	0.12	-0.14	-0.05	0.02	-0.08							
Paved secondary roads	-0.02	-0.02	0.00	-0.09	-0.02	-0.01	0.07	-0.01	0.17						
Postal services	0.25	0.23	0.16	0.11	-0.21	-0.02	0.05	-0.05	0.37	0.32					
Broadband availability	0.73	0.71	0.64	0.38	-0.07	0.05	-0.22	-0.10	0.34	-0.06	0.16				
National airports	0.07	0.06	0.03	0.09	-0.04	0.06	-0.07	-0.03	-0.06	-0.03	-0.03	0.03			
International airport	0.38	0.36	0.29	0.27	-0.03	0.00	-0.15	0.03	0.33	-0.01	0.21	0.32	-0.05		
Commercial flights	0.28	0.24	0.15	0.15	0.00	0.01	-0.10	0.07	0.19	0.01	0.17	0.20	-0.02	0.55	
Population	0.80	0.78	0.70	0.42	-0.03	0.13	-0.31	-0.05	0.28	0.00	0.27	0.81	0.06	0.39	0.35

Granted, rural and remote regions also differ among each other: in one simple typology, some of them are disconnected from markets practically entirely, others are selling and transacting with national markets, and still others have some exports and online sales. Figure 16 summarizes the challenges of different types of rural regions and provides a magnitude of the "distance" from the first-tier city, across the different pain points in rural regions. The priorities vary – the disconnected areas need better internet and connections, while the more connected and export-ready regions need to first and foremost build up their talent pool for ecommerce.

Figure 16: Three types of rural region's "distance" from first-tier cities in Mexico, by topic and rural area



Source: Nextrade Group.

There are strong correlations between firms' methods for selling online, their geospatial location, and variables that conceivably impact a firm's evolution into an online seller, such as size and export orientation. But is there a causal relationship at play—does "being rural" *cause* firms to remain social sellers and prevent them from graduating into global marketplace sellers?

Cursory econometric evidence based on survey data suggests that firm size, growth, and export diversification, the selling of goods as opposed to services, and the use of cross-border payment tools such as PayPal are, as expected, positively and significantly associated with a firm's propensity to adopt

ecommerce and onboard regional and global marketplaces. Meanwhile, being located in a rural area is negatively and significantly associated with firms' propensity to go online and sell on marketplaces. The gender of the firm CEO or owner is not a statistically significant determinant of a firms' propensity to sell online (table 2).

Table 2: Determinants of firms' propensity to sell on global marketplaces in 2021

	Use of global marketplaces	Use of global marketplaces	Use of global marketplaces
Independent variables:			
Firm size	0.130***	0.130***	0.178***
	(0.053)	(0.054)	(0.054)
Firm growth in 2020	-0.076	-0.08	0.002
	(0.033)	(0.023)	(0.023)
Number of export markets	0.108***	0.108***	0.136***
	(0.023)	(0.023)	(0.023)
Female CEO	0.117	0.117	0.074
	(0.099)	(0.101)	(0.101)
Use credit card	0.328***	0.328***	0.400***
	(0.104)	(0.100)	(0.100)
Use PayPal	0.621***	0.620***	0.455***
	(0.0.11)	(0.1147)	(0.1147)
Use own online store		0.967***	
		(0.108)	
Use regional marketplaces			1.167***
			(0.1011)
Rural location	-0.165***	-0.165***	-0.164***
	(0.080)	(0.080)	(0.082)
N	1.110	1,100	1,110
Pseudo R-sq	0.268	0.268	0.306

*** significant at the 1 percent level; ** significant at the 5 percent level; * significant at the 10 percent level. Standard errors in parentheses.

An interesting question in light of these findings concerns the extent to which ecommerce use does and can spread within countries. Even if it starts in major cities, could ecommerce spread quickly to rural areas? And if so, under which circumstances?

Unsurprisingly, studies suggest that the pace of the diffusion of online shopping is critically shaped by income levels and internet connectivity. In advanced countries, ecommerce has spread quite quickly to regions with broadband connectivity, where citizens are also more affluent and the pre-existing availability of offline retailers is good.[8] For example, in the UK, "food deserts" that have few offline retail outlets and supermarkets have, perhaps paradoxically, adopted ecommerce to a lesser extent than

regions with more retail activity, likely because the latter are simply more affluent and able to spend online and on delivery fees.

In China, a recent study finds that as the country has created a nationwide mobile internet network, incomes and consumer savings are what help online shopping to spread: wealthier shoppers with money to spare also take up ecommerce. Residents' online shopping is restricted by their own budgets, and other factors have little impact. [9] Meanwhile, for online sellers to spread, a wider range of enablers are than just connectivity are required, starting with human capital and fulfillment capabilities. The case of China's Taobao Villages in China is emblematic: these 4,000 villages have succeeded at cultivating online sellers because they provide hardware, connectivity, logistics, and skilled entrepreneurs (case 2).

Case 2: China's Taobao Villages:
What are their impacts and how can they be replicated elsewhere?

Ecommerce sales from rural China have been booming in recent years, with online purchases growing three times faster than in urban areas. In rigorous studies, the growth of ecommerce has been found to raise consumer welfare in rural China, mostly due to rural netizens' increased access to the wider variety of products that are available to their urban peers.[10] But not only do rural Chinese shop online, they increasingly sell online too. One of China's innovations, Taobao Villages, has helped spur ecommerce in rural areas. Taobao Villages are small communities of MSME sellers that sell their products largely on Alibaba Group's Taobao platform.

A Taobao Village is a rural locality with 100 or more online shops operated by locals and that generates $1.5 million or more in annual online sales. [11] According to Aliresearch, as of August 2019, there were 4,310 Taobao Villages across 25 Chinese provinces from which a total 660,000 Taobao shops operated, up nearly tenfold from 2014 levels.[12] The shops have initially focused on the comparative advantages of their villages, such as agricultural products, traditional crafts, or manufactured goods obtained from nearby wholesale markets.

Most Taobao Village shops are very small: two-thirds are run by individuals without employees and a third have fewer than five employees.[13] While they compete against each other, they also work together and subcontract each other.[14] The employees of these MSMEs are the very same consumers that are driving ecommerce purchases in China's rural areas when they use their revenue to shop online. The shops have also spurred the rise of a vibrant ecosystem of ecommerce services such as IT services, graphic design, photography, express delivery services, warehousing, and so on.[15]

The total sales generated by Taobao Villages—and Taobao Towns, which are larger-scale rural townships that deploy the same Taobao Village model—amounted to $100 billion during the year ending in June 2019. Taobao shops have created new jobs for people who might otherwise have migrated to urban areas and factories to work, while also helping to reduce income inequality between rural and urban areas. Taobao Villages have specifically created job opportunities for women—about one-third of Taobao shop owners and employees are women.[16] According to estimates, almost 7 million jobs were created in the 12 months prior to June 2019 in the Taobao Village ecommerce value chain.[17]

Opportunities to build and work in ecommerce have also stemmed emigration from rural areas in the agricultural sector. Econometric work shows that individuals that are in agricultural Taobao Villages are 26 percent less likely to migrate than individuals from nonagricultural Taobao Villages, controlling for various

factors that are likely to influence migration decisions, such as demographic characteristics, migration experience, educational background, and health status.[18]

Taobao Villages have quickly become an exciting model for governments in other developing nations. Visitors from Rwanda, Mexico, Malaysia, and other countries join the annual Taobao Village Summit, where rural entrepreneurs and scholars in China share best practices for rural ecommerce businesses.

Economists have uncovered certain key ingredients that go into building a Taobao Village. One essential factor is infrastructure and capabilities furnished by the Chinese government—good internet connectivity, logistics networks, and capital and talent.[19] For example, Dongfeng Village of Shajia County in Jiangsu Province and Junpu Village of Xiyang County in Guangdong Province reportedly became Taobao Villages thanks to national government support for basic infrastructure, ecommerce industrial parks and service centers, low-interest loans, tax concessions, connections to talent in universities, and urban planning that was geared to enabling ecommerce. This support is part of China's broader 2018–2022 rural development strategy, which pledges to improve rural incomes and living standards, and is connected with other government initiatives such as subsidized rural manufacturing and rural drone development.[20] The Chinese Communist Party has actively promoted ecommerce as a means to end poverty and pushed local governments to cultivate Taobao shops.[21]

Alibaba's role has been very important as well. The company is a leading provider of ecommerce training, IT hardware, and broader services to rural villages, a strategy the company has pursued as an investment in capturing the bulk of the rural ecommerce market.[22] For example, in 2014, Taobao announced it would establish 1,000 county-level and 100,000 village-level service centers that provide connectivity, logistics, and business services to both buy and sell online, along with educational, medical, travel, ecommerce training, and social services.

At the same time, there are hundreds of thousands of villages in rural China, yet only a small set of them have become Taobao Villages. What has made this subset of villages succeed?

An econometric study by Jiaqi Qi across more than 1,600 counties in two major provinces suggests that the rise of Taobao Villages is associated with education levels—specifically the share of high-school graduates in a county and the availability of IT, communication, and other skills in the county.[23] In addition, counties that have more firms and factories are likelier to have more Taobao shops, as are counties that have a certain ecosystem of services that online sellers need, such as advertising, shipping, and website development.[24] The tax base also seems to play a role: in counties with a strong local tax base, the government is able to invest in transportation infrastructure. Meanwhile, government support for industries and businesses that are not engaged in ecommerce (such as state-owned enterprises) reduces the odds of Taobao shops being established.[25]

Taobao shops have other features in common. For one, they tend to be led by relatively young entrepreneurs with above-average education levels.[26] Many are migrants returning from larger cities where they witnessed China's online shopping boom firsthand. Taobao shop owners are savvy about ecommerce and leverage the Taobao platform frequented by millions of consumers as a marketing and market research tool. For example, some Taobao shop owners have gained a great deal of traction by livestreaming programs about fresh, high-quality local food products to urban audiences. One village excelling in apple production used celebrities to streamline videos about their apples to 300,000 viewers and, as a result, sold 35,000 kilograms of apples produced by 700 poor households.[27] Taobao sellers are also using the platform to gain insights into shoppers' interests. For example, small firms in Chaoyang Nanshi Village that produce Tang Dynasty-style tricolor pottery learned via Taobao that shoppers are looking for pottery rearview-mirror charms for their cars.[28]

Granted, Taobao shops also face many of the same challenges as other aspiring ecommerce sellers around the world. Their main constraints include the high cost of online advertisement; stiff competition, including from shops in the same village; and a lack of skills for using digital channels. They also do not have many funding sources: most shops were founded with funds borrowed from family, friends, and relatives.[29]

Household incomes in Taobao Villages are almost three times higher than those of average rural households in China, and approximate average incomes in urban areas. While Taobao Villages are probably wealthier to begin with, econometric evidence also shows that Taobao Villages have had similar impacts as fiscal expenditures by local governments: they raise rural incomes and help close the rural-urban income gap.[30]

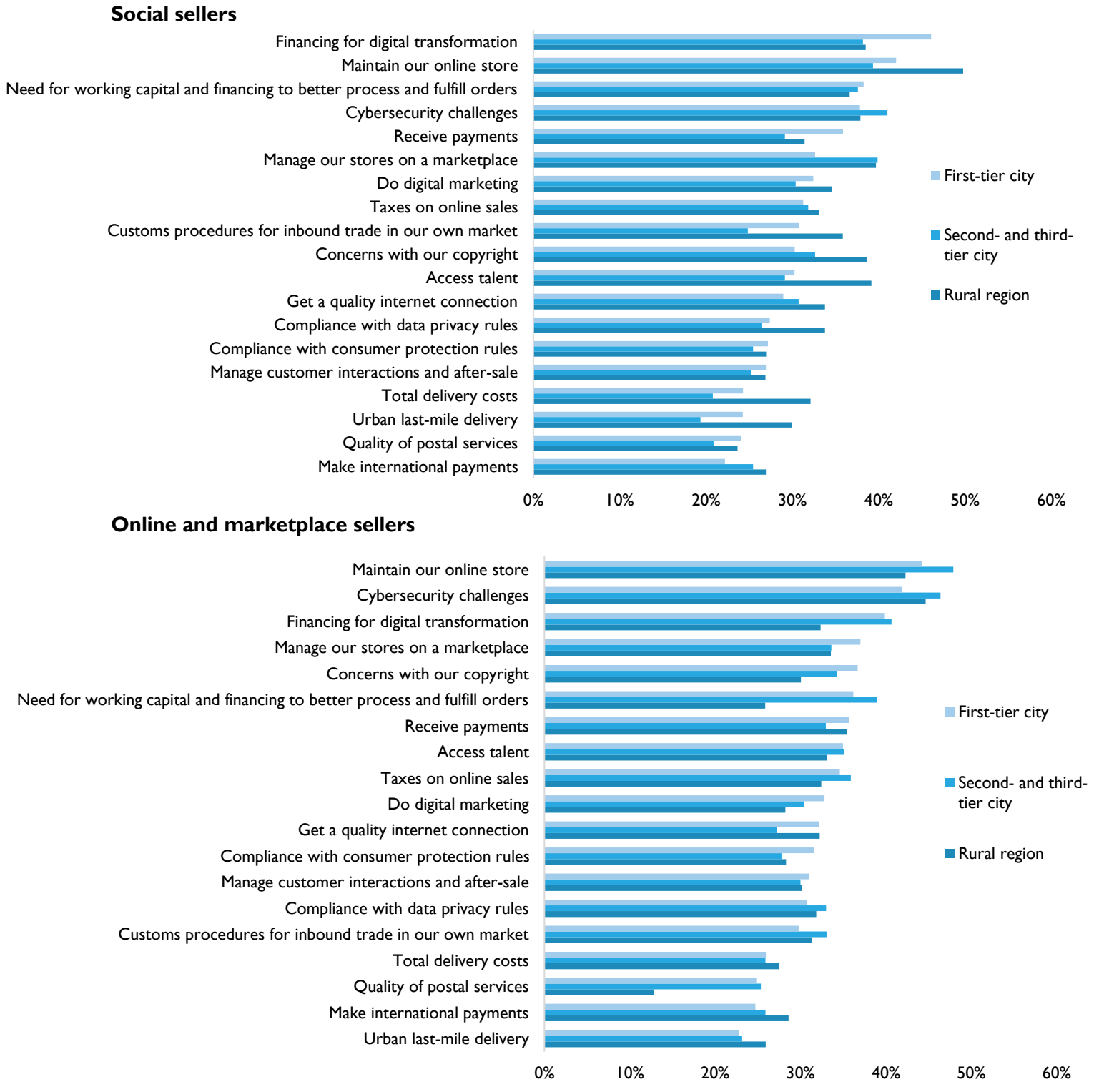
There is still much more potential for growth in both online consumption and sales in rural China. While the rural areas of the country are home to over 40 percent of its citizens, they account for fewer than 30 percent of its internet users.[31] The demographic profile of these areas tends to be older than in the cities, which Alibaba has recently responded to by introducing a Taobao shopping app specifically for the over-50s. Another ecommerce giant, JD, has announced plans to build 10,000 drone hubs across the country to serve rural areas.[32]

III. HOW DEVELOPING COUNTRY CITIES AND RURAL AREAS CAN PROMOTE MSME ECOMMERCE

Selling online has benefited firms in urban and rural regions alike. How, then, could city governments and stakeholders in developing regions cultivate online seller MSMEs?

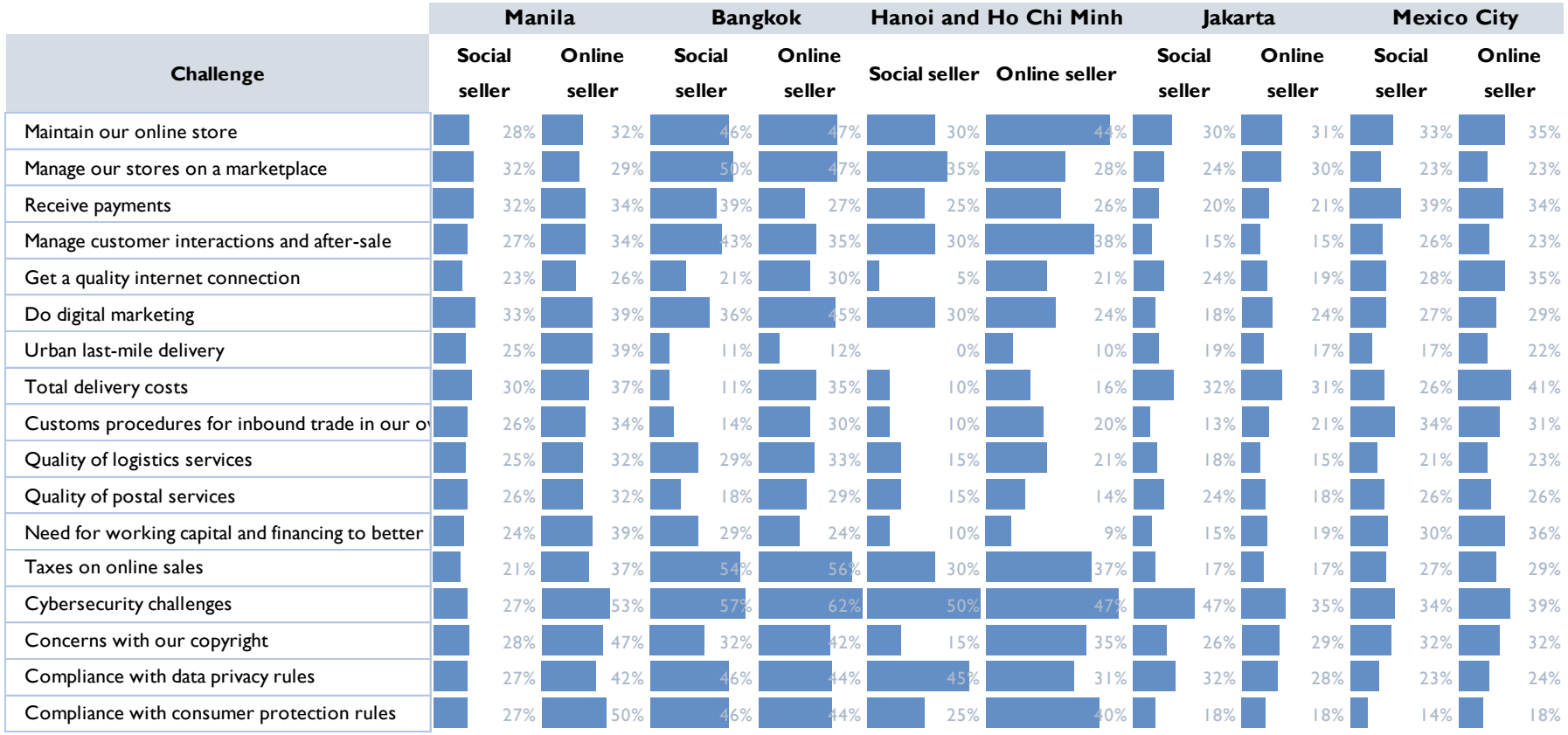
One way to answer this question is to ask firms what they need. The needs of urban and rural online and social sellers are quite similar, and the intensity of these demands, as proxied by the share of firms that express a "significant" or "very significant" need, are also quite similar across geographies (figure 17). For example, both urban and rural sellers struggle to maintain their online stores and perform digital marketing; social sellers in urban and rural areas also find it challenging to access financing for building ecommerce capabilities and working capital to quickly fulfill orders.

Figure 17: Challenges facing micro and small social and online sellers in first-tier cities, second- and third-tier cities, and rural areas, by developing country regions

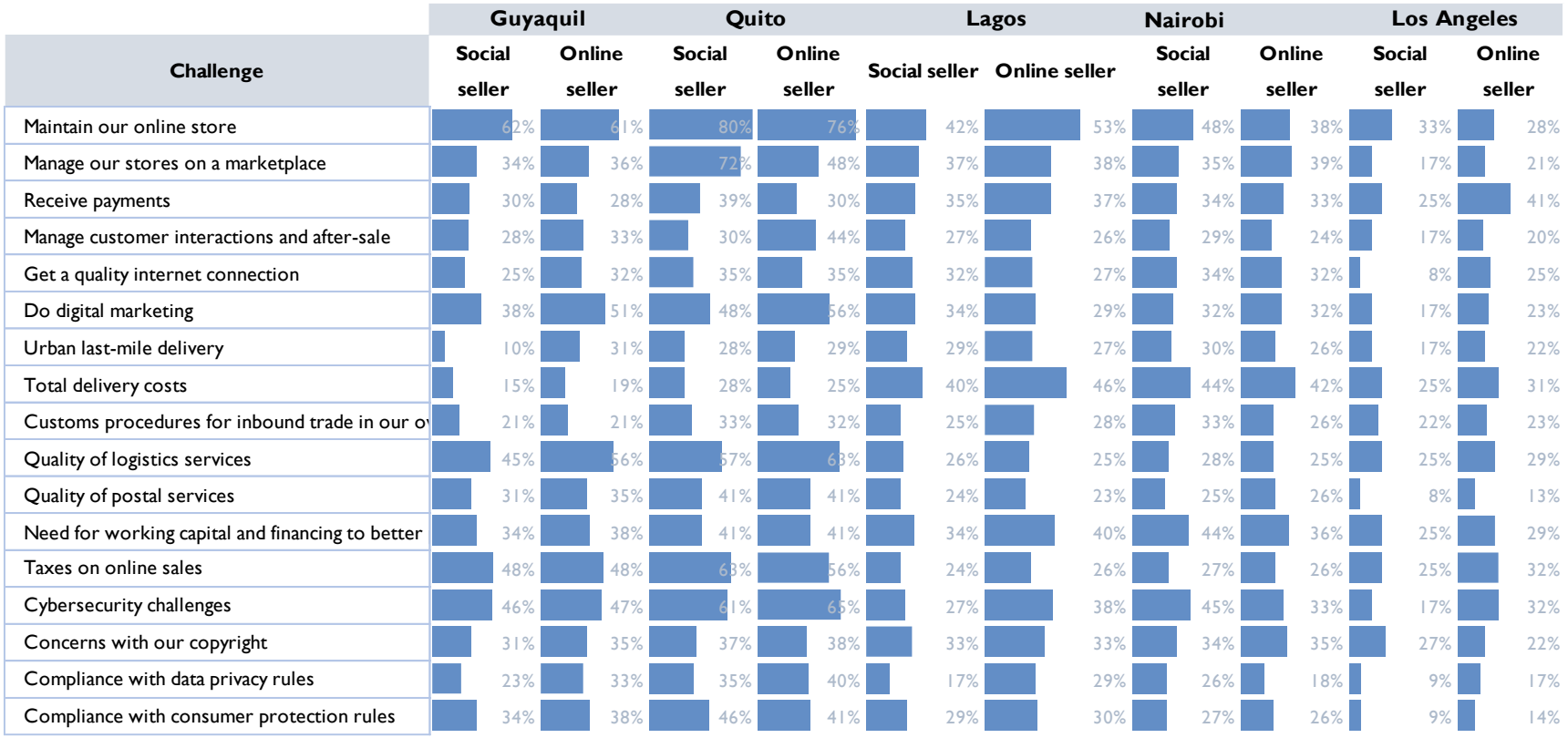


In first-tier cities, firms' challenges and needs to grow their online sales are also quite similar across locations, even if the intensity varies. Firms face challenges around maintaining their online stores, engaging in digital marketing, managing after-sale processes, and dealing with taxes and cybersecurity issues—these challenges are also the top challenges of firms in cities around the world (figure 18). In general, the share of firms that point to these as being major challenges is smaller than in the benchmark city, Los Angeles, one of the world's leading ecommerce seller and buyer hubs. Firms want support and knowledge on how to engage in ecommerce, access working capital, and improve the quality of their goods and services (figure 19). Sellers in cities such as Lagos, Nairobi, and Manila want better internet connections, and firms in first-tier African and Asian cities firms want payment acceptance capabilities.

Figure 18: Challenges reported by social and online sellers in selected metropolitan regions (all first-tier cities)



Challenge	Manila		Bangkok		Hanoi and Ho Chi Minh		Jakarta		Mexico City	
	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller
Maintain our online store	28%	32%	46%	47%	30%	44%	30%	31%	33%	35%
Manage our stores on a marketplace	32%	29%	50%	47%	35%	28%	24%	30%	23%	23%
Receive payments	32%	34%	39%	27%	25%	26%	20%	21%	39%	34%
Manage customer interactions and after-sale	27%	34%	43%	35%	30%	38%	15%	15%	26%	23%
Get a quality internet connection	23%	26%	21%	30%	5%	21%	24%	19%	28%	35%
Do digital marketing	33%	39%	36%	45%	30%	24%	18%	24%	27%	29%
Urban last-mile delivery	25%	39%	11%	12%	0%	10%	19%	17%	17%	22%
Total delivery costs	30%	37%	11%	35%	10%	16%	32%	31%	26%	41%
Customs procedures for inbound trade in our o	26%	34%	14%	30%	10%	20%	13%	21%	34%	31%
Quality of logistics services	25%	32%	29%	33%	15%	21%	18%	15%	21%	23%
Quality of postal services	26%	32%	18%	29%	15%	14%	24%	18%	26%	26%
Need for working capital and financing to better	24%	39%	29%	24%	10%	9%	15%	19%	30%	36%
Taxes on online sales	21%	37%	54%	56%	30%	37%	17%	17%	27%	29%
Cybersecurity challenges	27%	53%	57%	62%	50%	47%	47%	35%	34%	39%
Concerns with our copyright	28%	47%	32%	42%	15%	35%	26%	29%	32%	32%
Compliance with data privacy rules	27%	42%	46%	44%	45%	31%	32%	28%	23%	24%
Compliance with consumer protection rules	27%	50%	46%	44%	25%	40%	18%	18%	14%	18%



Challenge	Guyaquil		Quito		Lagos		Nairobi		Los Angeles	
	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller
Maintain our online store	62%	61%	80%	76%	42%	53%	48%	38%	33%	28%
Manage our stores on a marketplace	34%	36%	72%	48%	37%	38%	35%	39%	17%	21%
Receive payments	30%	28%	39%	30%	35%	37%	34%	33%	25%	41%
Manage customer interactions and after-sale	28%	33%	30%	44%	27%	26%	29%	24%	17%	20%
Get a quality internet connection	25%	32%	35%	35%	32%	27%	34%	32%	8%	25%
Do digital marketing	38%	51%	48%	56%	34%	29%	32%	32%	17%	23%
Urban last-mile delivery	10%	31%	28%	29%	29%	27%	30%	26%	17%	22%
Total delivery costs	15%	19%	28%	25%	40%	46%	44%	42%	25%	31%
Customs procedures for inbound trade in our o	21%	21%	33%	32%	25%	28%	33%	26%	22%	23%
Quality of logistics services	45%	56%	57%	63%	26%	25%	28%	25%	25%	29%
Quality of postal services	31%	35%	41%	41%	24%	23%	25%	26%	8%	13%
Need for working capital and financing to better	34%	38%	41%	41%	34%	40%	44%	36%	25%	29%
Taxes on online sales	48%	48%	63%	56%	24%	26%	27%	26%	25%	32%
Cybersecurity challenges	46%	47%	61%	65%	27%	38%	45%	33%	17%	32%
Concerns with our copyright	31%	35%	37%	38%	33%	33%	34%	35%	27%	22%
Compliance with data privacy rules	23%	33%	35%	40%	17%	29%	26%	18%	9%	17%
Compliance with consumer protection rules	34%	38%	46%	41%	29%	30%	27%	26%	9%	14%

Figure 19: Needs reported by social and online sellers in selected metropolitan regions (all first-tier cities)

Need	Manila		Bangkok		Hanoi and Ho Chi Minh		Jakarta		Mexico City	
	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller
Knowledge about how to do ecommerce	59%	59%	54%	56%	40%	50%	40%	49%	49%	45%
Digital marketing capabilities	57%	54%	57%	65%	30%	38%	42%	37%	57%	52%
Presence on global marketplaces	34%	44%	82%	56%	35%	30%	26%	30%	48%	46%
Better quality products and services	59%	60%	64%	50%	45%	65%	36%	43%	56%	63%
Working capital to fulfill orders	45%	43%	64%	44%	35%	30%	38%	41%	54%	50%
Financing for digital transformation	46%	34%	43%	36%	20%	19%	30%	30%	35%	39%
Customer data analytics capabilities	38%	36%	46%	29%	25%	40%	22%	20%	26%	30%
Better access to talent	38%	23%	36%	44%	30%	27%	19%	12%	27%	32%
Compliance with foreign market access regulations	33%	37%	50%	41%	25%	25%	24%	15%	37%	44%
Ability to manage domestic fulfillment	34%	33%	86%	39%	30%	21%	21%	18%	28%	25%
Ability to manage international fulfillment	33%	30%	39%	39%	35%	28%	26%	22%	39%	40%
Cheaper logistics	25%	30%	61%	27%	25%	23%	24%	26%	31%	34%
Compliance with digital regulations like data privacy	38%	28%	39%	48%	10%	23%	25%	26%	32%	32%
Ability to accept payments from customers	40%	40%	46%	39%	35%	28%	31%	41%	31%	33%
Access to high-quality internet	49%	45%	32%	30%	15%	22%	35%	29%	44%	31%

Need	Guyaquil		Quito		Lagos		Nairobi		Los Angeles	
	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller	Social seller	Online seller
Knowledge about how to do ecommerce	52%	59%	62%	63%	61%	49%	51%	59%	44%	33%
Digital marketing capabilities	44%	67%	60%	59%	51%	55%	56%	64%	56%	67%
Presence on global marketplaces	31%	52%	40%	59%	40%	36%	41%	47%	46%	42%
Better quality products and services	32%	41%	47%	51%	51%	62%	59%	59%	54%	50%
Working capital to fulfill orders	34%	43%	44%	46%	50%	45%	47%	48%	52%	42%
Financing for digital transformation	30%	39%	44%	38%	41%	45%	43%	39%	24%	17%
Customer data analytics capabilities	23%	33%	27%	40%	31%	35%	33%	34%	17%	17%
Better access to talent	30%	35%	24%	38%	28%	26%	30%	33%	48%	40%
Compliance with foreign market access regulations	24%	28%	28%	37%	38%	29%	33%	41%	39%	40%
Ability to manage domestic fulfillment	21%	24%	25%	32%	27%	36%	38%	34%	25%	33%
Ability to manage international fulfillment	24%	37%	28%	38%	35%	34%	39%	37%	38%	44%
Cheaper logistics	28%	30%	26%	38%	38%	32%	33%	40%	22%	25%
Compliance with digital regulations like data privacy	21%	28%	26%	33%	35%	31%	35%	32%	21%	27%
Ability to accept payments from customers	21%	30%	29%	44%	37%	39%	40%	39%	32%	42%
Access to high-quality internet	21%	39%	32%	37%	43%	46%	50%	48%	30%	25%

A. PROMOTING URBAN MSMES IN ECOMMERCE

Numerous city governments in small and large cities around the world have launched programs to address MSMEs' challenges to doing ecommerce and engaging in digital transformation. These programs vary by their beneficiaries and approaches (table 3; appendix I, table 1):

- Some cities focus on **promoting the digital transformation of traditional brick-and-mortar firms and online sales capabilities** through one-on-one training sessions, group workshops, and train-the-trainer programs. For example, an initiative run by the city of Alberta, Canada, known as Digital Main Street ShopHERE, provides one-on-one support for brick-and-mortar businesses to develop ecommerce and digital capabilities and partner with ecommerce ecosystem service providers for discounts. In Los Angeles, the LA Optimized program enabled brick-and-mortar firms in low-income communities to create and optimize websites, perform ecommerce audits, and access design services. The program has an Accelerator Academy, which provides businesses with ecommerce and marketing support. Mexico City has created a similar program for offline sellers with the Mexican Online Sales Association (AMVO), including the AIUDA.org online sales platform to help SMEs with physical storefronts to move online, especially as a result of COVID-19 (case 3).[33]

- Other cities have mounted **initiatives to enable online sellers and digital firms to access digital marketing capabilities**. For example, in New York City, the NYC Small Business Tech Corps connects small businesses to free technology professionals to upgrade their web presence. In another initiative, Madrid offers courses for MSMEs in the tourism sector to learn how to optimize their online marketing to Chinese tourists.[34]

- Still other cities have focused on **financing MSMEs' digital transformation projects**. For example, in 2018, Madrid issued grants of €20,000 for MSME retailers to purchase hardware for ecommerce capabilities; €30,000 for MSMEs to engage a technology provider for new custom developments and R&D development; and €300,000 for digital transformation projects (case 4).[35] In Dublin, the Trading Online Grant Scheme assists small businesses looking to sell online. Eligible businesses can apply for a voucher of up to €2,500 to invest in developing their ecommerce capabilities, such as developing or upgrading an ecommerce website or an app, implementing online payments or booking systems, purchasing software or online advertising, and so on.

- Some local governments have **worked with leading ecommerce companies to integrate MSMEs into global digital value chains**. For example, Walmart's Vriddhi program partners with state governments in India to provide capacity-building support to MSMEs with the goal of integrating 50,000 MSMEs into Walmart's supply chain and Global Sourcing program and taking Make-in-India products to the world. In December 2020, Walmart expanded its commitment to buying $10 billion of goods annually from Indian producers in such categories as food, pharmaceuticals, consumables, health and wellness, and general merchandise.[36]

- There are also specialized city-level programs to **enable online seller MSMEs to access add-on capabilities such as cybersecurity or logistics services**. For example, in 2018, New York City launched the Cybersecurity Moonshot Challenge in partnership with a venture capital fund to encourage businesses to develop and deliver affordable, scalable cybersecurity

solutions tailored to MSMEs. Brooklyn has created microfulfillment and shared warehousing solutions near end consumers for MSME online sellers. Together with the US–Israeli robotics provider Fabric, Brooklyn converted a former depot for New York's street vendors into a 7,500-square-foot automated facility where goods can be retrieved in five minutes and delivered to regional customers within hours.[37]

Table 3: Types of initiatives used by cities to promote ecommerce among MSMEs

Objectives	Example	Approaches	Partnerships
Diagnose MSMEs' digital readiness	Buenos Aires, My Digital SME[38]	Provide MSMEs a diagnostic tool to gauge their digital readiness and chart a digital journey, along with training, skills development, and financing for technology companies and digital services providers.	More than 40 technology services providers have participated in different ways
Enable MSMEs to learn about doing ecommerce	New York City, Launch Your Online Business course[39]	Teach MSMEs key ecommerce concepts and skills through courses and workshops; master the essentials of digital marketing and branding.	State University of New York (SUNY) and the Fashion Institute of Technology (FIT)
Enable brick-and-mortar MSMEs to sell online	Seattle, Digital Sales Access Program	Provide 50 Black-, Indigenous-, and People-of-Color-owned MSMEs with point-of-sales (POS) systems and connect participating businesses with the tools and training needed to pivot their operations to new technology.	Comcast, Kay Tita
	Guayaquil, mercado593.com	Online marketplace for local MSMEs and restaurants.	Contifico and city's digital entrepreneurship program EPICO
	Alberta, Digital Main Street ShopHERE	Improve MSMEs' ecommerce stores and provide free services or discounts from ecommerce ecosystem service providers.	Ecommerce ecosystem service providers
Train the trainers and one-on-one support	Los Angeles, LA Optimized	Provide one-on-one support from local talent to develop ecommerce and digital capabilities and an Accelerator Academy to provide businesses with ecommerce and marketing support.	University of Southern California (USC)
	Buenos Aires, Digitalizate	Train MSME trainers: train local youth in ecommerce and digital skills for each of them to train 2–4 brick-and-mortar companies.	University of Buenos Aires, Mercado Libre, Facebook

Enable informal MSMEs to sell online	Cape Town, Online Market[40]	Provide sellers who would ordinarily sell at the Cape Town Summer Market online product display assistance (product styling and photography), delivery options, and tips to improve offerings through data analytics and customer feedback.	Cape Town Summer Market organized by City of Cape Town
Increase access to export markets	Walmart Vriddhi program with Indian states	Integrate MSMEs into global retailers' supply chains.	Walmart
Finance online sellers' digital transformation	Madrid, SME Industry 4.0	Program covering 10%–30% of investments made by MSMEs in digital transformation (grants of up to €200,000 for midsize firms and €300,000 for small firms). Proceeds can be used for various initiatives, such as data analytics, cloud computing, supply chain management, cybersecurity, production innovations using robotics, and additive manufacturing.[41] Madrid also offers MSMEs digital transformation consultant support of up to €20,000.	European Union Regional Development Fund
	Newport News, E-Commerce Grant Program	Provide grants of up to $2,500 for small businesses and up to $4,500 for women- and minority-owned businesses for consultations on ecommerce development, web design and development services, ecommerce services, and internet marketing services.	None
	Singapore, E-Commerce Booster Package	Provide retailers a one-time grant of 80% of qualifying costs (capped at SGD8,000) to begin selling products on one of the appointed ecommerce platforms—Lazada, Mummys Market, Qoo10, Shopee, and Zalora.	Marketplaces Lazada, Mummys Market, Qoo10, Shopee and Zalora
	Dublin, Trading Online Voucher Scheme	Issue grant financing of up to up to €2,500 for ecommerce development and digital transformation.	
Incentivize innovative technology solutions for MSMEs, such as in cybersecurity	New York, Moonshot Challenge	Set up a funding challenge with VC to provide cybersecurity technologies for MSMEs.	Jerusalem Venture Partners

Case 3: Mexico City MSME Ecommerce and Internationalization Program

Mexico City is one of the largest cities in the world. The city's first female mayor, Dr. Claudia Sheinbaum Pardo elected in 2018, has put in place a comprehensive program to enable the city's MSMEs to grow their sales, use ecommerce, and export. The program seeks to address the major challenge the City's officials had identified – low survival rate of MSMEs, which has been exacerbated by COVID-19. The city governments offered in its first two years 2,000 trainings to 102,000 individuals, especially women-led firms.[42] As COVID-19 forced businesses to close their physical stores, the course catalogue and city policies focused heavily on firms hurt by the closures and that did not yet have online sales capabilities.

Mexico City created a program for offline sellers with the Mexican Online Sales Association (AMVO), which includes the AIUDA.org online sales platform to help move physical storefront MSMEs move online, especially as a result of COVID-19.[43] The City and AMVO also organized an event for 2,500 firms to learn about ecommerce opportunities .The city government has also partnered with Latin America's leading platform Mercado Libre to help MSMEs create their online stores, and set out to partner with firms like Amazon and FedEx to promote export sales for firms that are already more advanced in their digital journeys. MSMEs' ecommerce exports. In addition, the city also created a platform with the 5,000 firms that are selling goods in the city's historical center.

Mexico City also supports ecommerce and internationalization through its programs to expand internet access. For example, the Government of Mexico City worked with the country's telecommunications company Telmex to develop the "CDMX Digital Internet for Everyone"-program, which aims to provide free Wi-Fi internet access to citizens. To accomplish this goal, Telmex installed over 20,500 free public Wi-Fi hotspots, more than any city in the world.[44]

Case 4: Funding MSMEs' digital transformation at all levels of government: Madrid

MSMEs make up 99 percent of Spanish firms and are the backbone of the Spanish economy, but their growth has traditionally been slow. To accelerate SMEs' productivity growth and the creation of well-paying jobs, the government of Spain has a number of activities to enable the digital transformation of MSMEs and ecommerce development. This work is carried out in layers by working with national, regional, and municipal governments.

At the regional level, the region of Castilla La Mancha has managed a digital transformation program to promote the modernization and promotion of MSMEs' online retail to specifically support MSME in acquiring new technologies, building ecommerce capabilities, managing their brands, and online marketing and advertisement.[45] Funding from the program can be used to digitize company operations or sales channels, such as for the acquisition and installation of management equipment or software or to develop and launch ecommerce landing pages. The program also helps beneficiaries install a free Wi-Fi zone in their physical locations, and projects in underserved areas are eligible for 20 percent higher support.

The City of Madrid operates the SME Industry 4.0 program to fund MSMEs' digital transformation.[46] The assistance covers 10–30 percent of investments made by MSMEs through grants of up to €200,000 for midsize firms and €300,000 for small firms, which can be used for various initiatives such as data analytics, cloud computing, supply chain management, cybersecurity, social networks, and new production techniques

using robotics and additive manufacturing.[47] In addition to this financing, Madrid offers MSMEs support for consultant projects of up to €20,000 or up to 50 of project costs. These include:

- The Activate Cybersecurity pilot program to improve MSMEs' cybersecurity defenses through free consultant resources.
- The Boosting Talent 4.0 program connects top talent from Spanish universities and vocational training centers with science and technology business networks in the Madrid region.
- The Advice on Digital Platforms program helps firms use online marketplaces to access global consumers and reduce costs compared to traditional commerce.
- The Single Window for Internationalization program offers customized advisory services for MSMEs to identify and onboard best-fit online platforms and internationalize their products and services.

B. PROMOTING RURAL ECOMMERCE

Promoting ecommerce in remote and rural areas can bring high payoffs, both in terms of enabling rural businesses to reach new markets and helping rural firms and consumers access products that are available to their urban peers.[48] While being rural places firms at a disadvantage compared to their urban counterparts, a growing set of companies and governments are creating initiatives to promote rural ecommerce. For example, in Africa, there are such B2B marketplaces for agricultural products as Twiga Foods in Kenya and Tulaa in Kenya and Ghana.[49] These connect farmers to markets, help bypass expensive intermediaries, and through their transactional data, enable farmers and their customers to access financing.

Ecommerce businesses have also created programs to enable rural buyers and sellers to interact with each other and with their urban counterparts. For example, in Africa, Jumia's JForce program has agents that make purchases for clients in different areas and host almost 400 pick-up and drop-off stations to facilitate deliveries in rural areas. Jumia has created a partnership with Vivo Energy, which operates 2,000 fuel stations across the continent, to enable customers to place, pay for, pick up, and drop off orders at retail service stations.[50] Jumia has also advanced cashlessness with unbanked populations, with its rural mobile money agents promoting the growth of mobile payments in remote areas.

In India, Flipkart's Samarth program has onboarded some one million skilled but underserved artisans, weavers, and craftspeople across India to enable them to reach national markets through Flipkart's marketplace and access capacity-building for running an ecommerce business.[51] Snapdeal, another Indian online store, has worked to bring online shopping to rural regions such as Palasner in Maharashtra, Abdasa in Gujarat, Kalsi in Uttarakhand, Chitkul in Himachal.[52]

There is also a growing array of programs promoted by governments to enable rural MSMEs to digitize. On some occasions, these have been launched by state or local governments themselves, typically as public–private partnerships, and in others as a national rural ecommerce promotion initiative operated by the national government (table 3). Some examples include:

- In Nigeria, Rivers State has partnered with Jumia to bring ecommerce services to residents of such as Okrika, Kukuma, Ahoda, and Eche.[53] The solutions enable consumers in these regions to engage in mobile commerce and access delivery services via Jumia partner Ex & Ex Logistics Limited.

- A number of rural and remote areas, for example, the state of São Paulo in Brazil and the Navajo Nation in the United States, have created digital addresses to improve logistics services in remote regions. In the state of São Paulo, Google Plus Codes Rotas Rurais project is providing addresses to 340,000 rural properties across 645 towns with 2 million people who currently have no formal address. The addresses unlock many other use cases, such as registration for government services, access to healthcare, and improved policing in the region.[54]

- In Thailand, the Office of SMEs Promotion (OSMEP) has worked with the Department of Agriculture Extension and Bank of Agriculture and Agricultural Cooperatives (BAAC) to launch the SMEs Go Online campaign to enable rural MSMEs to learn online marketing skills and the OTOP-SMEs Transformer 4.0 project to support SMEs in agricultural sectors to acquire new digital skills.[55] Finally, the Young Smart Farmers program supports the uptake of smart farming solutions.

- Governments have also funded rural MSMEs' digital transformation. For example, in the UK, the Rural Business Development Grant Scheme funded by the Northern Ireland Department of Agriculture, Environment, and Rural Affairs provides Rural Business Grants of up to £4,999 for rural companies to purchase equipment or machinery or to set up an ecommerce website that costs at least £1,000 and no more than £20,000. Businesses in towns with less than 5,000 residents are eligible.[56]

- In India, ecommerce growth has been particularly strong in second- and third-tier cities, and the national and state governments have been working to enable this growth. For example, the Indian Post has set a goal of increasing daily parcel delivery from 2 million to 8 million parcels by 2024, and as part of this drive, it worked to improve the quality and timeliness of rural ecommerce delivery via its 141,001 offices located in rural and remote areas. Indian Post's Rural ICT Project has digitized 130,000 rural offices and has partnered with 400 companies, including Amazon and Flipkart, to get rural buyers and sellers using ecommerce. It also created an ecommerce platform, ecom.indiapost.gov.in, especially for rural artisans, self-help groups, and women entrepreneurs.[57]

- Bangladesh has launched an ecommerce platform for rural sellers called Ek-Shop, aimed to expand ecommerce into the country's rural areas. Ek-Shop runs union digital centers (UDCs) in rural regions around the country (case 5). Buyers can go to their nearest UDC and place orders through the representative there, while sellers can provide and upload information about their products to the Ek-Shop webpage, which will then show up on all Ek-Shop linked websites around the country.

- There are broader platforms to enable farmers to digitize their businesses. In the United States, the Virginia Foundation for Agriculture, Innovation, and Rural Sustainability has supported an ecommerce program, Lulus Local Food, with the support of the federal Rural Cooperative Development Grant. The program enables farmers running traditional brick-and-mortar operations to move online and digitize inventory management and financial reporting.[58] The

program has operated since 2008 but grew drastically during Covid-19, experiencing a 650-percent increase in sales and a 522-percent increase in orders from 2019 to 2020, acquiring new customers from several states such as Kentucky, California, Wyoming, Vermont, Maryland, Iowa, and Pennsylvania. Some 380 farms sell to 6,000 customers that purchase directly from the Lulus platform.

- As discussed above, China is widely cited as an important example of a national rural ecommerce development drive. For example, its some 4,000 Taobao Villages bring together over 600,000 shops that sell products to urban consumers. The success drivers for these shops and villages include internet connections, logistics networks, and educated talent that understands urban shoppers and is able to use marketplaces to generate and grow online sales, as well as differentiation—in lieu of selling commoditized products to a B2B wholesaler, rural shops have differentiated their goods and sold directly to end consumers.[59]

Table 4: Examples of initiatives used to promote rural ecommerce

Objectives	Example	Approaches	Partnerships
Improve accuracy in property addresses in rural areas	State of São Paulo, Rotas Rurais	Provides addresses to 340,000 rural properties and digitally maps a rural area of over 60,000 square kilometers across 645 cities, impacting about 2 million people.	Google Plus Codes
Enable distribution to remote areas	Rivers State, Nigeria	Partnership with Jumia to bring ecommerce services to residents in rural areas and enable mobile commerce and delivery services.	Jumia, Ex & Ex Logistics Limited
Finance rural MSMEs' digital transformation	Northern Ireland, Rural Business Development Grant Scheme	Grants of up to £4,999 for rural companies in towns with fewer than 5,000 residents to purchase equipment or set up an ecommerce website that costs at least £1,000 and no more than £20,000.	Regional government
Guided marketplace for rural buyers and sellers	Bangladesh, Ek-Shop (https://www.ekshop.gov.bd/)	Union digital center (UDC) marketplace connects rural regions around the country: buyers can go to their nearest UDC and place orders through a representative, and sellers can provide and upload information on their products to the Ek-Shop webpage. Also has escrow for holding funds before shipment is complete.	National government, with UNCDF, Visa, ShopUp
Enable farmers' digital transformation	Thailand, SMEs Go Online campaign	Coach rural SMEs on online marketing skills and entrepreneurship.	Bank of Agriculture and Agricultural Cooperatives (BAAC)
	United States, Lulus Local Food, (https://www.lulslocalfood.net/)	Cloud-based solutions that enable farmers operating traditional brick-and-mortar operations to go online and digitize inventory management and financial reporting.	Federal and state governments, MWH Solutions, LLC
Create ecommerce-driven villages	China, Taobao Villages	Creation of 4,000 Taobao Villages across China for sellers to sell differentiated goods to urban consumers.	Taobao, local and national governments

Case 5: Connecting rural residents and firms with markets in Bangladesh

The growth of ecommerce in Bangladesh has been concentrated primarily in urban centers. In response, the Aspire to Innovate (a2i) project of the Government of Bangladesh's Information and Communication Technology (ICT) Division created Ek-Shop ("one-stop shop") as an ecommerce platform that aims to bring ecommerce to rural populations and connect rural markets with a larger, international, online customer base. Ek-Shop was implemented under the Members of the e-Commerce Association of Bangladesh (e-CAB) use Ek-Shop to sell goods to a larger local and international customer base.[60] Ek-Shop was introduced in February 2018 to support the government's plan to achieve its sustainable development goals.[61] Ek-Shop leverages an application programming interface (API) connect ecommerce companies and platforms, delivery providers, and digital transaction companies into one platform.[62]

Ek-Shop links the Bangladeshi population with local and foreign ecommerce platforms. Its network of ecommerce and logistics providers expands the customer base available to Bangladeshi producers, establishes a rural-urban supply chain value network, and generates employment and income for local populations. Ek-Shop also provides the opportunity to buy and sell products in rural areas where direct market opportunities are limited.

Ek-Shop operates through more than 10,000 outlets across Bangladesh, expanding the delivery regions of large ecommerce companies to help rural residents in Bangladesh buy and sell goods online. Buyers and sellers place orders through representatives at any of the over 3,347 UDCs that are connected to Ek-Shop, who then send on and deliver these orders. Customers can also place orders directly, and sellers can share product specifications with UDC representatives to upload to the Ek-Shop site. Items listed for sale on Ek-Shop are displayed on all ecommerce pages linked through the platform. UDC then collects products and delivers them to the customer within four days via a pool of local logistics providers, including the Bangladesh Postal Office.[63] Customers can return products for automatic refunds,[64] and agents receive commissions for each order that are not included in the price of the product.[65]

Head of ecommerce at a2i, Rezwanul Haque Jami, explains that the goal of the initiative is to expand ecommerce and provide a virtual platform that highlights goods sold by rural entrepreneurs. According to Jami, the Ek-Shop concept was in development for three years. There are also Ek-Shop centers in Singapore and Malaysia for Bangladeshi expatriates, and the platform plans to expand to Turkey, Columbia, Uganda, Jordan, and South Sudan.[66]

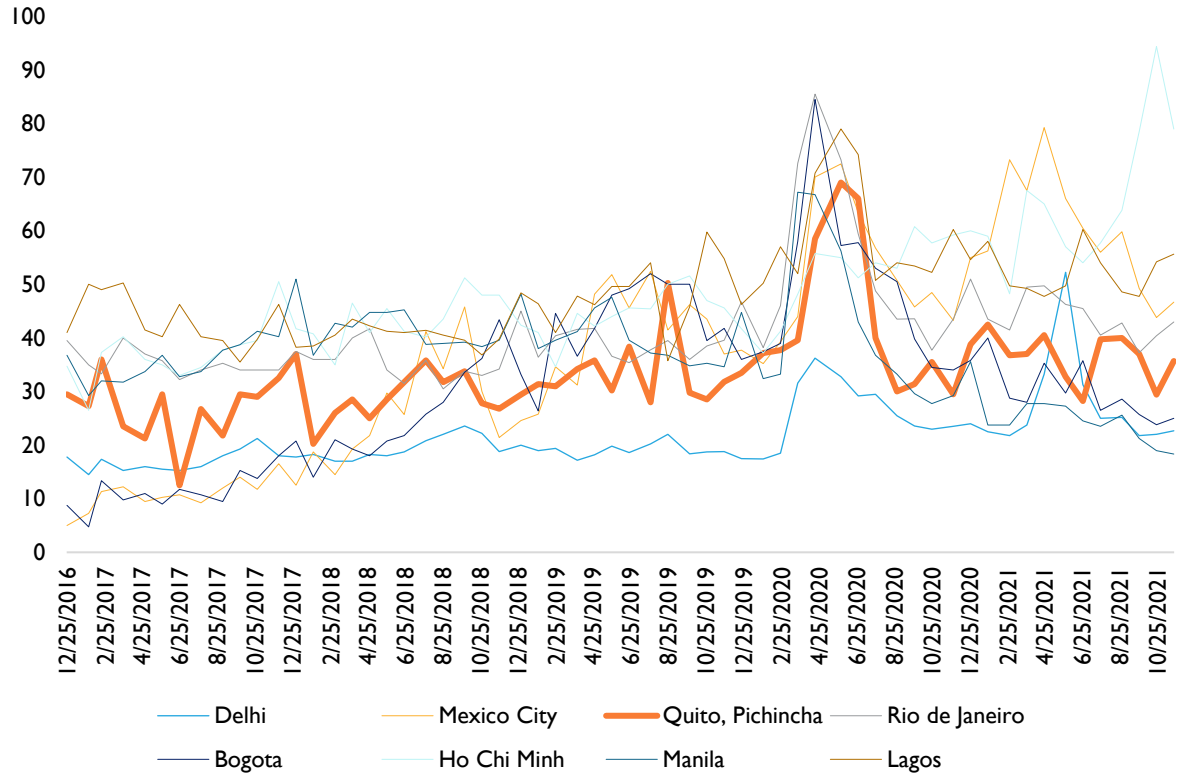
The head of the Newazpur UDC in the Noakhali district of Bangladesh, Mohammad Ismail, says Ek-Shop has revolutionized trading patterns in his area. "Once villagers had to go to subdistrict and district headquarters to buy things, but they're now coming to UDCs to do so," said Ismail.[67] His mother, for example, requires diabetes medication that is often not available or is too expensive in the local market and is now able to order this online.

Ek-Shop is recognized as a major driver of rural development by the international community. The United Nations, for example, gave Bangladesh an award for empowering the rural economy and ecommerce through Ek-Shop. The Geneva-based World Summit Information Society also recognized the Ek-Shop platform as a champion in the business category in 2020.[68] According to Bangladeshi government representatives, these awards reflect the Digital Bangladesh vision and are evidence of the country's progress toward a knowledge-based economy.[69]

IV. FACILITATING ECOMMERCE LOGISTICS IN DEVELOPING COUNTRY CITIES

Shoppers in cities around the world are increasingly demanding customized home delivery—rather than buyers going to stores, sellers and stores now need to bring their products to buyers. In many major urban areas in developing countries, demand for home delivery spiked across cities especially at the onset of Covid-19 in March and April 2020 (figure 20).

Figure 20: Google search for "delivery" in selected cities, 2020–2021



Source: Google Search Trends.

The growth of ecommerce in goods has created both opportunities and challenges for cities around the world. On the one hand, ecommerce delivery has created new jobs in urban regions, in logistics and supply chain management, warehousing, distribution, delivery, and the development and operation of sophisticated class-A warehouses and microfulfillment centers. Practically in all world regions, warehouse vacancy rates are plunging, even as new capacity is being built (figures 21a and b).

Figure 21a: Growth of new logistics warehouse completions and vacancy rates in 2010–2021 in the Americas

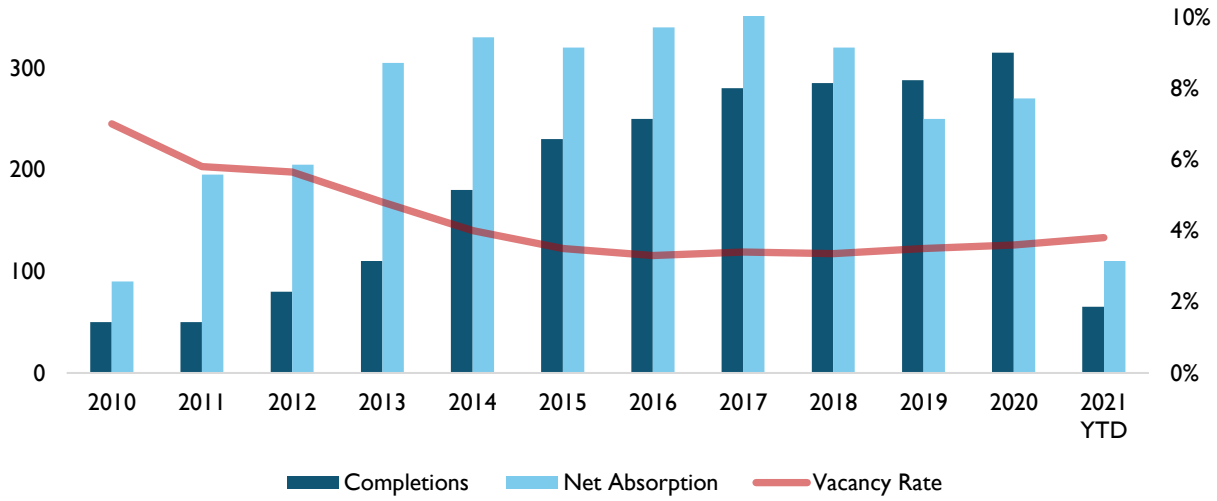
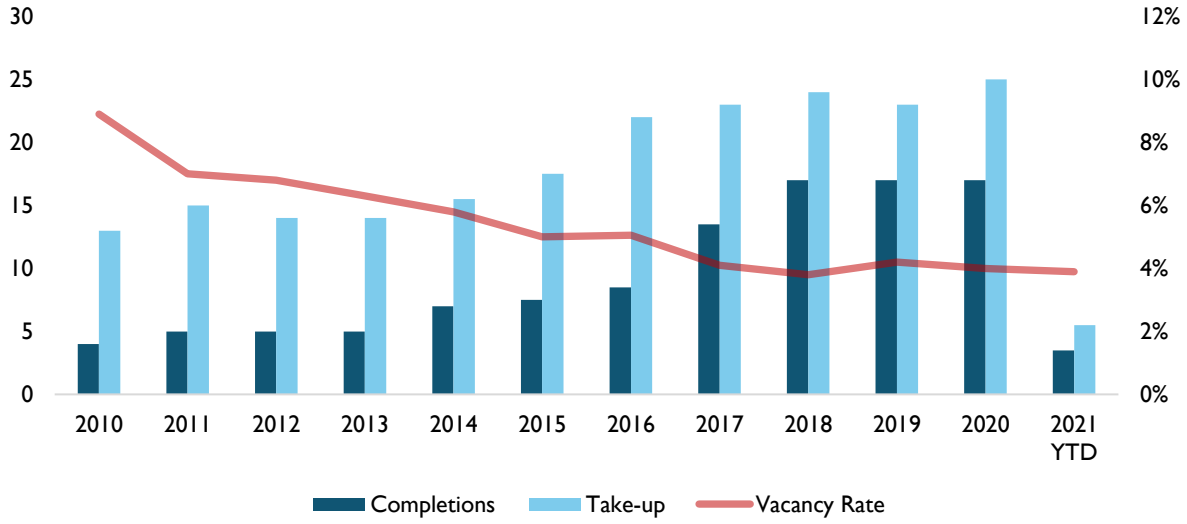


Figure 21b: Growth of new logistics warehouse completions and vacancy rates in 2010–2021 in the Europe



Source: CBRE.

On the other hand, ecommerce has exacerbated urban challenges such as congestion, emissions, noise, and delivery accidents, and "not in my backyard" issues associated with the build-out of mega-warehouses near residential neighborhoods. For example, in the leading U.S. ecommerce hub of Southern California, local officials that have drawn up plans for massive ecommerce warehousing projects have met with fierce resistance from environmental groups, residents, and community organizers, who argue that warehouses would add to pollution and traffic and disproportionately impact the poor and communities of color.[70]

Some studies estimate that last-mile delivery will grow by more than 75 percent globally between 2020–2030 thanks to the growth of ecommerce shopping and the number of people buying online, leading to demand for same-day delivery, implying that goods must be stocked relatively close to consumers.[71]

This however does not mean that ecommerce will worsen congestion and urban ills. Indeed, research is mixed on whether the growth of ecommerce is adding to or subtracting from urban sprawl. This is likely because studies have been focused on different cities with very different starting points, for example in terms of congestion. For example, a pre-Covid analysis found that traffic flowed in the least congested city in India twice as fast as it did in the most congested.[72] While during Covid-19 urban traffic was reduced significantly due to lockdowns, congestion worsened in many cities after restrictions were lifted, but still varied considerably across cities (figure 22).

Figure 22: Congestion in selected developing country and emerging market cities, 2019

Source: TomTom Traffic Index.

Cities also vary in terms of how they or delivery services themselves regulate deliveries. For example, in the United Kingdom, 12 of every 100 deliveries are sent out for delivery a second time rather than being left outside the recipient's door, adding congestion and costs for shippers that have been estimated to reach £850 million per year.[73] Repeat deliveries and variability in delivery times are common in developing country cities, due in part to poor addresses.[74] In addition, in some countries and cities, there may be more "serial returners," who order too many items on purpose and send the less desirables ones back.

Buying habits also differ from place to place, such as whether shoppers place orders for single items or buy in bulk. For example, in the New York area, the Regional Plan Association study concluded that it would be more economical to shop the old way—a full family going on a Saturday trip to the shopping mall would be cheaper than ten separate home deliveries made on different days.[75] However, a study in Shanghai found that on balance, ecommerce helped reduce urban traffic, especially during peak hours.[76]

In addition, the future interplay of ecommerce logistics and urban congestion and dynamics is shaped by the rapid emergence of efficient and sustainable logistics technologies and delivery models, such as:

- **Route optimization.** Real-time dynamic routing practices among delivery services open up opportunities for maximizing the volumes handled in each trip and ensure no fleet ever runs empty.[77] For example, Locus operating in Indian, Southeast Asia, Europe and the United States uses big data to provide businesses' fleets with optimal fleet mix and route plan for the vehicles respecting business as well as local constraints such as traffic and road closures.[78]

- **Matching supply to demand.** A wide range of services in the developing world are matching idle capacity to demand for logistics services. For example, Indian's Porter is a marketplace matching businesses needing intra-city delivery to drivers. In Colombia, Liftit marketplace matches independent truck drivers with companies or people in need of last-mile delivery services. In Brazil, CargoX, a smart trucking startup, matches drivers with leftover capacity in their trucks with companies that need shipping services.

- **Microfulfillment and urban warehousing.** In Israel, Fabric has developed software that analyzes business customers' inventory and sales data to determine the demand for specific items in a region or a city, and distribute the right amount across its micro-fulfillment network-enabling consumers to get their products from nearby distribution centers sooner. [79]

- **New transport modes.** In many cities, businesses are testing drone delivery, electric vans, and delivery robots. In the United States, Flytrex is Pioneering in delivering food and beverages to households across U.S. suburbs.[80] In China, Alibaba's autonomous delivery robots, guided by advanced algorithms, have delivered more than a million parcels in China within a year of their launch in 2020.[81]

- **Interoperable logistics value chains.** Post-Covid-19 shock, many companies are developing solutions for their supply chains. one example of an established provider is the U.S.-based One Network that enables ecommerce retailers to connect with their customers, distributors, suppliers, carriers and other relevant actors via one digital supply chain platform.[82]

- **Technologies to reduce ecommerce returns.** In the United States, retailers are increasingly adopting augmented reality and 3D holograms to enable shoppers to "try on" clothing virtually and see products in 3D before shopping, reducing the need for return logistics.[83]

In addition, developing country cities can proactively improve ecommerce logistics—and create employment in logistics. Many leading cities are already ideating and creating logistics pilots and initiatives, often in partnership with the private sector. Some useful examples from developed and developing countries include the following (see also table 5):

- **Digital addresses.** Some 60 percent of people in the world have a poor-quality address or no address at all. Many countries and cities have seized the opportunity provided by digital addresses to provide residents with their first-ever address. For example, the General Post Office of Dilbar in Katmandu, Nepal, has partnered with Google Plus Codes to increase the efficiency of letter and parcel delivery.

- **Drone delivery testbeds**. In Los Angeles, the public–private Urban Air Mobility Partnership seeks to introduce low-noise electric delivery aircraft by 2023.[84] The project enjoys support

from the Urban Air Mobility Division of Hyundai Motor Group. In the nearby city of Ontario, drone deliveries were started in a dedicated neighborhood in July 2021 as a testbed for future connected communities where drones can also be used to read water meters and deliver pharmaceuticals on demand.[85]

- **Sandbox for logistics innovations.** The Seattle Neighborhood Delivery Hub is a testbed for innovative sustainable urban logistics strategies on the ground in Seattle's dense uptown neighborhood.[86] Providers can test and evaluate new technologies, vehicles, and delivery models to get more fuel- and resource-efficient solutions to market quickly. The hub is also a delivery point for last-mile distribution via electric vehicles, bikes, or on foot.

- **Redrawing urban plans for ecommerce.** New York City's Freight NYC is a $100 million plan to modernize the city's distribution system through strategic investments in maritime and rail assets and new distribution facilities.[87] It seeks to create 5,000 jobs and a more sustainable, resilient supply chains. In Shenzhen, China, the city government has spearheaded the creation of an ecommerce-driven urban logistics network with last-mile delivery depots, mainly by converting old industrial sites into modern e-tailing logistics facilities.[88]

- **Models and incentives for off-peak delivery**. Several large, congested cities such as São Paulo and New York City have developed plans and incentives for streamlining ecommerce delivery. For example, New York City introduced a pilot program in residential areas seek to reduce double-parking by turning curbside parking spots into temporary neighborhood loading zones from 7 a.m. to 7 p.m. on weekdays, and created a pilot for some 500 companies such as pharmacies and grocery stores to deliver goods from 7 p.m. to 6 a.m.[89] São Paulo and Bangalore have also worked with the World Bank to develop a new tool that helps evaluate how different transport policies and interventions can impact ecommerce logistics in urban areas.[90]

- **Greening the last mile with cargo bikes.** London created its Last Mile Logistics Hub to consolidate deliveries across central London, reduce traffic, and cut harmful emissions.[91] The initiative aims to transform 39 parking spaces within the underutilized London Wall Car Park into a hub for Amazon Logistics. The final leg of parcel deliveries will be undertaken by e-cargo bikes and people on foot, in order to remove large numbers of delivery vehicles from city streets. Paris has similarly incentivized freight trucks to enter the city at night and deliver packages to microwarehouses near residences. The deliveries are then picked up in the morning by bikes and electric vans for last-mile delivery.[92]

- **Parcel lockers to aggregate parcel delivery.** In 2019, there were over 4.3 billion ecommerce retail deliveries by truck to customers in Tokyo and 46.4 billion via other distribution methods.[93] There were labor shortages, overworked delivery drivers, and a rise in ecommerce delivery costs. To address these issues, the government, Quadient, and Yamato Transport partnered to establish a dense network of carrier-agnostic parcel lockers across the city and the rest of the country.[94] As a result, large volumes of packages could be delivered to a single location, precluding residential deliveries and second or third delivery trips. The Japan Post Co. and ecommerce giant Rakuten have also set up lockers across the country.[95]

Table 5: Types of logistics initiatives used by cities to manage ecommerce logistics

Objectives	Example	Approaches	Partnerships
Reduce delivery times and their variability	Kathmandu's digital addresses	Post office pilots the use of open-source digital address	Google Plus Codes in General Post Office of Dillibzar, Kathmandu
Scale ecommerce distribution at cost	Singapore's federated lockers and collection points	Add 70 parcel locker sites covering two residential districts and eight urban metro stations. Brings ecommerce companies, locker operators, and logistics service providers into a single interoperable platform.	Singapore Locker Alliance, Parcel Perform
	São Paulo neighborhood store collection	Use 5,000 neighborhood stores as collection points for online sales for 40,000 sellers, with sellers paying a nominal fee using these stores as temporary "warehousing."	Over 5,000 neighborhood stores
Reconfigure urban real estate for ecommerce logistics	Parisian logistics hotels	Mixed-use developments that are part warehouses/distribution centers, to help make them more palatable to residents.	Government, real estate developer, private companies for mixed-use
Reduce urban congestion and emissions	London's Last Mile Logistics Hub	City distribution hubs where final leg of delivery is done via e-cargo bikes and people on foot, removing delivery vehicles from streets.	Amazon was the first partner
	Los Angeles Urban Mobility Partnership	Introduces low-noise electric aircraft as alternative transportation options for goods and people in 2024. Convenes aviation expertise across government agencies and develops a toolkit to inform urban air mobility regulations.	Urban Movement Labs (UML), Hyundai Motor Group
	India's Freight Smart Cities Initiative	Sustainable, data-driven smart city logistics solutions, through city-level logistics committees with related government agencies, the private sector, and users of logistics services. Piloted in 10 cities.	Government, bilateral development cooperation, nonprofit
	New York's various policies	Policies to promote night-time deliveries for ecommerce packages when roads in Manhattan are clearer and to establish an off-hours delivery program.	City government
	Los Angeles Code the Curb	Track curbside inventory in the city by creating a digital inventory of more than 1 million curbs, 37,000 parking meters, as well as signs and markings, and make data open-source for private companies to use.	

Create ecommerce warehouse jobs	Numerous locations near population centers around the world	Development of new, increasingly automated, robotized warehouses for fulfillment and distribution. An estimated 28,500 facilities will be added in 2021–2025 to global warehouse stock of 150,000 facilities.[96]	Government, ecommerce companies
Promote innovation in last-mile logistics services	Seattle Neighborhood Delivery Hub	Provide sandbox for innovative urban logistics solutions where providers can test new technologies, vehicles, and delivery models.	Government, local university, transportation tech start-ups
Urban planning for ecommerce era	New York's Freight NYC	City plan for overhaul of freight distribution systems, modernization of maritime and rail assets, creation of new distribution facilities	
	Shenzhen, Urban Development and Land Use	The Urban Development and Land Use Plan for 2016–2020 put forth an ecommerce-oriented urban logistics network with last-mile delivery depots, using brownfield strategies of converting former industrial sites into modern e-tailing logistics facilities.	Transportation and logistics companies such as China Post, Sinotrans Limited, and S.F. Express, and real estate developers (e.g., ProLogis)

V. PROMOTING ECOMMERCE-RELATED INVESTMENT IN DEVELOPING COUNTRY CITIES

Local governments around the world are competing for domestic and foreign investment from leading technology companies, including from ecommerce giants. There is a reason for this: empirical work and case studies suggest that investment in countries and cities' technology sectors provides:

- New services for local online sellers and ecommerce ecosystems. Large technology companies bring new capabilities and talent for local ecommerce marketplaces and ecommerce companies.

- New linkages between large international technology companies and local technology companies that can help local firms capture new knowledge, technologies, and processes. These gains are particularly strong for technology-intensive and high-growing local firms.[97]

- New pipeline of technological talent that can ultimately migrate to local companies or form new start-ups that enrich the local ecommerce ecosystem.[98]

- Construction jobs associated with technology companies' buildout of campuses and facilities, and overall new demand for various types of workers to service their facilities.

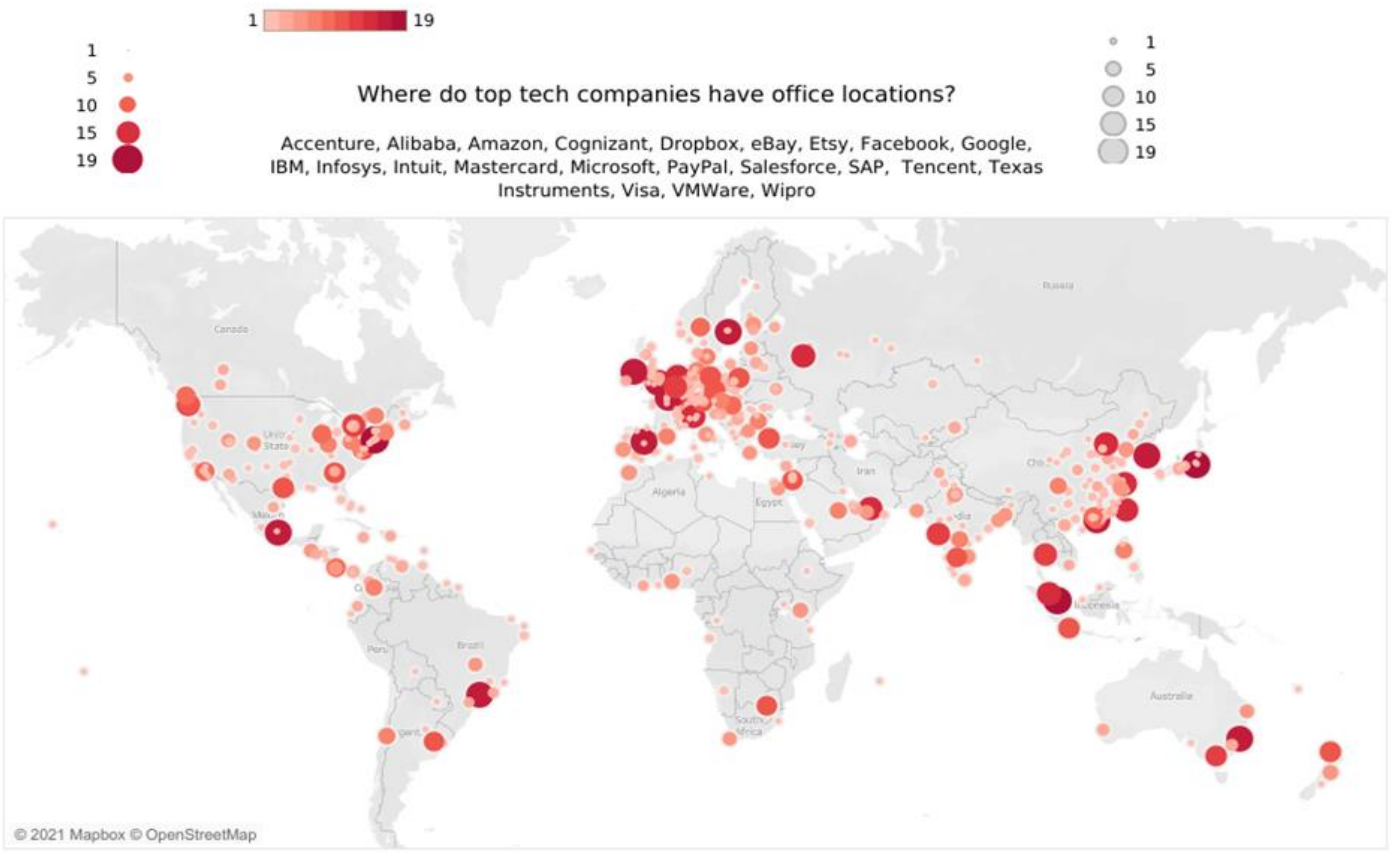
- Increased opportunities for cities and countries to export digitally deliverable services. Technology companies often sell their services to third markets, enabling the host country to grow its exports of digitally deliverable services. For example, Costa Rica and the Philippines have expanded their digital services exports on the back of foreign investment from leading technology companies.

- New business and personal income tax revenues for the cities in which technology companies are based.

Global technology companies can, if deploying in strong numbers, help modernize a city, such as by encouraging the creation of retail and services establishments that tech workers can frequent, and by promoting investment and upgrades in commercial and residential real estate.[99] The presence of technology companies providing world-class IT services can also help cities attract manufacturing companies that look to consume technology-intensive services.

Some cities have been more successful than others in securing domestic and foreign investment in their technology sectors. The flows have been rather concentrated in some of the largest emerging market cities, often the so-called global cities that have digital talent and robust technology ecosystems. In a dataset of 50 U.S, Chinese, and European technology companies' locations, we identified 10 major developing country cities that have become leading hubs for global technology companies—these include Bangalore, Bangkok, Manila, Mexico City, and São Paolo (figure 23).

Figure 23: 20 leading locations for US, European, and Chinese technology and ecommerce companies, 2021



Source: Nextrade Group.

What is behind these cities' success in attracting technology companies' investments? Research on this question is quite limited. While there is a long line of empirical work on the drivers of foreign direct investment (FDI) in manufacturing industries, little work has been done to date on the locational drivers of FDI in technology sectors. However, some clear answers are coming into view. For one, technology companies locate to markets with scale and spending power—they are bound to find customers in teeming emerging market cities. But in addition, a few further factors have helped cities draw technology investments: a strong, long-term talent pipeline, enabling policy environment, and access to technology parks and transit centers. For example:

- **Talent pipeline is essential for attracting technology companies.** A major consideration for technology companies is long-term access to highly trained talent. Just about every hub that has attracted investment in the technology sector has focused on creating a local pipeline of technological talent, both through partnerships with universities and the promotion of local start-up ecosystems. An illustrative example was the race among 238 U.S. cities to become the location of the second Amazon headquarters.[100] Arlington, Virginia won largely because it promised Amazon a talent pipeline for the next 20 years, such as $250 million to fund a new

Virginia Tech campus in Alexandria near the proposed HQ2 site with the aim of grooming talent in engineering and computer science. Arlington also benefited from support from the state of Virginia, which provided more than $1 billion to build a pipeline of technical workers and improve transportation systems. Virginia offered Amazon $550 million in job-creation grants, which will be made available and invested in Virginia's schools only after the company creates 25,000 jobs. Additional subsidies will be made available if the company creates 37,850 jobs. Virginia did not reportedly win with purely tax and fiscal incentives. In fact, its fiscal offer was relatively small and constrained by state policy of limited general fiscal incentives for investors.[101]

- **Amenities and tech hubs also attract technology firms**. Many cities have also created technology hubs or districts where technology companies can set up their offices and mingle with each other, identify talent, and where staff finds retail amenities and services. One study focusing on Barcelona's famous @22 district found that real estate, amenities, and agglomeration economics are indeed the key determinants for the locational decisions of firms' R&D investments.[102]Among cities that have built tech hubs and drawn in investment include Buenos Aires's Technology District, which was modeled after Barcelona's @22 district and was once a warehouse district.[103] San José, Costa Rica, is building a Tech City to host multinational tech companies and especially their R&D arms, a university campus focused on technology majors, and retail facilities, as a means to bring in new investments.[104] The Tech City is part of a Special Zone for Economic Development (ZEDE) project that aims to attract FDI to some 39 neighborhoods.

- **Tax incentives have a mixed record to attract investment.** Many cities have worked in tandem with national governments to provide fiscal incentives to attract technology companies. For example, in January 2021, the City of Buenos Aires launched a Regime of Promotion of Information Technologies and Communications, which defers or exempts businesses in the Technological District from gross receipt taxes. Amazon reportedly located its data center in the southwest of Buenos Aires province in order to benefit from tax breaks in the free-trade zone.[105] In India, the state of Karnataka has an IT policy for 2020–2025 that includes the creation of six million jobs and weeks to contribute $300 billion toward India's goal of becoming a trillion-dollar digital economy.[106] Among other things, the policy includes special incentives for an Electronics System Design and Manufacturing cluster, such as a 25 percent investment subsidy, reimbursement on costs like stamp duty, and full exemption from electricity costs. The government has also created a Server IT Special Economic Zone where companies are eligible for corporate tax holidays. Tel Aviv and the government of Israel have also created the Innovation Box: a set of intellectual property incentives to retain this in Israel.

  Like cities, countries have offered tax incentives for the technology sector: in a recent mapping, about one-half of 107 developing countries have granted tax incentives for IT services sectors.[107] However, empirical work suggests that tax incentives alone are not an adequate means to attract companies—for example because state, local, and property taxes can be relatively limited compared to the cost and need for labor.[108] Tax incentives alone will also be a hard sell politically, especially if the local community does not gain new jobs and sees a rise in housing costs. One study on the U.S. Bay Area housing market found that housing prices in the immediate vicinity of a tech company's campus increase by an additional seven percent within two years of the company's arrival.[109] In addition, if cities engage in bidding wars to attract technology companies, they may create a suboptimal outcome for the winner – if incentives offered outweigh the gains in local employment and revenues.[110]

- **Rule of law and sustainable practices will likely become more relevant in attracting technology companies**. Cities have also improved their odds of receiving investments with good policy environments and a commitment to sustainability. For example, Bangalore has put a plan in place to enable a remote, distributed labor force working beyond the state and to bolster cyber security for companies in the city. In Yucatán, Mexico, the state government has bolstered commitments to rule of law to attract a major Walmart Mexico distribution center that serves stores and online customers. Amazon is working with Abu Dhabi to build a major fulfillment center that uses renewable energy and helps the company attain its goal of net-zero carbon emissions by 2040. Facebook invested $800 million in a new data center in Gallatin, Tennessee, facilitated by a commitment by the Tennessee Valley Authority to bring 220 megawatts of new solar energy to the Tennessee Valley to support the company's operations in the region.[111] Sustainability will be an increasingly important locational driver for technology companies, most of which have some net-zero objectives for their own facilities, service providers, and supply chain partners. For example, the Net Zero Initiative recently found that 622 of the 2,000 largest publicly traded companies in the world by revenue have in some fashion committed to net-zero goals.[112]

- **Digitized and simplified processes facilitate investors.** Cities can also do what national governments like to do—facilitate companies' entry with e-government services and a single window for investors.[113] Some cities such as Portland and Calgary have created interactive maps of where foreign investors are located.[114]

Cities such as Bangalore, San José, Costa Rica, and Buenos Aires have incentivized inbound FDI in the technology sector with combinations of these strategies, often in tandem with national policies that are conducive to technology investments (table 6).

Indeed, cities that have attracted investment in technology sectors have typically benefited from national policies to promote inbound investment in the technology sector. For example, in Israel, the national government has provided visa-free entry for tech workers that helped drive investors into the robust technology ecosystem of Tel Aviv.[115] In 2019, the government further eased immigration rules and provided incentives for foreign start-up companies. In India, Bangalore has benefited from the national government's Startup India initiative launched in 2016.[116] Buenos Aires has similarly benefited from significant laws and investments by the national government to support the tech sector. In 2019, Argentina extended a 2004 software industry promotion law to attract investment in the tech sector. [117] In 2020, Congress approved the Knowledge Economy Law, which provides tax incentives such as a reduction in Argentina's income tax rate from 35 percent to 15 percent for start-ups and multinationals that train and hire workers.[118] In addition, in 2021, the government announced that it would be investing $288 million in science, technology, and innovation over the next five years.[119]

Table 6: Types of strategies used by cities to attract technology and ecommerce companies

Strategy	City	Description
Talent pipeline, workforce development, infrastructure	Arlington, USA	Won the bid to become the location of the second Amazon headquarters after Virginia extended $573 million in incentives, primarily through $550 million in cash grants, as well as a helipad. Virginia's winning bid offered fewer tax incentives than competing proposals and instead focused on investments in workforce development and infrastructure, such as $250 million to fund a new Virginia Tech campus in Alexandria, near the proposed HQ2 site in Arlington, that provides degrees in software engineering and computer science.
Remote work policies, tax incentives	Bangalore, India	Bangalore has become a success story in attracting numerous technology companies and promoting start-ups and VC investments in local companies. The state of Karnataka was the first in India to create the position of a Ministry of IT to address issues faced by the IT industry in terms of access to infrastructure and talent. One of the initial key policies issued by Karnataka was a 10-year tax holiday for IT services companies that set up operations in Bangalore. In 2015, the state government launched the Karnataka Startup Policy, with a vision to stimulate the growth of 20,000 tech start-ups by 2020, including several funds that brought together $47 million. In 2020, the Karnataka cabinet approved its latest IT policy to attain a goal of six million jobs during 2020–2025 and contribute 30 percent toward India's goal of becoming a trillion-dollar digital economy.[120] Among other things, the policy puts forth a path to enabling a remote, distributed labor force beyond Bangalore and a cybersecurity policy. There are also special incentives for an Electronics System Design and Manufacturing cluster, such as an investment subsidy of 25 percent on land, complete reimbursement of costs like stamp duty and registration, and a 100 percent exemption from electricity costs.
Workforce policies, tax incentives	Hangzhou, China	Hangzhou, home of Alibaba, works to attract and retain technology and support the city's ecommerce ecosystem through targeted workforce policies, tax breaks, and financing. Hangzhou also attracts technology and ecommerce companies by investing in the education and skills of the local workforce. In 2021, for example, Hangzhou set the goal of attracting 300,000 college graduates in 2021 through incentives, subsidies, and entrepreneurial funding.[121] In addition, Hangzhou increased its commitment to the digital economy by investing in blockchain. In 2018, the city government announced during the opening ceremony of the city's Blockchain Industrial Park that it would invest CNY3 billion in a CNY10-billion ($1.6-billion) blockchain fund. This fund will invest in blockchain projects and support the Blockchain Industrial Park, which seeks to attract industry start-ups and professionals. The goal of these cutting-edge investments is to expand local information technology, which contributes over half of the city's overall gross domestic product growth.[122]
Talent pipeline, tax incentives	San José, Costa Rica	In recent years, Costa Rica has catapulted itself into becoming a sophisticated IT services provider in sectors such as cloud services, data analytics and robotic process automation (RPA), and augmented and virtual reality, among others.[123] Numerous high-tech companies such as AWS, Microsoft, VMWare, and IBM are located in the capital, San José. [124] The city has recently worked on a plan for a Tech City to host multinational tech companies, especially their R&D arms, a university campus focused on technology majors, and retail facilities as a means to bring in new investments.[125] The Tech City represents the first phase of the Special ZEDE project, which aims to attract FDI to some 39 neighborhoods. The city is betting on a talent pipeline more than on incentives as a means to attract global companies. However, there are incentives for companies

		to bring supplies in duty-free and be exempt from municipal taxes.[126] Costa Rica's investment promotion agency, CINDE, has been hugely successful in attracting investment to the country.
Talent pipeline, tax incentives	Buenos Aires, Argentina	Buenos Aires has long been Latin America's tech hub. In 2015, the City of Buenos Aires won the Global Entrepreneurship Congress Cities Challenge for its innovative policies and start-up ecosystem [127] The city followed an Israeli model for supporting incubators and start-ups inspired by the Israeli Start-Up Nation model, and created a Technology District modeled after Barcelona's @22 district in what was once a warehouse district.[128] The city also provided a 10-year tax holiday to foreign companies and SMEs that invested in the district. In 2018, AWS opened an office in Buenos Aires and announced in 2019 that it would invest $800 million in an Amazon CloudFront Edge location in Buenos Aires.[129] In part, the location is attractive due to the presence of major clients such as Mercado Libre and Globant SA, Argentina's largest software developer, and 40 universities and more than 30 research centers.[130] In January 2021, Buenos Aires launched a Regime of Promotion of Information Technologies and Communications, which defers or exempts companies from gross receipt tax and also includes other tax benefits for businesses in the Technological District. Amazon located its data center in the southwest of the Buenos Aires province to benefit from tax breaks in the free-trade zone.[131]
Talent pipeline, visa-free entry	Tel Aviv	Israel helps drive technology and ecommerce companies to Tel Aviv in part through visa-free entry for tech workers. Israel offers a B-1 visa specific to high-tech workers and also offers a B-5 visa for investors, which ease entry into the country for investors and skilled workers.[132] In 2015, Israel introduced the Innovation Visas for Foreign Entrepreneurs program that allowed qualified entrepreneurs, investors, and tech workers to stay in Israel for up to five years, and also qualified these individuals to apply for longer-term visas.[133] In 2019, Israel further eased immigration rules and introduced incentives for foreign start-up companies. The country also leverages tax benefits to persuade multinationals to move intellectual property to Israel.[134]
Fiscal incentives	Hyderabad, India	Telangana State's policy for data centers offers facilitation and incentives to firms that set up such centers in the state. In 2020, AWS invested $1.5 billion in new data centers.
Incentives, sustainability	Abu Dhabi, United Arab Emirates	Abu Dhabi Investment Office (ADIO) is building a 175,000 square-meter fulfillment center with Amazon. The new center will be the Middle East's most technologically advanced and aims to create thousands of jobs, drive innovations in logistics and give local entrepreneurs and retailers access to new markets through Amazon. The building itself will also have a solar rooftop to generate renewable energy onsite and will be designed to accommodate zero-emission vehicles, in line with Amazon's commitment to reach net-zero carbon emissions by 2040. ADIO provided incentives to Amazon on land, construction, and sustainable energy at the new site.
Enabling policy environment	Yucatán, Mexico	Yucatán state has worked to strengthen security, rule of law, and the regulatory environment to attract Walmart de México to invest $36 million in a distribution center that will serve 90 stores in the region and online channels and employ 725 people directly and 1,450 indirectly.

Talent pipeline, sustainability	Gallatin, Tennessee, USA	After a three-year recruitment effort, Facebook is investing $800 million to build a new state-of-the-art data center in Gallatin, in response to the city's "terrific infrastructure, talented workforce, and the spirit of partnership the community offered," according to the VP of Data Center Strategy. The Facebook Gallatin Data Center will be among the most advanced, energy- and water-efficient data center facilities in the world, using 100 percent renewable energy and 80 percent less water than the average such center. Once completed, it will be LEED Gold certified. Facebook has already partnered with the Tennessee Valley Authority to bring 220 MW of new solar energy into the area to support Facebook's operations in the region.

VI. CONCLUSION

Local governments and stakeholders are playing a central role in ecommerce development in their regions. This report has pioneered in assessing the state of ecommerce development within different subregions in developing and emerging markets, and activities pursued by local governments to promote MSME ecommerce, manage ecommerce logistics, and attract investment in ecommerce ecosystems. The various case studies are hoped to catalyze thinking among developing country cities and rural regions on local ecommerce development strategies and activities. There are four main observations:

- **Numerous city governments have created programs to enable MSMEs to establish digital capabilities, engage in ecommerce, and finance their digital transformation.** Cities such as Mexico City and Los Angeles are focused on enabling the digital transformation of brick-and-mortar firms into online sellers using digital marketing, while cities such as Madrid and Dublin have provided grant financing for such digital transformation projects. Several Indian states and cities have worked with leading ecommerce retailers such as Amazon and Walmart to integrate MSMEs into these global companies' value chains. There are also specialized city-level programs to enable online seller MSMEs to access useful capabilities such as cybersecurity or logistics services.

- **Several national governments and rural regions, often in partnership with regional and global technology companies, have created programs to enable rural firms and residents to use ecommerce to sell and purchase goods**. Ecommerce can be a powerful means for rural firms to reach new markets and suppliers, and for rural consumers to access similar bundles of goods and educational, health, ad e-government service as available to their urban peers. In Bangladesh, Thailand, and the United States, among others, national governments have worked to enable rural ecommerce by building marketplaces and online services for rural MSMEs, and helped MSMEs acquire digital skills. In a number of other countries, such as Nepal, Nigeria, and India, local and state governments have worked with regional and global ecommerce companies to enable rural companies and residents to use ecommerce and access an address for the first time. Still other subnational governments, such as Northern Ireland, have provided financing for rural firms to create ecommerce capabilities. China has pursued a concerted effort with leading ecommerce companies and local governments to promote ecommerce-driven Taobao Villages across semirural and rural regions.

- **City governments and stakeholders have deployed a wide range of initiatives to facilitate ecommerce logistics and create new logistics-related jobs.** Major cities, already burdened by sprawl, traffic, and pollution, have struggled with the burgeoning volumes of ecommerce delivery. At the same time, ecommerce logistics are opening new opportunities for cities to create new jobs in logistics and warehousing, and many cities have created concerted initiatives to manage and benefit from ecommerce logistics. Some examples include Los Angeles's public–private Urban Air Mobility Partnership, which seeks to introduce low-noise electric delivery aircraft; the Seattle Neighborhood Delivery Hub, a testbed for innovative sustainable urban logistics strategies; the initiatives of Paris and New York City to incentivize night-time delivery; and work in São Paulo and Bangalore to evaluate the impact of transportation policies and interventions on ecommerce logistics.

- **Many advanced country and emerging market cities have set out to build talent pipelines for the technology sector as well as modern amenities for technology workers, and issued fiscal incentives and low-carbon initiatives to attract technology companies.** Investment from major technology companies enables cities to create new technology jobs, cultivate technological talent, and bolster their value proposition as global tech hubs. Major global technology companies have established a presence in recent years in cities such as Buenos Aires, Bogota, Bangalore, Bangkok, Manila, Mexico City, and San José. These cities are succeeding largely because of their commitment to supplying companies with a pipeline of world-class technological talent, including through university partnerships and tech campuses that focus on grooming and aggregating talent across technology sectors. Many have also deployed fiscal incentives. Commitment to sustainability and such strategies as the provision of solar energy will likely going forward be important for cities to cater to technology companies that have net-zero emissions targets.

These experiences provide a rich set of ideas for city governments and rural areas to draw on, as they leverage ecommerce to create jobs, grow small businesses, and build more sustainable and less congested cities.

APPENDIX I: CITY-LEVEL INITIATIVES FOR MSMES TO ENGAGE IN ECOMMERCE

City/Country	Program	Eligibility Requirements	Approach	Benefits	Partners
Ontario and Alberta, Canada	Digital Main Street ShopHERE	Ontario: Home-based or commercial business or artist with under 10 full-time employees (25 if a restaurant), registered in Ontario Alberta: Home-based or commercial small businesses registered in Alberta with less than 50 employees	Provide one-on-one support from local talent to develop ecommerce and digital capabilities and partner with ecommerce ecosystem service providers for free/discounted perks	Participants in the program receive one-on-one support from an ecommerce coordinator, who is a volunteer website developer committed to supporting independent businesses and artists with their digital skills. The support includes creating and configuring an online store, training on how to manage the online store including topics such as digital marketing, shipping and inventory management, how to get the store live, and access to free tools to help support the launch of the store. Participants also have access to benefits from supporting partners such as $50 in Facebook advertising credit, a free eBay basic store for 90 days, .ca domains through March 2022, 90-day free access to Shopify platform, and Google services like advertising spend matching and training on the various tools available for small business owners.	Program Partners are Government of Ontario/Alberta, Government of Toronto, Toronto Association of Business Improvement Areas (TABIA), Google, Mastercard, Microsoft, Shopify, Facebook, Intuit, Square, Yellow Pages, Lightspeed; with many more supporting partners such as eBay, General Assembly, and the Canadian Women's Chamber of Commerce
Ontario and New Brunswick, Canada	Digital Transformation Grant	Businesses should: employ 1–25 employees in New Brunswick/1–50 in Ontario, pay commercial property tax, be registered in the province, be open for business/operating at the time of application and should NOT: supply digital services to other businesses (e.g., website design/development, SEO, programming); be franchises, not-for-profit/charitable organizations; rent office space on a temporary basis, in a shared workspace such as a hot desk, or be purely online businesses.	Issue grant financing for ecommerce development and digital transformation	The program is focused on providing main street small businesses with a digital assessment, online training, and a one-time grant ($2,500 in Ontario/$3,000 in New Brunswick) to implement their digital transformation plan. Specific eligible costs covered include hiring a consultant/agency/person to execute digital marketing initiatives; redesigning and improving existing websites and developing new websites; software such as graphic design software, productivity software (LastPass, Hootsuite, Dropbox, etc.), social media software (Hootsuite, Buffer, etc.), and security software; ongoing digital training courses; and necessary hardware.	Ontario: Administered by the Ontario BIA Association (OBIAA), in partnership with TABIA, government of Toronto, Ontario, and Canada New Brunswick: Atlantic Canada Opportunities Agency, Government of Canada, and the Community Business Development Corporation

Dublin, Ireland	Trading Online Voucher Scheme	The business must have limited or no ecommerce presence, no more than 10 employees, turnover of less than €2m, registered and trading for at least 6 months, located in the Dublin City area, and have attended a Trading Online Voucher information session within the last 9 months	Issue grant financing for ecommerce development and digital transformation	The Trading Online Grant Scheme assists small businesses to trade online. Eligible businesses can apply for a voucher to invest in developing their ecommerce capability, up to €2,500. The grant is currently 50% funded up to a maximum of €2,500. The vouchers can be used for: IT consultation, developing or upgrading an ecommerce website, implementing online payments or booking systems, purchasing internet-related software, purchasing online advertising, developing an app (or multiplatform webpages), implementing a digital marketing strategy, consulting with ICT experts, and training/skills development.	Ireland's European Structural and Investment Funds Program 2014–2020, European Union, Government of Ireland; in partnership with Enterprise Ireland, Local Authorities Ireland
Dublin, Ireland	Technical Assistance for Micro Exporters	The enterprise must employ no more than 10 people, be located within the geographic location of the Local Enterprise Office, operate in the commercial sphere, demonstrate that there is a market for the proposed product/service, engage in manufacturing or internationally traded services, and not have received any funding for this proposal from any other source	Issue grant financing to increase exporting potential through ecommerce	The Technical Assistance for Micro Exporters' grants will fund part of the cost incurred in investigating and researching export markets, e.g., exhibiting at trade fairs, preparing marketing material, and developing websites specifically targeting overseas markets. The grant covers: participation at trade fairs and shows, participating in international trade networking events, developing specific marketing materials aimed at exploring new export markets, translating existing material (booklets, webpages, etc. for export markets), developing export-related websites, and investigating new internal or external processes to develop export business.	Ireland's European Structural and Investment Funds Program 2014–2020, European Union, Government of Ireland; in partnership with Enterprise Ireland, Local Authorities Ireland

Dublin (for Irish residents)	Selling online with Etsy & Shopify	Small business owners in Ireland	Teach key ecommerce concepts and skills through courses and workshops	This course helps small businesses sell to their existing customers and new customers by setting up an online store while equipping them with the tools to promote their store using their social media channels. It aims to teach interactively and collaboratively: how to assess the advantages of both Shopify and Etsy and see which is best for business, set up an Etsy store, set up a Shopify store, learn the value of good photography and how to take great photos for selling products, tips on how to deal with the mindset of selling, how to write descriptions, how to manage customers, the importance of presentation and packaging, asking for customer reviews, after-sale customer service, and social media selling.	Local Enterprise Office, Dublin City Government
Dublin (for Irish residents)	Future Proofing Your Small Business Using Smart Tech Tools	Small business owners in Ireland	Teach key digital concepts and skills through courses and workshops	This workshop aims to help small business owners assess if they are using enough smart tech tools to save time and work more efficiently, including in the areas of accounting and finance, marketing and communications, websites (Shopify, WordPress, Google My Business, WooCommerce), social media, email marketing, digital advertising, design, collaboration, sales, and CRM.	Local Enterprise Office, Dublin City Government

Los Angeles, United States	LA Optimized	Small businesses with a current City of Los Angeles Business Tax Registration Certificate, prioritizing brick-and-mortar businesses in low-income communities	Provide one-on-one support from local talent to develop ecommerce and digital capabilities	LA Optimized was launched in January 2021 to bridge the digital divide and help small businesses access the assistance they need to adapt and compete in the digital marketplace, including how to optimize their businesses for online sales and marketing by creating or optimizing online business listings, performing ecommerce audits, creating or optimizing business websites, and connecting small businesses to creative and design services. The program has an Accelerator Academy, which provides businesses ecommerce growth and marketing support through its educational programming, collaborating with corporate donors, nonprofit partners, and subject-matter experts.	Provided by the Mayor's Office of Economic Development, Office of Community Business, in partnership with the City of Los Angeles's Economic and Workforce Development Department (EWDD), USC Sol Price School of Public Policy Center for Economic Development, Art Center College of Design, and the City of Los Angeles Creative Advisory Board
Buenos Aires, Argentina	Digitalizate	Trainers who are trained in ecommerce and digital skills who then train SMEs in the city	Train local youth in ecommerce and digital skills, for them to then train SMEs	The first part of the program is to "train the trainers," where a training seminar is provided for young people aged between 18 and 35 on topics relating to ecommerce and digital marketing. Students are taught about tools to take advantage of online sales channels, different ways to market through social networks, search engine optimization, and they also gain knowledge about how to develop a global digital strategy, the impact of digitization, how to create an account in Mercado Libre, WhatsApp Business, and email marketing. Each student will then be paid to help digitize between 2 and 4 businesses and neighborhood stores.	In cooperation with Mercado Libre and the School of Economic Sciences of the University of Buenos Aires

Buenos Aires, Argentina	My Digital SME	MSMEs in the city	Diagnostic tools	The My Digital SME tool provides a digital maturity diagnostic test in four different areas: digital marketing (social networks, branding, analytics, and digital strategy); ecommerce (online store, marketplace, and omnichannel); operations (electronic invoicing, clouding, inventory management, and logistics); and digital culture (e-learning and cultural transformation). This diagnosis allows each SME to detect where there are weaknesses that hinder productivity and growth. The system also provides solutions to improve specific needs, accompanied by a list of companies that can help provide these solutions, including in services related to digital transformation, such as online stores, electronic invoicing, email marketing, social media management, branding, logistics, CRM, digital education, and more.	Ministry of Economic Development and Production and more than 40 partner suppliers that are listed as recommendations/possible contacts in areas that SMEs would like to learn more about or improve in
Singapore	E-commerce Booster Package	Business entities registered/incorporated in Singapore with minimum 30% local shareholding, annual turnover not exceeding $100 million per annum, or employment not exceeding 200 employees and that have a physical retail storefront	Issue grant financing for ecommerce development	Local retailers will receive a one-time grant of 80% of qualifying costs (capped at SGD8,000) to begin selling products on one of the appointed ecommerce platforms—Lazada, Mummys Market, Qoo10, Shopee, and Zalora. Solutions offered by the appointed ecommerce platforms include: content development (e.g., product photoshoots, content copywriting, product packaging); product listings (e.g., setting up merchant stores, uploading content, store decoration); channel management (e.g., assortment and pricing, promotion/campaign planning, forecasting and inventory management, data analytics); fulfillment (e.g., product warehousing, fulfillment by ecommerce platforms, integration with last-mile logistics providers); advertising and promotion (e.g., cross-channel marketing campaigns, onsite/in-store marketing campaigns); and training workshops to enhance ecommerce capabilities.	Lazada, Mummys Market, Qoo10, Shopee, and Zalora

Seattle, USA	Digital Sales Access Program	Microbusinesses with a maximum of 5 employees that are interested in learning how to leverage digital resources to grow their business, which are cash-only or in need of a POS upgrade	Issue grant financing for ecommerce development and digital transformation	Seattle's Office of Economic Development aims to address the digital divide, particularly for BIPOC SMEs, by removing digital access barriers that exacerbated the negative economic impact of the pandemic on small businesses. This program will support 50 small businesses by equipping them with a POS system and connecting participating businesses with the tools and training needed to pivot their operations to incorporate new technology. Each eligible business owner will receive POS equipment, a Square stand, an iPad Air, and one-on-one POS training. This new system will allow small business owners to grow their businesses by switching from cash-only to accepting debit and credit cards and other digital forms of payment, increasing businesses' ecommerce capacity and improving businesses digital literacy, financial awareness, and overall business health.	Comcast, Square, Kaytita, Blue Daisi Consulting, GZ Radio, Small Business Upgrade
New York City, USA	"Launch Your Online Business" course	NYC entrepreneurs/small businesses	Teach key digital concepts and skills through courses and workshops	The NYC Department of Small Business Services 15-hour Launch Your Online Business course is designed specifically for NYC entrepreneurs to master the essentials of digital marketing, branding, and PR; plan and develop every part of a business website (e.g., ecommerce, copy, photography/video); set up accounts on online marketplaces (e.g., Shopify, Amazon) and social media; learn the basics of search engine optimization and digital key performance indicators. The course can be audited for free or a fee can be paid to receive a certificate of completion.	Developed in partnership with SUNY and the Fashion Institute of Technology (FIT)
New York City, USA	NYC Small Business Tech Corps	Eligible businesses must be located within the five boroughs and have at least three months of consistent revenue prior to applying	Provide one-on-one support from local talent to develop ecommerce and digital capabilities	The NYC Small Business Tech Corps helps small businesses reach customers online by connecting them to no-cost tech professionals who can create or upgrade their web presences. In its first stage, the program specifically targets small businesses looking to join an existing ecommerce platform or improve their operations using technology. Businesses can expect to have two four-hour sessions with tech professionals, depending on the solution needed.	

Dubai, UAE	Dubai Economy Amazon training	Department of Economic Development Trader license holders (this type of license enables start-ups in Dubai to conduct business activities online and across social networking accounts)	Receive onboarding assistance from regional/global online marketplaces	E-learning courses provided through the Amazon Seller University. The ecommerce giant will also host a dedicated storefront on Amazon.ae to showcase products offered by local traders. Once Dubai-based businesses are registered to sell on Amazon.ae, they can also access the company's account managers who can offer insights into how to grow their business.	Amazon
Cape Town, South Africa	Cape Town Online Market	Local small businesses, including informal traders and vendors	Create online marketplace for local SMEs to gain exposure online	In the summer of 2021, the City of Cape Town piloted an ecommerce platform for vendors, informal traders, and craftspeople. As part of the initiative, sellers were provided online product display assistance in the form of product styling and photography, and delivery options for all items purchased. In addition, vendors were provided insight into how they can improve their offerings through data analytics and customer feedback. Shoppable items included baby clothes, pet goods, home décor, beauty items, kitchenware, and more.	
Mexico City, Mexico	AIUDA.org	SMEs	Create online marketplace for local SMEs to gain exposure online, and teach key digital concepts and skills through courses and workshops	The Government of Mexico City signed a collaboration agreement with the Mexican Online Sales Association (AMVO) to provide training courses and workshops on ecommerce, and created the AIUDA.org online sales platform to help move physical storefront SMEs move online, especially as a result of COVID-19.	AMVO; platform is powered by Hot Sale
Madrid, Spain	Community of Madrid grant	MSMEs operating within the Community of Madrid that have less than 250 workers and whose annual turnover or annual balance sheet are no greater than 50,000,000 or €43,000,000, respectively	Issue grant financing for ecommerce development and digital transformation	Grants of up to €20,000 were offered to SMEs in Madrid to aid investment projects for the digital transformation of SMEs. Eligible expenses include the expansion, transformation, or establishment of commercial operations; the acquisition of specialized equipment and furniture needed for commercial operations and to display products; the acquisition of computer equipment, both "hardware" and "software," aimed at implementing and improving ecommerce; and projects that implement new ICTs in business processes.	

New York City, USA	Moonshot Challenge	Private sector received funding to test proposals and concepts, MSMEs are the ultimate beneficiaries of these concepts and proposals	Set up a funding opportunity/competition for innovative ways to solve challenges facing MSMEs	In response to the gap in cybersecurity services for MSMEs, the Mayor's Office of the Chief Technology Officer (MOCTO), NYC Cyber Command, and the New York City Economic Development Corporation (NYCEDC) launched Cybersecurity Moonshot Challenge in 2018 to encourage the private sector to develop and deliver affordable, scalable cybersecurity solutions tailored to MSMEs, offering finalists up to $20,000 to test their proposals in New York City.	Three winners were announced in January 2020 and each were eligible for a $1 million investment from Jerusalem Venture Partners (JVP) and acceptance into JVP's inaugural Cybersecurity Accelerator cohort, which aims to help cybersecurity start-ups accelerate their growth and footprint in New York City:
Telangana State, India	Amazon training	Weavers and artisans	Receive onboarding assistance from regional/global online marketplaces	Amazon India signed a Memorandum of Understanding (MoU) with the Telangana Department of Handloom and Textiles, to educate, train and enable weavers and artisans to directly sell their products to Amazon customers across the country. Training programs included computer and internet training sessions and registration assistance programs, and on how to make products more attractive, appealing and marketable.	Amazon
Gujarat State, India	Amazon training	MSMEs	Receive onboarding assistance from regional/global online marketplaces to increase exporting	Amazon India signed an MoU with the Industries and Mines Department, Government of Gujarat. Amazon will conduct training, webinars, and onboarding workshops for exporters from key MSME clusters. The workshops will focus on sharing expertise and providing training to MSMEs about B2C ecommerce exports and selling to over 300 million people worldwide through Amazon's 17 foreign marketplaces. These courses are designed to provide MSMEs with the knowledge and tools they need to launch their brands and expand their businesses internationally using Amazon Global Selling.	Amazon

Different states throughout India	Walmart Vriddhi Supplier Development Program	MSMEs	Receive onboarding assistance from regional/global online marketplaces, especially B2B	The Walmart Vriddhi program partners with state governments in India to provide capacity-building support to MSMEs in the different states, with the goal of reaching 50,000 in the country. The program provides opportunities to join online, offline, and export channels, and reach pan-Indian and global marketplaces as part of the supply chains of Walmart, Flipkart, and other leading companies. The program also organizes training seminars and workshops to further enable the growth and development of small and medium businesses in the state.	Walmart, delivered by knowledge partner Swasti
Newport News, United States	Newport News Electronic Commerce (e-Commerce) Grant Program	Businesses must be for-profit and currently licensed in and with the principal office located within the City of Newport News, with projects that are legal and commercially viable.	Issue grant financing for ecommerce development and digital transformation	The purpose of this program is to assist small, women and minority-owned, for-profit Newport News companies in growing their business through ecommerce through a business assistance grant fund from the Economic Development Authority of the City of Newport News, Virginia. Awards are up to $2,500 for most Newport News small private businesses, not to exceed 50% of total project cost, or up to up to $4,500 for women and minority-owned businesses, not to exceed 50% of the total project cost. Eligible expenses include procuring services from registered ecommerce service providers in the following areas: consultation services for ecommerce development, web design and development services, ecommerce services, internet marketing services, and others as approved by the program.	
Guayaquil, Ecuador	Mercado 593 Guayaco	Businesses must be less than 5 years old, have less than 49 workers, sales below $1,000,000 per year, and have an existing and defined product or service.	Create online marketplace for local SMEs to gain exposure online	Guayaquil's economic development department, EPICO, created the Mercado 593 Guayaco virtual store in response to the Covid-19 pandemic to allow local companies to sell online at no cost, including with integrated payments and delivery solutions features.	EPICO

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