Promoting E-commerce in Georgia

IN FOCUS

Exploring Constraints to Online Participation using Baseline Data from an Experimental Study

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Table of Contents

Introduction

E-commerce has the potential to expand market opportunities for businesses. However, it is not guaranteed. The World Development Report on Digital Dividends (World Bank 2016) highlights the importance of complementary analog support that may be needed to ensure people and businesses are able to fully benefit from the opportunities that high-speed, ubiquitous internet can provide. The first step in providing such support is understanding the constraints to adoption.

The Competitive Policy Evaluation Lab (ComPEL) is supporting an impact evaluation in Georgia to generate knowledge about the constraints that prevent firms from participating in e-commerce platforms, while also testing an innovative approach to address the identified issues. The study evaluates the "Broadband for Development" (BfD) project, a component of the World Bank-supported Georgia National Innovation Ecosystem (GeNIE) program, that aims to foster innovation, particularly for otherwise marginalized firms. The BfD provides support to Micro, Small and Medium Enterprises (MSMEs) located outside of the capital, Tblisi, to adopt broadband connections and establish an online retail presence through e-commerce training. Before BfD launched this effort, the research team collected and analyzed baseline data regarding 2,180 eligible firms.

The purpose of this note is to explore the baseline results and some implications for BfD—or similar projects supported by the World Bank's Finance, Competitiveness and Innovation (FCI) Global Practice—within the context of the impact evaluation. The key findings are as follows:

- (Although access to the internet (from homes or businesses) is uniformly high across firm types, the use of the internet and complementary information and communications technologies (ICT) varies significantly across the size, formality and sophistication of the firm.
- However, even among larger, more sophisticated firms, the internet is used predominantly as an information source rather than a transaction tool. Few firms have ever received online orders for goods or services—or used online platforms for e-commerce. This suggests that there is considerable space for interventions that complement physical internet access to help firms fully utilize and realize e-commerce benefits.
- Despite the identified need, the findings indicate very low participation when delivering a training intervention to support firms in utilizing e-commerce. An analysis of participation suggests that complementary hardware, such as access to computers, is correlated with the willingness of businesses to participate in training. This suggests that programs aimed at helping businesses tap

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into e-commerce opportunities may need to provide more comprehensive support to avoid exacerbating baseline inequalities.

The work suggests there may be an important trade-off between equity considerations when aiming to provide universal access to the internet on the one hand, and efficiency considerations regarding which firms may have the most potential to benefit (and grow) from targeted support on the other.

Country Context

Economic Growth and the MSME Situation in Georgia

The transition to a market economy in Georgia has faced important challenges. The economy shrank by almost 60 percent from 1989 to 2003. Since then, the country has made substantial investment climate reforms, moving from 115th place in 2005 to 6th in 2019 (ahead of Norway and the United States) in the Doing Business rankings. However, the levels of innovation and productivity of Micro, Small and Medium Enterprises (MSMEs) are estimated to be one-third that of large firms. This low performance is a major barrier to growth of 94 percent of the approximately 60,000 registered businesses in the country (BfD Project Appraisal Document [PAD]). In this context, Georgia's ranking of 91 of the 141 countries surveyed in the World Economic Forum's Global Competitiveness Index innovation pillar highlights the problem.

The Georgia National Innovation Ecosystem (GeNIE) Program

To address the afore-mentioned issues, the Government has prepared a National Innovation Strategy 2020, which aims to "maximize Georgia's growth potential by creating an entrepreneurial, knowledge-based economy, where innovation-led growth will foster increased economic productivity and growth." This Strategy has motivated the financing of the GeNIE project—a US$40 million International Bank for Reconstruction and Development (IBRD) project implemented by the Georgian Innovation and Technology Agency (GITA) under the Ministry of Economy and Sustainable Development (MoESD). GeNIE was designed to foster innovation, particularly for otherwise marginalized firms. One of the programs within GeNIE is the "Broadband for Development" (BfD) Program, which aims to provide 3,000 firms outside of the capital, Tblisi, with tailored e-commerce training. This is the focus of an ongoing impact evaluation from which baseline data analysis is discussed in this note.

Studying the Constraints to E-Commerce

The impact evaluation is led by the Development Impact Evaluation (DIME) of the World Bank's research group. It assesses the impact of the BfD program on key aspects of firm performance and outcomes. In addition, it evaluates how a combination of e-commerce training and a small, subsidized initial order may incentivize the start of a firm's participation in online retail. The evaluation also tracks changes in firm participation in online markets, as well as performance as measured by turnover, profit, and job creation. Finally, it examines how these changes impact business demand for high-skilled versus low-skilled workers.

Methodology

Interventions

The study focuses on two interventions: an e-commerce training program and an associated demand-shock. The 3-day e-commerce training is delivered by GITA through face-to-face sessions to businesses located outside of Tbilisi. The training modules include the use of common, well-known platforms and social medias platforms, such as Airbnb, Bookings.com, Facebook, Google, hotels.com, Instagram, and Trip Advisor. GITA also teaches firms to understand consumer behavior, develop a business model, and raise funds. Consultations regarding website development are also provided. The demand-shock follows the training and consists of an initial online purchase of approximately US$100-150 worth of goods/services. The aim is to incentivize online engagement and assess the quality of firm products.

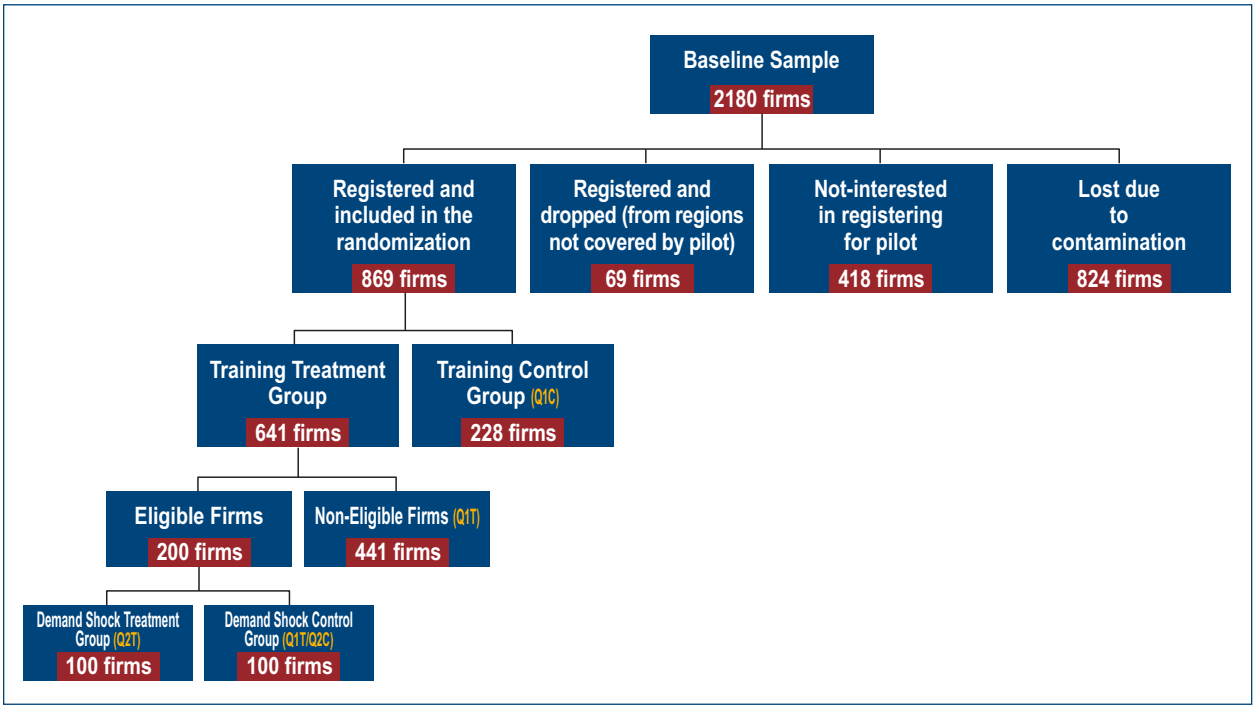
Randomization

The research team used a firm-level, randomized experimental design to capture the causal effect of the two interventions. The training is available for a randomly selected sample of eligible businesses; the demand-shock is added for a random subset of the trained firms and will address the effect of a short-term induced demand on online participation. The impact evaluation will compare three different groups: 228 firms with access to standard internet and light introductory training (control); 641 firms provided with the full training; and 100 firms that receive both training and the demand shock. Figure 1 details the randomization process and illustrates the sample breakdown.

The Baseline Data Collection

In July 2018, the research team conducted a telephone survey of the 2,180 active and legally registered MSMEs, which would constitute the baseline database for the impact evaluation. The sample was drawn from a census of businesses conducted by Geostat, the Georgian statistical agency, from six regions of the country (Kakheti, Kvemo Kartli, Mtskheta-Mtianeti, Samegrelo-Zemo Svaneti, Shida Kartli, and Samtskhe-Javakheti). The sample was not restricted by sector. However, in practice, it was comprised of firms predominantly from the agriculture, tourism and light manufacturing sectors. MSMEs are defined as having less than 100 employees and a turnover of less than GEL 1,500,000 (US$ 615,000). In practice, this definition is very seldom binding, and most potential businesses fall well below this threshold.

Figure 1. Breakdown of the Study Sample



Note: "Lost due to contamination" means some firms in the baseline sample received the training before the randomization.

[2] The baseline sample is much larger than the final impact evaluation sample described in the previous sessions due to usage and contamination issues. Table 7 presents the baseline balance statistics for the sample and shows that the intervention is reasonably balanced.

Results and Lessons Learned

The baseline data provides information about firm characteristics (age, sector, size, and revenues) and ICT use (Tables 1 and 2). The analysis highlights three important findings. First, despite high internet coverage in general, ICT use varies significantly by firm type. Second, very few firms engage in e-commerce, even when they have internet access. Third, when offered the opportunity to receive training to learn about e-commerce, very few firms showed an interest. A lack of basic complementary hardware (computers) also provides some explanation. The businesses indicating that they have difficulty finding clients are more likely to attend these training sessions, suggesting that firms may see e-commerce as an opportunity to expand their client base. However, much of the determination of program participation is due to unobserved factors, highlighting the difficulty of ex-ante program targeting.

Table 1. Firm Characteristics (Summary Statistics)

	Number	Mean	Standard-Deviation	Minimum	Maximum
Firm Age	2,178	10.047	6.841	1	73
Number of employees	2,180	5.67	11.077	1	297
Number of full-time employees	2,180	4.184	8.111	0	297
Number of part-time employees	582	3.162	4.154	1	45
Number of employees with university degree	1,598	2.165	0.91	1	3
Share of employees with university	1,481	62.655	30.848	2.2	100
Education					
Female respondent	2,180	0.382	0.486	0	1
Legal Status					
Individual entrepreneur	2,180	0.593	0.491	0	1
Limited liability	2,180	0.385	0.487	0	1
Other	2,180	0.022	0.147	0	1
Sector					
Agriculture	2,180	0.069	0.253	0	1
Manufacturing	2,180	0.09	0.286	0	1
Services	2,180	0.607	0.489	0	1
Other Sectors	2,180	0.234	0.423	0	1
Region					
Samegrelo-Zemo Svaneti	2,180	0.251	0.434	0	1
Samtskhe-Javakheti	2,180	0.079	0.27	0	1
Shida Kartli	2,180	0.202	0.402	0	1
Mtskheta-Mtianeti	2,180	0.061	0.239	0	1
Kvemo Kartli	2,180	0.171	0.376	0	1
Kakheti	2,180	0.236	0.425	0	1
Firm performance					
Revenues	195	145.793	341.142	0.003	3,000
Share of local sales	2,085	76.305	33.37	0	100
Share of national sales	2,085	17.084	27.16	0	100
Share of international sales	2,085	6.18	19.36	0	100

Source: Baseline data.

Firm Characteristics Associated with ICT Usage and E-Commerce Activities

Georgian firms seldom make use of the internet for business purposes. Although 90 percent of firms have some sort of internet access, it is mainly through home access. Only 35.7 percent of firms have access to the internet through their computers at work. Only 40 percent of firms have a computer at their business sites, and the average number of computers is 1.95 (Table 2). Additionally, whereas 60 percent of respondents have a personal email, only 4.2 percent of their businesses have a corporate email. The various uses of corporate emails are listed in Table 2. Company websites and social media are also seldomly used, mainly for cataloging products. Only 3.2 percent of firms have a company website, and only 11.6 percent have a business profile on Facebook.

Table 2. ICT Usage by Firms (Summary Statistics)

	Number	Mean	Standard-Deviation	Minimum	Maximum
Has a computer in the firm	2,176	0.407	0.491	0	1
Number of computers in the firm	885	1.95	2.481	1	43
Access to internet from home or business	2,005	0.906	0.292	0	1
Access to internet in the firm	2,145	0.357	0.479	0	1
Access to internet at home	1,977	0.891	0.312	0	1
Has a personal email	2,066	0.603	0.489	0	1
Has a business email	2,066	0.042	0.2	0	1
Use email for:					
place to receive online orders	1,410	0.382	0.486	0	1
send/receive invoices	1,408	0.536	0.499	0	1
any other customer service	1,402	0.369	0.483	0	1
Firm has Facebook Page	2,155	0.116	0.32	0	1
Use Facebook to:					
advertise goods and services	244	0.857	0.351	0	1
list firm's goods and services	242	0.785	0.412	0	1
respond to client questions	240	0.871	0.336	0	1
involve clients in product design	224	0.312	0.465	0	1
cooperate with partners	235	0.417	0.494	0	1
hire employees	247	0.211	0.409	0	1
Firm has used e-commerce platform	2,180	0.019	0.136	0	1
Firm has website	2,155	0.032	0.177	0	1
Use website for:					
placing/receiving online orders	65	0.462	0.502	0	1
cataloguing goods and services	64	0.766	0.427	0	1
listing prices	65	0.585	0.497	0	1
tracking online orders	60	0.267	0.446	0	1
customizing product design	61	0.131	0.34	0	1
personalizing searches	60	0.167	0.376	0	1
online applications	65	0.277	0.451	0	1
having transactions without calling	61	0.295	0.46	0	1
Firm has received online orders	2,145	0.056	0.231	0	1
Share of sales from online orders	104	26.99	29.681	0	100
Share of customers from online orders	2,136	0.096	0.294	0	1

Source: Baseline data.

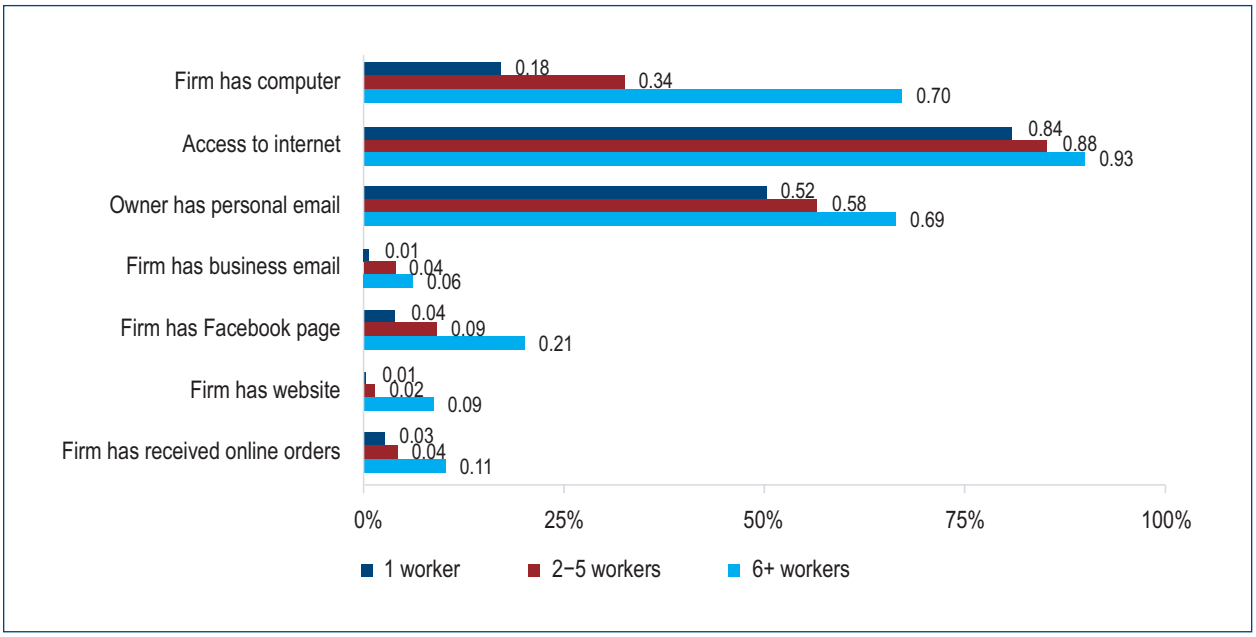
The use of e-commerce platforms is equally limited. Only 1.9 percent of firms have already used an e-commerce platform. Of the sample, 5.6 percent of firms have received an online order, and online sales represent a small share of total sales (that is, 27 percent of sales to 9.6 percent of customers). Also, only 3.2 percent of firms have a company website. The main use of these websites, reported by 76.6 percent of firms, is the cataloging of goods and services. Other important uses are listing prices, and placing or receiving online orders, reported by 58.5 and 46.2 percent of firms, respectively.

Whereas firm size, legal status, and employee education level are not correlated with internet access, they are significantly correlated with the use of ICT. This suggests that, even though the internet is equally accessible to firms (either through their personal capacity or formally through their business), who uses it and for what purpose varies considerably. Firm size, as measured by the number of employees, is positively correlated with having a computer, a Facebook page and a website. Among firms with 6 or more workers, 69 percent have a computer in their business location, 21 percent have a Facebook page and 10 percent have a website. These numbers are much lower for smaller firms as shown in Figure 2. Access to the internet is the only ICT variable that is not significantly correlated to firm size, which is defined as the respondent having internet access through a personal or business computer at home or at the business.

There is a correlation between employing skilled workers and the use of ICT. Among firms that have at least one employee with a university degree, 48 percent have a computer at the business location. This percentage is lower among firms with no employees with a university degree (25 percent). In the total sample, few firms have corporate emails, a Facebook page, a website, or have received an online order. However, when firms have at least one skilled worker, this rate is two times higher than that of firms with no skilled employee (Figure 3).

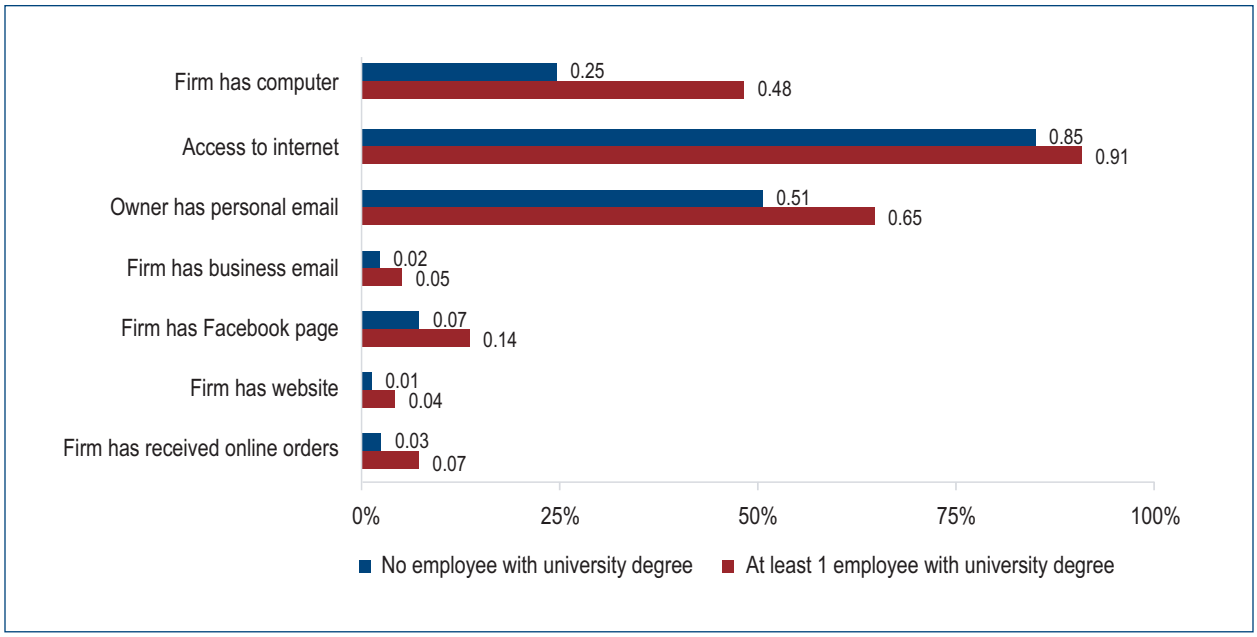
Having a limited liability company (as opposed to being an individual entrepreneur) is positively correlated with the same ICT variables (Figure 4).

Figure 2. Use of ICT by Firm Size



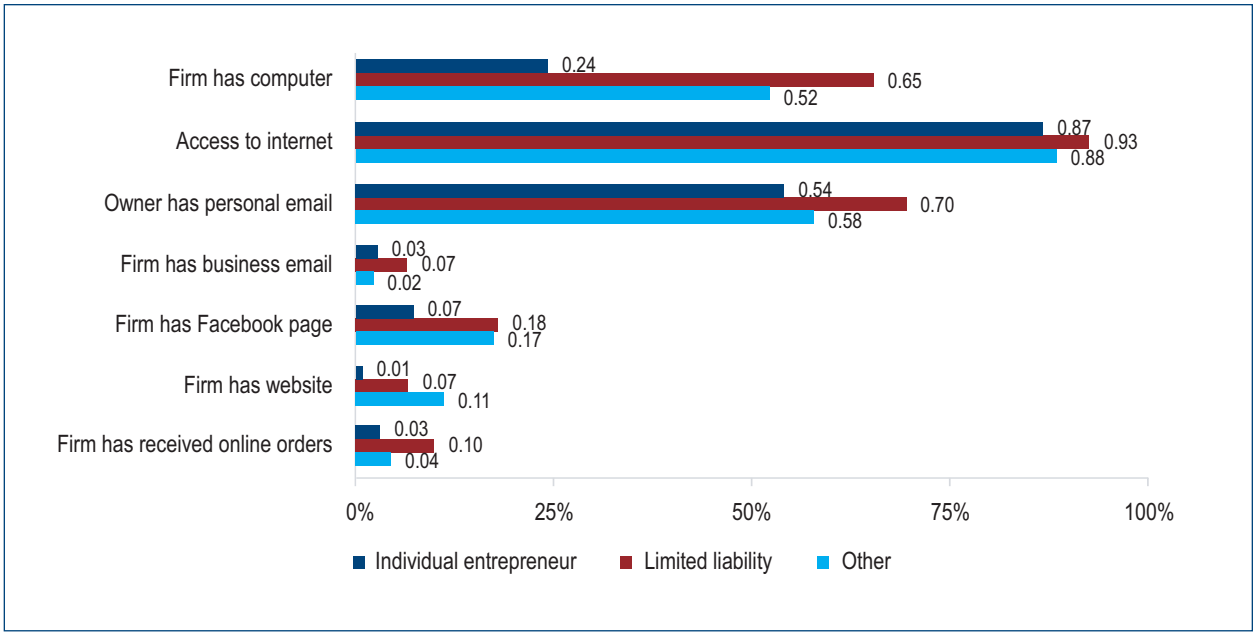
Source: Baseline data.

Figure 3. ICT Use and Skilled Employees



Source: Baseline data.

Figure 4. ICT Use by Firm Legal Status



Source: Baseline data.

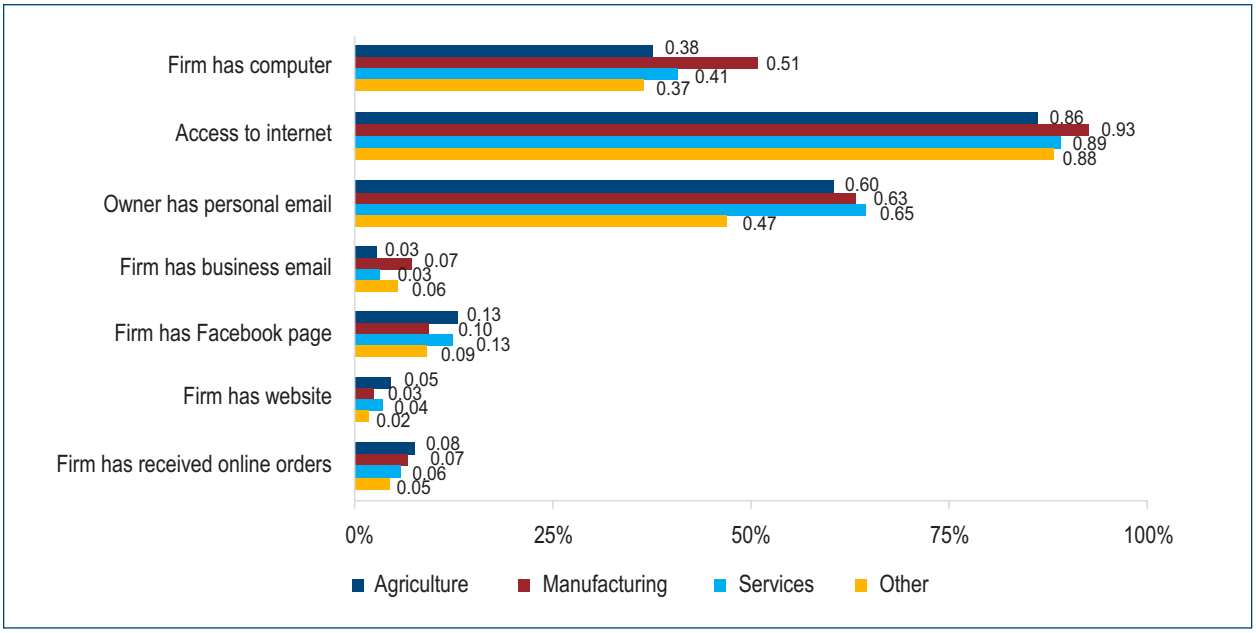
The region, sector and gender of the respondent has no clear and statistically significant relationship with ICT engagement (Figures 5 and 6).

Determinants of Program Participation

Participation in the e-commerce training was low. Of the 641 firms assigned to receive the training program, only 179 firms (28 percent) initially participated in the group training. An extensive follow-up effort then provided individual training to firms at their place of business. This increased the participation by 163 additional firms, or 25 percent. The added effort highlights that a significant portion of low participation rates was due to inconvenience or transaction costs associated with travelling to the group training event during a specific time period. However, a large number of businesses still did not participate, even when opportunity costs were substantially reduced.

Some firm characteristics help explain participation, however, they have limited explanatory power. To further explore the participation puzzle, a Lasso regression was conducted to determine the firm characteristics that most strongly predict training participation. This was done with the subset of firms for which baseline data was available, focusing on participation in group training. Of the 30 variables included in this analysis, firms were found to be more likely to participate if the firm: (i) was owned by a woman, (ii) owned and used a computer; (iii) had a Facebook page; and (iv) indicated one of their main challenges was that they had few clients. Whereas the program expressly focuses on reaching out to more marginalized businesses, the reality is that firms that do not have other basic complementary inputs, such as computers, are less likely to engage in the program. The fact that the firms struggling to find clients are more interested in the training could reflect the view that expanding into e-commerce presents an opportunity to increase the client base. Importantly, these regressions could only provide an approximate explanation for 11 percent of variation in program participation (R-squared), highlighting that main drivers for participation are unobserved, and creating a challenge for ex-ante targeting.

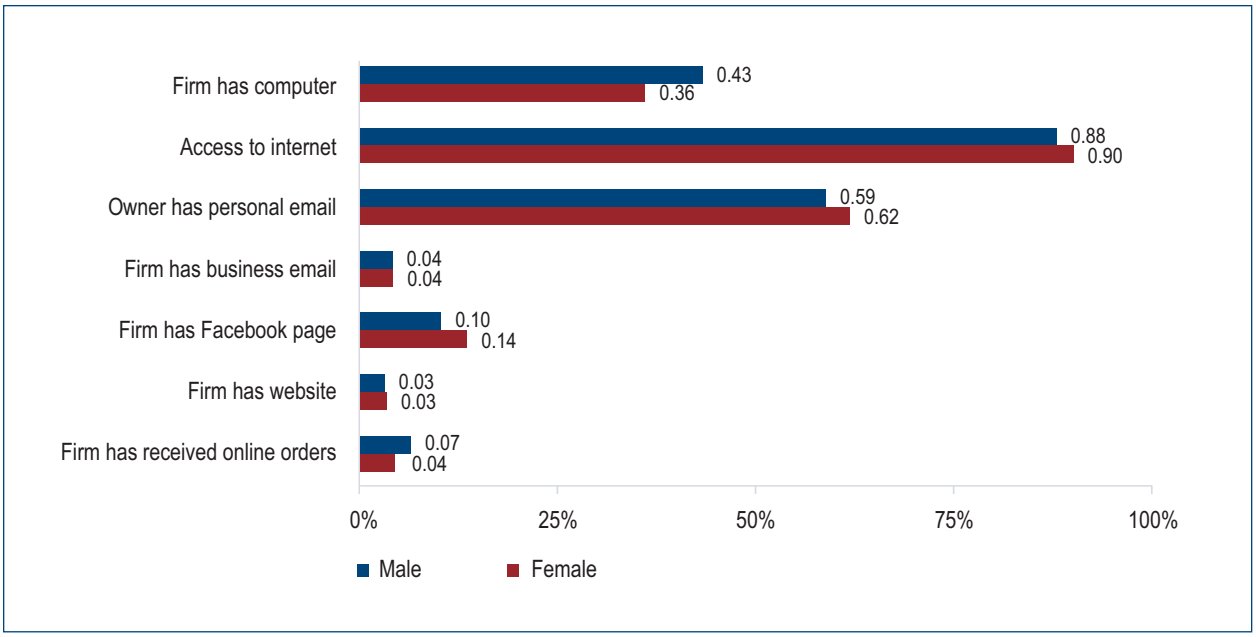
Figure 5. ICT Use by Sector



Source: Baseline data.

[3] A Lasso regression is a machine learning technique used, among other things, to select from a long list of covariates used to fit a prediction model only those that have high explanatory power.

Figure 6. ICT Use by Gender of Respondent



Source: Baseline data.

Conclusions, Challenges and Next Steps

Taken together, the results are consistent with the message that access to broadband may not be fully utilized, and this utilization varies considerably by firm. Although broadband services have been provided across the country and are commonly available in households, only a minority of firms actively use it for their businesses. Although this access is fairly uniform across firm types, the use of internet and complementary ICT varies significantly across the size, formality and sophistication of the firm. Low participation in online markets may be affected by low demand — if customers are not used to or unwilling to use online markets. Businesses that expressed difficulty in finding clients were particularly likely to participate in the e-commerce training. This highlights the relevance of the experimental evaluation, as it explores both a supply-side shock (strengthening firms' understanding of e-commerce and promoting their participation) and a demand-side shock (guaranteeing orders from firms if they market online).

Complementary services may be needed to help firms engage in e-commerce, but it does not guarantee that firms will be interested in this kind of support. The average participation rate across several impact evaluations where individuals received an invitation to training is only about 65 percent (McKenzie and Woodruff 2013). Among studies that evaluate firm-level training, this average is lower—even when studies focus on samples that initially expressed interest in attending (Bruhn and Zia 2012; Valdivia 2012). The research team mitigated the low participation risk by having a larger initial sample and working with firms that showed a genuine interest in the program. However, participation has still been relatively low despite significant efforts to boost demand, which highlights the difficulty of solving this challenge, even when it is known ex-ante.

The experience to date indicates that a demand shock could help incentivize firm participation in online markets; however, few firms are ready to absorb the intervention. The evaluation plans to deliver a demand shock to approximately 100

eligible businesses that were part of the e-commerce training intervention group. A short survey of the 641 training group firms highlighted that the majority of firms would not be able receive online orders, even if they were provided with the opportunity. The survey had a 78 percent response rate. Of the 498 respondents, 298 (60 percent) indicated that they were not yet selling online and would not be able to start selling online, even if they received an order. The remaining 200 firms were either already conducting some online sales (106 firms) or were willing to sell online (94 firms). They met the sample size needs for the evaluation. However, the fact that only a minority of such firms may be able to benefit from the intervention highlights the potential limits of such interventions, including the need to target them carefully.

A randomly selected 100 of the 200 firms are currently being considered to receive the demand shock, which will consist of a purchase order of up to US$150 worth of goods or services. The evaluation team will assess the professionalism of service, speed of delivery and quality of product once delivered. Goods and services will then be auctioned off by a charity to generate independent assessments of their relative value.

The COVID-19 pandemic has placed additional uncertainty for future prospects. The team is currently assessing the viability of delivering the demand shock during the pandemic, particularly since many of the firms in the sample are in the tourism sector. This will make purchase orders more challenging. Depending on viability, the work may refocus attention primarily on improving the measurement of impacts from the training intervention which have already been implemented. Decisions will be made based on operational feasibility.

The next steps for the project include implementing the demand shock and conducting a follow-up survey to measure program impacts. The initial recruitment into the training program began in November 2018. GITA conducted the experimentally evaluated training between May and October 2019, and the demand shock is currently being finalized for rollout — depending on viability during the pandemic. The first follow-up survey is scheduled for early 2021, about a year after the interventions were completed. The goal will be to measure primary outcomes on growth, employment and skill composition. The team will organize dissemination events for the implementing partners, including GITA, OpenNet and the Ministry of Sustainable Development of Georgia, as well as within the World Bank Group, with a focus on the FCI and Digital Development Global Practices, anticipated in late 2021.

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