

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Technology in Society

journal homepage: www.elsevier.com/locate/techsoc

Transnational experience and high-performing entrepreneurs in emerging economies: Evidence from Vietnam

Robyn Klingler-Vidra^{a,*}, Ba Linh Tran^b, Adam William Chalmers^c^a Department of International Development, School of Social Science and Public Policy, King's College London, 4.16 NE wing, Bush House, London, WC2B 4BG, United Kingdom^b University of Economics Ho Chi Minh City, Room H304, 1A Hoang Dieu, Phu Nhuan District, Ho Chi Minh City, 70 0000, Viet Nam^c Department of Political Economy, School of Politics & Economics, King's College London, 8th floor, Bush House, London, WC2B 4BG, United Kingdom

ARTICLE INFO

Keywords:

Entrepreneurship
Vietnam
Returnees
Transnational experience
Social capital
Innovation

ABSTRACT

Do high-performing entrepreneurs in the technology sector in emerging economies have more, or different, transnational experience than the founders of high-performing non-technology businesses? Employing Vietnam as a case study, we find that they do; the founders of high-performing technology-oriented businesses are 15 times more likely to have transnational experience in the U.S. compared to their non-technology peers, and are 35 times more likely to be graduates of American universities compared to founders of high-performing, non-technology-oriented business. The founders of high-performing non-technology businesses are more 'place-based', as they have predominantly lived and studied in Vietnam. Our data and methods are comprised of a logistic regression analysis of the biographical details of Vietnam's 143 highest-performing entrepreneurs; the founders of the 76 Vietnam's (non-technology-based) companies with the highest market capitalizations and the 67 founders of Vietnam's highest performing technology-oriented companies, in terms of private equity fundraising, as of April 2020. The paper's theoretical contribution is the advance it makes in analytical explanations of why technology-based entrepreneurs have more transnational experience, especially in the U.S., than high-performing founders of businesses in other sectors; this helps extend theory on the relationship between social and human capital and entrepreneurial performance, specifically in the technology sector.

1. Introduction

High-performing, technology-enabled entrepreneurship in emerging economies has been found to be associated with higher rates of transnational experience, with the founders completing university studies abroad, especially in the U.S. In their studies of Chinese, Indian and Taiwanese technology entrepreneurs, Kenney et al. [1] and Batjargal [2] found that returnees who studied at American universities constituted a significant share of the entrepreneurs who founded high-performing technology companies. Returnees from the U.S., then, constitute a 'brain gain' when they return to their home country [3]. This begs the core questions motivating this article: do similar patterns of transnational experience occur in Vietnam's growing technology sector? If it does, are Vietnam's high-performing high-technology entrepreneurs more likely to be overseas returnees than founders of high-performing non-high-technology businesses? Why?

To answer these questions, we compare the biographical details of

high-performing entrepreneurs with respect to the "where" of their education and work experience, comparing Vietnam's highest-performing technology entrepreneurs to the founders of the country's highest-performing non-high-technology companies. Vietnam is an interesting case to study, analytically, because of evidence in existing literature that demonstrates how particular forms of social capital are said to determine entrepreneurial propensity and performance [4,5]. Typically, familial and political connections, built through deep local experience, are found to determine entrepreneurial performance in Vietnam. On the other hand, emerging evidence suggests that transnational experience, especially in the U.S., is prevalent amongst the high-performers in the country's venture capital market [6] and in the pursuit of Silicon Valley-styled innovation policies in Vietnam [7]. Thus, there is a gap in knowledge as studies have not yet systematically explored the extent to which Vietnam's high-performing entrepreneurs are best described as having transnational experience [1,2] or as being place-based entrepreneurs [8].

* Corresponding author.

E-mail addresses: Robyn.Klingler.Vidra@kcl.ac.uk (R. Klingler-Vidra), Berlin.Tran@bath.edu (B.L. Tran), Adam.Chalmers@kcl.ac.uk (A.W. Chalmers).

<https://doi.org/10.1016/j.techsoc.2021.101605>

Received 19 January 2021; Received in revised form 28 April 2021; Accepted 3 May 2021

Available online 12 May 2021

0160-791X/© 2021 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Drawing on theory on the relationship between social and human capital and entrepreneurial performance, in this paper we offer: (1) novel empirical evidence of the transnational experience of Vietnam's highest-performing entrepreneurs, and (2) appreciative theory to unpack why technology-based entrepreneurs have more transnational experience than high-performing entrepreneurs in other sectors. Through this tack, we extend theoretical tools for understanding the relationship between social and human capital and entrepreneurial performance [8–12], by building upon state-of-the-art literature on why transnational experience uniquely contributes to entrepreneurial performance in burgeoning technology sectors in emerging economies.

Our data and methods are comprised of a novel analysis of two sets of high-performing entrepreneurs in Vietnam. The first set are the founders of Vietnam's highest-performing high-technology startups, defined as the startups with technology-based products or services who have raised the largest amount of equity funding (according to CrunchBase) as of April 2020. The second group constitutes the founders of Vietnam's most valuable publicly-traded companies, ranked by market capitalization by [Investing.com](#), also as of April 2020, that are not technology-oriented companies. They operate across a number of industries, including finance, real estate, consumer goods, industrials, and agriculture (see [Appendix](#) for the industry coding of each company included in the dataset). We analyze the university education and overseas (Việt Kiều) backgrounds of each founder in the two high-performing sets to ascertain the extent to which the founders of high-performing technology-enabled businesses possess different transnational experience than the founders of high-performing, but non-technology-oriented, businesses.

The paper offers the following contributions. Analytically, we extend the theoretical tools for conceptualizing and testing how high-performing, high-technology entrepreneurship may be distinct from high-performing entrepreneurs operating in other sectors, in terms of the transnationally-derived social and human capital of the founders. This approach is novel, as existing research [1,2] has not compared technology sectors to high-performing entrepreneurs in other sectors. In comparing high-performing entrepreneurs in the technology sector with other high-performing entrepreneurs, we are able to offer an advance as to the extent to which, and why, properties of the contemporary technology sector may be unique. In so doing, we also offer an advance for studies of the role of social and human capital as a determinant of entrepreneurial performance, especially in emerging economies.

Our second contribution is empirical; to the best of our knowledge, our study is the first to investigate the biographical characteristics of the founders of Vietnam's high-performing firms. By focusing on these high-performing entrepreneurs, we offer insights into the determinants of the elite echelon of entrepreneurship, rather than sole proprietors or small, traditional firms. A significant body of research already exists on the role of social capital in the performance of technology entrepreneurs [13,14] and for small-scale entrepreneurship in Vietnam, specifically [4,5, 15–20]. There is less empirical or analytical material on the determinants of high-performing entrepreneurs, especially in emerging economies such as Vietnam. Knowing more about the transnational experience of these high-performing entrepreneurs offers novel insight into the relationship between the location of founders' education and work experience and their entrepreneurial performance.

The paper proceeds as follows. Section II develops the theoretical framework that guides the analysis, focused on the social and human capital endowments of high-performing entrepreneurs. Section III presents the empirical findings of our regression analysis that tests hypotheses about the relationship between transnational experience and high-performing founders. In the discussion section, we analyze the extent to which the findings update existing knowledge on the determinants of high-performing entrepreneurship, particularly high-technology businesses, in emerging economies. We conclude the paper with a discussion of scholarly and policy implications, the study's limitations and avenues for further research.

2. Social and human capital and entrepreneurship in Vietnam

Social and human capital – particularly work experience, social networks and education – have been studied for their relationship with innovation and entrepreneurship [1,2,10,11,21]. Seminal work, such as Granovetter [22], offers analytical tools to better understand whether strong ties (deep, close connections via friends and family) or weak ties (more shallow or distant connections) are most associated with entrepreneurial performance [23,24]. Engel [25], taking a system-level view, examines the characteristics underpinning global clusters of innovation, finding that weak ties, defined as 'frequent connections created through networking and face-to-face relationships', are 'the conduit for important intelligence, opportunity, and personal mobility'. A variety of socioeconomic and political factors are said to determine entrepreneurial activity, including social security [26] and political ties [27,28], which determine the propensity to undertake entrepreneurial activity and access to financial capital and permits, respectively. Financial resources, through income [29] and childhood adversity [30], are especially important determinants of entrepreneurial access, and ultimately, performance.

Studies note that the nature of technology-oriented business models may benefit from different social and human capital endowments than businesses in other sectors. Businesses with a physical presence require production facilities, physical/land permits, and access to credit in order to establish operations. Administrative burdens, such as registering property and the costs involved in starting a business, are identified as crucial determinants of more physically-oriented, or traditional, businesses [31]. Entrepreneurs are well-served by their knowledge of how to obtain land-use rights, for instance, and how to navigate the bank loan underwriting process. Experience in "the place" helps entrepreneurs to accumulate this knowledge. Thus, the performance of founders of businesses with a physical presence may benefit on account of being "place-based" entrepreneurs [8].

Technology-based entrepreneurship, instead, does not necessarily need production facilities, permits or even dedicated office space. The logic follows that founding and growing technology-oriented businesses, especially internet-based businesses, does not hinge on the same access to credit lines, or permits, or physical space that physically-oriented businesses require. Rather, existing literature shows that technology entrepreneurs perform on account of knowledge of the startup ecosystem, awareness of how to start and scale technology-enabled businesses (such as e-commerce), and the possession of social networks and professional experience relevant to venture capitalists [1,2, 6]. Rather than bank loans, high-performing technology entrepreneurs raise venture capital (VC) for their startups. Research shows that VC managers tend to rely on their personal networks [32] to source investment opportunities and to evaluate founders on the basis of their (university-level) educational backgrounds [33]. VCs have also been found to exhibit "homophily" – the tendency to associate with those like you – when making investment decisions [34]. Thus, technology startup founders' ability to raise VC funding – a key determinant of grow-growth technology startups – can depend on their social networks (and thus, proximity to VCs through 'bonds or bridges'), the "where and what" of their university degrees, and their similarity to the VCs from which they are raising funding.

Research has revealed that such transnational experience, especially studying at U.S. universities, has been prevalent amongst high-performing entrepreneurs in the technology sector in other countries in South and East Asia. In the Chinese context, *hai gui* ("sea turtles" who have gained experience overseas and then returned to China) are prevalent in studies of cohorts of successful internet-based entrepreneurs. Scholars assert that it is their transnational social networks and U.S.-derived human capital (university education, specifically) that is propelling their positive entrepreneurial performance in their home countries [2]. In these studies, scholars such as Batjargal [2] operationalize human capital as "startup experience, industry experience, and Western

experience.” In a similar way, Kenney et al. [1] find, in the cases of China, India and Taiwan, that immigrants from the three countries often “came to the U.S. for educational opportunities, usually at the graduate level” [1]. They then stayed in the U.S. to gain work experience and returned to their home countries with knowledge of the “American way of business” and social networks in both the U.S. and their home country [1].

Thus, transnational experience, especially in the U.S., has been found to act as a driver of technology-based entrepreneurship in East Asia because of the acquisition of knowledge of Western business models, social ties across U.S.-based networks, and similar experience to VC investors [2]. Said another way, as a result of time spent studying or working overseas, the exposure to American practices and training, combined with the development of social networks that span national borders, returnees are said to have both the inclination and ability to found and scale technology-enabled startups in home countries in East Asia. Human capital, in this context, refers to the knowledge and skills gained through university studies and experience working abroad, specifically in the U.S. Human capital manifests as substantive knowledge – of the industry and associated business model – and procedural knowledge – which in the context of technology entrepreneurship, centers around how to establish and scale the company, in terms of how to secure financing, recruit talent, etc. [35] Social capital derived from transnational experience is understood to be the transnational networks as well as the possession of experience similar to others in the peer group. For technology founders, this is especially relevant to raising funding from venture capitalists in home and international markets, through one’s social network as well as through homophily exhibited by prospective VCs [1,2]. On the other hand, emerging research on entrepreneurial performance in non-technology-oriented businesses in emerging economies points to place-based, institutional, drivers, such as the prominence of family and political connections and embeddedness in the local triple helix of university, industry and government, as the enablers to access bank credit, obtain permits, etc. [8–11].

There is emerging literature that specifically explores the determinants of entrepreneurial performance in Vietnam. Studies have, until now, tended to focus on management [15], why some businesses are ‘born global’ [36], the role of trust [4], and the role of political connections [16,17,27,28,38,39]. To date, little has been published on the relationship between the transnational or place-based accumulation of social and human capital in the context of high-performing entrepreneurship in Vietnam. A notable exception is a study that observed that 49 out of 100 of the richest Vietnamese on the domestic stock market, as of 2008, had not completed university level studies [40].

Akin to research on the relationship between returnees and the advance of high-technology clusters in East and South Asia, there is growing anecdotal evidence that Vietnamese returnees from the U.S. have been influential in the rise of the country’s pursuit of Silicon Valley-styled innovation and entrepreneurship. Intel’s US\$1 billion assembly and testing plant in the Saigon Hi-Tech Park, for instance, was established at the behest of a long-time Intel employee at headquarters in Santa Clara, who lobbied for the location in his home country of Vietnam [6]. Also pointing to the presence of individuals with transnational experience in the burgeoning technology sector in Vietnam, Klingler-Vidra and Wade [7] found that the Vietnamese government’s startup-centric innovation policies have been fueled, in large part, by the involvement of returnee entrepreneurs, particularly from the U.S., in the innovation policymaking agenda since returning to Vietnam after the Global Financial Crisis. Vietnam Silicon Valley, a startup accelerator funded by the Ministry of Science and Technology, for instance, was supported by the state only once a returnee who had spent years living in Silicon Valley initiated it. Finally, media headlines have pointed to American-born Vietnamese moving to Vietnam to pursue their American dream of establishing and growing a technology-oriented business [41].

Table 1, below, summarizes our expectations based upon the above literature review – for the relative transnational or place-based

Table 1
Analytical expectations for experience of high-performing entrepreneurs.

	Technology founders	Non-technology founders
Loci of experience Social capital	<ul style="list-style-type: none"> • Transnational • Social networks: includes venture capitalists, other startup founders, and tech sector workers • Homophily: similar backgrounds (in terms of transnational experience) perceived by VCs investing in tech startups and by talent recruited by the company 	<ul style="list-style-type: none"> • Place-based • Social networks: includes banking professionals, public officials, industry contacts • Deep local network helps gain access to permits, contracts and bank credit
Human capital	<ul style="list-style-type: none"> • Substantive knowledge: U.S. way of business and technology business models • Procedural knowledge: how to establish and scale a technology startup 	<ul style="list-style-type: none"> • Substantive knowledge: industry expertise and ability to conduct business in the locale (e.g. Hanoi or Ho Chi Minh City) • Procedural knowledge: know-how for how to obtain permits and financing
Social and human capital endowments enable:	<ul style="list-style-type: none"> • Access to venture capital and private equity funding • Hiring technology talent; computer scientists, developers and designers • Partnerships with related technology platforms, often outside of Vietnam 	<ul style="list-style-type: none"> • Access to bank credit and institutional investors • Obtaining permits (for land and production facilities) • Ability to secure supplier and distributor contracts

Sources: authors’ compilation based upon literature review [1,2,6,7,15,18,26,31–43].

experience of high-performing entrepreneurs in emerging economies, specifically in Vietnam.

2.1. Hypotheses

Based upon our above synthesis of the literature on the relationship between transnational or place-based experience and entrepreneurial performance, we formulate theoretical expectations regarding the backgrounds of Vietnam’s high-performing founders that we will empirically test in the following section. First, existing research on high-performing, high-technology entrepreneurs in East Asia point to transnational experience, particularly in the U.S., as a common feature. Batjargal [2] and Kenney et al. [1] both point to exposure to the American way of doing business as typical of high-technology entrepreneurs in China, India and Taiwan. Studies of Vietnam’s growing startup activity, venture capital market and startup-centric innovation policymaking suggest that U.S. work experience, such as working at Silicon Valley-headquartered startups or at technology giants like Intel in Santa Clara, is increasingly typical in the backgrounds of those leading technology-oriented businesses in Vietnam [6,7]. Existing research and media coverage, however, do not point to the same U.S. connections for the founders of Vietnam’s high-performing non-technological businesses [37–39].

When transnational experience is mentioned for this cohort, it instead points to time spent in the former Soviet Union, typically in the 1980s and 1990s [42]. Chesnokov [43] notes that this early pattern, owing to prevailing geopolitical connections, consisted of Vietnamese migrants to the Soviet Union who were highly educated and developed “keen business sense and experience” due to their commercial activity there. They returned to Vietnam in the 1990s to capitalize on the Law on Companies and the Law on Private Enterprises, both passed in 1990, which allowed for the creation of private businesses. Based upon this, our expectation is that the cohort of high-performing, non-technology-oriented businesses, that were founded in the 1990s

onwards, may have experience in the Soviet bloc, if they have transnational experience.

Collectively our first hypothesis focuses on differential sets of experiences – in terms of location – across the two cohorts. Technology-enabled entrepreneurs in Vietnam are more likely to have transnational experience, often being returnees from the U.S., leveraging their knowledge of and connections to the American technology sector and venture capital. The non-technology founders are largely expected to benefit from place-based experience, but based upon scholarship on the transnational experience of this cohort, those who do have transnational experience are expected to have returned from the Soviet bloc rather than from the global West.

Hypothesis 1. high-performing technology entrepreneurs are more likely to have transnational experience in the West, specifically the U.S., whereas non-technology entrepreneurs are less likely to have transnational experience; when they do, it is likely to be in the Soviet bloc.

Our second hypothesis focuses on the location of university experience, specifically. Our expectations around university studies stems from research that shows that education acts as a formative experience, shaping one's worldview, providing important technical know-how (human capital) and fostering social networks (social capital) [3,14]. Notably, Batjargal [2] and Kenney et al. [1] both point to studying at U.S. universities as a typical entry point into time abroad for Chinese, Indian and Taiwanese founders of technology-focused companies. Focusing on this specific mechanism, we examine the location of where the founders completed university studies. This informs our second expectation, that high-technology founders are more likely to be graduates from universities in the global West, especially U.S. universities.

Hypothesis 2. High-performing technology entrepreneurs are more likely to be graduates of U.S. universities than the high-performing founders of non-technology-oriented businesses.

3. Data and methods

To test our hypotheses, we examine the transnational versus place-based experiences of two sets of high-performing founders in Vietnam: the founders of technology-oriented and non-technologically-oriented businesses. For both company sets, we used company valuation as of April 2020 as the indicator of their high performance. To compile the list of the highest-performing technology-focused companies, we identified the Vietnam-headquartered technology businesses that had raised the most equity funding. We used equity funding as the metric since Vietnam's technology companies are, for the most part, not yet listed on the Ho Chi Minh City stock exchange, given the nascent stage of the country's technology sector. The source for our technology company data was CrunchBase,¹ which has comprehensive details of early-stage funding for startups globally. We operationalized highest-performing technology companies for the Vietnamese context such that US \$100,000 in equity funding was set as the lower limit. This search resulted in a list of 110 companies.

We then examined the information exported from the CrunchBase search on each of the 110 companies, which includes their date of founding, company description, headquarters location, company structure and industry categories. We built out the CrunchBase information with our own search (in English and Vietnamese) on the company websites and for recent news of each company's activities. This information helped us to triangulate that these companies are Vietnamese, that their product or service is technology-enabled, that they are

¹ CrunchBase is the database managed by TechCrunch, which is one of the prominent online media outlets for global technology news. CrunchBase is available at: <https://www.crunchbase.com/home>.

currently independent and actively trading, and were privately-founded (rather than state-founded).

We first filtered out companies whose core business is not technologically-enabled.² We operationalized "technology" to mean that the company's core offering was included in one of these CrunchBase "Industry Groups": Apps, Artificial Intelligence, Business Information Systems, Data and Analytics, Design, Gaming, Information Technology, Internet Services, Media and Entertainment, Messaging and Telecommunications, Mobile, Platforms, Software, and Video.³ In total, the analysis led to 45 companies being filtered out from the technology-focused founders list on the basis of the thrust of their business not being technological in nature.

Our second filter was the date of founding, to ensure that the company is privately founded, rather than state-created. In cases when companies were established prior to 1986 (when the *doi moi* reforms were implemented, which first enabled private ownership), companies were cut from the list, as they are state-created firms, rather than entrepreneurial firms. In total, five companies were removed from the technology company dataset on the basis of being state-founded.⁴ We also checked the rest to make sure none were state-founded, as state firms continued to be built post-1986, and removed one more.

The third criteria was that companies have to be actively trading as independent companies. This filter helped us to ensure that we were not including the senior leaders of companies that are either defunct or subsidiaries of parent companies. For example, GATe Technology is the subsidiary of a French company, and was thus removed. In total, these filters led to us cutting out four companies, deemed illegitimate because (a) their websites and social media were not updated for more than a year or had been taken down (e.g. OnOnPay last updated their Facebook page in November 2018, and their website was not accessible through searches in both English and Vietnamese), (b) there was news about them failing, being defunct or even being scam companies (e.g. Modern Tech), or (c) nothing could be found about them through extensive online searches in both languages (e.g. Dificat). A further three companies were removed from the dataset as our research revealed duplication errors in the CrunchBase database.⁵

After applying these filters, we were left with a list of 52 Vietnam-headquartered companies that offer technology-based products or services, are currently operating, and are independently owned. As several of these companies have more than one founder, in total, our dataset includes 67 founders of high-performing technology-enabled companies in Vietnam. While we were constructing this technology-enabled company set, we were also compiling the list of Vietnam's most valuable publicly-traded non-technology-oriented companies, which underwent the same qualifying filters, but beginning with public equity market capitalization.

We used publicly-traded market capitalization ("market cap") as the measure for high-performing firms outside of the nascent technology sector. We used the [Investing.com](https://www.investing.com) database to obtain the details of

² For example, Vincom Shopping was captured in our CrunchBase search, but Vincom is one of the largest shopping mall retailers in the country, which opened its first mall in 2004. Digiworld also appeared in both searches, initially, but was filtered out of the Technology-enabled list as it began as a brick-and-mortar business selling physical products (CDs, floppy disks, etc.).

³ For the complete list of CrunchBase Industry Groups and Industries, see: <https://support.crunchbase.com/hc/en-us/articles/360043146954-What-Industries-are-included-in-Crunchbase->.

⁴ Four companies were excluded on the basis of the date of founding (hence state ownership) filter are as follows (with date of founding specified in the parentheses): 1. Dong Nai plastics (1975), 2. TASC0 (1971), 3. Traphaco (1972), and Dong Nai Plastic (1976). Loc Troi Group (1993) was filtered out on the basis of its state origins rather than date of founding.

⁵ The three companies are: (1) The *gioi di dong* is Mobile World; "Gioi" means world in English, and "di dong" is Utop is part of FPT. (3). Axie Infinity is the product of Sky Mavis.

publicly-traded companies traded on the Ho Chi Minh City Stock Exchange.⁶ This resulted in us identifying 314 companies with a market cap of over 0.5 trillion VND; this threshold ensured we obtained at least one company in each of Investing.com’s industry categories. Similar to the high-performing technology list, we filtered companies that were established by or owned by the state. As a result of this filter, 219 companies were found to have state origins and were thus cut from the list. The independent and actively-trading filter then led to the removal of two foreign-owned companies and one subsidiary company: Interfood Shareholding (foreign), VNS Security (foreign) and Viet Dragon (subsidiary). Lastly, there were companies that were under the same conglomerate, founded by one entrepreneur – for instance, Vinhomes and Vincom Retail were both under Vingroup, founded by Soviet returnee Pham Nhat Vuong. Companies like Vinhomes, Vincom Retail and Vingroup were thus considered duplicate entries (due to having the same founder) and, accordingly, treated as one instead of multiple. In this way, we removed a further twelve entries on Investing.com. As of this stage, we had identified 80 high-performing, non-technology-oriented businesses.

Once the two sets of companies were established, we then identified all of the founders of each of these technology-based and non-technology-oriented firms. Most companies’ founders were specified in the Investing.com and CrunchBase databases, but several were not. In these cases, we took three further steps to identify the founders: (1) examining the company website to see if the company founder’s name is specified in the history or overview; (2) for non-technology-oriented companies, checking VietStock.com, a domestic database of traded companies, and (3) if first two steps were inconclusive, we conducted a Google search. If, after all these steps, we could not find any details on the founder, we omitted the company from our analysis. On this basis, three companies were removed from the technology list and eleven from the non-technology list. The result of these filters was a list of the 69 highest-performing non-technology-oriented companies and 49 highest-performing technology businesses in Vietnam, as of April 2020, that were actively-trading, founded by a private individual, not state-owned, nor a subsidiary of another company. A full list of these companies and their founders can be found in the appendix.

As several firms have more than one founder our total number of founders is 143 (76 non-technology and 67 technology-oriented). We collected and coded biographical details of each of these 143 founders. This data was gathered through a variety of sources, in English and Vietnamese, including LinkedIn, media coverage, alumni(alumna) news/report from alma mater of different co-founders, public speeches, and Wikipedia. Our data collection included specifying up to four previous work experiences and the location and subject of each university degree obtained. We used this list of founders to create our dependent variable *Technology Founder*. This variable takes two values: 1 = technology founder and 0 = non-technology founder.

Hypothesis 1 predicts differences between the founders of technology and non-technology-oriented businesses in terms of the country location of their overseas work experience. We created two variables to test each part of this hypothesis. First, we include *Western work experience*, which is a count of the total number of previous jobs held in the global West (i.e., countries in Europe, Australasia and the Americas). In our dataset this includes Australia, Austria, France, Germany, Norway, United Kingdom, and United States. We also created a variable for *Soviet work experience*, which is a count of the total number of previous jobs held in any country that was a member of the Soviet Union. In our dataset Soviet work experience includes Russia, Romania, and Ukraine.

Finally, **Hypothesis 2** is about the location of founders’ educational experiences. In particular, we expect to see differences in terms of

whether or not founders obtained degrees from Western, especially American, universities or from non-Western universities. We created two variables: *USA education*, which is a count of the total number of degrees obtained from American universities; *Non-Western education*, which is a count of the total number of degrees obtained from universities outside of the global West.

Our empirical analysis also includes several important control variables. First, we include a series of dummy variables for *Degree level* obtained, including Undergraduate (UG), Masters (both MA and MSc), MBA, and PhD. Second, we include a variable indicating the sector(s) in which the business operates. This constitutes the three main sector categories reported by the Vietnamese government in its GDP distribution by economic sector: Agriculture, forestry and fishing, Industry (including construction) and Services. Finally, we include variables for each founders’ *Gender* (1 = female; 0 = male). **Table 2** presents summary statistics for all of our variables.

4. Empirical Analysis

In what follows we present the results of our regression analysis. As we are working with a binary dependent variable, we opted for logistic regression analysis. We also expect some variation at the level of the different sectors. As such, we use multi-level models with fixed effects for *Sector*. Our results are presented in two models, with each corresponding to our hypotheses, in **Table 3** below.

Our regression results provide support for our hypotheses. The results presented in model 1 suggest that *where* a founder obtained their previous work experience is a major difference between high-performing founders of technology-enabled and non-technological businesses. In particular, **technology-oriented founders are about 15 times** (15.23, as specified in the “Western work experience” line in **Table 3**) **more likely than non-technology founders to have previous work experience in the global West**. Said another way, our models predict the odds of being a tech-founder versus a non-tech found as a function of (1) work experience and (2) education. The odds of being a tech founder with study or work experience in the global West is 15 times that of non-tech founders. This is a sizeable difference. **Fig. 1**, below, visualizes the marginal effects for our key findings, which helps to show that the largest difference is between those with no Western work experience and those with two or more previous jobs in the global West.

Looking more closely at the data, we can see that the majority of this experience in the global West, about 55%, is in the U.S., compared to 32% in Europe and just 11% in Australasia. While the relationship between high-performing technology-based founders and Western work experience is very high, only a small portion of the founders of Vietnam’s high-performing non-technology-oriented companies have transnational experience. The relative rate by which non-technology founders are returnees from work in the Soviet Union is much lower than that of technology founders as having transnational experience in the global West. Thus, the pathway for founders of technology

Table 2
Summary statistics.

	Obs	Mean	Std. Dev	Min	Max
Founder	143	0.4685315	0.5007627	0	1
Western work experience	139	0.2657343	0.7777817	0	4
Soviet work experience	141	0.0629371	0.3188179	0	3
USA education	121	0.1748252	0.4330482	0	2
Non-Western education	125	0.6223776	0.6797286	0	3
UG	127	0.9444444	0.2299758	0	1
MBA	136	0.1555556	0.3637833	0	1
Masters	136	0.1111111	0.3154401	0	1
PhD	136	0.1037037	0.3060113	0	1
Gender	143	0.1188811	0.3247862	0	1
Sector	143	6.957746	1.825249	1	8

⁶ Investing.com was chosen as it contains updated data for Vietnamese public companies, was easily accessible (i.e. no payment required or IP region lock) and, as a bonus, was available in both Vietnamese and English.

Table 3
Logistic regression analysis of the determinants of *Technology Founders* in Vietnam.

	H1 (1)	H2 (2)
Western work experience	15.23** (2.81)	
Soviet work experience	0.184 (-1.55)	
USA education		35.28** (2.81)
Non-western education		0.840 (-0.43)
<i>Control Variables</i>		
UG	1 (.)	1 (.)
MBA	1.632 (0.80)	1.045 (0.07)
Masters	2.368 (1.08)	2.098 (0.88)
PhD	0.232 (-1.79)	0.0694* (-2.14)
Gender	0.230 (-1.72)	0.330 (-1.32)
Sector	Yes	Yes
N	117	117

Odds ratios with t statistics in parentheses.
*p < 0.05, **p < 0.01, ***p < 0.001.

companies going overseas to a specific region is more defined, and far more U.S.-focused, than that of the founders of non-technology-oriented businesses.

Also, as evident in Table 3, we find large differences between high-performing technology and non-technology founders when it comes to where they studied and hence support for Hypothesis 2. Technology founders are **35 times more likely** (35.28, as indicated in Table 3) than the founders of high-performing non-technology-oriented businesses to have degrees from American universities. Our marginal predicted means reflect these sizeable differences, where we see important differences between those with zero American degrees and those who have obtained just one American degree. Indeed, most American degrees obtained by

our founders were at the undergraduate (UG) level. It is also at the UG level where we see attendance at elite U.S. universities. This includes the Ivy league universities of Yale and Stanford, as well as highly-ranked universities such as the University of California Berkeley and UCLA. By contrast, not only are Masters, MBA and PhD degrees rare amongst founders in our dataset, the list of overseas universities attended for postgraduate studies are lower ranked. This includes Griggs University, Golden Gate University, and California Miramar University, with only New York University amongst the Western universities that the high-performing Vietnamese founders attend for postgraduate studies.

In contrast to degrees obtained in the U.S., our results show no significant differences for *Non-Western education*. Instead, the marginal predicted means show little differences for those with zero and those with even four degrees from non-Western universities. Thus, the transnational experience of technology founders is mostly evident in the context of (undergraduate level) university studies in the United States.

5. Discussion and analysis

Overall, our analysis supports the expectations that founders of high-performing technology companies have more transnational experience – particularly in the U.S. – than the founders of high-performing, non-technologically-oriented businesses in Vietnam. Our results show that founders of Vietnam’s high-performing technology businesses are significantly more likely than the founders of non-technologically-oriented businesses to be Western returnees. Of our results, U.S. university experience stands out as a prominent feature of the experience of the founders of Vietnam’s high-performing, technology-oriented businesses.

This suggests that Vietnam’s nascent technology sector has high-performing entrepreneurs that have similar transnational experience as earlier peer groups in China, India and Taiwan [1,2]. In recent studies, though, scholars have begun finding that as the Chinese ecosystem has matured, the founders of high-performing technology-based businesses are increasingly graduates from top universities embedded in coastal urban areas [44,45]. Vietnam’s technology ecosystem is in an early stage, with startup activity and venture capital funding multiplying year-over-year since the country’s WTO accession in 2007. As the Vietnamese technology sector matures, if it continues on a similar trajectory to China’s, it could see the further advance of

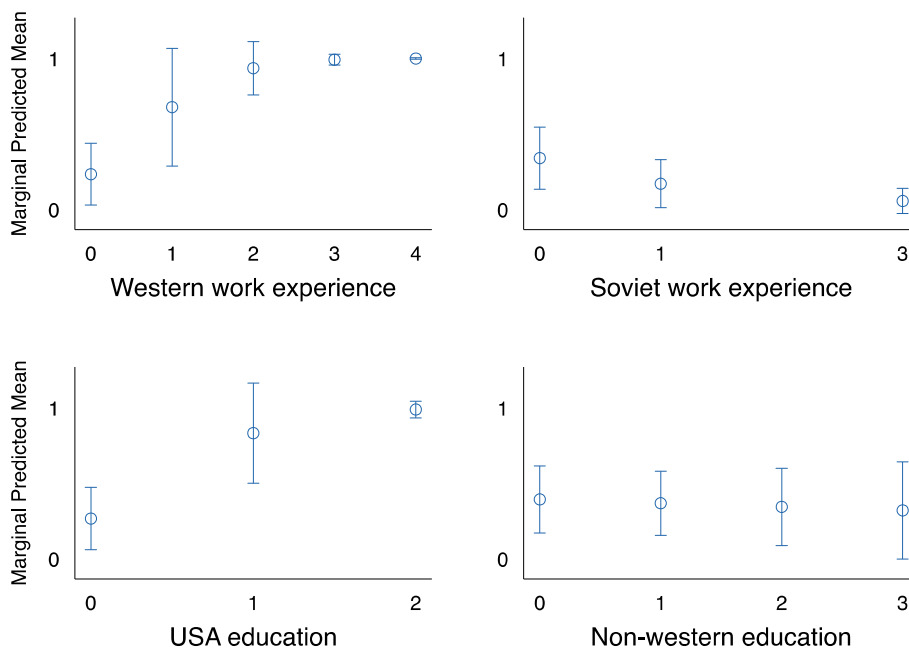


Fig. 1. Marginal predicted means of *Technology Founder*.

place-based entrepreneurship [44,45] – as local universities, the related Triple Helix, and ultimately, more locally-trained high-technology entrepreneurs gain success in Vietnam.

Our findings offer evidence of a strong relationship between an American university education and the founders of high-performing, technology companies in Vietnam. This aligns with the findings of previous studies of internet-based, and technology sector, entrepreneurs in East Asia, including Batjargal [2], Kenney et al. [1] and Klingler-Vidra and Wade [7], which found that transnational experience in the U.S. was prevalent. The transnational experience in the U.S. is said to shape founders' motivations for starting a technology-based business when they return to Vietnam. Such a desire was expressed in a media interview given by Pham Hung, the founder of Base.vn (one of the technology-based entrepreneurs in our dataset), in saying that:

the thing talked about the most at Stanford is what to do to create new value, and this is the way the famous school expects from Stanford's people. And that was why I decided to come back to Vietnam. I have to create new value to build up my country [46].

The impact of American higher education on one's professional mindset has been demonstrated in other arenas, including amongst economic policy [47], trade [48], and legal [49] realms. Our findings suggest that a similar mechanism is at work amongst Vietnamese returnees from the U.S.

Motivated to return to Vietnam to start a technology company, the time in the U.S. also endows the entrepreneurs with an ability to perform as technology entrepreneurs. According to existing scholarship on returnee technology entrepreneurs, once in their home country they draw on their transnational social network for advice, access to talent, new ideas, and help with equity fundraising. The VC managers active in Vietnam are, in large part, returnees with transnational experience in the U.S [6]. Given the prevalence of homophily [34], Vietnamese VCs may be more likely to fund technology founders who, like them, have experience in the U.S. Collectively, the time studying and living in the U.S. leads to accumulate experience that motivates their entrepreneurial activities and know-how in order to perform (human capital). It also seems to endow them with the social capital (in terms of social networks as well as the "right credentials") that helps them effectively secure VC funding and scale up their startups in Vietnam.

It is essential that we place our analysis in a historical context of market development, and specifically the advance of the technology sector, in Vietnam. Though both sets of companies were the highest-performing, in terms of market cap and equity funding, respectively, as of April 2020, they do not represent a truly like-for-like comparison. Instead, the high-performing, non-technology-oriented businesses tend to have been founded years earlier, and in many cases, by older founders. In fact, we can conceive of there being three waves of entrepreneurs since the *doi moi* reforms in 1986 [43]. The first wave since the *doi moi* reforms were micro businesses (mom and pop shops or vendors) that sprung up after Vietnam switched from a planned to market economy, when private ownership was first allowed. Then, a second wave can be conceived, with businesses founded during the 1990s and early 2000s. These businesses are large, organized businesses that, in many cases, have hundreds to tens of thousands of workers, and have become household names in Vietnam. This second wave constitutes the bulk of the high-performing non-technology-oriented companies that were analyzed in this study. Then, a third wave began when Vietnam ramped up its capitalist transformation in the 2000s. These businesses are fundamentally technology-based, striving to disrupt industries such as real estate, finance and logistics. This includes Vietnam's first "unicorn", VNG, which achieved a valuation in excess of US\$1 billion valuation for its mobile phone-focused video gaming products.

Thus, though we studied the highest-performing businesses in Vietnam at the same point in time (April 2020), we acknowledge that the technology and non-technology businesses would be subject to different opportunities and challenges as a result of both the time of founding and the different natures of the businesses. The non-technology-oriented

companies, in many cases, took years to build into the large businesses they are today, while the technology companies achieved significant equity valuations, in some cases, within a few years. So, we do not portend to have a perfectly comparable set of founders, with only the nature of their business as the differing variable. We still contend that the highest-performing entrepreneurs in Vietnam – including Le Hong Minh, the founder of VNG, and Dang Le Nguyen Vu, the founder of Trung Nguyen Group, the dominant coffee maker – are worth studying side-by-side. Without the non-technology founder group, we would be less able to ascertain whether, or how, transnational experience, especially university education in the U.S., may differ from high-performing entrepreneurs more broadly.

6. Conclusion

In this article, we have shown differential rates and directions of transnational experiences underpinning two sets of Vietnam's highest-performing entrepreneurs; those who founded the country's highest-performing non-technology-oriented companies, in terms of market cap, and those whose technology-focused businesses have raised the largest amount of private capital. We found strong evidence that the technology cohort is comprised of Việt Kiều – overseas returnees – who in large part completed university studies in the United States. The founders of Vietnam's highest-performing non-technology businesses, on the other hand, have less overseas experience, whether studying or working abroad. They do not have transnational experience, whether in the U.S. or in the Soviet bloc, to the same extent to which the founders of technology-enabled companies have. In this way, Vietnam's high-performing, technology founders have accumulated much more transnational experience than the non-technology cohort. As a result, the non-technology founders can be better described as place-based entrepreneurs, that benefited from social and human capital available in their locale (often in Ho Chi Minh City and Hanoi).

The strength of the findings points to the U.S. university experience as *the* most prominent driver of performance for Vietnam's high-technology founders. This has clear policy implications. Firstly, in light of the Covid-19 pandemic, technology-enabled entrepreneurship is said to be a more resilient form of both economic activity and job creation [50]. Such resilience is essential in the midst of the ongoing Covid-19 pandemic. More generally, technological entrepreneurship is associated with innovation gains that boost productivity and ultimately economic growth. But it is also a driver of increasing rates of inequality. This tendency for technological innovation to increase inequality needs to be met with purposeful efforts to better include, and better distribute, opportunities to participate [51–53].

In order to further embed Vietnam's growing technology-enabled startup activity into place-based entrepreneurship, policy could strive to further incorporate elements of the American university experience at universities in Vietnam. This could include increased support for entrepreneurship clubs and incentives for entrepreneurship curriculum. If it is the education, or human capital, itself, that is driving the relationship between U.S. universities and technology entrepreneurship, then furthering domestic universities' provision of this entrepreneurship in the curriculum and campus activities could help engender pertinent social and human capital. This development of top national universities has underscored the Chinese trajectory in recent years, and relatedly, the increased prevalence of top-performing, locally-trained high-technology founders [54]. These individuals come together in certain provinces, especially on the coast, and either collaborate 'intra-province' or collaborate with teams across provinces, in order to foster novel products or processes. In a similar way, studies of the university educations of Silicon Valley founders have found that there is tendency for high-performing startup founders to have graduated from elite universities in the U.S., especially Stanford University [55,56].

Future research can go deeper into the causal mechanisms at work in Vietnam, with respect to which aspects of social and human capital,

obtained by studying at a university in the U.S. or working in the U.S., matters most to entrepreneurial performance. Such insights would need to take a more qualitative tack, surveying or interviewing founders to ascertain the ways in which the U.S. experience endowed them with helpful social networks or provided them with the know-how for establishing a startup. Said another way, interviews with Vietnam's high-performing technology sector entrepreneurs would help to further unpack precisely how transnational experience in the U.S. shapes their willingness and ability to successfully found and grow technology-based businesses. A better understanding of why and how returnees go on to build technology-enabled companies can further scholars' understanding of the ways in which technological advance, especially in emerging economies, aims at fostering a "good society", in terms of the extent to which technology ameliorates local, societal problems [57].

Despite the study's limitations, we contend that the article offers a number of advances. Empirically, the paper offers novel insight into the differential social and human capital foundations of high-performing founders of technology-based and non-technology-oriented, "brick and mortar", businesses in Vietnam. Particularly in emerging economy studies, a thrust of existing research examines social capital vis-à-vis its relationship with household enterprises rather than the founders of high-performing, technology-based startups. Less is known about the social and human capital endowments of these high-performing entrepreneurs. Based upon our analysis of a novel dataset, we reveal that studying at a U.S. university is 35 times more likely amongst technology-based entrepreneurs than in the cohort of founders of non-technology companies. This phenomenon is not likely to be unique to Vietnam, and as such, needs to be on the research agenda in order to better understand the rise of "global clusters of innovation" in the contemporary political economy [25].

Analytically, the paper contributes through its approach to empirically testing and theorizing the role of transnational experience in the performance of technology sector entrepreneurs. Existing studies [1,2] tend to theorize and examine the experiences of technology-based entrepreneurs in isolation, without a benchmark to entrepreneurs in other sectors. We bring the study of technology entrepreneurship into the wider study of entrepreneurial performance by distilling analytical expectations for technology and non-technology founders in social and human capital terms. This is an advance on existing conceptualizations, which offer insight into the prevalence of transnational experience amongst technology entrepreneurs, but not a baseline by which to compare such a cohort to other high-performing entrepreneurs, or to

explain why they may possess more, or different, transnational experience. Through our approach, we move the analytical toolkit a step closer to delineating the ways in which changes to one's world view, the development of U.S. linked social networks, technical know-how, and the possession of similar experience sets uniquely contribute to the performance of technology-based entrepreneurs.

Finally, the finding that it is U.S. training that is associated with the founders of a burgeoning cohort of founders of technology-oriented startups raises questions about the societal impact of such a relationship. Certainly, policymakers in Vietnam and other emerging economies are working to encourage entrepreneurship that is both technologically-enabled *and* contextually relevant. A better understanding of why and how U.S. trained returnees go on to build technology-enabled companies can further scholars' understanding of the ways in which technological advance, especially in emerging economies, is oriented towards fostering a "good society" [57] and towards "inclusive innovation" [53], in terms of the extent to which technology strives to ameliorate local challenges and benefit wider society.

Author contribution/CRediT author contribution statement

Robyn Klingler-Vidra: Conceptualization, Data curation, Methodology, Roles/Writing- Original draft, Funding acquisition. Berlin Tran: Conceptualization; Data curation; Roles/Writing – original draft. Adam William Chalmers: Methodology, Roles/Writing- Original draft, Data curation, Formal analysis, Visualization.

Funding

This research benefitted from an Economic and Social Research Council (ESRC) Impact Acceleration Account research grant, which was administered by King's College London in 2020.

Acknowledgements

Comments provided by participants of the "Urbanization, rural development and changing social policy" workshop held at King's College London on November 27, 2019 as well as feedback received in response to a presentation given at the Hanoi Innovation Summit on August 29, 2019 were helpful in shaping early aims and drafts of the paper.

Appendix. List of founders (listed alphabetically by cohort by company names)

Company Name	Tech-enabled or non-tech cohort	Industry coding	Founder name
Base.vn	Technology	Information Technology, Internet, SaaS	Hung Pham
Buymed	Technology	B2B, E-Commerce Platforms, Health Care, Medical, Pharmaceutical	Peter Hiep Nguyen
Canavi	Technology	Mobile Apps	Hieu Tran
Canavi	Technology	Mobile Apps	Nguyen Hoang Hai
Canavi	Technology	Mobile Apps	Tuan Vo
CENTECH Communication JSC	Technology	Analytics, Big Data, Mobile Advertising, Service Industry	Kien Trung Nguyen
Coc Coc	Technology	Internet, Local, Search Engine, Software	Le Van Thanh
Coc Coc	Technology	Internet, Local, Search Engine, Software	Nguyen Duc Ngoc
Coc Coc	Technology	Internet, Local, Search Engine, Software	Nguyen Thanh Binh
Congnhadat.net	Technology	Information Technology, Property Development, Real Estate	Dominic Vu
CYFEER JOINT STOCK COMPANY	Technology	Hospitality, Information Technology, Property Management, Real Estate, SaaS	Phong Pham
DooPage	Technology	E-Commerce, Information Technology, Internet, Software	Truong Hua
EcoTruck	Technology	Information Technology, Logistics, Supply Chain Management	Anh Le
F88	Technology	Consumer, Financial Services, Lending, Trading Platform	Cong Tran
F88	Technology	Consumer, Financial Services, Lending, Trading Platform	Steven Nguyen
Ferosh	Technology	E-Commerce, Fashion	Thanh Huong Nguyen
Finhay	Technology	Advice, Financial Services, FinTech, Wealth Management	Huy (Shayne) Nghiem
Finhay	Technology	Advice, Financial Services, FinTech, Wealth Management	Minh Tri Do

(continued on next page)

(continued)

Company Name	Tech-enabled or non-tech cohort	Industry coding	Founder name
gachvang.com	Technology	E-Commerce, Internet, Property Management, Real Estate, Real Estate Investment	Peter Cheng
gachvang.com	Technology	E-Commerce, Internet, Property Management, Real Estate, Real Estate Investment	Phat Nguyen
GAPIT Communications JSC	Technology	Creative Agency, Digital Marketing, Mobile Advertising, SMS	Kien Trung Nguyen
HeyU	Technology	Information Technology, Logistics	Pham The Anh
iCare Benefits	Technology	FinTech, Retail Technology	Trung Dung
JAMJA	Technology	E-Commerce, Lead Generation, Online Portals, Shopping	Le Hung Viet
KAMEREO	Technology	E-Commerce, Food and Beverage, Restaurants	Taku Tanaka
KidsOnline	Technology	Internet, Mobile, Parenting	Binh Nguyen
KidsOnline	Technology	Internet, Mobile, Parenting	Ha Dau
KidsOnline	Technology	Internet, Mobile, Parenting	Long Le Huy
KidsOnline	Technology	Internet, Mobile, Parenting	Manh Vu
KidsOnline	Technology	Internet, Mobile, Parenting	Mao Dao Khac
KidsOnline	Technology	Internet, Mobile, Parenting	Nam Tran
Lac Viet Computing	Technology	Cloud Computing, Information Technology, Service Industry, Software, Telecommunications	Ha Than
Lixibox, Inc.	Technology	Beauty, E-Commerce	Sao Tran (Sao Lonsdale)
LOGIVAN	Technology	Information Technology, Logistics, Railroad, Transportation	Louise Linh Pham
Luxstay	Technology	E-Commerce, Hospitality, Sharing Economy, Travel Accommodations, Vacation Rental	Steven Nguyen
Moca	Technology	Apps, Electronics, Mobile, Mobile Payments, Payments	Dung Nguyen
Moca	Technology	Apps, Electronics, Mobile, Mobile Payments, Payments	Tran Thanh Nam
Momo	Technology	Finance, FinTech, Mobile Payments	Nguyen Thi Minh Hien
MWG - Mobile World Group	Technology	Consumer Electronics	Nguyen Duc Tai
OkieLa	Technology	E-Commerce, Logistics, Mobile Apps, Shopping	David Tran
OkieLa	Technology	E-Commerce, Logistics, Mobile Apps, Shopping	Max-F. Scheichenost
POPS Worldwide	Technology	Digital Entertainment, Digital Media, Film Production, Internet, Music, Social Media, Video	Esther Nguyen
Propzy	Technology	Business Information Systems, Marketing, Real Estate, Social Media	John Le
Pushsale.vn	Technology	Marketing, Business Information Systems, Logistics	Do Xuan Thang
Rever.vn (REVER)	Technology	Information Technology, Real Estate	Phan Le Manh
Sendo	Technology	Consumer Electronics, Consumer Goods, E-Commerce	Dung Nguyen Dac Viet
Sendo	Technology	Consumer Electronics, Consumer Goods, E-Commerce	Nguyen Phuong Hoang
Sendo	Technology	Consumer Electronics, Consumer Goods, E-Commerce	Tran Hai Linh
Sieu Viet Group	Technology	Human Resources, Internet, Recruiting, Staffing Agency	Minh Tam Phan
Sieu Viet Group	Technology	Human Resources, Internet, Recruiting, Staffing Agency	Xuan Minh Ong
Sky Mavis	Technology	Blockchain, Video Games	Aleksander Leonard Larsen
Sky Mavis	Technology	Blockchain, Video Games	Jeffrey Zirlin
Sky Mavis	Technology	Blockchain, Video Games	Trung Nguyen
Telio.vn	Technology	B2B, E-Commerce, Fast-Moving Consumer Goods, Retail, Retail Technology	Sy Phong Bui
Tiki Corporation	Technology	E-Commerce, Retail, Shopping	Son Tran Ngoc Thai
Tima	Technology	Financial Services, FinTech, Mobile Apps	Nguyen Van Thuc
Topica Edtech Group	Technology	Education, Information Technology, MOOC	Tuan Pham
VeXeRe.Com	Technology	E-Commerce, Public Transportation, Tourism, Travel	Long Luong
VeXeRe.Com	Technology	E-Commerce, Public Transportation, Tourism, Travel	Thang Dao
VNG	Technology	Internet, Software	Bryan Pelz
VNG	Technology	Internet, Software	Le Hong Minh
VNpay	Technology	Banking, Finance, Payments, Telecommunications	Tanh Le
Vntrip.vn	Technology	E-Commerce, E-Commerce Platforms, Leisure, Tourism, Travel, Travel Agency	Lam Le Dac
Vntrip.vn	Technology	E-Commerce, E-Commerce Platforms, Leisure, Tourism, Travel, Travel Agency	Thai Nguyen
Waves Vietnam Podcasts	Technology	Audio, Podcast	Ben Le Tu Quoc Minh
Waves Vietnam Podcasts	Technology	Audio, Podcast	Kevin Gao
WeFit	Technology	Fitness, Mobile Apps, Wellness	Khoi Nguyen
ACB	Non-tech	Finance	Dang Thu Thuy
ACB	Non-tech	Finance	Huynh Thanh Thuy
ACB	Non-tech	Finance	Nguyen Duc Kien
ACB	Non-tech	Finance	Pham Trung Cang
ACB	Non-tech	Finance	Tran Mong Hung
ACB	Non-tech	Finance	Trinh Kim Quang
An Phat Plastic and Green Environment JSC	Non-tech	Basic materials	Pham Anh Duong
Apax	Non-tech	Service	Nguyen Ngoc Thuy
Bamboo Capital	Non-tech	Service	Nguyen Ho Nam
Century Land	Non-tech	Service	Nguyen Trung Vu
Century Synthetic Fiber Corp	Non-tech	Consumer cyclical	Dang Trieu Hoa
CEO Group	Non-tech	Capital goods	Doan Van Binh
CMC Corp	Non-tech	Telecommunications	Nguyen Trung Chinh
Dai Thien Loc Corp	Non-tech	Basic materials	Nguyen Thanh Nghia
Dat Phuong	Non-tech	Capital goods	Luong Minh Tuan
Dat Xanh Real Estate Service and Construction	Non-tech	Service	Luong Tri Thinh

(continued on next page)

(continued)

Company Name	Tech-enabled or non-tech cohort	Industry coding	Founder name
Digiworld	Non-tech	Consumer non-cyclical, Tech	Doan Hong Viet
Fecon Foundation Engineering	Non-tech	Capital goods	Pham Viet Khoa
First Real	Non-tech	Service	Nguyen Hao Hiep
FIT INVEST	Non-tech	Finance	Nguyen Thi Minh Nguyet
FIT INVEST	Non-tech	Finance	Nguyen Van Sang
FLC Group JSC	Non-tech	Service	Trinh Van Quyet
FPT	Non-tech	Finance, Service, Tech	Bui Quang Ngoc
FPT	Non-tech	Finance, Service, Tech	Do Cao Bao
FPT	Non-tech	Finance, Service, Tech	Truong Gia Binh
Hai Phat Invest	Non-tech	Capital goods	Do Quy Hai
Hoa Binh Construction & Real estate	Non-tech	Capital goods	Le Viet Hai
Hoa Phat Group	Non-tech	Basic materials	Tran Dinh Long
Hoang Anh Gia Lai JSC	Non-tech	Consumer non-cyclical	Doan Nguyen Duc
Hoang Huy Investment Services	Non-tech	Consumer cyclical	Do Huu Ha
Hoang Quan Consulting Trading Service	Non-tech	Capital goods	Truong Anh Tuan
Hoasen Group	Non-tech	Basic materials	Le Phuoc Vu
Hung Vuong Corp	Non-tech	Consumer non-cyclical	Duong Ngoc Minh
IB Securities	Non-tech	Finance	Nguyen Thi Tuyet
Khang Dien House Trading Investment	Non-tech	Service	Ly Dien Son
Kien Long Commercial	Non-tech	Finance	Truong Hoang Luong
Kinh Bac City Development	Non-tech	Service	Dang Thanh Tam
Kinh Do	Non-tech	Consumer non-cyclical	Tran Kim Thanh
Kinh Do	Non-tech	Consumer non-cyclical	Tran Le Nguyen
Kosy	Non-tech	Capital goods	Nguyen Viet Cuong
LDG Investment	Non-tech	Service	Nguyen Khanh Hung
Masan Group	Non-tech	Basic materials	Nguyen Dang Quang
Minh Phu Seafood	Non-tech	Consumer non-cyclical	Le Van Quang
Mobile World	Non-tech	Service	Nguyen Duc Tai
Nafoods Group	Non-tech	Consumer non-cyclical	Nguyen Manh Hung
Nam Long Investment Corp	Non-tech	Capital goods	Nguyen Xuan Quang
Nam Viet Corp	Non-tech	Consumer non-cyclical	Doan Toi
Ngoc Nghia Industry	Non-tech	Basic materials	La Van Hoang
Nova Land	Non-tech	Capital goods	Bui Thanh Nhon
Pan Pacific Corp	Non-tech	Consumer non-cyclical	Nguyen Duy Hung
Phat Dat Real Estate Development	Non-tech	Service	Nguyen Van Dat
Pomina Steel Corp	Non-tech	Basic materials	Do Duy Thai
Quoc Cuong Gia Lai JSC	Non-tech	Service	Nguyen Thi Nhu Loan
Saigon Securities Incorporation	Non-tech	Finance	Nguyen Duy Hung
Sao Mai Group	Non-tech	Service	Le Thanh Thuan
Son Ha International Corp	Non-tech	Capital goods	Le Vinh Son
Tam Duc Cardiology	Non-tech	Healthcare	Dr. Nguyen Ngoc Chieu
Tan Tao Investment and Industry	Non-tech	Service	Dang Thi Hoang Yen
Techcombank	Non-tech	Finance	Hoang Quang Vinh
Techcombank	Non-tech	Finance	Le Kien Thanh
Thanh Nam Inox	Non-tech	Basic materials	Nguyen Hung Cuong
Thanh Thanh Cong Group	Non-tech	Consumer cyclical	Dang Van Thanh
Sacombank		Consumer non-cyclical Finance, Service	
Thien Long Group	Non-tech	Consumer non-cyclical	Co Gia Tho
Tri Viet Securities	Non-tech	Finance, Service	Pham Thanh Tung
Trung An Hi-tech	Non-tech	Consumer non-cyclical	Le Thi Tuyet
Trung An Hi-tech	Non-tech	Consumer non-cyclical	Pham Thai Binh
Truong Thanh Furniture Corp	Non-tech	Consumer cyclical	Vo Truong Thanh
Viet Capital	Non-tech	Finance	Nguyen Thanh Phuong
Viet Nam Intl Bank	Non-tech	Finance	Dang Khac Vy
Viet Phat Import Export	Non-tech	Basic materials	Nguyen Van Binh
Vietjet Aviation	Non-tech	Transportation	Nguyen Thi Phuong Thao
Vietnam Sun Corp	Non-tech	Transportation	Dang Phuoc Thanh
Vingroup	Non-tech	Capital goods, Service	Pham Nhat Vuong
Vinh Hoan Corp	Non-tech	Consumer non-cyclical	Truong Thi Le Khanh
VNDIRECT Securities	Non-tech	Finance	Pham Minh Huong
Yeah1	Non-tech	Service	Nguyen Anh Nhuong Tong

References

- [1] M. Kenney, D. Breznitz, M. Murphree, Coming back home after the sun rises: returnee entrepreneurs and growth of high-tech industries, *Res. Pol.* 42 (2013) 391–407, <https://doi.org/10.1016/j.respol.2012.08.001>.
- [2] B. Batjargal, Internet entrepreneurship: social capital, human capital, and performance of Internet ventures in China, *Res. Pol.* 36 (2007) 605–618, <https://doi.org/10.1016/j.respol.2006.09.029>.
- [3] Y. Ma, S. Pan, Chinese returnees from overseas study: an understanding of brain gain and brain circulation in the age of globalization, *Front. Educ. China* (2015) 306–329, <https://doi.org/10.1007/BF03397067>.

- [4] T. Nguyen, J. Rose, Building trust- evidence from Vietnamese entrepreneurs, *J. Bus. Ventur.* 24 (2009) 165–182, <https://doi.org/10.1016/j.jbusvent.2008.03.004>.
- [5] M. Huis, R. Lensink, N. Vu, N. Hansen, Impacts of the gender and entrepreneurship together ahead (GET ahead) training on empowerment of female microfinance borrowers in northern Vietnam, *World Dev.* 120 (2019) 46–61, <https://doi.org/10.1016/j.worlddev.2019.04.001>.
- [6] R. Klingler-Vidra, Building a venture capital market in Vietnam: diffusion of a neoliberal market strategy to a socialist state, *Asian Stud. Rev.* 38 (2014) 582–600, <https://doi.org/10.1080/10357823.2014.958054>.
- [7] R. Klingler-Vidra, R.H. Wade, Science and technology policies and the middle income trap: lessons from Vietnam, *J. Dev. Stud.* 56 (2020) 717–731, <https://doi.org/10.1080/00220388.2019.1595598>.
- [8] R.M. Ling, E. Fink, E. Kibler, Understanding place-based entrepreneurship in rural Central Europe: a comparative institutional analysis, *Int. Small Bus. J.* 32 (2014) 204–227, <https://doi.org/10.1177/0266242613488614>.
- [9] D. Ahlstrom, G.D. Bruton, An institutional perspective on the role of culture in shaping strategic actions by technology focused entrepreneurial firms in China, *Enterpren. Theor. Pract.* 26 (2002) 53–69, <https://doi.org/10.1177/104225870202600404>.
- [10] P. Davidsson, E. Hunter, M. Klofsten, Institutional forces: the invisible hand that shapes venture ideas, *Int. Small Bus. J.* 24 (2006) 115–131.
- [11] F. Delmar, P. Davidsson, Where do they come from? Prevalence and characteristics of nascent entrepreneurs, *Enterpren. Reg. Dev.* 12 (2000) 1–23, <https://doi.org/10.1080/089856200283063>.
- [12] H. Westlund, R. Bolton, Local social capital and entrepreneurship, *Small Bus. Econ.* 21 (2003) 77–113, <https://doi.org/10.1023/A:1025024009072>.
- [13] L.A. Renzulli, H. Aldrich, J. Moody, Family matters: gender, networks, and entrepreneurial outcomes, *Soc. Forces* 79 (2000) 523–546, <https://doi.org/10.2307/2675508>.
- [14] E.B. Roberts, *Entrepreneurs in High Technology: Lessons from MIT and beyond*, Oxford University Press, Oxford, 1991, <https://doi.org/10.1093/acprof:oso/9780195067040.001.0001>.
- [15] Q.-H. Vuong, V.-P. La, T.T. Vuong, H.-K. Nguyen, M.-T. Ho, What have Vietnamese scholars learned from researching entrepreneurship? A Systematic review, *Heliyon* (2020) 6, <https://doi.org/10.1016/j.heliyon.2020.e03808>.
- [16] T.X.N. Huong, V. Le, Network ties and export propensity of Vietnamese small and medium enterprises, *Asia Pac. Bus. Rev.* 25 (2019) 100–122, <https://doi.org/10.1080/13602381.2018.1531615>.
- [17] C.H. Nguyen, C.J. Nordman, Household entrepreneurship and social networks: panel data evidence from Vietnam, *J. Dev. Stud.* 54 (2018) 594–618, <https://doi.org/10.1080/00220388.2017.1303668>.
- [18] T. Pham, O. Talavera, Discrimination, social capital, and financial constraints: the case of Viet Nam, *World Dev.* 102 (2018) 228–242, <https://doi.org/10.1016/j.worlddev.2017.10.005>.
- [19] J.P.H. Poon, D.T. Thai, D. Naybor, Social capital and female entrepreneurship in rural regions, *Appl. Geogr.* 35 (2012) 308–315, <https://doi.org/10.1016/j.apgeog.2012.08.002>.
- [20] A.M. Leshkovich, Woman, buddhist, entrepreneur: gender, moral values, and class Anxiety in late socialist Vietnam, *J. Vietnamese Stud.* 1 (2006) 277–313, <https://doi.org/10.1525/vs.2006.1.1.2.277>.
- [21] M. Piracha, F. Vaden, Return migration and occupational choice: evidence from Albania, *World Dev.* 38 (2010) 1141–1155, <https://doi.org/10.1016/j.worlddev.2009.12.015>.
- [22] M. Granovetter, The strength of weak ties, *Am. J. Sociol.* 78 (1973) 1360–1380, <https://doi.org/10.1086/225469>.
- [23] G. Grabher, The weakness of strong ties: the lock-in of regional development in the Ruhr area, in: G. Grabher (Ed.), *The Embedded Firm: on the Socioeconomics of Industrial Networks*, Routledge, London, 1993, pp. 255–277.
- [24] M. Guth, Innovation, social inclusion and coherence regional development: a new diamond for a socially inclusive innovation policy in regions, *Eur. Plann. Stud.* 13 (2005) 333–349, <https://doi.org/10.1080/0965431042000321866>.
- [25] J.S. Engel, What are clusters of innovation, how do they operate and why are they important? in: J.S. Engel (Ed.), *Global Clusters of Innovation: Entrepreneurial Engines of Economic Growth Around the World* Edward Elgar, Cheltenham, 2014, pp. 5–37.
- [26] C. Song, K.M. Park, Y. Kim, Socio-cultural factors explaining technology-based entrepreneurial activity: direct and indirect role of social security, *Technol. Soc.* (2020) 61, <https://doi.org/10.1016/j.techsoc.2020.101246>.
- [27] H. Li, L. Meng, Q. Wang, L.A. Zhou, Political connections, financing and firm performance: evidence from Chinese private firms, *J. Dev. Econ.* 87 (2008) 283–299, <https://doi.org/10.1016/j.jdeveco.2007.03.001>.
- [28] M. Troilo, J. Zhang, Guanxi and entrepreneurship in urban China, *J. Asia Pac. Econ.* 17 (2012) 315–331, <https://doi.org/10.1080/13547860.2012.668280>.
- [29] P. Mejia, M. Melendez, Middle-Class Entrepreneurs and Social Mobility through Entrepreneurship in Colombia, Inter-American Development Bank working paper no. IDB-WP-317, September 2012.
- [30] Z. Cheng, W. Guo, M. Hayward, R. Smyth, H. Wang, Childhood Adversity and the Propensity for Entrepreneurship: A Quasi-Experimental Study of the Great Chinese. DOI: 10.1016/j.jbusvent.2020.106063.
- [31] OECD, B. Annex, List of Indicators of Entrepreneurial Determinants, 2017. Available at: https://www.oecd-ilibrary.org/docserver/entrepreneur_aag-2017-2
- 9-en.pdf?expires=1594744299&id=id&accname=guest&checksum=BF16C011D0EF5D4D0FB50F95832B7FC0. (Accessed 20 April 2021).
- [32] Y.V. Hochberg, A. Ljungqvist, Y. Lu, Whom you know matters: venture capital networks and investment performance, *J. Finance* 62 (2007) 251–301, <https://doi.org/10.1111/j.1540-6261.2007.01207.x>.
- [33] J.E. Tinkler, K.B. Whittington, M.C. Ku, A.R. Davis, Gender and venture capital decision-making: the effects of technical background and social capital on entrepreneurial evaluations, *Soc. Sci. Res.* 51 (2015) 1–16, <https://doi.org/10.1016/j.ssresearch.2014.12.008>.
- [34] P.A. Gomers, W. Gornall, S.N. Kaplan, I.A. Strebulaev, How do venture capitalists make decisions? *J. Financ. Econ.* 135 (2020) 169–190, <https://doi.org/10.1016/j.jfineco.2019.06.011>.
- [35] M. Bertrand, M. Bombardini, F. Trebbi, Is it whom you know or what you know? An empirical assessment of the lobbying process, *Am. Econ. Rev.* 104 (2014) 3885–3920, <https://doi.org/10.1257/aer.104.12.3885>.
- [36] M.T.T. Thai, L.C. Chong, Born-global: the case of four Vietnamese SMEs, *J. Int. Enterpren.* 6 (2008) 72–100, <https://doi.org/10.1007/s10843-008-0021-y>.
- [37] V.H. Vu, Ve Moi Quan He Giua Nha Nuoc – Thi Truong – Xa Hoi Thoi Gian Qua (The Relations between the State, Market and Society in Recent History), Tap Chi to Chuc Nha Nuoc (Online), 2019. <https://tcnn.vn/news/detail/43184/Ve-moi-quan-he-giua-nha-nuoc—thi-truong—xa-hoi-thoi-gian-qua.html>. (Accessed 20 July 2020).
- [38] K.E. Meyet, H.V. Nguyen, Foreign investment strategies and sub-national institutions in emerging markets: evidence from Vietnam, *J. Manag. Stud.* 42 (2005) 63–93, <https://doi.org/10.1111/j.1467-6486.2005.00489.x>.
- [39] The Saigon Times, Kinh Doanh Bang ‘quan He’ Hay Bang Phap Luat (Doing Business via Connections or Law) (Online), 2011. <http://tapchitaichinh.vn/tai-chinh-phap-luat/kinh-doanh-bang-quan-he-hay-bang-phap-luat-9187.html>. (Accessed 10 July 2020).
- [40] The Saigon Times, Moi Quan He Giua Doanh Nghiep Va Chinh Quyen (The Relations between Businesses and the Government) (Online), 2011. <https://www.thesaigontimes.vn/48952/Moi-quan-he-giua-doanh-nghiep-va-chinh-quyen.html>. (Accessed 10 July 2020).
- [41] M. Ito, Living the American Dream in Vietnam, *Nikkei Asian Review*, 29 September 2016. <https://asia.nikkei.com/Business/Living-the-American-dream-in-Vietnam>. (Accessed 20 April 2021).
- [42] L.A. Hoang, *Vietnamese Migrants in Russia: Mobility in Times of Uncertainty*, Amsterdam University Press, Amsterdam, 2020.
- [43] A. Chesnokov, *Su di cu qua lai Nga-Viet: Nhung khia canh lich su, kinh te-xa hoi va chinh tri* (Russia-Vietnam mobility: Perspectives in history, socio-economics and politics) (online), 2011. <http://vepr.org.vn/upload/533/20170428/NC-25.pdf>.
- [44] R. Klingler-Vidra, J. Hai, Y. Liu, A. Chalmers, How unique is Jack Ma? The social foundations of China’s high-performing entrepreneurs, in: Paper Presented at the UCLA Symposium on Global Chinese Entrepreneurship, 21 November, 2020.
- [45] M. Li, L. He, Y. Zhao, The triple helix system and regional entrepreneurship in China, *Journal of Entrepreneurship & Regional Development* 32 (2019) 508–530, <https://doi.org/10.1080/08985626.2019.1666168>.
- [46] K. Chi, “Stanford Graduate Returns to Vietnam to ‘Create New Value’”, 2018. VietNamNetBridge, May 18. Available at: <http://english.vietnamnet.vn/fms/education/200610/stanford-graduate-returns-to-vietnam-to-create-new-value.html>. (Accessed 27 April 2021).
- [47] J. Chwieroth, Neoliberal economists and capital account liberalization in emerging markets, *Int. Organ.* 61 (2007) 443–463, <https://doi.org/10.1017/S0020818307070154>.
- [48] S. Weymouth, J.M. Macpherson, The social construction of policy reform: economists and trade liberalization around the world, *Int. Interact.* 38 (2012) 670–702, <https://doi.org/10.1080/03050629.2012.726185>.
- [49] Y. Dezalay, B. Garth, *Asian Legal Revivals: Lawyers in the Shadow of Empire*, University of Chicago Press, Chicago, 2010.
- [50] *The Economist*. Jobs (I): Entrepreneurship: Startup Nation, 10 October 2020.
- [51] R. Kattel, M. Mazzucato, Mission-oriented innovation policy and dynamic capabilities in the public sector, *Ind. Corp. Change* 27 (2018) 787–801, <https://doi.org/10.1093/icc/dty032>.
- [52] R. Klingler-Vidra, Y. Liu, Inclusive innovation policy as social capital accumulation strategy, *Int. Aff.* 96 (2020) 1033–1050, <https://doi.org/10.1093/ia/iaa091>.
- [53] U.N.D.P. Inclusive, Innovation Policy for the Next Development Stage in Viet Nam (Online), 23 July 2020. <https://www.vn.undp.org/content/vietnam/en/home/library/InclusiveInnovation.html>. (Accessed 20 April 2021).
- [54] F. Li, W. Liu, K. Bi, Exploring and visualizing spatial-temporal evolution of patent collaboration networks: a case of China’s intelligent manufacturing equipment industry, *Technol. Soc.* 64 (2021), <https://doi.org/10.1016/j.techsoc.2020.101483>.
- [55] V. Wadhwa, R. Aggarwal, K. Holly, A. Salkever, *The Anatomy of an Entrepreneur Family Background and Motivation*, Kauffman Foundation, July 2009.
- [56] T. Walker, The Billionaire Factory: Why Stanford University Produces So Many Celebrated Web Entrepreneurs, *The Independent* (online), 15 July, 2013, <https://www.independent.co.uk/student/news/billionaire-factory-why-stanford-university-produces-so-many-celebrated-web-entrepreneurs-8706573.html>. (Accessed 20 April 2021).
- [57] C. Griffy-Brown, B.D. Earp, O. Rosas, Technology and the good society, *Technol. Soc.* 52 (2018) 1–3, <https://doi.org/10.1016/j.techsoc.2018.01.001>.