University of Reading

Gendered regulations and SMEs' performance in transition economies

Article

Accepted Version

Vershinina, N., Markman, G., Han, L. ORCID: https://orcid.org/0000-0002-2778-3338, Rodgers, P., Kitching, J., Hashimzade, N. and Barrett, R. (2022) Gendered regulations and SMEs' performance in transition economies. Small Business Economics, 58. pp. 1113-1130. ISSN 1573-0913 doi: 10.1007/s11187-020-00436-7 Available at https://centaur.reading.ac.uk/93228/

It is advisable to refer to the publisher's version if you intend to cite from the work. See Guidance on citing.

To link to this article DOI: http://dx.doi.org/10.1007/s11187-020-00436-7

Publisher: Springer

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the End User Agreement.

www.reading.ac.uk/centaur

University of Reading

CentAUR

Central Archive at the University of Reading

Reading's research outputs online

GENDERED REGULATIONS AND SMEs' PERFORMANCE IN TRANSITION ECONOMIES

ABSTRACT

This article explores the culture-regulations-gender triad in relation to SMEs' performance. Using a firm-level panel dataset drawn from 27 countries in Central and Eastern Europe and Central Asia between 2005 and 2014, we show that women and men experience and respond differently to regulations. Women take regulations very seriously and as a result, their SMEs see improved performance, whereas men discount the influence of regulations which then depresses the performance of their SMEs. However, when women respond to regulatory enforcers, it erodes the performance of their SMEs, whereas when men engage enforcers, the performance of their SMEs improves. The fact that women and men experience and respond to the same regulations differently—regardless of country effect and whether their SMEs are high- or low-performing businesses—suggests that regulations perpetuate gender biases, thus impacting not only individuals but even the organizations they lead. Our study expands *gendered institutions theory* by clarifying how regulations diffuse cultural values and influence women and men, as well as their SMEs, differently.

Key Words: Culture, Regulations, Gender, SMEs, Entrepreneurship

JEL: J16 J24 L26 L51 P2

Acknowledgement: We are deeply grateful to SBE's guest editors Tatiana Manolova and Amanda Bullough, and two developmental reviewers for providing insightful feedback and asking thoughtful questions—your engagement assisted tremendously with the development of this manuscript.

INTRODUCTION

This study investigates the intersection of culture, regulations, and gender and the implications of this intersection for the performance of women-led SMEs. Culture, regulations, and gender are of course distinct but, because they are highly intertwined and mutually reinforcing, it is difficult to unpack their discrete effects on individuals and firms. Culture reflects collective values and beliefs, regulations are overriding rules enforced by higher authorities, and gender influences our attitudes, assumptions, and norms of interactions. Although culture is a more subtle construct because it is anchored in tacit attitudes, mindsets, and societal norms, it does shape and is inextricably linked to and bounded by gendered values and regulations—a wider institutional net underpinned by authoritative governance principles. Being impalpable and lacking central governance, culture evolves autonomously and tacitly; however, like regulations and gender, it sets enduring codes of conduct and values, molds attitudes and actions, and it imprints guiding principles in relation to what is encouraged, accepted, discouraged, and/or rejected (Johnson 2000; Welter 2011). Thus, all three elements are visible and invisible 'enforcement' mechanisms that influence choices and actions at the personal and organizational levels.

Given these intertwined and mutually reinforcing dynamics, building and expanding upon *gendered institutions theory* seems suited to studying the culture-regulations-gender triad. Although gender is an individual-level construct, the theory explains that it is deeply yet subtly embedded in both governing institutions and culture, and, as such, it impacts firm processes and outcomes, including performance. With this understanding in mind, our study aims at addressing two main gaps in the extant literature. First, research on gender differences rarely considers business regulations as *gendered modalities* (that propagate gender inequality); due to this omission, the influence of culture, regulations and gender on firm performance has hitherto been underestimated (Elam and Terjesen 2010; Johnson 2000). Second, the literature

on business regulations is growing, but research on how individuals *experience* and *respond to* regulations is limited. Moreover, we do not yet know whether regulations pass gender bias and if so, how this transfer of bias correlates with firm performance. Thus, we challenge the dogma that business regulations are gender neutral, and our research questions, are: "*Do women and men experience and react to business regulations the same way?"* and "*What are the implications to the performance of their firms?"*

To address the above questions, we use data drawn from a longitudinal (2005-2014), firm-level panel representing 27 *transition economies* (Central and Eastern Europe and Central Asia) in which—at least historically—gender differences were less pronounced. By shedding light on the culture-regulations-gender triad, our study makes several contributions, two of which deserve brief mention. First, our study reveals that business regulations are in fact gendered. That is, women experience business regulations as highly consequential to their SMEs' performance, whereas men experience regulations as inconsequential. Second, we uncovered that when women respond to regulatory enforcers the performance of their SMEs suffers, while men's response is related to better SMEs' performance. Furthermore, the finding that, regardless of country effects, women experience and respond to regulations differently (from men) elucidates our thesis that regulations are quite gendered.

The rest of the article unfolds as follows. The background section surveys the culture-regulations-gender triad in transition economies and the entrepreneurship and SMEs research. The theory section elaborates on gendered institutions theory and highlights gender differences in the context of SMEs. The methods section describes the study's dataset, analyses, results and findings, and the article concludes with the findings, contributions, and future research.

BACKGROUND

To bring context to the culture-regulations-gender triad, we divide this section into two segments, the first is about transition economies and second, we focus on gender differences

in entrepreneurship. We use the transition economies context, but the applicability of our theory—that gender effect persists across cultural setting—is more generic. Our focal area is gender, and of course, we weave in attention to and control for cultural differences.

Gender and Transition Economies

While studying various types of regulations, we were surprised that this scholarship affords scarce attention to gender inequality and cultural differences (Bardasi et al. 2011; Estrin and Mickiewicz, 2011), which explains, at least in part, our decision to study this topical area. We also noticed that most of the research on regulations and firm performance had been conducted in developed economies, where institutional regimes and regulatory environments are well-established, and women and men are equally protected—at least under the law. While research on developing economies is on the rise, there is still a dearth of studies on regulations and firm performance in transition economies, which are often characterized by challenging institutional contexts and Balkanized cultural settings (Bruton et al. 2018). Because of outdated equipment, uneven access to information and communication technology (ICT), and insufficient market orientation, transition economies also see restrained competitiveness and underdeveloped and underfunded private sector, including SMEs. For instance, slow reforms and ineffective regulations mean that the banking system limits the supply of finance to SMEs.

To be more specific, the former Soviet republics had historically aspired to ensure employment for all, with women and men working alongside each other (Aidis et al. 2008). After the USSR broke up in 1991, however, the transition process started to affect women and men differently, revealing cultural distinctions and causing economic disparities and difficulties, and increasingly, gender inequalities became less tolerable (Manolova et al. 2008). For instance, between 1996 and 2006, the gender wage gap in Belarus doubled, and women experienced increased segregation to low-wage industries (Pastore and Verashchagina 2011). The South Caucasus nations (Georgia, Azerbaijan, and Armenia) saw a sharp decline in fertility

and a significant increase in the ratio of boys' to girls' births, which has often been attributed to a preference for sons (Das Gupta 2015; Dudwick 2015). On the other hand, and in contrast with developed economies, education, especially math and science, is still associated with gender parity in many transition economy settings, with girls even outperforming boys in a few countries (Legewie and DiPrete 2012; UNICEF 2013).

To recap, the effects of gender and culture on firm performance are unclear, and this association is especially unclear in transition economies. On the one hand, these economies have a strong egalitarian heritage; the power of the state seems especially high; they value education (in which women often thrive) and of course math, engineering, and science-based skills are foundational for a successful career, productive labor market, and strong economy (Bliss and Garratt 2001; Buser et al. 2014; Dilli and Westerhuis 2018; Smallbone and Welter 2001). On the other hand, their transition, cultural freedom, and women emancipation have resurrected tremendous gender inequality. We see these forces as boundary conditions that afford a rare opportunity to study how gender relates to firm performance across distinct cultural settings. Our goal is to test whether regulations transmit gender biases and if such effects persist despite varied cultural differences.

Entrepreneurship and SMEs

We also use this background section to further motivate the study by unearthing some limitations related to the growing body of research on the effects of gender on entrepreneurship and SMEs. For example, a narrow focus on gender while neglecting to consider the wider and nuanced influence of context (such as gendered regulation), can mask significant gender-related effects (Cromie 1987; Watson and Newby 2005). Indeed, studies often show how, in comparison to men, women start and operate smaller businesses (Fairlie and Robb 2009), lack growth intention and ambition (Mueller and Conway Dato-on 2013), struggle to access finance (McCracken et al. 2015), select less profitable and over-populated sectors (Loscocco et al.

1991), and face family-business tradeoffs (Minniti and Nardone 2007). In many countries, women face barriers to starting businesses due to suppressive cultural and religious beliefs (Jamali 2009; Pavlovich and Markman, in press) and, even in progressive societies, the reconciliation of family and business commitments often falls predominantly on women (Jennings and McDougald 2007). Studies also show that women face more barriers than men while building career experience and business networks (McAdam et al. 2018), which, of course, undermines their entrepreneurial aspirations (Thebaud 2010; 2015).

Research on broader contextual factors focuses on industry or sector size (Estrin and Mickiewicz 2011; Reynolds et al. 2005), national wealth, unemployment rates, economic growth or freedom (Verheul et al. 2006), gender roles (Marques 2017), education (Dilli and Westerhuis 2018), and human and social capital (Brush et al. 2006). To be clear, such scholarship greatly advances our appreciation of gender differences in entrepreneurship, but it rarely considers highly burdening systemic, macro-level factors as root causes of such effects. Our concern is that the influence of gender, especially as it oozes into society via regulations and culture (or perhaps because it hides in plain sight), is seldom addressed (Brush et al. 2010; Bullough et al. 2017; De Bruin et al. 2006; Terjesen et al. 2011).

We evince that furthering the understanding of root causes of performance differences may require entrepreneurship scholars to consider the *gendered institutions hypothesis*—in our case, that regulations might dispatch and ratify gender biases (Henry et al. 2016; Marlow et al. 2019; Marlow and McAdam, 2013). We theorize that business regulations perpetuate cultural and gender inequality, thus causing women and men to experience and react to regulations differently, and this line of work is important because it explains, at least in part, why gender effects correlate with different SME performance levels even across countries and cultures.

THEORY DEVELOPMENT AND HYPOTHESES

Business Regulations and SMEs' Financial Performance

The relationship between business regulations and a firm financial performance is complex because of the former's diverse nature: how regulations are created, when, where and how they are deployed and enforced. Regulations also have diverse goals—e.g., to protect employee rights, elevate consumer safety, preserve the environment, ensure fair competition, or curtail excessive influence of business on society, to name a few. Regulations can also be either permissive or restrictive and their cost is rarely trivial.

Business regulations can emphasize *financial*, *social* or *environmental* performance (Aragón-Correa et al. 2020); for instance, research on heavily polluting industries reports that, although regulations are burdening, they can elevate both environmental and financial performance over time (Shen et al. 2019). Given the diversity in business regulations and variety of performance parameters, it is not surprising that some studies report regulations as being associated with depressed firm performance, while others find the opposite. Our review of this literature corroborates a main takeaway, that regardless of culture or gender, business regulations (whether permissive or restrictive) are almost always operationally disruptive and financially costly (Fletcher 2001; Kitching et al. 2015a, 2015b; Kitching 2006).

Regulations are helpful when they support sound business principles, create level playing fields, suppress unfair competition, prevent unsafe operations or unethical practices, and are reasonable—e.g., impartial banking and loan requirements, equitable protection from liability, and, of course, the unbiased rule of law. An example of such a regulation is the US 2019 Equality Act; a gender equality law that shields individuals from discrimination across diverse areas, including employment, housing, credit, education, public services, federally funded programs, and jury service. Although they are often seen as a hindrance, regulatory constraints can have a positive effect on social well-being or bring environmental benefits—

e.g., gender equality laws increase the number and diversity of job candidates, while restrictive environmental legislation improves fuel consumption, emission, and safety standards.

We do not question the noble goals of many, perhaps most, regulations, but we do notice that the association between business regulations and firm financial performance is quite complex. One obvious issue is that the effects of regulations depend on many factors, including cultural, political, and legal contexts in which they are created and enforced. Of course, firms face many, often interdependent regulatory requirements and isolating the distinct effect of one policy from those of others is not straightforward. A second issue is that regulations have diverse goals, a heterogeneity that too creates research challenges. As theory and measurement go hand in hand, defining the types of regulations is a precondition to empirically testing their effects. We focus on basic business regulations, such as SMEs' ability to connect to the wider business ecosystem, and bound out others, including global, social and environmental regulations; health, safety and antitrust rules; and tax and tariff policies.

In this study, we elevate awareness to the consequences that regulations create because of their disproportionate impact on small enterprises, which are appreciably more vulnerable than their larger counterparts.[1] Because regulations tend to impose operational adjustments, consume or divert scarce resources, dilute managerial bandwidth, impede workflow, and interfere with customer acquisition, they are especially detrimental to smaller firms. Furthermore, violations of regulatory policies often elicit hefty fines and even greater disruptive scrutiny. Scholars argue that large enterprises routinely set policies, and in effect "regulate" smaller businesses (Van Loo, 2020). Compliance studies have demonstrated that regulations entail substantial administrative and psychological costs, even deterring new-venture formation and reducing investment in innovation (Chittenden and Ambler 2015).

[1] In the US, the misbehaviors of big enterprises (e.g., the Enron debacle in 2001) resulted in the creation of the Sarbanes-Oxley (SOX) regulation, which entails massive accounting fees that large firms can afford but can overwhelm SMEs.

Estimates show that, in 2008, one out of three American workers required a government-issued license or certificate to earn a living, up from one out of 20 in the 1950s (Kleiner and Krueger 2013).

The liabilities of smallness and newness suggest that—independent of cultural differences—regulatory requirements encumber microenterprises and SMEs appreciably more than they impede large firms. The small scale of the former makes them appreciably more vulnerable than larger, better-endowed enterprises, which can spread the regulatory costs across their high-value, large-volume offerings, or business units (Markman and Waldron 2014). Indeed, regulations have a disproportionately negative impact on entrepreneurs and SMEs (U.S. Chamber of Commerce Foundation 2017). To be fair, on balance, unregulated business activities are costlier to society as they cause externalities such as environmental harm, defaunation and labor abuses. We acknowledge such adverse effects and the need for regulations, but society, firms, and individuals, especially women, carry different financial power. For example, regulators can often overreach to the point of requiring would-be entrepreneurs to vest thousands of hours in costly, unpaid trainings and certification, including for low-risk professions (interior designers, tour guides). It is also worth noting that, over the last century, the total number, reach, and complexity of business regulations—and the tightness of their enforcement—have grown and intensified in every economy. This complexity raises an important concern about the invisible costs and unintended consequences of business regulations to women-led SMEs across nations and cultures.

Seeking to consolidate this debate, we highlight three converging facts: (i) business regulations are vital, but they tend to complicate operations and escalate cost; (ii) the tension between regulations and businesses is weighty and growing; and (iii) regulations are onerous for microenterprises, SMEs, minorities, and disadvantaged individuals, especially women.

Given this discussion, the absence of theory, inconsistent empirical evidence, and the need to clarify the cost-benefit analysis of regulations, we make a baseline prediction that business regulations will, in general, have a negative effect on the financial performance of SMEs. This prediction integrates various arguments. First, that the growing number and intrusiveness of business regulations and the operational disruption they cause mean that entrepreneurs and SME owners are forced to divert already scarce resources to ensure compliance, sidetracking them from investing in employees and growing their enterprises. Second, regulations, which are developed and ratified by lobbyists and politicians, adopted by bureaucrats, and imposed by local enforcers, have unintended consequences that often wreak havoc on the most vulnerable players—namely, entrepreneurs and SMEs (Hunt and Fund, 2016). We thus formulate the following baseline hypothesis:

Hypothesis 1: Business regulations will be negatively associated with SMEs' financial performance (all else being equal).

Gender Effects

Recognizing that the consideration of the mere direct effects of regulations is often too simplistic, scholars see public policies as involving intricate processes and interactions among stakeholders, whose reaction is often based on whether they stand to benefit or lose from said regulations (Kalt and Zupan 1984; Noll 1985; Peltzman 1976; Posner 1971; Stigler 1971). To better appreciate the effects of regulations, we consider two gender effects—one that is based on women's and men's experience of regulations, and another that accounts for their informal responses. We also use this opportunity to more formally introduce gendered institutions theory and redirect attention to entrepreneurship and SMEs.

Gender Effects: How Women and Men Experience Regulations

Used primarily in sociology and political science, *gendered institutions theory* is applicable to our topical area because it elevates awareness to institutions as forces that legitimize and perpetuate gender bias and inequality. The theory explains that women face

institutional barriers because culturally embedded gender differences infiltrate and influence daily activities, social life, and economic infrastructure (Acker 1992; Elam and Terjesen 2010). The theory neither blames men or women for gender inequality nor pushes "gender ideology"; rather, it explains that regulations *subtly* and often unintentionally acclimate and desensitize us to discrimination—e.g., masculine hegemony in the law enforcement sector (Shelley et al. 2011). Applying this logic to business, some of the barriers and constraints that women entrepreneurs face stem from gendered cultural values, norms, and customs (Baughn et al. 2006). Hence, we use gendered institutions logic to explain that regulations are constructed, supported, ratified and reinforced by a dominant culture that is often blind to its own gender biases and inequalities.

As noted, gender disparities are not a new phenomenon, including in entrepreneurship research (de Bruin, Brush, & Welter, 2007; Salmenniemi, Karhunen, & Kosonen, 2011); however, for completeness, we share recent evidence on this topic. A World Bank study catalogued thousands of legal restrictions worldwide, from legislation that forces women to get permission (from a male family member) to open a bank account, to rules that exclude women from certain jobs and even grant them unequal property rights.[2] To illustrate, in 2009, a St. Petersburg woman who applied for a subway driver position was turned down because the law prohibits women from holding that job. Even a challenge to the Russian Federation's Supreme Court failed to make this gender discrimination illegal. Subway driving is not the only example of ratified injustices; truck drivers in agriculture; freight train conductors; deckhands (boatswain, skipper, and all denominations of sailor) on ships are just a few of the 456 jobs that are inaccessible to women in Russia. Finally, to appreciate how subtly gender bias infiltrates our lives, it is worth noting how languages that adhere to gender-differentiated pronouns are

[2] Women, Business and the Law, 2016. http://pubdocs.worldbank.org/en/550610519930693642/WBL2016-Key-Findings-EN.pdf (accessed May 5, 2020)

correlated with wider gender gaps in entrepreneurial activities (Hechavarría et al. 2018). Naturally, research continues to improve our understanding of gender inequality across cultures, but gendered institutions theory points to a root cause of such inequality—that over and above culture, gender bias imprints itself on societal infrastructure.

Carrying this logic further, we theorize that when gender bias permeates the lives of individuals, this bias can pass on and affect their enterprises too. In fact, when a society features built-in gender-based bias, barriers or inequities, it undermines, stigmatizes, and inhibits the engagement of women in diverse contexts, including entrepreneurial pursuits. And, when institutions and regulations propagate gender bias—instead of abolishing it—said regulations become more consequential for women and their SMEs than for men. The thesis that women and men experience regulations differently is grounded in their *asymmetric encounters* with governmental bodies. Indeed, an annual survey conducted on a sample of 32,200 respondents shows a chronic *trust inequality*; i.e., that, year after year, women continue to exhibit the greatest distrust towards government institutions—more than toward the media or businesses (Edelman Trust Barometer 2020; Gustafson 1998). In transition economies, for example, discriminatory policies and inequitable practices compel individuals and certainly women to straddle the formal/informal world, juggling the costs-benefits of compliance with regulations versus non-compliance.

The conceptual expansion we hope to make, then, is that if regulations are gendered, then women, more so than men, experience severe consequences of regulations not only at the personal level but also to their enterprises. We theorize that because women face more biases, they are keenly aware of the consequence of incompliance, and as business leaders they surely appreciate the impact of regulations on their SMEs' performance. In contrast, men rarely experience gender bias and only seldomly appreciate how far-reaching regulations and policies

can be in propagating inequality. In fact, men trust that, should an issue arise, they will 'work the system' and this dismissive approach to regulations erodes the performance of their SMEs.

Fairness research features a similar division between initial conditions and outcomes, which explains why procedural and distributive justice theories predict that when individuals face biases—women and men alike—they consider governing bodies as responsible for said biases (Diehlet al. 2018; Goldman 2001; Karriker and Williams 2009). Because women are more planful, vigilant and proactive, and less trusting of institutions, they take a more preemptive stance towards regulations and thus enjoy a higher SMEs' performance. That is, women hardly ever experience regulations as equitable or fair, and are keenly aware of their firms' vulnerability to requirements and costs related to incompliance; accordingly, they take regulations very seriously and as a result the performance of their SMEs improves. Thus, we formulate the following hypothesis:

Hypothesis 2a: Women's experience with regulations will be associated with improved SMEs' performance, whereas men's experience with regulations will be associated with declined SMEs' performance.

Interestingly, while women' concerns about regulations assist their SMEs' performance (as explained above), they often have no sway on how business regulations are developed and deployed. The rationale here is consistent with that used above: women experience institutions as male-made and male-dominated outfits that create and sustain gender bias; therefore, they prefer to proactively address regulatory requirements at the frontend than to reactively engage enforcers at the backend. Consistent with a self-fulfilling prophecy, we predict that women's experience of regulations will negatively moderate the already negative association between said regulations and SMEs' performance. We make a similar prediction for men. As acknowledged, men rarely reflect on gender bias in general and as SME owners, they lack the political clout to influence how business regulations are developed or implemented (Van Loo,

2020). For this reason, we predict that men too experience regulations as negatively moderating the association between regulations and SMEs' performance. Stated formally:

Hypothesis 2b: The way women and men experience regulations will negatively moderate the already negative association between regulations and SMEs' performance.

Gender Effects: Responses to Regulatory Enforcers

Another contribution we hope to make is to study how SME owners react to regulations, and because women and men experience regulations differently, we theorize that their responses will too diverge. Regulations are obdurate policies bent on enforcing compliance backed by the risk of punitive deprecations; thus, challenging them requires significant political power, legislative know-how, and financial resources that SME owners often lack (Van Loo, 2020). While this limited political or legislative clout is applicable to most entrepreneurs, it is especially harmful to women, as they are even less represented in political arenas and legislative bodies and often lead enterprises that are smaller and more vulnerable than those run by men.

As noted, both women and men entrepreneurs and SME owners often lack the political wherewithal to influence the development of regulations, which is a main reason why we suspect that they might try to exert influence at the *backend*—e.g., by allaying the impact of regulations through less formal engagements with local enforcers of said regulations. We are referring to off-the-record, yet legal gestures enacted as coping modalities intended to influence and nudge local regulatory agents and tame the regulative burdens affecting small businesses.[3] Examples of informal engagement might include relational exchanges through the giving gifts to or reaching local officials to subtly induce reciprocity and expedite permit processing, phoneline connections, or to grant extra time to rectify items flagged up during inspections. We focus on informal acts because they are certainly accessible to entrepreneurs; their costs

[3] We make no reference at all to unlawful acts; bribery, blackmailing and vigilantism are certainly important topics, but they fall beyond the scope of this study (cf. Cuervo-Cazurra 2008).

seem inconsequential, and they require little planning and time. We bound out formal legislature efforts as they require more coordinated engagements, are quite costly and time consuming, and entail special expertise that large enterprises might possess, but most SME owners lack (Markman and Waldron 2014).

Using several rationales related to *mistrust*, *power asymmetry*, and *vulnerability*, we predict that women entrepreneurs are less likely than men to use informal channels to engage with regulatory enforcers. First, as explained, women mistrust institutions; this is at least in part because government officials often treat them less equitably than they do their men counterparts (Edelman Trust Barometer 2020). To illustrate, women business owners who seek to secure bank loans must divulge more private information than their male counterparts, (Eddleston et al. 2016), but they are still treated with greater skepticism (Carter et al. 2007) and are granted smaller loan amounts under less favorable terms (Wu and Chua 2012). Given that interactions with officials compel women entrepreneurs to do more to often get less, it seems quite logical that women are reluctant to engage officials.

Second, over and above cultural differences, their mistrust in institutions and diffidence toward regulatory agents (who often are men), women entrepreneurs also tend to face greater power asymmetry at the personal level and competitive disadvantage at the business level (Eddleston et al. 2016). Of course, a sense of vulnerability makes engagement with officials even less appealing. A related issue is that any unsanctioned contacts with officials might send 'mixed' or wrong signals, thus discouraging women entrepreneurs to deal informally with enforcers. As gendered institutions theory puts it, inspectors hold prejudicial views of women's aptitudes—e.g., they see women business owners as unsophisticated or lacking in critical knowledge, skills, experience, abilities, and resources. In this scenario, women business owners will limit their engagements as their outreach might be decoded as too solicitous. It is also conceivable that reaching out to officials and inspectors, however informally, may trigger

formal scrutiny; the knowledge of the vulnerability of their SMEs thus further discourages women from initiating such engagements (Özcan 2006).

For completeness, the association will be reversed for men in transition economies, which increasingly follow masculinized cultural norms. As mentioned, given their gender-based experience, men entrepreneurs are likely to trust regulators or the legal system. And because men-led SMEs are unable to influence regulatory policy (Van Loo, 2020), they are quite motivated to engage local enforcers at the backend. Given the ease and safety with which men can bond and build camaraderie with governing agents, and the fact that they are less hindered by either cultural norms or gender inequality, we evince that men will try to aid their SMEs by responding to regulations through backchannels.

Summing up, informal responses to regulations rarely benefit women-owned SMEs; therefore, we predict a negative association between women's responses to regulatory enforcers and their SMEs' performance. On the other hand, we predict a positive association between men's responses to regulations and their SMEs' performance.

Hypothesis 3a: The responses of women to enforcers are associated with depressed SMEs' performance, while the responses of men are associated with elevated SMEs' performance.

We just theorized that women and men react to regulations differently; going forward, we hypothesize that their informal responses moderate—in opposite ways—the association between their experience of regulations and their SMEs' performance. When women engage enforcers, they strengthen the positive association between how they experience regulations and their SMEs' performance. In contrast, when men engage enforcers, they make the association between how they experience regulations and their SMEs' performance less negative.

It is not easy to appreciate moderating associations, so here is a breviloquent recap. Local enforcers' main job is to effect compliance and bear costs that parties would otherwise not have incurred (Hawkins and Hutter 1993). Moreover, enforcers espouse rules that—

according to gendered institutions logic—are often not at all gender neutral. When women end up engaging with regulatory enforcers, they quickly learn that enforcers care far more about acquiescence and deterring noncompliance than they do about making concessive accommodations. It is unclear whether enforcers (many of whom are men) are gender-biased or not, but it is quite certain that engaging enforcers sub-optimizes their SMEs' performance, thus reinforces women's sense that regulations are consequential. Men, in contrast, hardly experience regulations as too consequential for their SMEs' performance so their engagement with enforcers is essentially their backdoor to mitigate burdens they did not foresee.

Put another way, we predict that both women and men engage enforcers, but with different outcomes. When women turn to regulatory enforcers, it erodes the performance of their SMEs, whereas when men turn to enforcers, it often helps their SMEs. Thus:

Hypothesis 3b: The informal responses of women and men to enforcers moderate the association between their experience of regulations and their SME performance. Women's responses strengthen the already positive association between their experience of regulations and SME performance. In contrast, men's responses weaken the already negative association between their experience of regulations and SME performance.

For added clarity and as a prelude to the methods, results, and discussion, Figure 1 depicts the conceptual model, hypothesized relations, and level of empirical support.

Insert Figure 1 About Here

METHODS

Data and Methodology

To test the hypotheses, we used data on 41,218 firms across 27 transition economies drawn from the 2005-2014 Business Environment and Enterprise Performance Survey (BEEPS),[4] which includes a wide variety of countries in terms of businesses, economics, social,

[4] BEEPS is a joint project of the European Bank for Reconstruction and Development (EBRD) and the World Bank. The dataset covers 2002, 2005, 2007-2009 and 2014, and not all variables are available in all time periods.

and institutional factors.[5] We focus on this period as it is characterized by a substantial number and sufficiently rich mixture of private businesses established since the collapse of the socialist system and it encompasses the 2008-2009 global financial crisis. Used frequently in the economics literature, the BEEPS dataset was collected for the European Bank for Reconstruction and Development (EBRD) and the World Bank to investigate the business environments of transition economies (Bardasi et al. 2011; Gashi et al. 2014; Mateut 2018). The survey data are based on face-to-face interviews conducted with business officials and firm representatives.[6] The respondents shared key information about their firms, including ownership, competition, performance, and management, and the gender of their principal owners (Muravyev et al. 2009). To take gender effects into consideration, assist with the development of the experience of and responses to regulation variables, and to prevent common method bias, we collected additional data from the European Values Study.[7] For example, as culture varies across countries, the *gender equality* variable controls for cultural differences related to values of gender equality across the 27 countries.

The BEEPS dataset contains detailed information on firm characteristics, access to financial sources, the influence of regulations on businesses, and the characteristics of firm owners and senior managers, their genders and years of experience. We present the investigated items, definitions, and descriptive statistics in Table 1. Combing through the data,

[5] Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Uzbekistan and Ukraine. We dropped Turkey from our sample as it had been a market economy long before the 1990s.

[6] The survey samples were constructed through the stratified random sampling of national registries of firms or their equivalents. The firms were drawn from both the industry and services sectors; the distribution between these sectors was determined according to their relative contribution to the GDP of each country. Firms that operated in sectors subject to governmental price regulations and prudential supervision (banking, electric power, rail transport, and water and wastewater), enterprises with more than 10,000 employees, and firms established after 2002 were excluded from the sample. About three quarters of the firms sampled were SMEs.

[7] This dataset provides information on family, work, environment, perceptions of life, politics, society, religion and morality, and national identity (Europeanvaluesstudy.eu, accessed May 5, 2020).

we learned that the sample primarily comprises of micro, small, and medium-sized businesses (fewer than 250 employees; see EU employment criteria).

Variable Definitions and Measurements

Several measures could reflect firm financial performance, which is our dependent variable, with sales, sales per worker, profits, or profits per worker often used in the literature. Following Sabarwal et al. (2009), we used the natural logarithm of sales growth per worker to transform the Cobb-Douglas type production function into linear form for multivariate linear regression analysis. We also tested profits, but this variable suffered from too many missing observations. In addition to culture (*Gender Equality)* at country level, we also controlled for the characteristics of the sample firms, such as size, age, and industry fixed effects.

Courts and legislatures have long recognized that access to electricity, natural gas, water, and phonelines is a basic necessity. Given the 'duty to serve' and criticality of utility services to the general public, economic growth, and national security, most transition-economy countries nationalized their public utility sector either through state-owned enterprises or by ensuring that private utility firms act in full compliance through arm's length legislation. We frame public utility providers as quite reflective of their national regulators; for context, in Russia, the state controls 47% of the oil and gas sector and 37% of the utility sector. In Tajikistan, to obtain construction permits, firms must obtain clearance from multiple entities or they will not be connected to the utility grid, which takes about 47 days. (World Bank 2019). To test the hypotheses in a robust manner, we conducted several analyses and we present those in a sequential fashion. For the first test of **H1**, which predicted that regulations erode SMEs' performance, we measured *actual regulations* by calculating the average number of days it took to connect SMEs to such utilities as phonelines, water, and electricity.[8] To test

[8] We also tested regulatory measures such as business inspections, certification, and tax filing; however, given their redundancy—and to declutter the tables—we decided to omit them.

H2 (the *experience of regulations*), we measured the regulatory obstacles that SMEs faced in relation to a variety of items, including transportation, crime prevention, licensing issues, court proceedings, etc. Finally, to test **H3** (*response to regulation enforcers*), we used a dummy that was set to 1 if the sample SMEs had engaged in informal gift giving *to regulation enforcers*. Table 1 presents the variable definitions and descriptive statistics.

Insert Table 1

Econometric Estimation Strategy

We employed different quantitative techniques to explore how women and men experience regulations and respond to enforcers, and the relations to SMEs' performance. We also relied on *difference-in-means tests* to assess whether, on average, women and men business owners perceived and experienced different regulatory realities. For example, whereas it took an average of 41.71 days to connect women-owned SMEs to the electrical grid, that value went down to only 28.31 days for men-owned SMEs—a statistically significant difference. We saw a consistent pattern with other regulation-related variables; for example, women experienced significantly more phone-related interruptions and taxation issues than men. This pattern corroborates our general thesis that regulations—although presumed to be gender neutral—perpetuate systematic gender bias. To further isolate the effects of regulations on SMEs' performance, we also relied on *multiple linear regression analysis*, which we describe next. Furthermore, to add assurance and rigor, and to account for heteroskedasticity, we conducted additional robustness tests.[9]

We ran an ordinary least squares (OLS) estimation on the pooled cross-sectional data (Table 2) using the industry and location (country) indicators to account for unobserved heterogeneity in the panel dataset. The regressions included the following control variables:

[9] The difference-in-means analyses, the inclusion of alternative measures of regulation (i.e., inspections, tax filing, etc.) and of course the robustness tests are all available upon request.

firm size and age, as well as industry (at the two-digit level of NACE; the Statistical Classification of Economic Activities in the European Community) and country fixed effects. For further certitude, we also controlled for fixed assets, and obtained consistent results.

Testing only the direct effects, Table 2 presents the results of the pooled OLS regression estimation, with the growth of sales per worker as the dependent variable. As noted, Table 2 merely features a preliminary testing of our hypotheses; this is mainly due to concerns that analyzing the full sample might not provide a stable assessment of the hypotheses because of contextual heterogeneity. For instance, the same regulations might affect high performers quite differently than laggards. As the multiple linear regression approach assumes a constant linear effect of co-variates on performance for all firms, we used this analysis as a prelude for a more detailed examination of the effects of regulations on SMEs' performance (see below).

Insert Table 2 About Here

Table 2 shows that we first assessed the impact of culture on SMEs' performance. As expected, a culture of gender equality was found to be significantly related to elevated firm performance—across all models, the greater the *gender equality,* the higher the performance of SMEs. Interestingly, the baseline model (Model 1; Table 2) reveals that, a culture of gender equality benefits all SMEs; that women-led SMEs outperform men-led SMEs; and that gender equality benefits men-led SMEs more than women-led SMEs. In combination, the results of the baseline model show that over and above a country's cultural effect, the gender effect continues to exert significant influence on the performance of SMEs. Contrary to expectations, Model 2 offers no support for **H1**; there is little evidence of regulations affecting firm performance. Model 3 shows that experiencing regulations is positively related to SMEs' performance, thus supporting **H2a**. Finally, Model 4 offers no support for **H3a**; neither informal responses to enforcers nor this variable's interaction with gender is statistically significant. The results hint that regulations do not have linear effects across the entire sample

of women- and men-led SMEs; in fact, these results corroborate the need to test the same predictors within each gender and across performance levels.

To increase reliability, we tested for non-linear effects by performing a *quartile regression analysis*. By dividing the sample into performance-based subsets (Farinas & Ruano, 2004) and by testing the hypotheses for each gender, the *quartile regression analysis* afforded the sharpest and most detailed assessments of our conceptual model (Figure 1). This approach is especially useful for testing the interactions between the owner's gender, their experience of regulations, and their reactions to enforcers, and firm performance (Table 3). In our case, we analyzed the effect of the predictors and interaction terms on firm performance by looking at the lowest performing (bottom 25%), average performing (middle 50%), and top performing SMEs (top 25%). The quartile regression approach enabled the investigation of the extent to which certain covariates may have affected the conditional distribution of firm performance within each subset. Thus, Table 2 features the preliminary analysis, while Table 3 features the full analytical model.

Insert Tables 3

RESULTS

Using Figure 1 for reference, Table 3 features the more nuanced and complete results, based on the quartile analysis, and shows that **H1** received marginal and mixed support. The regulations studied were marginally and positively related to the lowest performing men-owned SMEs (bottom 25%), barely and negatively related to the top performing men-owned SMEs (top 25%), while unrelated to the remaining SMEs. Given the alignment between Tables 2 and 3, we conclude that the association between regulations and SMEs' performance is insignificant.

Turning to **H2a**—which posited that women's and men's experience of regulations would be associated with their SMEs' performance—the results show that there is indeed a gender-based effect; i.e., whereas women experience regulations as highly consequential and thus positively related to the performance of their SMEs, the association is reversed for men. This gender effect is stronger than the culture effect—it holds across all 27 countries and remains significant regardless of SMEs' performance (the only exception being the high-performing men-led SMEs; Model 6). Although the actual regulations variable is unrelated to performance, the fact that women's and men's experience of regulations as inversely related to the performance of their SMEs lands support to our thesis that regulations are gendered. It is worth noting, however, that as a moderating predictor (**H2b**), the experience of regulations had no influence on the association between regulations and SMEs' performance (the only exception being the low-performing men-led SMEs; Model 4). Stated more explicitly, we found no support for **H2b**.

Table 3 and Figure 1 also show that **H3a** and **H3b** received strong support. **H3a** predicted that women's and men's responses to regulatory enforcers would be correlated differently with SMEs' performance, and it was supported. Specifically, while for women the response to enforcers is associated with a decline in SMEs' performance, for men, it is correlated with an improvement. Put differently, for women, engaging enforcers is more detrimental for high-performing SMEs than it is for the low-performing ones; conversely, for men, it is especially edifying for low- and mid-performing SMEs, and has still positive but declining effects for high-performing ones.

H3b predicted that women's and men's informal responses to regulatory enforcers moderate (differently) the association between how they experience regulations and SMEs' performance, and it too received strong support. Using the highest performing women-owned SMEs to explain the results (Table 3; Model 3), we see that when women *do not* engage

enforcers, the performance coefficient is 19.479, but if they respond to enforcers, then the *aggregate* coefficient is lowered to 12.906 (19.479 - 17.009 + 10.436). This means that when women engage enforcers, the performance of their SMEs remains positive, but at a declined rate (12.906 rather then 19.479). This finding is consistent with women experiencing regulations as highly consequential (**H2a**), and their disinclination to engage enforcers (**H3a**), as doing so sub-optimizes their SMEs' performance.

The results for men-owned SMEs are opposite; to clarify this finding, consider the lowest-performing men-led SMEs. As Table 3; Model 4 shows, when men *do not* engage enforcers, the performance coefficient remains -2.294, but when they respond to enforcers, then the *aggregate* coefficient is -0.511 (-2.294 + 3.384 – 1.601). This means that when men engage enforcers, the performance of their SMEs is still declining, but at a lower rate (-0.511 rather than -2.294). Summing up, the results provide significant support for hypotheses **H2a, H3a,** and **H3b**; but not for **H1** and **H2b**.

DISCUSSION

Regulations are prodigiously foundational to societal and economic order; as they contribute immensely to public health and education, human rights, race and gender equality, the environment and sustainability, commerce, and countless other aspects of civil life. At the same time, however, regulations can be draconian, thus placing undue burdens in the form of superfluous requirements, arrogate bureaucratic protocols, and pricing small companies out of the market. When regulations erect insuperable obstacles or bring about the implementation of onerous procedures, their costs exceed their benefits. Worse still, when regulations only hinder a specific subset of the population, they discriminate, demoralize and precipitate resentment. The tremendous good that regulations afford and their unintended consequences, and our interest to unearth barriers to women's entrepreneurship, warrant the earnest efforts to study whether or how regulations are gendered.

Focusing on the conceptual side, our study sought to expand *gendered institutions theory* by bringing clarity to the intersection between the culture-regulations-gender triad and SMEs' performance. Analyses based on a longitudinal (2005-2014), firm-level panel dataset from 27 countries in transition economies showed that women and men experience and respond differently to regulations. Reflecting first on the *direct effects*, Table 3 shows that the association between regulations—at least as captured by the current study—and SMEs' performance remains unclear. However, Table 3 reveals that how women and men experience and respond to regulations produce gender effects on the performance of SMEs. Specifically, how women (men) experience regulations is positively (negatively) related to the performance of women (men)-led SMEs. In addition, while responding to enforcers is clearly beneficial for men-owned SMEs, it is detrimental for women-led SMEs.

Redirecting attention to the *moderating effects*, there is neither strong nor consistent evidence that how women and men experience regulations moderates the association between regulations and SMEs' performance. However, the interaction between how women and men experience regulations and engage enforcers has a mostly uniform effect on SMEs' performance. Specifically, when women engage enforcers, the performance of their SMEs waned; here we refer to both direct and the moderating effects. In contrast, the informal response of men to regulations mitigates the negative association between their experience of regulations and SMEs' performance. We speculate that because men tend to underestimate regulations, they then end up engaging enforcers directly to enhance their SMEs' performance.

This gender effect is so robust, it supersedes culture effect, but what is its root cause? Addressing underlying causes, testing the directionality of causal effects, and/or ruling out alternative explanations are certainly valid limitations that await future research. Such effort would necessitate additional data, perhaps even an experimental research design. Still, our earnest effort to address this spurious effect—by studying the beta coefficients (Table 3) and

re-running the robustness checks—suggests that, in general, the response to regulations benefits men-led SMEs, but not women's. This insight aligns with our thesis and this study's raison d'être; i.e., that, when regulations are gendered, they perpetuate bias and inequality. This points at the fact that the influence of regulations goes well beyond undermining enterprising women; it also damages the performance of their SMEs. To be fair, given the methodological and data constraints we faced, we could not discern whether the regulatory effects studied constitute 'gender discrimination' per se; nevertheless, these effects do reflect significant gender inequality and thus economic imbalance.

Theoretical Contributions

This study makes several contributions. First, it challenges the dogma that regulations are gender neutral by showing that women and men do experience and informally respond to regulation differently, and that this gender effect is correlated with performance differences for women- and men-led SMEs and across 27 countries. Second, given that sustained economic growth and prosperity benefit from gender equality, this study shows that such equality requires great awareness that business regulations can be gendered. This effort to elevate awareness of gendered institutions is important because regulations are often modalities by which gender inequality imperceptibly permeates not only individuals and the labor force, but also the performance of SMEs. Third, by acknowledging that the quiddity of regulations is that they are cultural institutions, this study brings greater clarity to the culture-regulations-gender triad and firm performance. Finally, although entrepreneurship research continues to provide ever deeper insights into gender differences (Dilli & Westerhuis, 2018), like other fields, it still views regulations as gender neutral. This study explicates how regulations propagate gender effects and influence firm-level performance, which is clearly a new, useful, and nonobvious addition to the entrepreneurship field.

Implications for Managerial Practice and Public Policy

The conventional wisdom is that an equal representation of women and men in regulatory functions will eradicate gender bias; however, if regulations are gender-biased, then women may be too (albeit to a lesser degree than men). Therefore, we worry that even in the presence of an 'equal representation' panacea, gender biases are likely to persist. What could policymakers do?

One way to de-bias or reduce the gender gap could be to use independent, nonprofit organizations to audit and rate regulations. Nongovernment organizations (NGOs) operate independently of any government; they could therefore study regulations objectively, focusing on the regulators' responsiveness to and equitability in the application of gender considerations, perhaps even by using certification processes—e.g., a Morningstar rating system aimed at ranking regulations. Strong judicial systems are often correlated with vibrant economies, so we suspect that women wronged by biased regulations would use such third-party certifications or rating systems to amend biased regulations. We also challenge women's organizations to engage more consistently in the public discourse on gender biases in regulations and call on governments and companies to ensure that regulations are designed ethically and deployed responsibly.

Future Research

If certain regulations are gendered, is it possible that some products and services are also gendered? To illustrate, automakers design seatbelts, headrests and airbags based on data collected from crash tests that use mannequins that are anthropometrically and ergonomically based on men's physique and seating posture, thus, women, especially when pregnant, often fall outside those 'standard' product and service specifications. As a result, when involved in similar accidents, women are 17% more likely to die and 47% more likely to suffer serious

injuries (D'Ignazio and Klein 2020; Perez 2020). We suspect that studying whether products and services are gendered or not could expand gendered institutions theory.

Future studies could explore shifting epistemological positions—from how gender predicts certain outcomes to how social and economic orders are gendered—and thus how their influence on outcomes and processes might surpass the influence of cultural factors (Ahl, 2006). For example, studies could unpack regulations by applying a finer-grained approach suited to analyze how more distinct and nuanced cultural contexts permeate specific legislations, labor market structures, socioeconomic classes, local norms, or family businesses, and how these factors impact women's entrepreneurship.

As noted, regulations are hardly homogenous; in fact, they vary greatly so a notable limitation of the current study is the narrow focus on only one basic type of regulation. Therefore, follow-up research should segment regulations based on their aims and scopes—e.g., environmental, HR (e.g., hiring, firing, training, safety, benefits), building and zoning regulations, etc. In fact, we recommend that scholars develop a typology of regulations and we suspect that—contrary to the regulations we studied—some regulations could show gender parity, whereas others might privilege women at the expense of men. It would be helpful to uncover what type, and why or under what conditions certain *classes or categories of regulations* are more gender neutral than others. Of course, it would be advisable to examine how regulations are also affected by national cultural settings. Finally, though we showed that despite the mundane nature of the regulations studied they still produce significant gender bias, the small number of regulations is a limitation, so future work should include a larger number and more diverse regulation types.

CONCLUSION

All efforts made to close the gender gap in entrepreneurship research and practice will remain inadequate until we become fully aware that some regulations are not gender agnostic

but, in fact, perpetuate gender bias. Based on data draw from 27 countries in Central and Eastern Europe and Central Asia from 2005 to 2014, our study explains why and how regulations are gendered and how women's and men's experience and responses to regulations influence their firm performance. We show that women's and men's experience of regulations is correlated differently with the performance of their SMEs—the former experience regulations as being positively related to their SMEs' performance, whereas the latter experience them to be negatively correlated to their SMEs' performance. In contributing to gendered institutions theory, our study shows that (i) regulations perpetuate gender inequality; and (ii) such gender effects supersede cultural differences and extend well beyond the individuals involved, spilling over into and impacting the wider organizations they lead.

REFERENCES

Acker, J. (1992). From sex roles to gendered institutions. *Contemporary Sociology*, 21, 565-569.

Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory & Practice*, 30(5), 595-621.

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

Aragón-Correa, J.A., Marcus, A.A., & Vogel, D. (2020). The effects of mandatory and voluntary regulatory pressures on firms' environmental strategies: A review and recommendations for future research. *Academy of Management Annals*. 14, 339-365.

Bardasi, E., Sabarwal, S., & Terrell, K. (2011). How do female entrepreneurs perform? Evidence from three developing regions. *Small Business Economics*, *37*(4), 417-441.

Baughn, C.C., Chua, B., & Neupert, K.E. (2006). The normative context for women's participation in entrepreneurship: A multicountry study. *Entrepreneurship Theory & Practice*, 30, 687-708.

Bliss, R.T., & Garratt, N.L. (2001). Supporting women entrepreneurs in transitioning economies. *Journal of Small Business Management*, 39(4), 336.

Brush, C.B., Carter, N.M., Gatewood, E.J. Greene P.G., & Hart, M.M. (2006). *Growth-oriented women entrepreneurs and their businesses: A global research perspective* (New Horizons in Entrepreneurship Series). Edward Elgar.

Brush, C.G., De Bruin, A., Gatewood, E.J., & Henry, C. (Eds.). (2010). *Women entrepreneurs and the global environment for growth: a research perspective*. Edward Elgar Publishing.

Bruton, G.D., Su, Z., & Filatotchev, I. (2018). New venture performance in transition economies from different institutional perspectives. *Journal of Small Business Management*, 56, 374-391.

Bullough, A., Moore, F., & Kalafatoglu, T. (2017). Research on women in international business and management: Then, now, and next. *Cross Cultural & Strategic Management*, 24(2), 211-230.

Buser, T., Niederle, M., & Oosterbeek, H. (2014). Gender, competitiveness, and career choices. *Quarterly Journal of Economics*, 129(3), 1409-1447.

Carter, S., Shaw, E., Lam, W., & Wilson, F. (2007). Gender, entrepreneurship, and bank lending: The criteria and processes used by bank loan officers in assessing applications. *Entrepreneurship Theory and Practice*, 31, 427–444.

Chittenden, F., & Ambler, T. (2015). A question of perspective: Impact assessment and the perceived costs and benefits of new regulations for SMEs. *Environment and Planning C: Government and Policy*, 33(1), 9-24.

Cromie, S. (1987). Motivations of aspiring male and female entrepreneurs. *Journal of Organizational Behavior*, 8(3), 251-261.

Cuervo-Cazurra, A. (2008). Better the devil you don't know: Types of corruption and FDI in transition economies. *Journal of International Management,* 14(1),12-27.

Das Gupta, M. (2015). Missing girls' in the south Caucasus countries: Trends, possible causes, and policy options. *Policy Research Working Paper 7236*. Washington, D.C.: World Bank Group.

de Bruin, A., Brush, C.G. & Welter, F. (2007). Advancing a framework for coherent research on women's entrepreneurship. *Entrepreneurship Theory & Practice*, 323-339.

De Bruin, A., Brush, C.G., & Welter, F. (2006). Introduction to the special issue: Towards building cumulative knowledge on women's entrepreneurship. *Entrepreneurship Theory & Practice*, 30(5), 585-593.

Diehl, M-R., Richter, A., & Sarnecki, A. (2018). Variations in employee performance in response to organizational justice: The sensitizing effect of socioeconomic conditions. *Journal of Management*, 44, 2375-2404.

D'Ignazio, C., & Klein, L.F. (2020). *Data Feminism*. MIT Press, Cambridge, MA.

Dilli, S., & Westerhuis, G. (2018). How institutions and gender differences in education shape entrepreneurial activity: A cross-national perspective. *Small Business Economics*, 51(2), 371-392.

Dudwick, N. (2015). *Missing Women in the South Caucasus: Local Perceptions and Proposed Solutions*. Washington, DC: World Bank Group.

Eddleston, K.A., Ladge, J.J., Mitteness, C., & Balachandra, L. (2016). Do you see what I see? Signaling effects of gender and firm characteristics on financing entrepreneurial ventures. *Entrepreneurship Theory & Practice*, 40, 489-514.

Edelman Trust Barometer, (2020). *Global Report*. https://www.edelman.com/trustbarometer#top (accessed May 5, 2020).

Elam, A., & Terjesen, S. (2010). Gendered institutions and cross-national patterns of business creation for men and women. *The European Journal of Development Research*, 22(3), 331-348.

Estrin, S., & Mickiewicz, T. (2011). Institutions and female entrepreneurship. *Small Business Economics*, 37(4), 397–415.

Fairlie, R.W., & Robb, A. (2009). Gender differences in business performance: Evidence from the Characteristics of Business Owners survey. *Small Business Economics*, 33, 375.

Farinas, J.C., & Ruano, S. (2004). The dynamics of productivity: A decomposition approach using distribution functions. *Small Business Economics*, 22(3/4), 237-251.

Fletcher I. (2001). A small business perspective on regulation in the UK. *Economic Affairs* 21(2), 17-22.

Gashi, P., Hashi, I., & Pugh, G. (2014). Export behaviour of SMEs in transition countries. *Small Business Economics*, 42(2), 407-435.

Goldman, B.M. (2001). Toward an understanding of employment discrimination claiming: An integration of organizational justice and social information processing theories. *Personnel Psychology*, 54, 361-386.

Gustafson, P.E. (1998). Gender Differences in risk perception: Theoretical and methodological perspectives. *Risk Analysis*, 18(6), 805-811.

Hawkins, K., & Hutter, B.M. (1993). The response of business to social regulation in England and wales: An enforcement perspective. *Law & Policy*, 15, 199–217.

Hechavarría, D.M., Terjesen, S.A., Stenholm, P., Brännback, M., & Lång, S. (2018). More than words: Do gendered linguistic structures widen the gender gap in entrepreneurial activity? *Entrepreneurship: Theory & Practice*. 42, 797-817.

Henry, C., Foss, L., & Ahl, H. (2016). Gender and entrepreneurship research: A review of methodological approaches. *International Small Business Journal*, 34(3), 217-241.

Hunt, R.A., & Fund, B. (2016). Intergenerational fairness and the crowding out effects of sell-intended environmental policy. *Journal of Management Studies*, 53, 878-910.

Jamali, D. (2009). Constraints and opportunities facing women entrepreneurs in developing countries: A relational perspective. *Gender in Management: An International Journal*, 24(4), 232 – 251.

Jennings, J.E., & McDougald M.S. (2007). Work-family interface experiences and coping strategies: Implications for entrepreneurship research and practice. *The Academy of Management Review*, 32(3), 747-760.

Johnson, A.G. (2000). *The Blackwell Dictionary of Sociology: A User's Guide to Sociological Language*. Malden, Ma: Blackwell Publishers.

Kalt, J.P., & Zupan, M.A. (1984). Capture and ideology in the economic theory of politics. *American Economic Review*, 74, 279-300.
Karriker, J.H., & Williams, M.L. (2009). Organizational justice and organizational citizenship behavior: A mediated multifoci model. *Journal of Management*, 35, 112-135.
Kitching, J. (2006). A burden on business? Reviewing the evidence base on regulation and small-business performance. *Environment and Planning C: Government and Policy,* 24(6), 799-814.
Kitching, J., Hart, M., & Wilson, N. (2015a). Burden or benefit? Regulation as a dynamic influence on small business performance. *International Small Business Journal*, 33(2), 130-147.
Kitching, J., Kašperová, E., & Collis, J. (2015b). The contradictory consequences of regulation: The influence of filing abbreviated accounts on UK small company performance. *International Small Business Journal*, 33(7), 671-688.
Kleiner, M., & Krueger, A.B. (2013). Analyzing the extent and influence of occupational licensing on the labor market. *Journal of Labor Economics,* 31(2), 173-202.
Legewie, J., & DiPrete, T.A. (2012). School context and the gender gap in educational achievement. *American Sociological Review*, 77, 463-485.
Loscocco, K.A., Robinson, J., Hall, R.H., & J.K. Allen, (1991). Gender and small business success: An inquiry into women's relative disadvantage. *Social Forces,* 70(1), 65-85.
Manolova, T.S., Eunni, R.V. & Gyoshev, B.S. (2008). Institutional environments for entrepreneurship: Evidence from emerging economies in Eastern Europe. *Entrepreneurship Theory & Practice*, 32, 203-218.
Markman, G.D., & Waldron, T.L. (2014). Small entrants and large incumbents: A framework of micro entry. *Academy of Management Perspectives*, 28, 179-197.
Marlow, S., & McAdam, M. (2013). Gender and entrepreneurship: Advancing debate and challenging myths; exploring the mystery of the under-performing female entrepreneur. *International Journal of Entrepreneurial Behavior & Research,* 19(1), 114-124.
Marlow, S., Hicks, S., & Treanor, L. (2019). Gendering Entrepreneurial Behaviour. In *Entrepreneurial Behaviour*, 39-60. Palgrave Macmillan, Cham.
Marques, H. (2017). The routineness of tasks, gender and culture in entrepreneurship. *Socio-Economic Review*, 15, 815–851.
Mateut, S. (2018). Subsidies, financial constraints and firm innovative activities in emerging economies. *Small Business Economics*, 50(1), 131-162.
McAdam, M., Harrison, R.T., & Leitch, C.M. (2018). Stories from the field: Women's networking as gender capital in entrepreneurial ecosystems. *Small Business Economics*, 1-16.
McCracken, K., Marquez, S., Kwong, C., Stephan, U., Castagnoli, A., & Dlouhá, M. (2015). Women's entrepreneurship: Closing the gender gap in access to financial and other services and in social entrepreneurship. *European Parliament.*
Minniti, M., & Nardone, C. (2007). Being in someone else's shoes: The role of gender in nascent entrepreneurship. *Small Business Economics*, 28(2-3), 223-238.
Mueller, S.L., & Conway Dato-on, M. (2013). A cross cultural study of gender-role orientation and entrepreneurial self-efficacy. *International Entrepreneurship and Management Journal*, 9 (1), 1-20.
Muravyev, A., Talavera, O., & Schäfer, D. (2009). Entrepreneurs' gender and financial constraints: evidence from international data. *Journal of Comparative Economics*, 37, 270-286.
Noll, R.G. (1985). Let them make toll calls: A state regulator's lament. *American Economic Review,* 75, 52-56.
of research on new venture creation, 85-98.

Özcan, G.B. (2006). Djamila's Journey from Kolkhoz to Bazar: Female Entrepreneurs in Kyrgyzstan. In Welter, F., Smallbone, D. & Isakova, N. (Eds.) *Enterprising Women in Transition Economies*. Routledge, New York, NY.

Pastore, F., & Verashchagina, A. (2011). When does transition increase the gender wage gap? *Economics of Transition,* 19(2), 333-369.

Pavlovich, K. & Markman, G.D. (In Press). *Spirituality, Entrepreneurship and Social Change*. Wolrd Scientific Publishing; Hackensack, NJ.

Peltzman, S. (1976). Toward a more general theory of regulation. *Journal of Law and Economics*, 19, 211-240.

Perez, C.C. (2020). *Invisible Women: Exposing Data Bias in a World Designed for Men*. Penguin, UK.

Posner, R.A. (1971). Taxation by regulation, *Bell Journal of Economics and Management Science*, 2, 22-50.

Reynolds, P.D., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P., & Chin, N. (2005). Global entrepreneurship monitor: data collection design and implementation 1998-2003. *Small Business Economics*, 24(3), 205–231.

Sabarwal, S., Terrell, K., & Bardasi, E. (2009). How do female entrepreneurs perform? Evidence from three developing regions. *World Bank*.

Salmenniemi, S., Karhunen, P. & Kosonen, R. (2011). Between business and byt: Experiences of women entrepreneurs in contemporary Russia. *Europe-Asia Studies*, 63(1): 77-98.

Shelley, T.O., Morabito, M.S., & Tobin-Gurleyc, J. (2011). Gendered institutions and gender roles: Understanding the experiences of women in policing. *Criminal Justice Studies*, 24, 351-367.

Shen, F., Ma, Y., Wang, R., Pan, N., & Meng, Z. (2019). Does environmental performance affect financial performance? Evidence from Chinese listed companies in heavily polluting industries. *Quality & Quantity*, 53, 1941–1958.

Smallbone, D., and Welter, F. (2001). The Role of Government in SME Development in Transition Countries. *International Small Business Journal*, 19 (4): 63-77.

Stigler, G.J. (1971). The theory of economic regulation, *Bell Journal of Economic and Management Science*, 2, 3-21.

Terjesen, S., Elam, A., & Brush, C. G. (2011). Gender and new venture creation. *Handbook*

Thebaud, S. (2010). Gender and entrepreneurship as a career choice: Do self-assessments of ability matter? *Social Psychology Quarterly*, 73(3), 288-304.

Thebaud, S. (2015). Business as plan B: Institutional foundations of gender inequality in entrepreneurship across 24 industrialized countries. *Administrative Science Quarterly*, 60, 671-711.

U.S. Chamber of Commerce Foundation, (2017). *The Regulatory Impact on Small Business: Complex. Cumbersome. Costly*.

UNICEF, (2013). *Equity in Learning? A Comparative analysis of the PISA 2009 results in Central and Eastern Europe and The Commonwealth of Independent States*. Geneva: United Nations Children's Fund.

Van Loo, R., (2020). The new gatekeepers: Private firms as public enforcers. *Virginia Law Review*, 106: 467-522.

Verheul, I., Stel, A.V., & Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. *Entrepreneurship and Regional Development*, *18*(2), 151-183.

Watson, J., & Newby, R. (2005). Biological sex, stereotypical sex-roles, and SME owner characteristics. *International Journal of Entrepreneurial Behavior & Research*, 11(2), 129-143.

Welter, F. (2011). Contextualizing entrepreneurship: Conceptual challenges and ways forward. *Entrepreneurship Theory and Practice*, 35(1), 165–184.

World Bank. (2019). *Financial Inclusion. Europe and Central Asia Economic Update* (Spring), Washington, DC: World Bank. Doi: 10.1596/978-1-4648-1409-9.
Wu, Z., & Chua, J.H. (2012). Second-order gender effects: The case of U.S. small business borrowing cost. *Entrepreneurship Theory & Practice*, 36, 443–463.

Table 1: Variables, Definitions and Descriptive Statistics

Variables	Definition	Observations	Mean	SD	Min	Max
Firm Performance						
Sales Growth per Worker	Growth of sales per worker (Ln.)	3584	11.99	3.09	2.25	26.84
Gender						
Gender	=1 if the firm is owned by a woman, 0 if the firm is owned by a man	33661	0.31	0.46	0	1
Gender Equality (Culture)	A measure of a country's culture vis-à-vis gender. The higher the ratio, the higher the level of *gender equality* in a country	26905	0.57	0.06	0.42	0.69
Firm Characteristics						
Number of employees	Number of permanent and full-time employees in the last year	37513	36.24	47.48	0.00	249.00
Asset	Net book value of machinery, vehicles, and equipment in the last year (Ln.)	5360	14.20	3.11	0	28.38
Firm age	Firm age in years	37217	1994.55	13.26	1800.00	2013.00
Experience of Regulations						
	Average value of obstacles represented by electricity, telecommunication, transport, business inspections, compulsory certificates, crime, tax rates, licensing and courts (0 no obstacle to 4 very severe obstacle)	41150	1.04	0.77	0.00	4.00
Actual Regulatory Obstacles						
	The average number of days to needed to get electricity, water, and telephone connections	12973	20.16	62.05	0	2001
Informal Response to Regulatory Enforcers						
	If gifts were given for electricity, water, and telephone connections (1=yes; 0=no)	19115	0.12	0.32	0	1

Table 2: OLS Regression Results for the Hypothesized Direct Effects; DV = Sales Growth per Worker (over two consecutive years; Ln)

Models	(1)	(2)	(3)	(4)
VARIABLES	**Baseline**	**H1**	**H2a**	**H3a**
Number of Employees	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Age	0.005**	0.009*	0.005**	0.006*
	(0.002)	(0.005)	(0.002)	(0.004)
Gender Equality	28.071***	27.526***	26.759***	32.097***
	(0.996)	(1.954)	(0.967)	(1.385)
Gender (Women=1; Men=0)	2.182***	-0.297	0.115	-1.555
	(0.762)	(0.194)	(0.135)	(1.232)
Gender * Gender Equality	-3.742***			
	(1.288)			
Actual Regulations		0.000		
		(0.001)		
Gender * Actual Regulations		-0.003		
		(0.002)		
Experience of Regulations			0.165**	
			(0.065)	
Gender * Experience of			-0.131	
Regulations			(0.102)	
Response to Reg. Enforcers				-0.013
				(0.278)
Gender * Response Reg. Enforcers				0.844
				(0.628)
Constant	-15.606***	-23.388**	-16.048***	-17.470**
	(4.827)	(10.971)	(4.830)	(7.377)
R-squared	0.702	0.730	0.702	0.701
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES

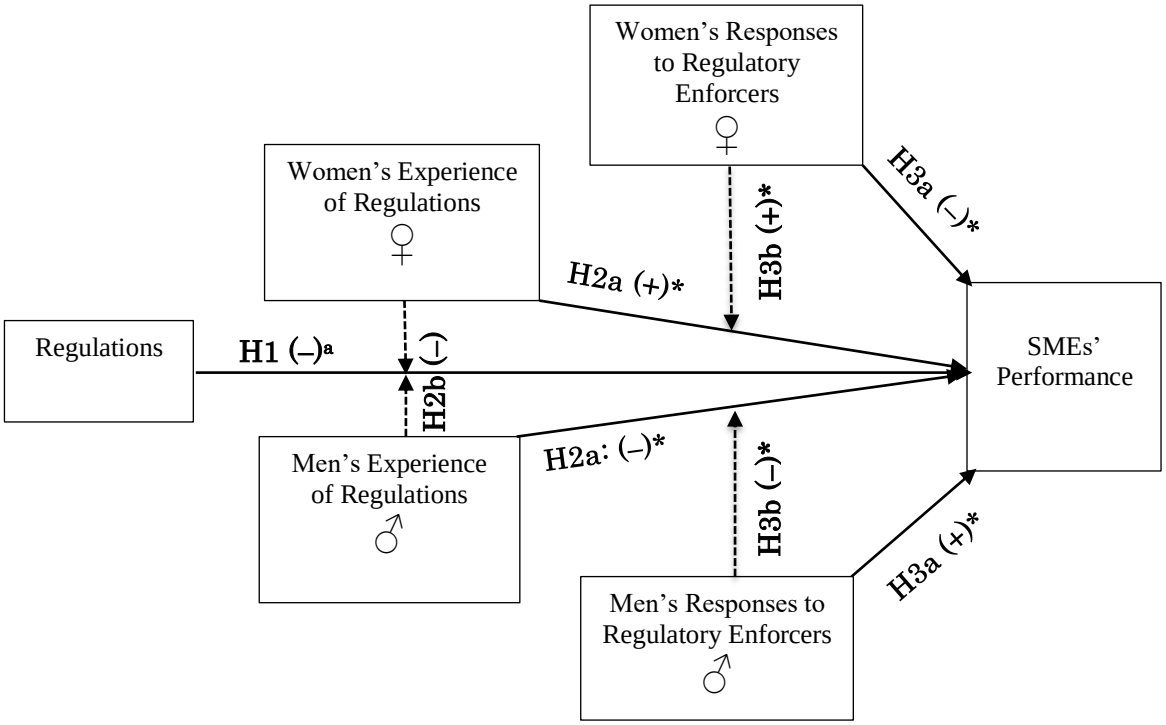
* Statistical significance at 10% (weaker evidence)
** Statistical significance at 5%
*** Statistical significance at 1% (stronger evidence)
Standard Errors are in Parentheses

Table 3: Quartile Regression Results for all Hypothesized Effects:
DV: Sales Growth per Worker (over two consecutive years; Ln)

Models	(1)	(2)	(3)	(4)	(5)	(6)
Least to Best Performing:	**Women Bottom 25%**	**Women Middle 50%**	**Women Top 75%**	**Men Bottom 25%**	**Men Middle 50%**	**Men Top 75%**
Controls:						
Asset	0.289***	-0.028	-0.021	0.109***	0.079	0.122
	(0.026)	(0.050)	(0.027)	(0.014)	(0.127)	(0.090)
Number of employees	-0.013***	-0.001	-0.006***	-0.003***	-0.003**	-0.003***
	(0.001)	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)
Firm age	0.050***	0.089***	0.072***	0.005**	0.008	0.002
	(0.007)	(0.013)	(0.007)	(0.002)	(0.017)	(0.012)
Predictors						
H1: Actual Regulations	0.004	0.011	-0.001	0.026***	0.013	-0.031*
	(0.004)	(0.008)	(0.0043	(0.003)	(0.024)	(0.017)
H2a: Experience of	12.965***	21.331***	19.479***	-2.294***	-2.925**	-1.153
Regulations	(3.052)	(5.874)	(3.135)	(0.143)	(1.320)	(0.934)
H3a: Response to Regulatory	-9.941***	-16.282***	-17.009***	3.384***	3.981***	1.993**
Enforcers	(1.615)	(3.109)	(1.659)	(0.132)	(1.223)	(0.865)
Moderators:						
H2b: Experience of	-0.003	-0.006	-0.001	-0.011***	-0.006	0.008
Regulations * Actual	(0.002)	(0.004)	(0.002)	(0.001)	(0.008)	(0.006)
Regulations						
H3b: Experience of	6.876***	11.037***	10.436***	-1.601***	-1.899**	-0.593
Regulations * Response to	(1.525)	(2.934)	(1.566)	(0.073)	(0.678)	(0.480)
Regulatory Enforcers						
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Country Fixed Effects	YES	YES	YES	YES	YES	YES

*, **, and *** refer to statistical significance levels of 10%, 5% and 1%, respectively.
Standard Errors are in Parentheses

Figure 1: The Conceptual Model, Hypotheses, and Statistical Support



* Significant support
[a] Partial support
—————— Direct effects
---------- Moderating effects