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# COVID-19 and entrepreneurship entry and exit: Opportunity amidst adversity

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## Abstract

We theoretically and empirically examine how acquiring new skills and increased financial worries influenced entrepreneurship entry and exit intentions during the pandemic. To that end, we analyze primary survey data we collected in the aftermath of the COVID-19's first wave in Russia, which has had one of the highest COVID-19 infection rates globally. Our results show that acquiring new skills during the pandemic helps maintain an existing business and encourages start-ups in sectors other than information technology (IT). For IT start-ups, having previous experience matters more than new skills. While the pandemic-driven financial worries are associated with business closure intentions, they also inspire new business start-ups, highlighting the creative destruction power of the pandemic. Furthermore, preferences for formal employment and remote work also matter for entrepreneurial intentions. Our findings enhance the understanding of entrepreneurship formation and closure in a time of adversity and suggest that implementing entrepreneurship training and upskilling policies during the pandemic can be an important policy tool for innovative small business development.



**Keywords:** business entry, information technology (IT), business closure, COVID-19, entrepreneurship intentions, self-employment, Russia

**JEL Codes:** E24, J24, L26, P20

## 1. Introduction

What drives entrepreneurial decisions in adverse circumstances, such as a global pandemic? While there is some research on entrepreneurial activities under conditions of war (Bullough, Renko and Myatt, 2014), terrorism (Branzei and Abdelnour, 2010), and financial crises (Davidsson and Gordon, 2016), little is known about the consequences of the ongoing COVID-19 pandemic for business closure or start-up decisions. The pandemic is unique because it combines the features of a rather sudden adverse event having the potential of enduring adversity into the future (Shepherd and Williams, 2020), which makes studying its consequences of paramount importance for entrepreneurship scholars.

The pandemic was an enormous shock to workers, businesses, and governments globally. In 2020, 114 million people worldwide became jobless (World Economic Forum, 2021), and the total tally up until the end of 2021 amounted to 255 million (ILO, 2021). In many countries, financial concerns, the fears of a global economic downturn, and the fears of unemployment skyrocketed due to COVID-19 (Christelis et al., 2021; Dosi and Soete, 2022).

The pandemic also became a great challenge for many self-employed and solo entrepreneurs worldwide (Anderson, 2020). The pandemic hit the hardest gig economy workers, including the self-employed, independent contractors, and those employed in temporary jobs. Often, these workers had to face difficult trade-offs between the health and safety risks imposed by the disease, the realities of business closure, and the loss of livelihoods due to the lockdowns (Douglas et al., 2020; Moulds, 2020). The stay-at-home orders that many governments imposed threatened the existence of many small businesses and solo entrepreneurs, especially in the services and retail sectors (Kuckertz et al., 2020).

Nevertheless, the pandemic simultaneously created a potential for the modernization and digitization of products and services, thus fostering new opportunities for future business development (AppJobs Institute, 2020; Ciarli et al., 2021; Desi and Soete, 2022). In many

countries, new start-up registrations soared, with new ventures seeking to provide novel solutions in the fields of logistics, delivery, and information technology (IT) (Altun, 2021).

Specifically, the IT sector provided individuals with the tools and capabilities to continue with telemedicine, education, work, and entertainment (Ciarli et al., 2021; He et al., 2021; Evans, 2020). As such, the demand for technologies and digital services during the pandemic presented an opportunity for creating innovative solutions to cope with the consequences of lockdowns and stay-at-home orders (O'Leary, 2020). For example, the pandemic created a rapidly emerging demand for COVID apps, contact tracing apps, cashless commerce solutions, data management banks, person recognition, e-health, and other services (O'Leary, 2020).

In addition to bringing joblessness and insecurity, the pandemic was also a wake-up call for many workers and employers as it exposed deficiencies in skills and knowledge. European data show that 30-40% of non-manual workers in many Eastern European countries lacked digital skills (Milasi et al., 2020). Global survey results from 190 countries show that two in three workers would like to learn new skills to land new jobs or roles that offer more security or opportunity (Strack et al., 2021). Survey evidence also shows that most workers who wanted to learn new skills for a new job did so because they wanted to switch to IT or digital jobs (Strack et al., 2021). This willingness to retrain and upskill is driven not only by COVID-19 but also by ongoing automation trends (Strack et al., 2021). In Russia, the country of interest in this paper, more than half (56%) of respondents were willing to retrain for a new role (Strack et al., 2021).

This paper focuses on understanding business owners' options and potential choices under such uncertain and turbulent conditions. Specifically, we study the role of push factors specific to the pandemic, such as financial insecurity, and pull factors, such as acquiring new skills and talents. We explore whether the pandemic led to the closure of ailing businesses and whether it inspired the start-up intentions of individuals who saw the pandemic as an opportunity. This line of work is important because it can reveal important patterns, creative solutions, and coping

strategies that are of interest to current and potential business owners and to policymakers seeking to support the innovativeness and resilience of businesses in turbulent times.

To that end, we utilize primary survey data collected during COVID-19's first wave in Russia, one of the most negatively affected countries during the pandemic's first wave (Twigg, 2020). The first COVID-19 wave resulted in over 800,000 infected persons in Russia by July 2020. As of February 2022, the number of infected persons is about 14.5 million. Apart from the health consequences, the pandemic also has had economic repercussions for ordinary people and businesses in Russia.[1] In June 2020, about 60% of Russians reported having lost some of their income, and one in ten lost their livelihoods because of COVID-19 (*The Moscow Times*, 2020a). The pandemic has also severely affected small businesses in Russia. One in every five small and medium enterprises was shut down by the first wave (Vlasova, 2020). Also, only 10% of businesses accessed government support during the first wave, even though over 35% were eligible for such support (*The Moscow Times*, 2020b).

In addition, by being a country with a long history of communism, dependent on natural resources, and having high institutional barriers, Russia is generally a challenging context in which to run a business (Aidis et al. 2008; Djankov et al. 2005; Parker 2009; Smallbone and Welter 2001). The main barriers relate to corruption, lack of the rule of law, and difficult access to finance (GEM, 2021). On the one hand, the pandemic further exacerbated these challenges for existing businesses and discouraged the start-up of new businesses. At the same time, the lockdowns and stay-at-home orders provided opportunities for learning new skills and creating innovative start-ups (Kuckertz et al., 2020). Moreover, high-quality education in engineering, science, and IT is still a tradition in Russia (Klochikhin 2012), creating opportunities for developing innovative small businesses.

The ongoing pandemic is a unique event combining the short-term shock and long-term persistent features. Therefore, understanding how it influenced entrepreneurial decision-

[1] For instance, see Hartwell et al. (2021) on the role of the pandemic on governance and air pollution in Russia.

making is of utmost importance. We provide several contributions in this direction. First, conceptually, we modify and augment Shepherd and Williams' (2020) theoretical framework, which distinguishes between adverse events (e.g., earthquakes or terrorist acts) and persistent adversity (e.g., poverty traps), to account for both push (financial insecurity) and pull (the acquisition of new skills) factors affecting entrepreneurial behavior during the pandemic. Second, empirically, by employing the novel individual-level data, we are the first to provide evidence about the differences in the role of the new skills acquired during the pandemic and financial worries for entrepreneurial exit and entry intentions in general and in the IT sector, particularly. Third, by focusing on both entry and exit decisions in Russia, we contribute to the scant literature on entrepreneurship decisions in transition countries (Aidis et al. 2008, Djankov et al. 2005, Ivlevs et al. 2021). Finally, we add to the policy dialog on the relative importance of financial support to businesses compared to the introduction of upskilling programs during the pandemic. We show that implementing training programs for acquiring new skills can be an important tool for preventing business exits and motivating business start-ups.

## 2. Background: COVID-19 and entrepreneurship in Russia

Russia provides an interesting case for analyzing the consequences of the pandemic for individual entrepreneurship decisions. Recent reports by the Global Entrepreneurship Monitor (GEM, 2020a and 2020b) underscore several distinctive features of existing and nascent Russian entrepreneurs. According to different sources, the percentage of those who intend to start their own business varies from 14% to 30% (GEM 2020b, Russian Public Opinion Research Center 2016). This figure has been steadily increasing during recent years. However, Russia is still among the countries with the lowest possibilities for starting a business (GEM 2020b). For nearly 80% of those who would like to start a business, the major motivation is earning a better livelihood. This figure is remarkably high for an upper-middle-income economy like Russia's and is comparable to that in Ecuador or Madagascar (GEM 2020a).

With over 800,000 registered COVID-19 cases during the first wave (March-July 2020), Russia became and continues to be one of the most infected countries in the world and a top infected country in Europe (about 14.5 million registered cases as of February 2022). During the first wave, the Russian government limited international travel in response to the rising number of infection cases. It announced the so-called "non-working days" that were effectively stay-at-home orders and implied a temporary closure of non-essential businesses. These measures lasted from the end of March 2020 until mid-May 2020 (President of the Russian Federation Decree, 2020 a, b, and c). Along with these measures, the responsibility of introducing further pandemic-related policies, re-opening of non-essential businesses, and regulating the regional mobility were shifted from the federal to the regional authorities (President of the Russian Federation Degree, 2020b; Hartwell et al., 2021). This resulted in the substantial regional variation in the support policies for businesses and households introduced to cope with the pandemic consequences (for an overview of COVID economic policies in Russia, see Ryazantseva et al., 2020).

Beyond challenges to public health, the pandemic also had many socioeconomic consequences in Russia and beyond. Recent survey evidence suggests that every tenth Russian reported having lost their job after the first wave, indicating about 10 million job losses (Higher School of Economics, 2020; *The Moscow Times*, 2020a). While the official data suggest a more modest increase in the number of unemployed (about 1.7 million newly unemployed during the first wave), this number still implies at least a 30% increase in the number of unemployed during the pandemic's first months (i.e., April-June 2020, as compared to January-March 2020).[2]

The self-employed and solo entrepreneurs faced especially high risks of losing their income due to the safety precautions, stay-at-home orders, and the closure of non-essential services

[2] For more details, see the unemployment statistics from the Russian Statistical Office, available at: https://rosstat.gov.ru/labour_force (accessed October 4, 2021).

during the pandemic (Khabibullina, 2020; Vasilchuk, 2020). Nevertheless, the number of self-employed in Russia is growing steadily. It has increased ten times in the first half of 2020 compared with the same period of 2019, reaching 850,000 individuals by mid-July 2020 and almost 2.5 million individuals by June 2021 (Ministry of Economic Development of the Russian Federation, 2020, 2021; Koshkina, 2020). There are many reasons for such a rapid increase in the number of self-employed during the pandemic. These include the rise in unemployment and the need to earn a living, changes in preferences from salaried employment to independent self-employment, the pandemic support of the self-employed, and a lower income tax for the self-employed (Koshkina, 2020). The program of preferential taxation for the self-employed was first introduced in 2019, but only in four Russian regions. At the beginning of 2020, it was extended to 19 regions and from July 2020 to all regions. The program covers solo entrepreneurs and self-employed individuals with no employees who earn less than 2.4 million rubles per year (ca. 33,000 USD) and includes simplified registration as a self-employed and a taxpayer, low flat income tax rate[3], low-interest loans, the possibility to pay voluntary social security contributions, and a tax subsidy amounting to the income tax paid in 2019 (Federal Law of the Russian Federation 2018; Government of the Russian Federation Decree, 2020; Ministry of Economic Development of the Russian Federation, 2020, 2021).

In the report to the Russian President in May 2020, the business ombudsman stated that the first wave affected 67% of the Russian businesses of any size, while small and medium-size businesses were affected most severely (The Ombudsman Report, 2020). According to the report, more than 50 percent of businesses evaluated their current state as “crisis” or “catastrophe,” more than 60% estimated their survival chances at less than 50%. Furthermore, the key difficulties for businesses during the first wave were the inability to pay wages, rent, and property taxes. In the surveys of entrepreneurs conducted after the first wave, the respondents state that the most affected activities were restaurants, tourism, retail trade, services,

[3] Instead of the usual 13% tax rate, the tax rate for the self-employed working with individuals is 4% and when working with firms is 6%.

transport, and manufacturing, while businesses in the IT, telecommunications, and health services sectors were among the least affected (Khasanov, 2020; NAFI, 2020).

Several support policies were introduced at both the federal and regional levels to help businesses and families cope with the first wave of the pandemic. These measures included tax furlough schemes, rental payments postponement, credit support, wage subsidies, low-interest loans, employment support, and other measures (Pinskaya et al., 2021; Ryazantseva et al., 2020). However, only about 10% of Russian businesses have used this support (The Ombudsman Report, 2020). Such a low utilization rate is partly explained by the fact that about 60% of the economic sectors had not been included in the government's initial list of "severely affected industries" eligible for support (The Ombudsman Report, 2020).[4] Indeed, despite the diversity of support measures, a survey of small and medium-size business owners conducted in the immediate aftermath of the first wave of the pandemic suggests that more than 80% of respondents did not expect to receive any government support and planned to survive on their own (Khasanov, 2020). Nevertheless, as we discuss below, an extreme situation such as the pandemic may also bring a chance for modernization and a change in the preferences of current and future entrepreneurs.

## 3. Conceptual framework and hypotheses development

### 3.1. Adversity and entrepreneurship

This paper builds on the scholarship on adversity and entrepreneurship, which has assessed the consequences of disasters, shock events, and chronic hardship. Following Shepherd and Williams (2020), we define adversity as "low-probability, high-impact negative shocks or jolts to a focal individual's or organization's environment that is potentially highly disruptive to well-being" (p. 2). Adversity could be short-lived or persistent. Specifically, after a disaster or

[4] The industries that were considered to be "severely affected" included retail trade, transport, tourism, education, cultural and sport activities, services, and some types of manufacturing. However, in most industries that were not included in the list of those eligible for state financial support, the total revenue also fell by 30% or more during the first pandemic wave (The Ombudsman Report, 2020).

a one-time negative event, different actors such as governments, nonprofits, and ad-hoc groups, undertake measures to alleviate immediate needs and offer relief (Williams and Shepherd, 2016). In addition, new ventures often emerge to fulfill different needs that the above-mentioned actors cannot cover. The main motivation of such ventures is to offer solutions to existing challenges and alleviate suffering (Williams and Shepherd, 2016).

Several empirical papers have studied the link between negative shocks and entrepreneurship, showing heterogeneous results that depend on the shock and the context. For example, Bullough et al. (2013) show that perceived danger during the war in Afghanistan lowers entrepreneurial intentions. Yet resilience slightly diminishes the negative relationship between perceptions of danger and start-up desires. In addition, Davidsson and Gordon (2015) demonstrate that the global financial crisis did not meaningfully impact start-up activities in Australia. In another context, Branzei and Abdelnour (2010) find that terrorism outbreaks, and in some cases, escalations, are negatively associated with business venture resilience. Yet, when the authors control for the actual level of terrorism taking place, terrorism escalations are unassociated with resilience. As another example, in the aftermath of the 2010 Haitian earthquake, new ventures were formed to fill the gaps between formal relief teams and the needs of the communities (Williams and Shepherd, 2016).

In addition to one-time shocks, the literature has also examined entrepreneurship in conditions of persistent adversity such as chronic poverty, corruption, and violence. In such circumstances, business owners may creatively use existing resources, overcome adversity, and actively look for opportunities (Shepherd et al., 2020; 2021).

We modify and augment Shepherd and Williams' (2020) theoretical framework, which distinguishes between adverse events (e.g., earthquakes or terrorist acts) and persistent adversity (e.g., poverty). From the viewpoint of the first wave, the COVID-19 pandemic combined the features of both a shock and a persistent state. The pandemic hit countries quickly and unexpectedly. Moreover, from the point of view of summer 2020, the end of the pandemic was unclear, which made it seem like a persistent event with possible future outbreaks (Kissler

et al., 2020). Even though the Russian Ministry of Health registered the first COVID-19 vaccine called “Sputnik V” in August 2020, its effectiveness in preventing future outbreaks was unknown. As such, the pandemic may be a unique event combining the short-term shock and long-term persistent features. Therefore, understanding how it influenced entrepreneurial decision-making is of great importance.

First, according to Shepherd and Williams (2020), if adversity is a one-time shock, actors respond to it either by falling into chronic dysfunction or by engaging in entrepreneurial action (Shepherd and Williams, 2020). Negative shocks may lead to unmanageable stress or destructive coping mechanisms. Some individuals or businesses may enter a “survival mode” (Williams and Shepherd, 2016), whereby they can barely function and must rely on outside help. Some business owners may find themselves unable to keep their businesses in such traumatic situations and decide to terminate them. In the context of Russia, given that the Russian government failed to provide sufficient help for ailing businesses, some business owners may have found themselves in a state of despair and lacking the capabilities and means to conduct day-to-day operations.

In addition to the chronic dysfunction leading to disengaged and failing business owners (Williams and Shepherd, 2020), we propose that for some entrepreneurs, the crisis may have been an eye-opening experience exposing the deficiencies of their businesses. Faced with adversity, some businesses owners may have decided that the COVID-19 crisis was an opportunity to separate from a dysfunctional venture. In that sense, given that closing down a business is a psychologically scarring experience (Nikolova et al., 2021; Hetschko, 2016), the pandemic may have made it more acceptable for failing business owners to terminate their enterprises. These business owners may have been delaying closing down the business despite incurring financial losses by using anticipatory grief as a mechanism (Shepherd et al., 2009). In other words, prolonged grief before the actual closing is a coping mechanism that helps “soften the blow” of a business closure. It may be possible, therefore, that some entrepreneurs who were considering but delaying closures saw the pandemic as a chance to do so as the stigma

associated with business closure would be less if happening to many businesses at the same time.

Business closure is not necessarily business failure: business closure reasons often include finding a new job, financial worry, retirement, or intentions to start a new venture. Furthermore, at the macro-level, business closures may help create market niches for new and creative ventures. At the individual level, they may provide personal growth and further development (Schutjens and Stam, 2006; Stokes and Blackburn, 2002). In that sense, a business closure is not necessarily a negative process but rather a dynamic part of the economy associated with Schumpeterian forces (Stokes and Blackburn, 2002).

At the same time, in the context of a pandemic, business closures are likely due to the decline in business activities and financial distress because of lockdowns, coupled with a lack of government support (Bartik et al., 2020). Amid such adversity, business owners may not be able to concentrate on learning or resilience. Several anecdotal reports suggest that entrepreneurs and the self-employed in Russia had different experiences during the COVID-19 pandemic (Safronova, 2020; Khabibulina, 2020; Khasanov, 2020; Vasilchuk, 2020). For some, the pandemic increased their financial worries, creating the need to look for alternative sources of income and inducing switches to salaried jobs permanently or temporarily (Khabibulina, 2020; Khasanov, 2020; Vasilchuk, 2020). Others considered the pandemic a modernization opportunity and adopted new technologies or digitized their operations (Khabibulina, 2020; Safronova, 2020).

### 3.2. Adversity, learning, financial worries, and business closures

Research suggests that business failure, in general, can be associated with future-oriented behaviors and learning (Cope, 2011). At the same time, grief and dysfunction may hinder such processes (Shepherd, 2003; Shepherd et al., 2009). Disengaged business owners are unlikely to invest in the future (Shiv et al., 2005). As such, business owners who are considering terminating their ventures may be unwilling to acquire new skills right before closing down the

business, even though the process of owning and terminating a business may have been a learning experience itself. As such, disengaged business owners are unlikely to adjust and acquire new tools to adapt themselves and their businesses for the post-pandemic world. This may be for two reasons: either because the pandemic was so debilitating for them that they had no scope for investing time or resources in learning, or because they were already in the process of anticipatory grief and were delaying the imminent business closure. While we cannot disentangle these two mechanisms empirically, we can test whether business exit intentions are associated with fewer investments in learning and skills acquisition. In light of this, our first hypothesis is:

*H1a: Learning new skills during the pandemic is negatively associated with intentions for business closure.*

Large-scale shocks such as COVID-19 impose financial worries for entrepreneurs (Dalton et al., 2020). For example, data from the UK reveal that financial worries during the pandemic increased mental distress and reduced the well-being benefits of self-employment (Wolfe and Patel, 2021). Evidence from older individuals in 20 European countries and Israel shows that self-employed workers who experience financial distress suffer more pronounced reductions in life satisfaction compared to salaried workers (Berrill et al., 2021).

Because government support for businesses in Russia was scant, financial worries likely played a key role in business closure decisions. When faced with imminent closure, many business owners must balance the financial and emotional costs of failure (Shepherd et al., 2009) and procrastinate with closing down the venture even though it is financially costly (Shepherd et al., 2009). Nevertheless, the pandemic likely made the financial aspects of running a business more salient and intensified the urgency of a business closure. As such, the pandemic may have intensified the financial worries of business owners and pushed them to consider terminating their business. Therefore, we conjecture that:

*H1b: Financial worries are positively associated with business closure intentions.*

### 3.3. Adversity, learning, financial worries, and start-up intentions

Disengagement and dysfunction are not the only possible equilibria for entrepreneurship following negative shocks. For some groups, adversity and negativity allow finding a new identity and growing and building up from rock bottom (Shepherd and Williams, 2018). According to the framework in Shepherd and Williams (2020), when facing a one-time adverse event, resilient actors may start new ventures to restore the community's well-being or facilitate their own recovery. Furthermore, in the context of persistent or long-lasting adversity, resilient individuals ignore the setbacks and actively explore potential opportunities or think differently about the potential gains of new ventures (Shepherd and Williams, 2020).

We argue that in the context of unexpected and unique negative experiences such as the COVID-19 pandemic, resilient individuals may actively look for learning and growing possibilities to cultivate the skills and knowledge that would allow them to engage in entrepreneurial ventures during and after the shock. Entrepreneurs are, in general, good at various skills and invest in a broad range of learning experiences (Lazear, 2004; Merida and Rocha, 2021). This is in part necessary because entrepreneurs perform many tasks in their business, from accounting and planning to customer relations, human resource management, and others. Moreover, resilient individuals actively search for meaning and purpose during tough times; they embrace adversity and improvise (Coutu, 2002). In this sense, the pandemic may have taught entrepreneurial individuals resilience skills and provided them with the capabilities to face conditions of uncertainty and stress.

Alternatively, entrepreneurial individuals may have used the pandemic as an opportunity to actively acquire digital or other skills and invest in formal training that would better prepare them for the future of work. The first wave of COVID-19 may have proven to be a profound learning experience, whereby the stay-at-home orders may have given people a push to acquire new skills or given them the courage to pursue a new venture. For example, survey evidence from 19 countries suggests that 2 in 5 workers reported that their digital skills improved during

the pandemic (PricewaterhouseCoopers, 2021). About half of respondents reported that they are building entrepreneurial skills to start their own venture since many of them believe that traditional employment may be threatened by automation in the future. Moreover, according to a survey conducted in May 2020 in Russia, during the first wave of the pandemic, 52% of entrepreneurs and 45% of salaried employees devoted their time to personal development and learning new skills (Aimaletdinov et al., 2020). The skills most acquired by both entrepreneurs and salaried workers are the ones greatly valuable for starting or developing their own business and include management, marketing, advertising, sales, and accounting (Aimaletdinov et al., 2020). Given this evidence, we hypothesize that:

*H2a: Learning new skills during the pandemic is positively associated with start-up intentions.*

We also explore financial constraints and worry brought on by the pandemic and their role in start-up intentions. On the one hand, financial worries may inspire resilient individuals to seek opportunities and persist through adversity by envisioning a new business venture (Shepherd and Williams, 2020). Such individuals may see financial worries as a temporary problem that can be circumvented through entrepreneurship. On the other hand, monetary concerns impair mental health, well-being, and cognitive functioning (Mani et al., 2013; Netemeyer et al., 2017). This may leave individuals in distress and make them disengaged and powerless. As such, they may focus on daily survival rather than starting businesses (Shepherd and Williams, 2020). Therefore, it is *a priori* unclear whether financial worries impede or inspire future entrepreneurship. As such, we hypothesize that:

*H2b: Financial worries are associated with business start-up intentions.*

### 3.4. COVID-19 and IT businesses: opportunities, financial worries, and learning

Finally, resilient entrepreneurs are used to overcoming constraints and pursuing entrepreneurial opportunities in times of persistent adversity (Shepherd and Williams, 2020). They may look for solutions to problems or view the situation as an opportunity to alleviate the

adversity. In the context of COVID-19, the social distancing measures and lockdowns caused an overnight change in the way of living and working. This demanded reliance on information technology and digital forms of communication. Education, high-skilled work, and many services shifted online. Worldwide, the IT sector provided the tools and capabilities underpinning various remote activities (Evans, 2020) and offered new business opportunities for those with the relevant skills (Ciarli et al., 2021).

With about 83 internet users per 100 people in Russia in 2019 (United Nations, 2021), over a third of all jobs can be done from home (Dingel and Neiman, 2020). In a survey conducted during the first wave of the pandemic, one in three (32%) Russian respondents evaluated their digital competencies as high, and another 30% evaluated their digital skills as above the mean (Davydov, 2021). In addition, 12% of entrepreneurs and 16% of salaried employees learned new IT skills during the first wave of the pandemic (Aimaletdinov et al., 2020). Therefore, the COVID-19 allowed individuals to engage in innovative ventures that provide solutions to the digital challenges posed by the pandemic. The pandemic required fast and reliable technological solutions and products such as mobile COVID-19 tracing apps, chatbots, IT services, and communications software (He et al., 2021). Those with existing IT skills and experiences and those who equipped themselves with new capabilities during the pandemic were likely better positioned to envision a new IT start-up. Therefore, we posit that:

*H3a: Prior experiences in the IT sector and learning new skills during the pandemic are positively associated with IT business start-up intentions.*

Furthermore, according to recent surveys of entrepreneurs in Russia, IT businesses suffered the least from the pandemic (Khasanov, 2020). This suggests that financial worries are unlikely to play a role in the intention to start a business in the IT sector. Specifically, our last hypothesis is:

*H3b: Financial worries are not associated with IT business start-up intentions.*

## 4. Methodology

To test Hypotheses 1a and 1b, we estimate the following model:

$$CloseBusiness_i = \gamma_0 + \gamma_1 NewSkills_i + \gamma_2 FinW_i + \boldsymbol{Sector}_i'\Phi + \boldsymbol{X}_i'\boldsymbol{\delta} + \varepsilon_i \qquad (1)$$

where the subscript $i$ stands for an individual. $CloseBusiness_i$ represents the individual intention to close an existing business. $NewSkills_i$ is a dummy variable that equals 1 if an individual has acquired new skills during the first wave of the pandemic and zero otherwise. $FinW_i$ is a measure of financial distress: a dummy variable that equals 1 if an individual thinks about having their own means for living more frequently because of the pandemic and zero otherwise. $\boldsymbol{Sector_i}$ stands for a set of economic sectors in which the individual is currently employed or self-employed, including agriculture, mining, construction, healthcare, education, IT, manufacturing, transport and infrastructure, wholesale and retail trade, finance, services, or other sectors. The categories of this variable are not mutually exclusive since individuals could work in several sectors. For instance, a law professor could lecture at a university and at the same time work at a private or state law company. $\boldsymbol{X_i}$ is a vector of individual socioeconomic characteristics such as gender, age, education, marital status, employment status, health status, income level, formal employment and remote work preferences, and the regional fixed effects. Finally, $\gamma$, $\Phi$, and $\boldsymbol{\delta}$ are the vectors of parameters to be estimated; $\varepsilon_i$ is a stochastic disturbance term.

We then analyze the factors that affect starting a new business (Hypotheses 2a and 2b). The model is as follows:

$$StartBusiness_i = \beta_0 + \beta_1 NewSkills_i + \beta_2 FinW_i + \boldsymbol{Sector}_i'\boldsymbol{\theta} + \boldsymbol{X}_i'\boldsymbol{\Psi} + e_i \qquad (2)$$

where $StartBusiness_i$ equals 1 if an individual $i$ has an intention to start a new business and zero otherwise. The rest of the explanatory variables are the same as in Equation (1). Furthermore, $\boldsymbol{\beta}$, $\boldsymbol{\theta}$, and $\boldsymbol{\Psi}$ are the set of the model parameters and $e_i$ is a stochastic

disturbance term. We estimate Equations (1) and (2) using probit estimator and compute the marginal effects.

To test Hypotheses 3a and 3b, we analyze the intentions to start a business in the IT sector. We first estimate a model for having an intention to start a business in IT compared to starting a business in any other sector. The model is as follows:

$$Start\ Business\ in\ IT_i = \delta_0 + \delta_1 NewSkills_i + \delta_2 FinW_i + \boldsymbol{Sector}_i'\Omega + \boldsymbol{X}_i'\boldsymbol{\omega} + \varepsilon_i \quad (3)$$

where $Start\ Business\ in\ IT_i$ equals 1 if an individual has an intention to start a business in the IT sector, and zero if an individual has an intention to start a business in any other sector. We estimate Equation 3 by probit and compute the marginal effects.

In an alternative specification, we also test Hypotheses 3a and 3b using a different default group. For this, we estimate a model for intentions to start a business with 3 possible choices: (i) intention to start a business in IT, (ii) intention to start a business in any other sector, and (iii) having no intentions to start a business. The following multinominal logit model is used to estimate the probability of starting a business in IT or and the probability of starting a business in any other sector:

$$\Pr\left[StartBusiness_i = j\right] = \frac{\exp\left(\alpha_{0j} + \alpha_{1j} NewSkills_i + \alpha_{2j} FinW_i + \boldsymbol{Sector}_i'\boldsymbol{\varphi_j} + \boldsymbol{X}_i'\mathrm{V}_j\right)}{1 + \sum_j \exp\left(\alpha_{0j} + \alpha_{1j} NewSkills_i + \alpha_{2j} FinW_i + \boldsymbol{Sector}_i'\boldsymbol{\varphi_j} + \boldsymbol{X}_i'\mathrm{V}_j\right)} \quad (4)$$

In Equation (4), an individual *i* chooses among *j* alternatives, where *j* =1 if an individual has an intention to start a business in IT, *j* =2 if an individual has an intention to start a business in any other sector. If *j* =3, an individual has no intention to start a business. This category is used as a default, and its probability is specified in Equation (5):

$$\Pr\left[StartBusiness_i = 3\right] =$$

$$= \frac{1}{1 + \sum_j \exp\left(\alpha_{0j} + \alpha_{1j} NewSkills_i + \alpha_{2j} FinW_i + \boldsymbol{Sector}_i'\boldsymbol{\varphi_j} + \boldsymbol{X}_i'\mathrm{V}_j\right)} \quad (5)$$

The rest of the explanatory variables are the same as above, and exp(·) is an exponential function. We use robust standard errors in all models and cluster them at the regional level.

## 5. Data and Variables

### 5.1. Survey details

Our analysis is based on original individual-level survey data of individual experiences, preferences, and self-employment intentions during the first wave of the pandemic in Russia and collected between June and September 2020. The authors designed the survey questionnaire and conducted it online using the platform *testograf.ru*. This platform conforms with the current legislation of the Russian Federation and offers an SSL-certificate, protection from DDoS-attacks, and daily backups.

The survey was distributed online by a professional team from the Far Eastern Federal University via international and Russian-based social networks, including Facebook, Vkontakte, Youtube, Instagram, Odnoklassniki, and online city forums. Before starting the survey, every respondent was asked whether they were at least 18 years old. The survey continued only in the case of a positive response. This restriction resulted in a drop-out rate of less than 1%. About 400 individuals (about 7.5% of respondents) did not finish the survey. The survey was available for use on a computer, smartphone, and tablet. As mentioned above, there are about 83 internet users per 100 people in Russia in 2019 (United Nations, 2021), suggesting that answering the survey was possible for most socioeconomic groups.

The survey consists of 80 questions organized in four major topic blocks: (1) individual socioeconomic characteristics such as age, gender, employment status, marital status, and education; (2) individual attitudes and self-assessed well-being and health; (3) self-employment and entrepreneurship intentions and experiences; and (4) food consumption. All questions were asked in the Russian language. The sample of respondents who answered all survey questions contains about 4,900 individuals. The survey did not ask for any private information (e.g., name, address, or the exact geolocation) that could help identify a respondent. The respondents were also informed that their answers would remain anonymous. The average time to complete the survey was about 25 minutes.

### 5.2. Variables

The key dependent variables capture respondents' intentions to start a new venture or close their current business. The intention to close business is based on the survey question "If you have had a business or a start-up in the last 30 days, do you plan to close it?" with possible answers: "I had no business," "yes," "maybe," "most likely no," "no," and "I had to close it already due to the pandemic." Relying on answers from respondents who had business in the last 30 days, we construct a dummy variable $CloseBusiness$ that equals 1 if a respondent answered "yes," "maybe," or "I had to close it already due to the pandemic" to the question above, and 0 if a respondent answered "no" or "most likely no" to this question. Individuals who did not own a business are excluded from the analysis based on Equation (1).

The variable capturing business start-up intentions is based on the survey question "Do you plan to start a business or a start-up in the next 12 months?" with possible answers: "yes," "maybe," "most likely no," and "no." Using the answers to this survey question, we construct the dummy variable *StartBusiness*, which equals 1 if a respondent answered "yes" or "maybe," and 0 if a respondent answered "no" or "most likely no."

The main independent variables, both of which are binary – $NewSkills$ and $FinW$ – are based on the survey questions "Did you acquire new skills for your work or studies during the stay-home-orders period? and "Because of the pandemic, I think of own means for living more frequently," respectively. Table 1 details the descriptive statistics and the definitions of all variables used in the analysis. To compare our sample with the Russian population at large, in this table, we also present the means of several socioeconomic characteristics of the Russian population based on the latest available census data of 2010, the latest census data available at the time of writing. As seen, our data are skewed towards females and educated people. Using the *ebalance* command in Stata, we rebalance our data such that the share of females and educated people equals the population means (Hainmueller and Xu, 2013). The corresponding means of these variables after rebalancing are presented in parentheses (see column "Means"

in Table 1). Finally, we apply the computed weights in our analysis to ensure that our results are nationally-representative.

[Table 1 here]

## 6. Results

### 6.1. Empirical results related to H1a and H1b

We first discuss the results pertaining to intentions to close a business and hypotheses 1a and 1b. The evidence reported in Table 2 indicates that entrepreneurs who invested in acquiring new skills during the first wave of the pandemic were 15.6 percentage points (p.p.) less likely to close their existing business than entrepreneurs who did not acquire new skills. This is in line with our hypothesis H1a. We find no association between financial worries during the pandemic and business closure intentions. That is, we find no support for our hypothesis H1b. We also find no evidence that preferences for formal employment or remote work affect business closure intentions during the pandemic.

We also find that socioeconomic characteristics such as age, gender, income, and education are generally not associated with business closure intentions during the pandemic, suggesting that the pandemic equally affects business owners across all socioeconomic groups. One exception is those entrepreneurs who live in Moscow and Saint Petersburg. This group is 34.1 p.p. less likely to close their existing business than entrepreneurs living in other regions of Russia. This might be because these two cities are the biggest business centers, in which there is more demand for business activities and more opportunities to keep the business functioning.

[Table 2 here]

### 6.2. Empirical results related to H2a and H2b

As discussed above, adverse events may also motivate individuals to start new ventures to restore community well-being, facilitate their own recovery, or explore new opportunities. In Table 2, column 2, we find that acquiring new skills during the pandemic increases the

likelihood of starting own business by 9.3 p.p. This provides support for our hypothesis H2a that learning new skills during the pandemic is positively associated with start-up intentions. Interestingly, in line with the hypothesis H2b and supporting the predictions of Shepherd and Williams (2020), we also find that financial worries during the pandemic inspire potential entrepreneurs to seek new opportunities and increase the likelihood of starting their own business by 6 p.p. This also implies that potential entrepreneurs who are more likely to learn new skills also see the pandemic and the accompanying financial worries as a problem as a challenge that they need to overcome or as a motivation to start a business (to have their future and earnings in their own hands).

Table 2 also furnishes key insights about the likely profile of the cohort of entrepreneurs who will likely replace the business owners whose businesses were destroyed by the pandemic. Specifically, they are more likely to be young married men, those with a higher income, those living in Moscow or Saint Petersburg, and individuals with lower preferences for formal employment and greater preferences for remote work.

### 6.3. Empirical evidence related to Hypotheses 3a and 3b

The pandemic created the potential for a new cohort of entrepreneurs and opportunities for the modernization and digitization of products and services. It exposed new opportunities for future business development, especially in the IT sector. We explore how different entrepreneurs who intend to start a business in the IT sector are from other nascent entrepreneurs. To that end, we estimate the probability of starting an IT business compared to intentions to start a business in other sectors. We present results with and without Moscow and Saint Petersburg observations (see columns 1 and 2 in Table 3, respectively).[5]

[5] Moscow and Saint Petersburg are the largest cities that themselves constitute a region. Given that these cities are the biggest business centers in Russia, potential entrepreneurs from those cities may have a different profile and preferences and drive our results. To show that this is not the case we provide the results without Moscow and Saint Petersburg.

[Table 3 here]

As shown in both columns of Table 3, previous experience in the IT sector does not affect the likelihood of starting a business in the IT sector relative to business start-up intentions in other sectors. However, new skills acquisition increases the likelihood of starting an IT business in regions outside Moscow and Saint Petersburg by 4.5 p.p. relative to business start-up intentions in other sectors. Therefore, we find partial support to our hypothesis H3a. Also, in line with our hypothesis H3b, we find that financial worries are not associated with the intention to start a business in the IT sector outside Moscow and Saint Petersburg. Financial worries only marginally affect start-up intentions when we include Moscow and Saint Peterburg in the analysis sample. Finally, preferences for formal employment have no statistically significant association with the intention to start a business in the IT sector. Interestingly, preferences for remote work are an important pull factor for those who would like to start a business in the IT sector.

Next, we divide our respondents into three groups: i) those who have an intention to start a business in IT, ii) those who have an intention to start a business in any other sector (other than IT), and iii) those who have no intention to start a business. Table 4, columns 1 and 2 shows results related to the intention to start an IT business and in any other sector except IT, respectively. The comparison group for both groups is individuals with no intention to start a business. Columns 3 and 4 show the results without Moscow and Saint Petersburg observations.

[Table 4 here]

First, we find that young men and those with higher incomes living in Moscow or Saint Petersburg are more likely to start a business in both the IT and non-IT sectors. Furthermore, individuals with prior experience in IT are more likely to start an IT business. Relatedly, respondents who currently work in the IT sector are less likely to start a business in the non-IT sectors.

Second, we document that acquiring new skills during the pandemic motivates business start-ups in non-IT sectors (8.6 p.p.). At the same time, financial worries motivate business start-ups in both sectors (2.1 p.p. and 3.9 p.p., respectively). This evidence is against our hypothesis H3b that financial worries are unimportant for starting an IT business.

Finally, the findings suggest that preferences for formal employment only marginally increase an intention to start a non-IT business outside Moscow and Saint Petersburg and are not associated with intentions to start an IT business. We also find that preferences for remote work are essential for potential entrepreneurs in both IT and non-IT sectors. The magnitude (i.e., average marginal effect) of the coefficient estimate for remote work is 1.5 times greater for potential entrepreneurs in non-IT sectors than in the IT sector. This might be motivated by the pandemic. Given their prior experience in the IT sector, those who would like to start an IT business may have had the experience of remote work before the pandemic. In contrast, those who would like to start a business in non-IT sectors were likely to obtain only a taste of remote work during the pandemic.

### 6.4. Addressing endogeneity

We also address several methodological concerns and provide robustness checks that increase confidence in our results and main conclusions. First, there may be a potential endogeneity problem in the relationship between the intention to close down or start a business, new skills, and financial worries. Such endogeneity may be due to several reasons. For instance, individuals may plan to start a business first and, as a result, invest in new skills. Moreover, start-up intentions may also bring financial worries since they are associated with high risk and uncertainty. In addition, unobserved heterogeneity may be an issue. For example, individuals may sort into particular positions (self-employment or regular employment) or have preferences for business start-up or closure based on their unobserved traits, such as motivation, risk tolerance, and entrepreneurial aptitude. Such unobserved traits also influence the perception of financial worries and the probability of learning new skills.

To address this simultaneity bias issue, we rely on the Lewbel IV estimator (Lewbel, 2012), which uses higher moments of the data to create regressors that are uncorrelated with the product of heteroskedastic errors.[6] The instruments are thus simple functions of the model's data based on the heteroskedasticity in the model's standard errors. In fact, the Lewbel technique is similar in spirit to the Arellano-Bond type of dynamic panel data estimators as it does not require any information outside the model (i.e., external instruments).

To illustrate the Lewbel approach, we have the following general representation of a simultaneous system of equations:

$$Y_1 = \boldsymbol{Y_2'\delta_1} + \boldsymbol{X'\delta_1} + \boldsymbol{\varepsilon_1} \quad (6a)$$

$$Y_2 = \boldsymbol{Y_1'\delta_2} + \boldsymbol{X'\delta_2} + \boldsymbol{\varepsilon_2} \quad (6b)$$

where $Y_1$ represents the intention to start/exit a business, $Y_2$ stands for the new skills acquired and financial worries, and **X** is a vector of exogenous controls, as described above. The errors $\boldsymbol{\varepsilon_1}$ and $\boldsymbol{\varepsilon_2}$ are allowed to be correlated with each other. Each instrument $Z_i$ in the Lewbel approach is based on the residuals from auxiliary equations multiplied by each of the exogenous variables in mean-centered form as follows:

$$Z_i = (X_i - \overline{X}) \cdot \boldsymbol{\epsilon} \quad (7)$$

where $\boldsymbol{\epsilon}$ is a residual vector from a regression of each endogenous regressor on all exogenous regressors (including a constant).

The Lewbel IV estimations are presented in Table 5.[7] As shown, most of the results on the intentions to start a business are very similar to the baseline findings, in terms of both sign and statistical significance, further reassuring that endogeneity is not driving our findings (see column 2 in Tables 2 and 5).

[6] A number of papers in the literature rely on the Lewbel IV approach to offer robustness checks and causal explanations (Arampatzi, Burger, Ianchovichina, Röhricht, and Veenhoven, 2018; Arcand, Berkes, and Panizza, 2015; Banerjee, Chatterji, and Lahiri, 2017; Belfield and Kelly, 2012; Mavisakalyan et al., 2021).

[7] We rely on the Stata user-written command –ivreg2h– to implement Lewbel's IV method (Baum and Schaffer, 2018).

Comparing the results on the intentions to close down a business, we find that new skills acquired during the pandemic reduce the likelihood of closing down a business. Furthermore, we also find that financial worry during the pandemic strongly influenced the intentions to close down a business. This is consistent with our hypothesis H1b (see column 1 in Tables 2 and 5). Specifically, entrepreneurs experiencing financial worries were 10.7 p.p. more likely to close their existing business than those without such worries. Finally, given the scant government support of businesses in Russia, it appears that the pandemic not only increased the financial worries of entrepreneurs but also shifted their preferences in favor of having formal employment. Indeed, entrepreneurs who prefer formal employment were 15.8 p.p. more likely to close their existing business.

Next, we compare the results regarding the intentions to start an IT business (Table 3 and columns 3 and 4 in Table 5). The estimated coefficients on newly acquired skills become insignificant, while having previous experience in the IT sector substantially increases the likelihood of starting a new business in this sector, as compared to starting a business in any other sector. Therefore, we find partial support to our hypothesis H3a.

Another finding is that financial worries reduce the likelihood of starting a business in the IT sector in favor of starting a business in other sectors. In other words, financial concerns are a push factor for potential IT entrepreneurs but a pull factor for potential entrepreneurs in other sectors. This finding rejects our hypothesis H3b and may have several explanations. First, due to the growing demand for IT services, businesses in the IT sector did not suffer much during the pandemic and may even have seen their activities boosted (Khasanov, 2020). Therefore, potential entrepreneurs in the IT sector are likely to have few financial worries. As underscored above, potential IT entrepreneurs also have sufficient IT skills and experience. This may give them extra confidence and reduce pecuniary concerns.

We also offer a formal check regarding omitted variables bias based on a method proposed in Oster (2019), which assesses the potential bias from unobservables based on the assumption of proportionality between bias from unobservable and observable factors. The method, which

gauges how large unobservables have to be to explain the associations we document, refines an earlier technique by Altonji, Elder, and Taber (2005) by also taking into account movements in the $R^2$. The method is essentially based on comparing the changes in the coefficient estimates between models with and without controls. Because the method can only deal with one endogenous variable, we use a sequential procedure, in which the first variable to test is *new skills acquired*, and the second is *financial worry.* Assuming a maximum possible $R^2$ value of (1.3*the observed $R^2$) from a regression, the key independent variable is either *new skills acquired* or *financial worries*. We find that Oster's $\partial$s for the *new skills acquired* variable in Eqs. (1) and (2) are 8.3 and 10.9, suggesting that the selection on unobservables needs to be 8.3 and 10.9 times as important as the included control variables to render the coefficient estimate on the *new skills acquired* variable to be 0, respectively. Concerning the *financial worry* variable in Eqs. (1) and (2), Oster's $\partial$s are 13.9 and 4.8. In general, results are robust to omitted variables bias if the $\partial>1$ (Oster, 2019), which is the case here.

## 7. Discussion and conclusion

This paper examines the role of pandemic-related factors for entrepreneurial entry and exit intentions in Russia. Extending Shepherd and Williams' (2020) theoretical framework, we suggest that the COVID-19 pandemic has the features of being both an adverse shock and a persistent state. We argue that studies of entrepreneurial intentions and exit during the pandemic should account simultaneously for both of these challenges, such as increased financial worries, as well as the emerging opportunities, including acquiring new skills and business chances in the IT sector. Building on Shepherd and Williams (2020), we analyze whether actors respond to the pandemic's circumstances by falling into chronic dysfunction or by engaging in entrepreneurial action.

To that end, we analyze novel survey data that we collected in Russia during the first wave of the COVID-19 outbreak. To our knowledge, this is the first study to examine entrepreneurship in Russia during the pandemic. We thus provide a rare and unique glimpse

into the challenges and opportunities that Russian entrepreneurs face amidst this global public health disaster.

Our findings underscore that the new skills acquired during the first pandemic wave in Russia reduce the likelihood of business closures. Such new skills also become crucial for starting a new business. While new skills are crucial for maintaining and starting businesses, our empirical evidence also suggests that financial worries caused by the pandemic affect both business exit and entry decisions.

We also furnish several important glimpses into the profile of the COVID-time entrepreneurs. Specifically, individuals with preferences for formal employment are less likely to start a new business. This reluctance may be motivated by the fact that running a business during the pandemic is a risky activity with uncertain payoffs. Simultaneously, remote work possibilities increase the likelihood of starting one's own business. We also find that younger and married males with higher income are more likely to report start-up intentions. This finding is in line with Merida and Rocha (2021), who argue that younger entrepreneurs have lower opportunity costs for entering the business activity and are more willing to take risks.

While providing novel insights, our study opens several opportune avenues for future research. First, we show that acquiring new skills in times of crisis, such as the COVID-19 pandemic, is an important way for both maintaining the operations of existing business and for forming start-up intentions. Administering programs offering entrepreneurial training or upskilling for the digital economy may be challenging during a pandemic, given that face-to-face meetings may be difficult to organize. Nevertheless, such challenging conditions also create additional business opportunities. It would be interesting to analyze the business practices in online educational programs and the causes and consequences of human capital acquisition by entrepreneurs in more detail. This dimension is especially important for less developed countries, where the opportunities for government support to businesses are scant.

Second, our findings suggest that the first pandemic wave may have unleashed a creative destruction process in Russia. On the one hand, increased financial worries and preferences for

formal employment increase the likelihood of business closure intentions. On the other hand, new skills, financial worries, and preferences for remote work also boost start-up intentions. Thus, the pandemic can create a new generation of entrepreneurs. Therefore, the crucial follow-up policy question based on this analysis is, "to what extent is this trend sustainable in the long run?" Therefore, future work must examine whether newly created businesses survive the ongoing pandemic and the factors underpinning business survival. Finally, the differences in entrepreneurial intentions in countries' central and periphery regions is another important dimension for future analysis. Specifically, exploring spatial inequalities, challenges, and opportunities for entrepreneurs can help gain a better overview of the potential for government programs and support to ensure that entrepreneurs have equal chances everywhere.

**References**


Aidis, R., Estrin, S., and Mickiewicz, T. (2008). Institutions and entrepreneurship development in Russia: a comparative perspective. *Journal of Business Venturing 23*(6), 656–672.

Aimaletdinov, T.A., Hildebrandt, I.A., Nikoshova, E.N., and Rassadina, D.S. (2020). New normal: Lifestyle, markets, infrastructure, and communications after the pandemic. Moscow: The research center NAFI [In Russian]. Available at: https://nafi.ru/projects/sotsialnoe-razvitie/novaya_normalnost/ (accessed October 1, 2021).

Altonji, J.G., Elder, T.E., and Taber, C.R. (2005). Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools. *Journal of Political Economy, 113*(1), 151-184.

Altun, Y.B. (2021, April 9). *Pandemic Fuels Global Growth Of Entrepreneurship And Startup Frenzy*. Forbes. https://www.forbes.com/sites/forbestechcouncil/2021/04/09/pandemic-fuels-global-growth-of-entrepreneurship-and-startup-frenzy/?sh=75deeef97308

Anderson, J. (2020). *COVID-19: The self-employed are hardest hit and least supported*. Bruegel. https://www.bruegel.org/2020/04/covid-19-the-self-employed-are-hardest-hit-and-least-supported/

AppJobs Institute (2020). How does the COVID-19 outbreak affect the life of freelancers and gig workers. April 8. Available at: https://institute.appjobs.com/how-does-the-covid-19-outbreak-affect-the-life-of-freelancers-gig-workers-march-2020 (accessed April 30,2020).

Arampatzi, E., Burger, M., Ianchovichina, E., Röhricht, T., and Veenhoven, R. (2018). Unhappy Development: Dissatisfaction with Life on the Eve of the Arab Spring. *Review of Income and Wealth, 64*(s1), S80-S113. DOI:10.1111/roiw.12388

Arcand, J.L., Berkes, E., and Panizza, U. (2015). Too much finance? *Journal of Economic Growth, 20*(2), 105-148.

Banerjee, S., Chatterji, P., and Lahiri, K. (2017). Effects of Psychiatric Disorders on Labor Market Outcomes: A Latent Variable Approach Using Multiple Clinical Indicators. *Health economics, 26*(2), 184-205. doi:10.1002/hec.3286

Bartik, A.W., Bertrand, M., Cullen, Z., Glaeser, E.L., Luca, M., and Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences, 117*(30), 17656-17666.

Baum, C. and Schaffer, M. (2020). IVREG2H: Stata module to perform instrumental variables estimation using heteroskedasticity-based instruments.

Belfield, C.R. and Kelly, I.R. (2012). The benefits of breast feeding across the early years of childhood. *Journal of Human Capital, 6*(3), 251-277.

Berrill, J., Cassells, D., O'Hagan-Luff, M., and van Stel, A. (2021). The relationship between financial distress and well-being: Exploring the role of self-employment. *International Small Business Journal*: *Researching Entrepreneurship*, 39(4), 330-349.

Branzei, O. and Abdelnour, S. (2010). Another day, another dollar: Enterprise resilience under terrorism in developing countries. *Journal of International Business Studies, 41*(5), 804-825.

Bullough, A., Renko, M., and Myatt, T. (2014). Danger Zone Entrepreneurs: The Importance of Resilience and Self–Efficacy for Entrepreneurial Intentions. *Entrepreneurship Theory and Practice, 38*(3), 473-499. doi:10.1111/etap.12006

Christelis, D., Jappelli, T., and Kenny, G. (2021, June 8). Heterogenous effects of Covid-19 on households' financial situation: Cross-country evidence from a new survey. VOXEU. Available at: https://voxeu.org/article/heterogenous-effects-covid-19-households-financial-situation-and-consumption

Ciarli, T., Kenney, M., Massini, S., and Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. *Research Policy*, 50, 104289.

Cope, J. (2011). Entrepreneurial learning from failure: An interpretative phenomenological analysis. *Journal of Business Venturing, 26*(6), 604-623.

Coutu, D.L. (2002). How resilience works. *Harvard Business Review, 80*(5), 46-56.

Dalton, P.S., Nhung, N., and Rüschenpöhler, J. (2020). Worries of the poor: The impact of financial burden on the risk attitudes of micro-entrepreneurs. *Journal of Economic Psychology, 79*, 102198. DOI: 10.1016/j.joep.2019.102198

Davidsson, P. and Gordon, S.R. (2016). Much ado about nothing? The surprising persistence of nascent entrepreneurs through macroeconomic crisis. *Entrepreneurship Theory and Practice, 40*(4), 915-941.

Davydov, S.G. (2021). Digital Competencies of Russians and Work on Self-Isolation during the COVID-19 Pandemic. *Monitoring of Public Opinion: Economic and Social Changes,* 2, 403–422. https://doi.org/10.14515/monitoring.2021.2.1913.

Dingel, J.I. and Neiman, B. (2020). How many jobs can be done at home? https://github.com/jdingel/DingelNeiman-workathome/blob/master/DingelNeiman-workathome.pdf. Accessed July 7, 2021.

Djankov, S., Miguel, E., Qian, Y., Roland, G., and Zhuravskaya, E. (2005). Who are Russia's entrepreneurs? *Journal of the European Economic Association 3*(2–3), 587–597.

Dosi, G., and Soete, L. (2022). On the syndemic nature of crises: A Freeman perspective. *Research Policy*, 51, 104393.

Douglas, M., Katikireddi, S.V., Taulbut, M., McKee, M., and McCartney, G. (2020). Mitigating the wider health effects of COVID-19 pandemic response. *BMJ* 369:m1557 doi: 10.1136/bmj.m1557.

Evans, C. (2020). The coronavirus crisis and the technology sector. *Business Economics, 55*(4), 253-266.

Federal Law of the Russian Federation (2018). On conducting an experiment in introducing a special tax regime "a professional income tax," No. 422-FZ, November 27, 2018 (with revisions by July 2, 2021).

Global Entrepreneurship Monitor (2021). GEM Russia 2020/2021 report. Available at: https://www.gemconsortium.org/economy-profiles/russia (accessed July 15, 2021).

Global Entrepreneurship Monitor (2020a). The 2019/2020 global report. Available at: https://www.gemconsortium.org/file/open?fileId=50443 (accessed July 15, 2020).

Global Entrepreneurship Monitor (2020b). GEM Russia 2019 report. Available at: https://www.gemconsortium.org/economy-profiles/russia (accessed July 15, 2020).

Government of the Russian Federation Decree (2020). On introducing the 2020 rules for the federal budget subsidies to individuals, including solo entrepreneurs who in 2019 had a special tax regime "a professional income tax" due to the worsening situation as a result of the new coronavirus infection spread, No. 783, May 29.

Hainmueller, J., and Xu, Y. (2013). ebalance: A Stata package for entropy balancing. *Journal of Statistical Software,* 54(7), 1-18.

Hartwell, C., Otrachshenko, V., and Popova, O. (2021). Waxing power, waning pollution: The effect of COVID-19 on Russian environmental policymaking. *Ecological Economics*, 184, 107003.

Higher School of Economics (2020). Economic and social consequences of coronavirus in Russia and in the world. *HSE Analytical Bulletin*, 3, May 29, 2020. Available at: https://www.hse.ru/pubs/share/direct/435321439.pdf (accessed October 3, 2021).

He, W., Zhang, Z.J., and Li, W. (2021). Information technology solutions, challenges, and suggestions for tackling the COVID-19 pandemic. *International Journal of Information Management, 57*, 102287.

Hetschko, C. (2016). On the misery of losing self-employment. *Small Business Economics*, 47(2), 461-478.

International Labor Organization ILO. *COVID-19 recovery must be human-centred*. (2021, April 9). International Labor Organization. http://www.ilo.org/global/about-the-ilo/newsroom/statements-and-speeches/WCMS_779257/lang--en/index.htm

Ivlevs, A., Nikolova, M., and Popova, O. (2021). Former Communist party membership and present-day entrepreneurship. *Small Business Economics,* 57(4), 1783-1800. DOI: https://doi.org/10.1007/s11187-020-00364-6

Khabibulina, A. (2020). "I grabbed my head and thought what to do": Self-employed about their attempt to save their own business during the coronavirus pandemic. *Izvestia*, 04.04.2020. Available at: https://iz.ru/995554/aigul-khabibullina/ia-skhvatilsia-za-golovu-i-dumal-chto-ia-mogu-sdelat (accessed May 10, 2020).

Khasanov, T. (2020). It will be worse: Entrepreneurs have evaluated their future perspectives. *Gazeta.RU*, 18.05.2020. Available at: https://www.gazeta.ru/business/2020/05/18/13087099.shtml (accessed June 5, 2020).

Kissler, S.M., Tedijanto, C., Goldstein, E., Grad, Y.H., and Lipsitch, M. (2020). Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. *Science*, 368(6493), 860-868. DOI: 10.1126/science.abb5793

Klochikhin, E. A. (2012). Russia's innovation policy: Stubborn path-dependencies and new approaches. *Research Policy*, 41, 1620-1630.

Koshkina, A. (2020). The number of self-employed increased substantially. *Vedomosti,* August 11. Available at: https://www.vedomosti.ru/economics/articles/2020/08/10/836329-kolichestvo-samozanyatih (accessed October 4, 2021).

Kuckertz, A. et al. (2020). Start-ups in times of crisis - A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, 13, e00169. DOI: https://doi.org/10.1016/j.jbvi.2020.e00169

Lazear, E.P. (2004). Balanced Skills and Entrepreneurship. *American Economic Review, 94*(2), 208-211. doi:10.1257/0002828041301425

Lewbel, A. (2012). Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models. *Journal of Business & Economic Statistics,* 30(1), 67-80.

Mani, A., Mullainathan, S., Shafir, E., and Zhao, J. (2013). Poverty impedes cognitive function. *Science, 341*(6149), 976-980.

Mavisakalyan, A., Otrachshenko, V., and Popova, O. (2021). Can bribery buy health? Evidence from post-communist countries. *Journal of Comparative Economics*, 49(4), 991-1007.

Merida, A.L., and Rocha, V. (2021). It's about time: The timing of entrepreneurial experience and the career dynamics of university graduates. *Research Policy*, 50, 104135.

Ministry of Economic Development of the Russian Federation (2020). More than 850,000 individuals in Russia registered as self-employed, July 23. Available at: https://www.economy.gov.ru/material/news/bolee_850_tysyach_chelovek_v_rossii_zaregistrirovalis_v_kachestve_samozanyatyh.html (accessed October 4, 2021).

Ministry of Economic Development of the Russian Federation (2021). The number of self-employed in Russia increased by 125,000 people per month, June 1. Available at: https://www.economy.gov.ru/material/news/kolichestvo_samozanyatyh_v_rossii_uvelichilos_na_125_tys_chelovek_za_mesyac.html (accessed October 4, 2021).

Milasi, S., Gonzalez- Vazquez, I., and Fernandez-Macias, E. (2020). Telework in the EU before and after the COVID-19: where we were, where we head to. JRC120945. Available at: https://ec.europa.eu/jrc/sites/default/files/jrc120945_policy_brief_-_covid_and_telework_final.pdf

Moulds, J. (2020). Gig workers among the hardest hit by coronavirus pandemic. *World Economic Forum*, April 21. Available at: https://www.weforum.org/agenda/2020/04/gig-workers-hardest-hit-coronavirus-pandemic (accessed April 30, 2020).

NAFI (2020). Russian business and the coronavirus. Part 1. Entrepreneurs on the role of the pandemic on their businesses and on their demand for state support. April 2020. Moscow: Analytical Center NAFI. Available at: https://nafi.ru/projects/predprinimatelstvo/rossiyskiy-biznes-i-koronavirus-chast-1-predprinimateli-o-vliyanii-epidemii-na-ikh-biznes-i-o-potreb/ (accessed October 4, 2021).

Netemeyer, R.G., Warmath, D., Fernandes, D., and Lynch, J.G., Jr. (2017). How Am I Doing? Perceived Financial Well-Being, Its Potential Antecedents, and Its Relation to Overall Well-Being. *Journal of Consumer Research, 45*(1), 68-89. doi:10.1093/jcr/ucx109

Nikolova, M., Nikolaev, B., and Popova, O. (2021). The perceived well-being and health costs of exiting self-employment. *Small Business Economics*, 57(4), 1819-1836.

O'Leary, D.E. (2020). Evolving information systems and technology research issues for COVID-19 and other pandemics. *Journal of Organizational Computing and Electronic Commerce, 30*(1), 1-8.

The Ombudsman Report (2020). COVID-19. Consequences for business and the economy. The Russian business ombudsman report to the President of the Russian Federation. Attachment. May 2020. Available at: http://doklad.ombudsmanbiz.ru/2020/7.pdf (accessed October 5, 2021).

Oster, E., (2019). Unobservable selection and coefficient stability: Theory and evidence. *Journal of Business & Economic Statistics,* 37(2), 187–204.

Parker, S. (2009). *Introduction*. In: Parker, S.C. (Ed.), *The Economics of Entrepreneurship*. Cambridge University Press, Cambridge, pp. 1–28.

Pinskaya, M.R., Steshenko, Y.A., and Tsagan-Mandzhieva, K.N. (2021). Tax support during coronavirus crisis: Whom to help? *Voprosy Ekonomiki*, 5, 129-144.

President of the Russian Federation Decree (2020a). On introducing the non-working days in the Russian Federation, No. 206, 25.03.2020. Available at: http://kremlin.ru/acts/bank/45335 (Accessed October 4, 2021).

President of the Russian Federation Decree (2020b). On Measures that Ensure the Sanitary and Epidemiological Well-being of Population in the Territory of the Russian Federation in Relation to the Spread of New Coronavirus Infection (COVID-19), No. 239, 02.04.2020. Available at: http://kremlin.ru/events/president/news/63134 (Accessed October 4, 2021).

President of the Russian Federation Decree (2020c). On the Prolongation of Measures that Ensure the Sanitary and Epidemiological Well-Being of Population in the Territory of the Russian Federation in Relation to the Spread of New Coronavirus Infection (COVID-19), No. 294, 28.04.2020. Available at: http://kremlin.ru/acts/bank/45494 (Accessed October 4, 2021).

PricewaterhouseCoopers. (2021, March 16). *Pandemic has accelerated digital upskilling, but key groups still miss out - PwC survey*. PwC. https://www.pwc.com/gx/en/news-room/press-releases/2021/pwc-hopes-and-fears-survey-2021.html

Russian Public Opinion Research Center (2016). Own business: Today and 25 years ago. May 30, report no. 3115. Available at: https://wciom.ru/index.php?id=236&uid=115707 (accessed July 15, 2020).

Ryazantseva, N.V., Paschenko, F.S., and Borel', A. E. (2020). Regional incentives in supporting socioeconomic stability during the COVID-19 pandemic: Business support and employment policies. *HSE Analytical Bulletin* No. 2, May 21, pp. 90-103. Available at: https://www.hse.ru/pubs/share/direct/435321435.pdf (accessed October 1, 2021).

Safronova, V. (2020). "You either adapt or make your future": How does the pandemic affect social entrepreneurship in Russia. 30.06.2020. Available at: https://te-st.ru/2020/06/30/social-business/ (accessed July 15, 2020).

Schutjens, V. and Stam, E. (2006). *Starting anew: Entrepreneurial intentions and realizations subsequent to business closure* (1566-5283). Retrieved from https://repub.eur.nl/pub/7638/

Shepherd, D.A. and Williams, T. (2020). Entrepreneurship responding to adversity: Equilibrating adverse events and disequilibrating persistent adversity. *Organization Theory, 1*(4), 2631787720967678.

Shepherd, D.A. and Williams, T.A. (2018). Hitting rock bottom after job loss: Bouncing back to create a new positive work identity. *Academy of Management Review, 43*(1), 28-49.

Shepherd, D.A., Parida, V., and Wincent, J. (2020). The surprising duality of *jugaad*: Low firm growth and high inclusive growth. *Journal of Management Studies, 57*(1), 87-128.

Shepherd, D.A., Parida, V., and Wincent, J. (2021). Entrepreneurship and poverty alleviation: the importance of health and children's education for slum entrepreneurs. *Entrepreneurship Theory and Practice, 45*(2), 350-385.

Shepherd, D.A., Wiklund, J., and Haynie, J.M. (2009). Moving forward: Balancing the financial and emotional costs of business failure. *Journal of Business Venturing, 24*(2), 134-148.

Shepherd, D.A. (2003). Learning from business failure: Propositions of grief recovery for the self-employed. *Academy of Management Review, 28*(2), 318-328.

Shiv B., Loewenstein, G., Bechara, A., Damasio, H., and Damasio, A.R. (2005). Investment behavior and the negative side of emotion. *Psychological Science* 16(6), 435-439.

Smallbone, D. and Welter, F. (2001). The distinctiveness of entrepreneurship in transition economies. *Small Business Economics 16*(4), 249–262.

Stokes, D. and Blackburn, R. (2002). Learning the hard way: the lessons of owner-managers who have closed their businesses. *Journal of Small Business and Enterprise Development, 9*(1), 17-27.

Strack, R., Kovacs-Ondrejkovic, O., Baier, J., Antebi, P., Kavanagh, K., and Lopez Gobernado, A. (2021, April). *Decoding Global Reskilling and Career Paths*. Boston Consulting Group. https://web-assets.bcg.com/93/b6/11ba136841189e51cc50486f1340/bcg-decoding-global-reskilling-and-career-paths-apr-2021.pdf

The Moscow Times. (2020a, June 1). *60% of Russians Have Lost Income Due to Coronavirus*. https://www.themoscowtimes.com/2020/06/01/60-russians-lost-income-coronavirus-a70443

The Moscow Times. (2020b, May 28). *Only 10% of Russian Businesses Have Received Coronavirus Support*. https://www.themoscowtimes.com/2020/05/28/only-10-of-russian-businesses-have-received-coronavirus-support-a70405

Twigg, J. (2020, June 5). Coronavirus in Russia: First Wave, Round Two: The Regions | Think Global Health. Council on Foreign Relations. Available: https://www.thinkglobalhealth.org/article/coronavirus-russia-first-wave-round-two-regions

United Nations (2021). SDG Indicators. Available at: unstats.un.org/sdgs/indicators/database/

Vasilchuk, T. (2020). Self-employed in the era of self-isolation. *Novaya Gazeta*, 28.03.2020. Available at: https://novayagazeta.ru/articles/2020/03/28/84569-samozanyatye-v-epohu-samoizolyatsii (accessed April 30, 2020).

Vlasova, I. (2020). Survive the lockdown: Why businesses can't open. Gazeta.ru, 21.07.2020. Available at: https://www.gazeta.ru/business/2020/07/21/13161019.shtml (accessed 15.07.2021).

Williams, T.A., and Shepherd, D.A. (2016). Building resilience or providing sustenance: Different paths of emergent ventures in the aftermath of the Haiti earthquake. *Academy of Management Journal, 59*(6), 2069-2102.

Wolfe, M.T., and Patel, P.C. (2021). Everybody hurts: Self-employment, financial concerns, mental distress, and well-being during COVID-19. *Journal of Business Venturing Insights, 15*, e00231. DOI: https://doi.org/10.1016/j.jbvi.2021.e00231

World Economic Forum. *How many jobs were lost in 2020 due to COVID-19?* (2021, February 4). World Economic Forum. https://www.weforum.org/agenda/2021/02/covid-employment-global-job-loss/

**Table 1: Descriptive statistics**

| Variable | Survey question | No. obs. | Mean | St. Dev. | Min | Max | Census mean |
|---|---|---|---|---|---|---|---|
| Intention to close business | If you have had a business or a start-up in the last 30 days, do you plan to close it? (1=yes, 0=no) | 681 | 0.273 | 0.446 | 0 | 1 | |
| Intention to start a business | Do you plan to start a business or a start-up in the next 12 months? (1=yes, 0=no) | 4,812 | 0.198 | 0.398 | 0 | 1 | |
| New skills | Did you acquire new skills for your work or studies during the stay-at-home orders period? (1=yes, 0=no) | 4,812 | 0.528 | 0.499 | 0 | 1 | |
| Financial worry | Because of the pandemic, I think of own means for living more frequently | | | | | | |
| *no* | | 4,812 | 0.321 | 0.467 | 0 | 1 | |
| *yes* | | 4,812 | 0.591 | 0.492 | 0 | 1 | |
| *difficult to say* | | 4,812 | 0.088 | 0.283 | 0 | 1 | |
| Preference for formal employment | Because of the pandemic, I now understand better how important it is to have a formal employment | | | | | | |
| *no* | | 4,812 | 0.256 | 0.437 | 0 | 1 | |
| *yes* | | 4,812 | 0.582 | 0.493 | 0 | 1 | |
| *difficult to say* | | 4,812 | 0.161 | 0.368 | 0 | 1 | |
| Preference for remote work | In a case of any employment, I prefer to work remotely | | | | | | |
| *no* | | 4,812 | 0.435 | 0.496 | 0 | 1 | |
| *yes* | | 4,812 | 0.383 | 0.486 | 0 | 1 | |
| *difficult to say* | | 4,812 | 0.182 | 0.386 | 0 | 1 | |
| Higher education | Respondent's education (1=has a higher education, 0=otherwise) | 4,812 | 0.792 (0.244)* | 0.406 | 0 | 1 | 0.234 |
| Personal monthly income | Respondent's personal income in Russian Rubles | | | | | | |
| *below 15,000 Rub* | | 4,812 | 0.144 | 0.351 | 0 | 1 | |
| *15,001-60,000 Rub* | | 4,812 | 0.520 | 0.500 | 0 | 1 | |
| *above 60,000 Rub* | | 4,812 | 0.197 | 0.398 | 0 | 1 | |
| *refusal* | | 4,812 | 0.139 | 0.346 | 0 | 1 | |
| Female | Respondent's gender (1=female, 0=male) | 4,812 | 0.672 (0.539)* | 0.470 | 0 | 1 | 0.538 |
| Age | Respondent's age in years | 4,812 | 35.703 | 14.218 | 18 | 86 | 38 |
| Married | Respondent's marital status (1=married or cohabitating, 0=otherwise) | 4,812 | 0.515 | 0.500 | 0 | 1 | 0.633 |
| Self-assessed health | How would you assess your own health? (1=very bad, 10=very good) | 4,812 | 6.854 | 1.767 | 1 | 10 | |
| Employment status | Respondent's employment status (1=employed or self-employed, 0=otherwise) | 4,812 | 0.729 | 0.445 | 0 | 1 | 0.632 |
| Moscow/St. Petersburg | Respondent lives in Moscow or St. Petersburg (1=yes, 0=no) | 4,812 | 0.153 | 0.360 | 0 | 1 | 0.115 |
| Time to complete the survey | Log(seconds) | 4,812 | 6.736 | 0.647 | 5.01 | 12.17 | |
| Open questions | No. of open-ended questions answered on the respondent's own experience during the pandemic | 4,812 | 1.088 | 1.209 | 0 | 3 | |

Note: Open questions include the following: "Could you share anything else about your experience during the pandemic?", "What has improved in your life during the pandemic?", "Do you have any questions or comments for us?" The last column presents the 2010 Russian census means provided by the Federal State Statistics Service. * denotes that the sample was rebalanced on this variable, applying the entropy balancing and using the census mean. The number in parentheses corresponds to the sample mean after entropy balancing. For other variables (age, marital and employment statuses, and the share of those living in Moscow and Saint Petersburg), the means are comparable to those in the 2010 census, suggesting that the sample is representative at a country level.

**Table 2: Intentions to start and close business during the pandemic (marginal effects)**

| VARIABLES | Intention to close down a business | Intention to start a business |
|---|---|---|
| New skills acquired | -0.156*** | 0.093*** |
| | (0.040) | (0.021) |
| Financial worry | 0.065 | 0.060*** |
| | (0.062) | (0.018) |
| Preference for formal employment | 0.082 | -0.123*** |
| | (0.057) | (0.025) |
| Preference for remote work | 0.037 | 0.065*** |
| | (0.050) | (0.023) |
| Female | -0.057 | -0.066*** |
| | (0.053) | (0.024) |
| Age | -0.000 | -0.006*** |
| | (0.002) | (0.001) |
| Married | 0.056 | 0.054** |
| | (0.052) | (0.024) |
| Has a higher education | -0.074 | -0.040 |
| | (0.060) | (0.031) |
| Self-assessed health | -0.018 | -0.004 |
| | (0.014) | (0.007) |
| Income (below 15,000 Rub is a default) | | |
| *15,001-60,000 Rub* | 0.052 | 0.110*** |
| | (0.080) | (0.029) |
| *above 60,000 Rub* | -0.002 | 0.228*** |
| | (0.097) | (0.035) |
| Employed | 0.009 | -0.009 |
| | (0.050) | (0.032) |
| Currently works in IT | -0.024 | 0.057 |
| | (0.092) | (0.040) |
| Lives in Moscow or St. Petersburg | -0.341*** | 0.148*** |
| | (0.093) | (0.014) |
| Region FE | yes | yes |
| Current/past occupation sector FE | yes | yes |
| Nr. of regions | 52 | 74 |
| Observations | 681 | 4,812 |

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. Robust standard errors clustered at the regional level are in parentheses. The weights from entropy balancing are used. Controls for "difficult to say" answers to financial worry, preference for formal employment, and remote work questions, and the control for refusal to answer the question on income are included.

**Table 3: Intentions to start an IT business (marginal effects)**

| VARIABLES | Intention to start an IT business | Intention to start an IT business, without Moscow and St. Petersburg |
|---|---|---|
| New skills acquired | 0.028 | 0.045** |
| | (0.021) | (0.021) |
| Financial worry | 0.048* | 0.035 |
| | (0.025) | (0.032) |
| Preference for formal employment | -0.006 | 0.015 |
| | (0.032) | (0.034) |
| Preference for remote work | 0.074*** | 0.090*** |
| | (0.023) | (0.023) |
| Female | 0.330*** | 0.369*** |
| | (0.028) | (0.026) |
| Age | 0.330*** | 0.369*** |
| | (0.028) | (0.026) |
| Married | 0.330*** | 0.369*** |
| | (0.028) | (0.026) |
| Has a higher education | 0.330*** | 0.369*** |
| | (0.028) | (0.026) |
| Self-assessed health | 0.330*** | 0.369*** |
| | (0.028) | (0.026) |
| Income (below 15,000 Rub is a default) | | |
| *15,001-60,000 Rub* | 0.047 | 0.004 |
| | (0.030) | (0.036) |
| *above 60,000 Rub* | 0.109** | 0.018 |
| | 0.047 | 0.004 |
| Employed | 0.022 | 0.006 |
| | (0.016) | (0.021) |
| Currently works in IT | -0.042 | -0.043 |
| | (0.032) | (0.032) |
| Lives in Moscow or St. Petersburg | -0.002 | |
| | (0.022) | |
| Region FE | yes | yes |
| Current/past occupation sector FE | yes | yes |
| Nr. of regions | 36 | 34 |
| Observations | 810 | 648 |

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. Intention to start a business in all other sectors is used as a default. Robust standard errors clustered at the regional level are in parentheses. The weights from entropy balancing are used. Controls for "difficult to say" answers to financial worry, preference for formal employment, remote work questions, and the control for refusal to answer the question on income are included.

**Table 4: Intention to start an IT business and other sectors (marginal effects)**

| VARIABLES | Intention to start an IT business | Intention to start a business in any other sector except IT | Intention to start an IT business, without Moscow and St. Petersburg | Intention to start a business in any other sector except IT, without Moscow and St. Petersburg |
|---|---|---|---|---|
| New skills acquired | 0.008 | 0.086*** | 0.010 | 0.073*** |
| | (0.013) | (0.019) | (0.014) | (0.021) |
| Financial worry | 0.021** | 0.039** | 0.020** | 0.044** |
| | (0.008) | (0.019) | (0.010) | (0.020) |
| Preference for formal employment | 0.015 | 0.070 | 0.018 | 0.080* |
| | (0.016) | (0.048) | (0.017) | (0.045) |
| Preference for remote work | 0.027** | 0.040* | 0.030** | 0.029 |
| | (0.011) | (0.023) | (0.012) | (0.025) |
| Female | -0.037*** | -0.029* | -0.041*** | -0.033* |
| | (0.011) | (0.017) | (0.012) | (0.019) |
| Age | -0.001* | -0.005*** | -0.001** | -0.006*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Married | 0.001 | 0.062** | 0.000 | 0.072** |
| | (0.010) | (0.026) | (0.012) | (0.028) |
| Has a higher education | 0.003 | -0.048* | 0.002 | -0.030 |
| | (0.010) | (0.027) | (0.013) | (0.027) |
| Self-assessed health | 0.001 | -0.005 | 0.001 | -0.009 |
| | (0.002) | (0.007) | (0.003) | (0.006) |
| Income (below 15,000 Rub is a default) | | | | |
| *15,001-60,000 Rub* | 0.020** | 0.089*** | 0.018* | 0.100*** |
| | (0.010) | (0.027) | (0.010) | (0.030) |
| *above 60,000 Rub* | 0.054*** | 0.184*** | 0.049*** | 0.218*** |
| | (0.014) | (0.041) | (0.015) | (0.038) |
| Employed | -0.018 | 0.010 | -0.015 | 0.014 |
| | (0.012) | (0.031) | (0.012) | (0.036) |
| Currently works in IT | 0.074*** | -0.053* | 0.083*** | -0.054* |
| | (0.019) | (0.028) | (0.019) | (0.030) |
| Lives in Moscow or St. Petersburg | 0.017** | 0.162*** | | |
| | (0.008) | (0.015) | | |
| Region FE | yes | yes | yes | yes |
| Current/past occupation sector FE | yes | yes | yes | yes |
| Nr. of regions | 74 | 74 | 72 | 72 |
| Observations | 4,812 | 4,812 | 4,077 | 4,077 |

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multinomial logit is used to estimate columns 1 and 2 jointly and columns 3 and 4 jointly. Marginal effects are reported. No intention to start a business is used as a default. Robust standard errors clustered at the regional level are in parentheses. The weights from entropy balancing are used. Controls for "difficult to say" answers to financial worry, preference for formal employment, remote work questions, and the control for refusal to answer the question on income are included.

**Table 5: Intentions to close and start a business (marginal effects, Lewbel IV)**

| VARIABLES | Intention to close down a business | Intention to start a business | Intention to start an IT business | Intention to start an IT business, without Moscow and St. Petersburg |
|---|---|---|---|---|
| New skills acquired | -0.080*** | 0.078*** | -0.008 | -0.008 |
| | (0.030) | (0.013) | (0.017) | (0.021) |
| Financial worry | 0.107*** | 0.052*** | -0.058** | -0.063** |
| | (0.041) | (0.011) | (0.025) | (0.027) |
| Preference for formal employment | 0.158*** | -0.120*** | 0.024 | 0.038 |
| | (0.039) | (0.015) | (0.027) | (0.032) |
| Preference for remote work | -0.043 | 0.074*** | 0.030 | 0.038 |
| | (0.028) | (0.013) | (0.024) | (0.027) |
| Female | -0.018 | -0.061*** | -0.095*** | -0.109*** |
| | (0.033) | (0.015) | (0.023) | (0.025) |
| Age | 0.001 | -0.005*** | -0.001 | -0.000 |
| | (0.001) | (0.001) | (0.001) | (0.002) |
| Married | -0.026 | 0.029*** | -0.000 | 0.010 |
| | (0.038) | (0.009) | (0.021) | (0.027) |
| Has a higher education | -0.030 | 0.023 | 0.007 | 0.006 |
| | (0.058) | (0.017) | (0.027) | (0.035) |
| Self-assessed health | -0.011 | 0.006 | 0.003 | 0.007 |
| | (0.010) | (0.004) | (0.005) | (0.006) |
| Income (below 15,000 Rub is a default) | | | | |
| *15,001-60,000 Rub* | -0.042 | 0.071*** | 0.055 | 0.022 |
| | (0.075) | (0.017) | (0.034) | (0.031) |
| *above 60,000 Rub* | -0.071 | 0.129*** | 0.099** | 0.040 |
| | (0.074) | (0.025) | (0.043) | (0.042) |
| Employed | -0.009 | -0.034** | 0.010 | -0.004 |
| | (0.039) | (0.016) | (0.018) | (0.021) |
| Currently works in IT | 0.028 | 0.041 | 0.446*** | 0.459*** |
| | (0.049) | (0.027) | (0.040) | (0.042) |
| Lives in Moscow or St. Petersburg | -0.069 | -0.005 | -0.041** | |
| | (0.047) | (0.011) | (0.016) | |
| Region FE | yes | yes | yes | yes |
| Current/past occupation sector FE | yes | yes | yes | yes |
| Nr. of regions | 52 | 74 | 36 | 34 |
| Observations | 681 | 4,812 | 810 | 648 |

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. Intention to start a business in all other sectors is used as a default in columns 3 and 4. Robust standard errors clustered at the regional level are in parentheses. The weights from entropy balancing are used. Controls for "difficult to say" answers to financial worry, preference for formal employment, and remote work questions, and the control for refusal to answer the question on income are included.