



HUMAN CAPITAL FOR MICRO, SMALL, AND MEDIUM-SIZED ENTERPRISES (MSMES) IN APEC DEVELOPING ECONOMIES: INDONESIA

DOMINIC S.K. LIM



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RESEARCH TEAM

Dominic S. K. Lim is an assistant professor at Ivey Business School, Western University, where he teaches entrepreneurship and growth-related topics in undergraduate, graduate, and executive programs. Prior to Ivey, he held faculty positions at Goodman School of Business, Brock University, and Marshall School of Business, University of Southern California. He received his PhD from Ivey, his MBA from Cambridge University where he was a British Chevening Scholar, and BSc (Computer Engineering) from Seoul National University, Korea. His research on entrepreneurial firm growth, entrepreneurial cognitions, and institutions has been funded by Social Sciences and Humanities Research Council of Canada (SSHRC), and published in top management and entrepreneurship journals such as *Strategic Management Journal*, *Entrepreneurship Theory & Practice*, and *Journal of the Academy of Marketing Science*. He serves on the editorial review board of *Entrepreneurship Theory & Practice*, *Journal of Business Venturing*, *International Small Business Journal*, and *Multinational Business Review*. Dr. Lim is also the faculty advisor for the LEADER Project at Ivey Business School.

Nathan Kim is a PhD candidate in Entrepreneurship at Ivey Business School, Western University. He received his Bachelor of Business Administration degree from Seoul National University in Seoul, Korea, and his MSc in Management degree from Queen's University in Canada. Nathan's research areas include comparative international entrepreneurship, which studies predictors of entrepreneurship across different countries. He is also studying co-working spaces and their influence on the emotional well-being of entrepreneurs who use them.

Chang Hoon Oh is William Saywell Professor in Asia Pacific Business and professor of International Business at the Beedie School of Business, Simon Fraser University. He was the Inaugral Alan Rugman visiting fellow in Henley Business School, University of Reading, for 2015/2016. He worked for Samsung Electronics and Samsung Corporation as a marketing manager at their headquarters. He served his military service as an instructor, first lieutenant ROTC, in South Korea. Dr. Oh received his PhD in 2007 from the Kelley School of Business at Indiana University-Bloomington. His research centres on internationalization strategy, country risk, business continuity and sustainability, and international entrepreneurship. His research has been supported by the SSHRC, Canadian International Resources and Development Institute (CIRDI) and the National Research Foundation of Korea (NRF). He has also collaborated with World Wildlife Fund of Nature (WWF) and United Nations Development Programme (UNDP). Since 2016, he is a co-editor in chief of *Multinational Business Review*.

Mihwa Seong is a PhD student in Entrepreneurship at Ivey Business School, Western University. She completed her BA in International Politics and Economics at Ewha Womans University in South Korea, and received her MSc in Statistics at Western University before joining the PhD program. Her primary research interests lie in resolving gender discount against women in entrepreneurship through identifying limiting factors to women entrepreneurs and seeking ways to overcome such barriers. Furthermore, she aims to better understand how institutions may pose constraints for women entrepreneurs and how women entrepreneurs with different motivations and levels of financial and human capital may face greater or lesser institutional constraints.

HUMAN CAPITAL FOR MICRO, SMALL, AND MEDIUM-SIZED ENTERPRISES (MSMES) IN APEC DEVELOPING ECONOMIES: INDONESIA

This report investigates how institutional environments influence the usefulness of individuals' human capital for entrepreneurial activity, that is, new business creation.

Based on the logic of institutional theory, we posit that various dimensions of a country's institutional environment — specifically, regulatory dimension such as government policy and support for new and growing businesses; cognitive dimension such as entrepreneurship education; and normative dimension such as entrepreneurship-friendly cultural and social norms — may have differing moderation effects on the relationship between individuals' level of education and their engagement in entrepreneurial activities.

Our analysis of the dataset comprising 32,540 individuals from 14 APEC countries in 2014 indicates that an individual's education level is positively related to new business creation. Further, our findings suggest that teaching entrepreneurship across all levels of education facilitates highly educated individuals' engagement in new business activity. We also find that providing support for new and growing businesses can encourage highly educated individuals to create new business with innovative characteristics.

INTRODUCTION

This report investigates the role of institutions in encouraging or discouraging highly educated individuals to engage in new business activities — which has been one of the key research questions in development economics in development economics (Baumol 1990; Dias and McDermott 2006). Emerging economies present a meaningful context to study the interactions between micro- and macro-level factors, considering the resource constraints and institutional barriers that many individuals in these countries need to overcome to start a new business (Bruton, Ahlstrom, and Obloj 2008; Kiss et al. 2012).

In particular, this report focuses on new business activities in one APEC developing economy: Indonesia. By comparing participation rates among highly educated individuals in new businesses in Indonesia with those of select APEC developing economies (Indonesia, Vietnam, Philippines, and Peru) and APEC developed economies (United States, Australia, Singapore, Japan, and Canada), this report highlights the roles that various institutions may play in individuals' engagement in new business activity. Based on an analysis of 14 APEC economies included in the Global Entrepreneurship Monitor (GEM) dataset in 2014, a number of evidence-based policy and regulatory recommendations are provided.

First, including entrepreneurship education in the curriculum of primary, secondary and higher education institutions encourages highly educated individuals to engage in new business activities. Improving the school enrolment rate, along with focusing on offering entrepreneurship education early in the education system, can be particularly useful for increasing participation in new business activities across the population. Increasing support for new and growing businesses can be an effective policy lever to encourage highly educated individuals to create new business with innovative characteristics.

THE CONTEXT: INDONESIA

2.1. Country Overview

Indonesia has the fourth largest population in the world at 260 million, with half the population under the age of 30 (World Bank Data Bank 2018). Indonesia also has a great degree of diversity and is home to more than 300 ethnic groups spread across 17,000 islands. Over 80% of the population identify as Muslim, making Indonesia the largest Muslim population in the world. However, Indonesia remains a secular state and most Muslims in Indonesia support religious pluralism. This is evidenced by women in Indonesia who enjoy greater freedom to pursue higher education and careers beyond homemaking activities compared with other Muslim countries (Blackburn 2008).

Raising the quality of education has been a challenge for Indonesia, despite the government's commitment to improving it. The government has distributed approximately 20% of the annual GDP to education since 2009. However, 60% of the population in Indonesia have not attained upper secondary-level education, even though rates of school enrolment have steadily risen across all income levels. School-completion rates vary greatly across income strata (World Bank 2015). Indonesia's performance in Program for International Student Assessment (PISA) is well below the international standards in literacy and math compared to the OECD average as well as other Southeast Asian peers (World Bank 2016; OECD 2018).

2.2. Economic Context

With a gross domestic product (GDP) of US\$1.016 trillion in 2017, Indonesia is the largest economy in Southeast Asia (World Bank 2018). Indonesia is an emerging economy among lower middle-income countries, with a GDP per capita of US\$3,847 in 2017. Indonesia is also categorized as an efficiency-driven economy, meaning it strives to improve production processes and product quality to compete in the global market (World Economic Forum 2017). Indonesia is a relatively open economy compared to the global and regional average scores on the economic freedom index developed by the Heritage Foundation (2018). Trade accounts for around 35% of GDP, indicating moderate importance to its economy. Indonesia has maintained robust economic growth since the Asian financial crisis with real GDP growth in 2018 projected to be 5%. This growth has been accompanied by a significant reduction in the poverty rate which declined by 10% in 2016.

However, wealth inequality has been a significant challenge, as evidenced by the relatively high Gini Index of 39.5 (2013). The key to Indonesia's transition from a middle-income country to a high-income country is identified as inclusive growth which could shrink the increasing gap between the rich and poor. Inequality often leads to a small middle class with a majority of the population facing deteriorating health and limited access to higher education, a major roadblock to accumulating human capital. In turn, a lack of skilled labour and financial capital to start businesses slow down job creation (World Bank 2018a).

The December 2017 Indonesian economic quarterly report also suggests that the Indonesian government needs to become more efficient in collecting taxes and spending public funds (World Bank 2017). For example, public expenditure on education has led to a growth in the number of schools, but no substantial changes in the quality of education. In addition, the government has held back from actively intervening in the early stages of children's cognitive development which is widely recognized as vitally important. Government spending on research and development is also too restricted, making it difficult to transform into an innovation-driven economy.

2.3. Entrepreneurship in Indonesia

According to GEM, Indonesia's Total Early State Entrepreneurial Activity (TEA) is the highest among its Southeast Asian peers (Nawangpalupi et al. 2014 2015). Within Indonesia, nascent and new entrepreneurs are concentrated in the western region where most economic and political activities are also concentrated. Jakarta has the highest TEA rates among cities. Entrepreneur ownership rates are high for both early entrepreneurship activities and established entrepreneurship activities. Generally, the involvement level in early stage entrepreneurship is higher among populations at lower income levels.

Through various GEM indicators, Indonesia shows a positive outlook for entrepreneurial activities. Perceived opportunity is around 47%, which is high. The population also displays high perceived capabilities, especially among younger people who completed education to the senior secondary level. Most Indonesians also confer a high status for successful entrepreneurs (80%) who receive ample media attention (Nawangpalupi et al. 2014 2015). However, Indonesia remains less developed than innovation-driven economies that are knowledge-intensive. Compared to most of its Southeast Asian peers, Indonesia ranks low on the 2018 Global Innovation Index (GII) largely due to a lack of skilled labour and research and development (Cornell University, INSEAD, and

WIPO 2018). As such, Indonesia needs to focus on building a climate conducive for both innovation and entrepreneurship through improving national policies, building the necessary infrastructure such as better access to the Internet, and providing education and training (Nawangpalupi et al. 2014 2015). One example of the Indonesian government's efforts to foster innovation and entrepreneurship is the 2016 easing of regulations on starting businesses by abolishing the minimum capital requirements for small and medium-size businesses.

THE LITERATURE

3.1. Entrepreneurial Process

One of the widely accepted definitions of entrepreneurship is the process through which individuals discover, evaluate, and exploit opportunities (Shane and Venkataraman 2000). Such entrepreneurial process is crucial for any country's economic development (Baumol 1990; Baumol and Strom 2007), but particularly so in less developed economies (Bruton et al. 2008). One of the key research questions in development economics is how to direct a country's resources into productive economic activities, such as entrepreneurship (King and Levine 1993). The literature that relates entrepreneurship to economic development highlights the importance of macro-level institutions such as government policy and economic resources in encouraging entrepreneurship (Baumol 1990; Dias and McDermott 2006; King and Levine 1993). However, many of the key resources needed for the entrepreneurial process, such as human capital, reside with individuals (Arenius and De Clercq 2005; Autio and Acs 2010; Shane and Venkataraman 2000). The extent to which individual human capital can be channeled toward the entrepreneurial process is therefore an important issue in emerging economies where individual resource exploitation is often hampered by institutional constraints (Lau and Busenitz 2001; Tan 2002).

3.2. Human Capital and Entrepreneurship

At the individual level, knowledge and skills are key drivers of engagement in entrepreneurship (Shane 2000; Shane and Venkataraman 2000). Human capital theory argues that the knowledge base of individuals increases their cognitive ability to undertake productive economic activities (Becker 1975). Entrepreneurship literature similarly documents that human capital reflected in education levels (Arenius and De Clercq 2005), enhances people's abilities to identify and enact opportunities (Davidsson and Honig 2003; Ucbasaran, Westhead, and Wright 2008). Education equips people with superior information processing abilities, search techniques, and scanning capabilities (Becker 1975; Shaver and Scott 1991). These skills, along with enhanced access to the "knowledge corridor" that higher education provides, enable highly educated individuals to recognize a wider range of entrepreneurial opportunities (Dimov and Shepherd 2005). They can also exploit those opportunities more successfully (Cooper, Gimeno-Gascon, and Woo 1994; Shane and Venkataraman 2000).

Similarly, previous research has indicated that individuals' level of education plays an important role in stimulating their engagement in entrepreneurship (Iyigun and Owen 1998). Therefore, the underlying premise of our conceptual model is that people's human capital, based on higher education, should play an instrumental role in their engagement in the entrepreneurial activity.

3.3. Role of Institutional Conditions

The discovery, evaluation, and exploitation of entrepreneurial opportunities is shaped by interactions between people and their environment (Shane and Venkaraman 2000), such that the broader institutional context affects the choices individuals make about using their personal resources toward entrepreneurial opportunities (Baker et al. 2005; McMullen et al. 2008). Entrepreneurship research in emerging economies, in particular, must consider the role of the institutional context (Bruton et al. 2008). Individuals with high levels of income or education in these economies have a choice between becoming rent-seekers or productive entrepreneurs (Dias and McDermott 2006), and institutional conditions conducive to entrepreneurial activities may have a significant impact on this choice (Hirschman 1958). To examine the link between individual-level human capital and engagement in entrepreneurship, this report adopts Scott (1995) who conceptualized the institutional context with three pillars: regulatory, cognitive, and normative dimensions.

3.3.1. Regulatory dimension

The regulatory dimension is closely related to North's (1990) notion of the "rule of the game," and reflects entrepreneurship-related policies and regulations that can influence entrepreneurial process (Bowen and De Clercq 2008). Entrepreneurship-friendly regulations and incentives can effectively lower barriers to entrepreneurial activities (Baumol and Strom 2007). However, entrepreneurship in emerging countries is often hampered by excessive bureaucracy (Djankov and Murrell 2002), inefficient tax systems, failure to deliver on existing legal commitments (De Soto 1989; Danis and Shipilov 2002), and, notably, the absence of a strong intellectual property protection regime (Bruton et al. 2008).

3.3.2. Cognitive dimension

In the context of entrepreneurship, this dimension reflects the extent to which

the country's education system addresses issues related to new business creation and growth (Bowen and De Clercq 2008; Reynolds et al. 2005). Attention to entrepreneurship in education may not only prepare individuals for developing entrepreneurship-specific skills, but also promote a general awareness of entrepreneurship as a possible career choice (Peterman and Kennedy 2003). Such higher education systems also provide resourceful individuals with a pool of employees who know how to start and run a business, and thus they can stimulate aspiring entrepreneurs to leverage their human capital into their own new business undertakings (Honig 2004). In emerging economies, however, there are wide cross-country variations in terms of the availability of such knowledge (Bruton et al. 2008; Manolova, Eunni, and Gyoshev 2008).

3.3.3. Normative dimension

In general terms, the normative dimension of a country's institutions captures the models of behaviour that are accepted through various social interactions (Busenitz et al. 2000). For entrepreneurship, this dimension reflects the degree to which individuals believe that starting a new business constitutes a desirable choice of career. This choice may depend on whether the country's culture emphasizes such values as personal initiative and self-fulfillment over collective responsibility (Baughn, Chua, and Neupert 2006), and also how relevant stakeholders, such as the media, perceive these issues (Reynolds et al. 2005). Individuals are likely to be encouraged to apply their human capital to entrepreneurial activities in countries where society regards new businesses as valuable (Busenitz et al. 2000). In contrast, it should be less attractive for individuals to leverage their personal resources to create a new business when prevailing norms associate entrepreneurial activities with parasitism or profiteering (Hisrich and Grachev 1993; Manolova et al. 2008).

THE STUDY

4.1. Purpose of the Study

One of the main interests of comparative international entrepreneurship research is how the institutional environment shapes country-level differences in entrepreneurial activity (Lim et al. 2010; Terjesen et al. 2016). The purpose of this study is to address the following questions:

(1) How does the relationship between an individual's human capital and her/his engagement in new business activities differ in Indonesia and other countries?

(2) How do different institutions of a country affect the relationship between an individual's human capital and her/his engagement in new business creation?

4.2. Methods

4.2.1. Data Sources

We derived individual- and country-level information from multiple data sources. We collected individual-level variables from the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS). The GEM project started in the late 1990s to create cross-country data which harmonized individual perceptions and prevalence of new business activity. GEM is recognized as rich, reliable, and valid dataset (Reynolds et al. 2005). The APS is conducted annually mainly via telephone interviews with a representative sample of at least 2,000 adults, 18-64 years old, in each country studied. GEM data has been used by other comparative international entrepreneurship research, due to its wide coverage (Bowen and De Clercq 2008; Lim et al. 2016).

Country-level institutional conditions are collected from the GEM National Expert Survey (NES). The NES polls country experts representing a broad range of backgrounds about the quality of the country's institutions with respect to promoting entrepreneurial activity. Standardized questions and validated measurement scales are used to collect experts' opinions about their institutional environments (Reynolds et al. 2005). We also gathered additional macro-level variables — for the controls and as checks for the institutional conditions — from the World Economic Forum's Global Competitiveness Reports and World Bank's World Development Indicators. In total, our datasets consist of 32,540 individual-level observations from 14 APEC countries

4.3. Measures

4.3.1. Dependent variables

First, engagement in new business activity is a binary variable, which equals 1 if the respondent is 1) actively involved in start-up efforts as owner, or 2) manages and owns a business that is up to 42 months old (Lim et al. 2016). This variable is coded as 1 only if respondents do so to take advantage of a business opportunity, rather than because there are no better work choices. This variable indicates the respondent's actual involvement in opportunity-driven, early-stage entrepreneurial activity (McMullen et al. 2008). Second, we also test whether individual human capital and institutional dimensions affect creation of new business with innovative characteristics. This is measured by a binary variable, which equals 1 if the respondent is involved in a startup that does not have many businesses offering the same product, and of which customers consider product/service new/unfamiliar.

4.3.2. Individual-level human capital

Following the approach of previous research, we measure individual-level human capital using a dummy variable derived from the GEM APS that measures the individual's education level (Aidis et al. 2008; Cooper et al. 1994). The value of this variable equals 1 if a person has completed post-secondary or higher education.

4.3.3. Institutional conditions

To measure the three institutional conditions, we use variables from the GEM NES that have also been validated in previous research. First, the regulatory dimension of institutions is measured by entrepreneurship-friendly government policy and government support for new and growing firms. Second, we test cognitive dimension of institutions by the extent to which a country's education system provides entrepreneurship-related knowledge. Finally, the normative dimension of institutions is measured by entrepreneurship-friendly social norms. A five-point Likert scale is used to assess each individual item. Appendix A shows the list of items that are used for the measurement of institutional dimensions.

4.3.4. Control variables

We include both individual- and country-level control variables, consistent with prior research that uses multi-level analysis (Autio and Acs 2010). At the individual level, we control for gender (Aidis et al. 2008; Minniti and Nardone 2007), and for age and age squared (Autio and Acs 2010). We also control for the household income which has been known to affect engagement in entrepreneurial activities. This is a binary variable derived from the GEM APS that equals 1 if a respondent belongs to the upper one-third of his or her country's distribution of annual household income (Autio and Acs 2010; Reynolds et al. 2005). In addition, we control for work status, which indicates whether the respondent is not working, is retired or a student, or is a full- or part-time worker (Arenius and Minniti, 2005), as well as the individual's social ties to entrepreneurs (Lim et al. 2016).

At the country level, we control for five variables. First, the country's level of economic development is measured by log transformed gross domestic product (GDP) in real (constant) terms (Baughn et al. 2006). The pace of economic development is measured by GDP growth rate (Hessels, Van Gelderen, and Thurik 2008). We also control for population growth (measured by annual rate of population growth of the country), as well as presence of foreign firms (the stock of inward foreign direct investment relative to a country's GDP) (De Clercq et al. 2010). We included these control variables to account for possible macro-level differences in entrepreneurial opportunity structures across countries. We collected these variables from the World Bank's World Development Indicators for 2014. In addition, we included business ownership rate, which represents the country's overall climate of entrepreneurial activities. The variable is measured by the percentage of the country's adult population that owns a business that has persisted for at least 42 months (Wennekers et al. 2005). Finally, we control for year and regional differences through year dummy variable and region dummy variables representing one of four regions: North America, Latin America and Caribbean, Asia, and Oceania.

4.4. Analysis

The analysis was done in two steps. First, we examined the direct effect of individual-level human capital on entrepreneurial activity across different samples. Using logistic regression technique, we compared the direct effect of human capital on the individual's engagement in new business activities, and those with innovative characteristics, across four different samples: Indonesia only; APEC developing economies; APEC developed economies; and all APEC countries included in the 2014 GEM dataset. APEC developing economies include Vietnam, Peru, Philippines, and Indonesia. APEC developed economies include the United States, Australia, Singapore, Japan, and Canada. We controlled country-level effect by including country dummies in the analysis.

Next, we investigated the cross-level moderating effects of the various institutional conditions on the relationship between individual-level human capital and engagement in new business activities as well as new business activities with innovative characteristics. Considering the nested structure of our data and the interdependency between individual and country-level variables, we apply multi-level modelling to explain individual differences while also accounting for cross-country variations. Since our dependent variables are binary in nature we used a multi-level mixed effects logistic regression with a random intercept modelling technique (hierarchical linear model). As noted above, we include year and region dummy variables to account for unobserved characteristics over years and across regions that might arise from missing variables (Wooldridge 2002).

4.5. Results

4.5.1. Summary statistics

Appendix B presents the summary of key individual- and country-level variables.

The data indicates that the 10.6% rate of new business creation observed in Indonesia is lower than the rate of 12.9% recorded in four APEC developing economies —Vietnam, Peru, Philippines, and Indonesia and also 12.7% observed in APEC economies included in the GEM 2014. This, however, was higher than the 8.8% of adults engaged in new business activities in APEC developed economies.

The 2.3% rate of innovation-oriented new business creation in Indonesia was also slightly lower than the 2.9% of APEC developing economies and 4.2% found in all APEC economies.

Meanwhile, the most significant difference was in the percentage of population that completed post-secondary or higher education: 16.4% in Indonesia compared to 26.1% and 63% in APEC developing economies and APEC developed economies, respectively.

4.5.2. Effects of individual-level human capital (higher education)

Next, Figures C-1 and C-2 in Appendix C illustrate the impact of higher education on new business creation and innovation-oriented new business creation. The predicted probability values were calculated based on the results of the logit models.

Figure C-1 shows that the predicted probability of a highly educated individual engaging in new business creation in Indonesia is significantly higher than that of less educated counterparts at .078 compared to .054. This is consistent with what we observe in all APEC countries, although this relationship is particularly pronounced in APEC developing economies.

There was no statistically significant difference observed between highly educated individuals and their less educated counterparts when it comes to innovative new business activities in Indonesia. In comparison, the relationship between individuals' level of education and innovation-oriented new business creation was significant in the entire sample of APEC economies in the GEM dataset ($\beta = .180, p < .01$), and marginally so in the sample of APEC developing economies ($\beta = .237, p < .1$). This means that the instrumentality of the higher education in innovation-oriented new business creation is higher in APEC developing economies, than in Indonesia and APEC developed samples. Figure C-2 illustrates these results.

4.5.3. Moderating effects of institutions¹

The results of multi-level logistic regression analyses also indicate that cognitive institutions—the extent to which the curricula in primary/secondary education ($\beta = .277, p < .01$) and higher education ($\beta = .555, p < .01$) teach topics related to new and growing businesses—positively moderate the relationship between individual-level higher education and new business creation. As expected, teaching entrepreneurship related topics in higher education does not make any difference to individuals without higher education (predicted probability .021 vs. .021), but significantly increase the instrumentality of higher education in new business creation for highly educated individuals (predicted probability .106 vs. .133; Figure D-2). Including entrepreneurship related topics in primary/secondary school curriculum actually facilitate new business creation for both highly educated and less educated individuals, while this approach is particularly effective in encouraging highly educated individuals to engage in new business activity. The predicted probability of highly educated individuals engaging in new business activity improves from .035 to .053; Figure D-1). It is also notable that entrepreneurship-friendly cultural/social norms also positively moderates the relationship between individual human capital and new business activity ($\beta = .537, p < .01$).

The regulatory dimension of institutions, specifically, government support for entrepreneurship strengthens the relationship between individual-level higher education and innovation-oriented new business activity, albeit marginally ($\beta = .279, p < .1$). The positive effect of individual higher education on predicted probability of creating innovation-oriented new business was stronger for countries with strong government support for new and growing businesses (Figure E-1: predicted probability .016 vs. .025). This means government support programs for new and growing businesses can be a useful policy lever to encourage highly educated individuals to engage in new business activities with innovative characteristics.

²Only the significant and notable moderating effects are discussed in this report. The complete results of the multi-level logit analysis are available upon request from the authors.

DISCUSSION AND CONCLUSION

5.1. Key Findings

Our analysis found that the positive influence of individual-level higher education on the creation of new business in Indonesia is similar to that observed in the sample of APEC developing economies, although in general, the predicted probability for these highly educated individuals to engage in new business activity in Indonesia was lower than in APEC developing economies on average. Further, the human capital acquired through higher education is not particularly instrumental for creating innovation-oriented new businesses in Indonesia. While our results indicate that individual human capital is crucial for entrepreneurial engagement in new business activity, they also raise an important question: why is the effect of an individual's higher education on the creation of new businesses in general, and innovation-oriented new businesses in particular, less significant in Indonesia?

We believe understanding the roles of various institutional conditions in Indonesia should be the key in untangling these results. Using the multi-level dataset collected from APEC countries, we find that stronger entrepreneurship education in primary, secondary and post-secondary schools, as well as entrepreneurship-friendly social norms, amplify the positive relationship between individuals' higher education and new business creation. Government support programs for new and growing businesses can also strengthen the positive relationship between higher education and engagement in innovation-oriented new business activities.

For policy-makers, our findings suggest that different institutions may be more effective for encouraging highly educated individuals toward different types of entrepreneurial activity. For example, cognitive institutions that familiarize individuals with entrepreneurship-related issues early in their education may facilitate individual engagement in new business activities which could be particularly useful for those who acquire specialized knowledge through higher education. Entrepreneurship-friendly social norms can also encourage highly educated individuals to engage in new business activities. Regulatory institutions such as government support for new and growing businesses can be particularly effective in encouraging highly educated individuals to take advantage of their human capital and create innovation-oriented new businesses.

As such, policy-makers need a tailored approach to stimulate the new business activities, depending on their main objective. It is also possible that using these policy levers in combination can be particularly effective.

5.2. Recommendations for Indonesia

Overall, Indonesia's institutional conditions for entrepreneurship are on par with those of various comparison groups, including APEC developed economies and all APEC countries included in the Global Entrepreneurship Monitor survey. When compared with those of APEC developing countries, Indonesia's institutional conditions in fact compare favorably. Appendix F shows the comparison of institutional conditions between Indonesia and comparison groups, based on the GEM National Experts Survey. For example, Indonesia's scores for regulatory pillars, such as entrepreneurship-friendly government policy (2.65 vs. APEC developing economies average of 2.43) and government support for new and growing businesses (2.60 vs. APEC developing economies average of 2.34), are above the average scores among APEC developing economies in the dataset. These scores are also on par with the average scores of all APEC economies.

Based on our analysis results and GEM data, we suggest three policy implications. To begin with, the government should maintain its support for entrepreneurship education in both primary/secondary schools and higher education institutions. Indonesia's score for entrepreneurship teaching in higher education (3.29) is significantly higher than those of other samples (Total APEC country mean = 2.98; standard deviation = .23); but the issue is that the country's tertiary enrolment rate is very low (28.2%). In this regard, focusing on entrepreneurship education in primary/secondary education can be particularly effective in increasing the individuals' engagement in new business activities.

In addition, the government should continue its effort to increase school enrolment. As we noted in Chapter 2, 60% of the population in Indonesia attained less than upper secondary education and school completion rates vary greatly across income strata. Without tackling these issues, investment in entrepreneurship education may be in vain. Conversely, improving school enrolment rates while offering entrepreneurship education in early education can be very effective in making the country more fertile for entrepreneurial activities. Policy-makers can also consider delivering entrepreneurship education through non-conventional channels and venues. This could be particularly important for remote communities in Indonesia where higher education is unavailable to most.

Finally, our findings suggest that further increasing government support for new and growing businesses can be an effective policy lever to encourage highly educated individuals to engage in innovation-oriented new business activities. The importance of innovation-oriented new businesses in the country's economic development and growth has widely been recognized. While the data indicates that Indonesia's support for new and growing businesses is significantly stronger than the average of APEC developing economies, there is room for improvement when compared with APEC developed economies. The government may consider benchmarking the entrepreneurship support programs offered in APEC developing economies and adopting some of the best practices.

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APPENDIX A.

Institutional Variables in GEM NES Data

Category	Questions: In my country,
Regulative dimension	
Entrepreneurship friendly government policy	<p>government policies (e.g., public procurement) consistently favor new firms</p> <p>the support for new and growing firms is a high priority for policy at the national government level</p> <p>the support for new and growing firms is a high priority for policy at the local government level</p> <p>new firms can get most of the required permits and licenses in about a week</p> <p>the amount of taxes is NOT a burden for new and growing firms</p> <p>taxes and other government regulations are applied to new and growing firms in a predictable and consistent way</p> <p>coping with government bureaucracy, regulations, and licensing requirements it is not unduly difficult for new and growing firms</p>
Government support for new and growing business	<p>a wide range of government assistance for new and growing firms can be obtained through contact with a single agency</p> <p>science parks and business incubators provide effective support for new and growing firms</p> <p>there are an adequate number of government programs for new and growing businesses</p> <p>the people working for government agencies are competent and effective in supporting new and growing firms</p> <p>almost anyone who needs help from a government program for a new or growing business can find what they need</p> <p>government programs aimed at supporting new and growing firms are effective</p>

Category

Questions: In my country,

Cognitive dimension

Entrepreneurship teaching in primary/secondary education

teaching in primary and secondary education encourages creativity, self-sufficiency, and personal initiative
teaching in primary and secondary education provides adequate instruction in market economic principles
teaching in primary and secondary education provides adequate attention to entrepreneurship and new firm creation

Entrepreneurship teaching in higher education

colleges and universities provide good and adequate preparation for starting up and growing new firms
the level of business and management education provide good and adequate preparation for starting up and growing new firms
the vocational, professional, and continuing education systems provide good and adequate preparation for starting up and growing new firms

Normative dimension

Entrepreneurship friendly cultural/social norms

the national culture is highly supportive of individual success achieved through own personal efforts
the national culture emphasizes self-sufficiency, autonomy, and personal initiative
the national culture encourages entrepreneurial risk-taking
the national culture encourages creativity and innovativeness
the national culture emphasizes the responsibility that the individual (rather than the collective) has in managing his or her own life

APPENDIX B.

Summary Statistics for Key Variables

Variables	Samples: mean (Std. Dev.) values shown			
	Indonesia Only	APEC Developing	APEC Developed	Total APEC
Individual-level				
Dependent variables				
New business creation	.106 (.307)	.129(.335)	.088 (.238)	.127 (.333)
Innovation-oriented new business	.023 (.151)	.029(.168)	.029(.170)	.042 (.201)
Independent variables				
Higher education	.164 (.370)	.261 (.439)	.630 (.482)	.401 (.490)
Country-level				
<i>Regulatory dimension</i>				
Entrepreneurship friendly government policy	2.655	2.435 (.259)	2.790 (.577)	2.636 (.418)
Government support for new and growing business	2.608	2.346 (.219)	2.878 (.539)	2.651 (.430)
<i>Cognitive dimension</i>				
Entrepreneurship teaching in primary/secondary education	2.600	2.326 (.503)	2.300 (.484)	2.201 (.406)
Entrepreneurship teaching in higher education	3.290	3.025 (.328)	2.999 (.246)	2.985 (.225)
<i>Normative dimension</i>				
Entrepreneurship friendly cultural/social norms	3.288	3.135 (.103)	3.193 (.412)	3.114 (.283)

APPENDIX C.

Direct Effects of Individual-Level Higher Education

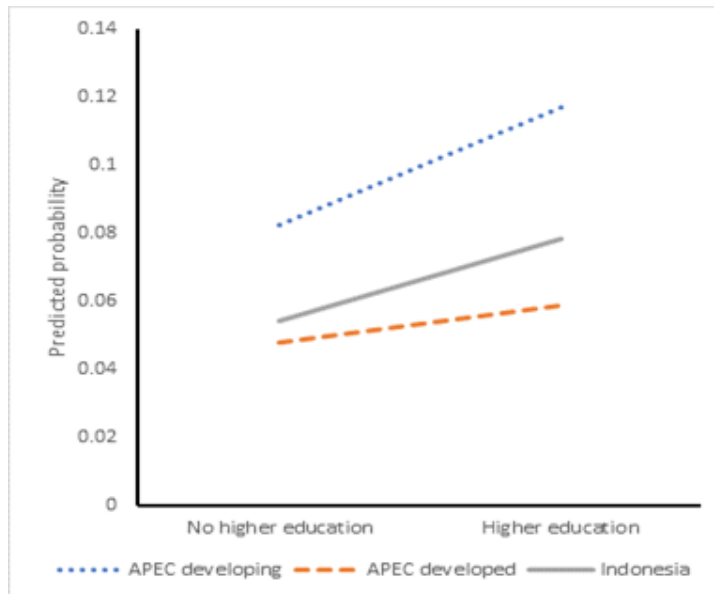


Figure C-1. Predicted probability of engaging in new business activity

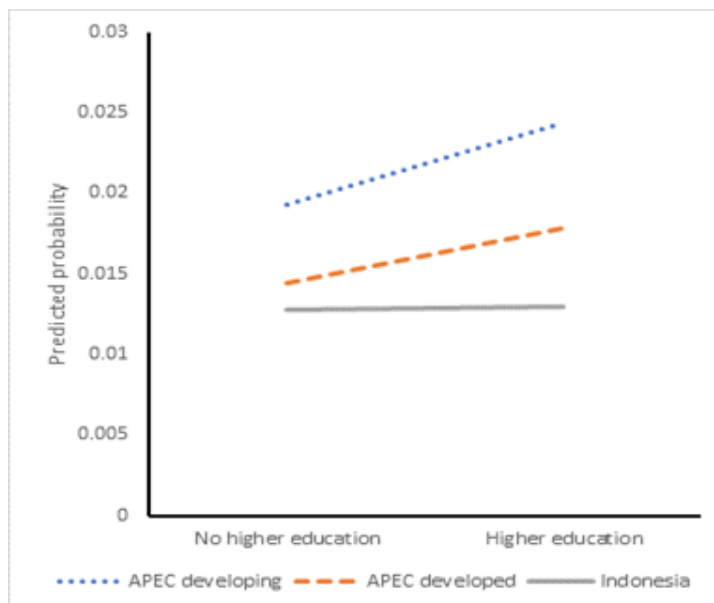


Figure C-2. Predicted probability of engaging in innovation-oriented new business activity

APPENDIX D.

Moderating Effects of Institutions on Individuals' Engagement in New Business Activity

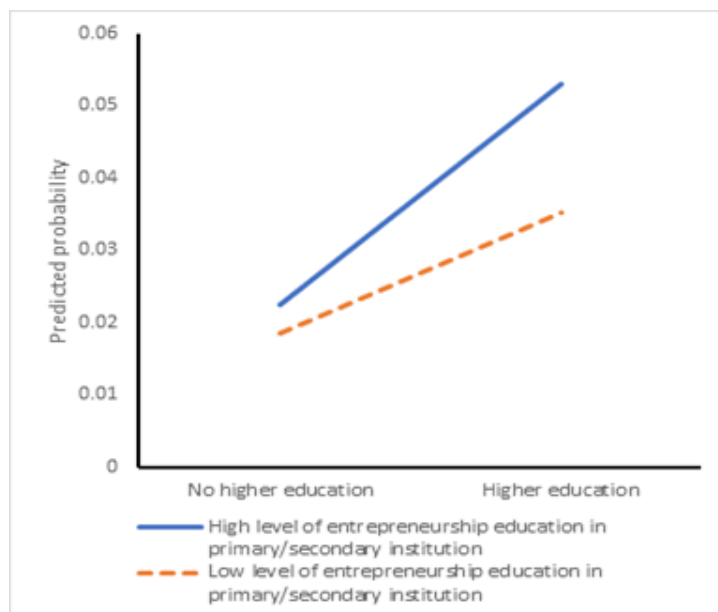


Figure D-1. Moderating effect of entrepreneurship teaching in primary/secondary education

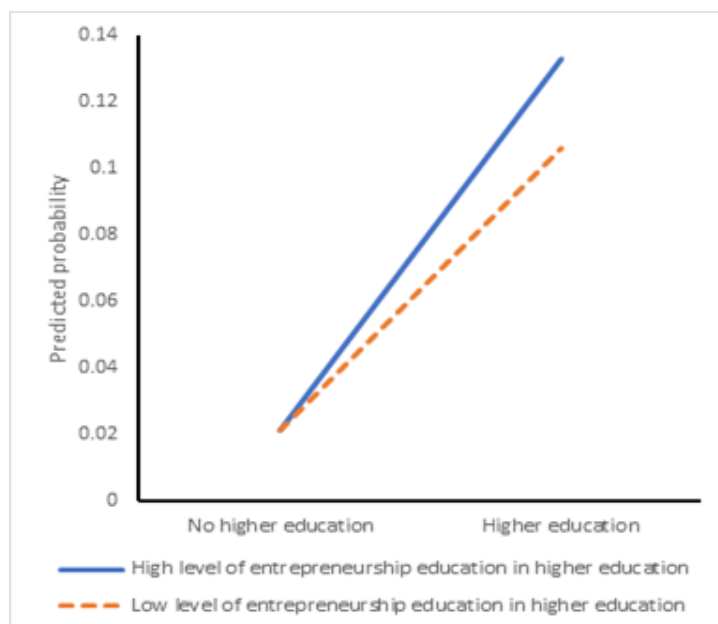


Figure D-2. Moderating effect of entrepreneurship teaching in higher education

APPENDIX E.

Moderating Effects of Institutions on Engagement in Innovation-Oriented New Business Activity

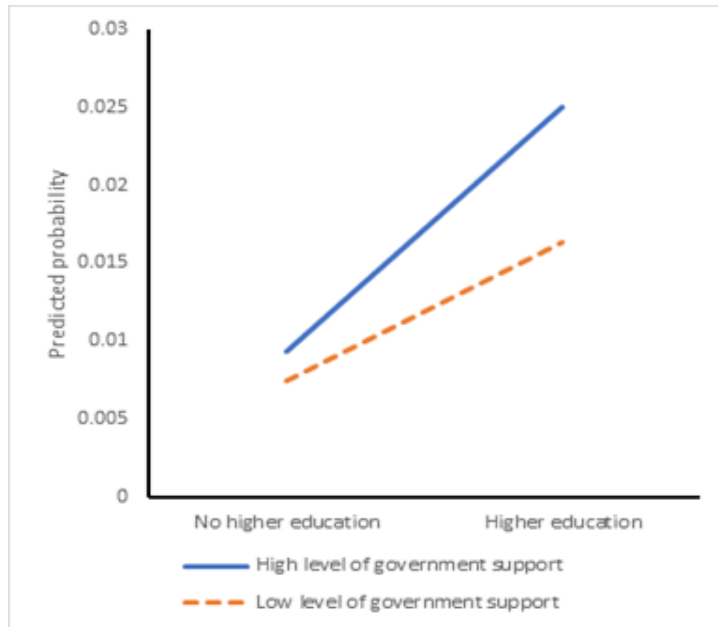


Figure D-1. Moderating effect of government support for new and growing businesses

APPENDIX F.

Entrepreneurial Framework Conditions: Comparison between Indonesia and Other Country Groups

	Indonesia	APEC Developing	APEC Developed	Total APEC	
Regulatory Pillar	Government policy	2.54	2.42	2.65	2.66
	Government support	2.57	2.40	2.81	2.7
	IP protection	2.59	2.70	3.17	2.92
	Support for high-growth	3.28	3.23	3.28	3.24
Cognitive Pillar	Primary/Secondary education	2.56	2.30	2.04	2.2
	Higher education	3.30	2.95	2.9	2.96
	Entrepreneurial knowledge	2.70	2.88	2.4	2.53
Normative Pillar	Cultural/Social norms	3.27	3.13	3.17	3.13
	Social image	3.90	3.76	3.66	3.71
	Support for innovation	3.63	3.59	3.44	3.46
Other	Opportunity availability	3.93	3.59	3.45	3.5
	Physical infrastructure	3.45	3.49	4.01	3.85
	Entrepreneurial finance	3.07	2.51	2.59	2.73
	Market openness	3.09	2.81	2.72	2.87
	Support for women	3.73	3.55	3.36	3.48
	Tertiary enrollment	28.2	31.83	77	55.35
	Quality of business school	4.50	4.11	5.13	4.61

Red colour indicates that the score is more than one standard deviation below the average of all APEC countries included in the Global Entrepreneurship Monitor.

Blue colour indicates that the score is more than one standard deviation over the average of all APEC countries included in the Global Entrepreneurship Monitor.

