

# Pre-entry Experience, Post-entry Adaptations and Internationalization in the African Mobile Telecommunications Industry

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# Pre-Entry Experience, Post-Entry Adaptations, and Internationalization in the African Mobile Telecommunications Industry

## ABSTRACT

We study the evolution of the African mobile telecommunications industry from its effective beginning, and explore the sources of ownership advantages among indigenous firms, by assembling historical qualitative and quantitative firm-level data. Our historical qualitative findings suggest that a few start-ups gained industry-specific knowledge through their pre-entry experience, directed their post-entry development of capabilities toward adaptations to challenging market and operational conditions, and leveraged their adaptive capabilities to enter and compete in other African countries. Using our quantitative panel data, we show that these firms successfully internationalized across the continent. In particular, compared with other start-ups, they had higher rates of foreign entry in African countries that had relatively weaker rule of law, and greater market reach in African countries that had relatively larger low-income consumer segments. These patterns corroborate that their capabilities for overcoming the industry's challenging market and operational conditions were their key ownership advantages. Through our triangulated analysis, we show that inherited industry knowledge provides a foundation for post-entry capability development, and entrepreneurial leadership guides this process to create ownership advantages for regional internationalization.

(177 words)

## INTRODUCTION

Recent trends in foreign direct investment indicate a puzzling phenomenon: foreign investments in developing countries have substantially increased due to investments by firms from other *developing* countries, but within industries, only a few developing country firms invest abroad (e.g., United Nations 2012). According to a core principle of internationalization theory, firms exploit their hard-to-imitate “ownership advantages” to overcome the disadvantages of investing abroad (Dunning 1980, Zaheer 1995, Rugman 2009). More recently, scholars have suggested that the challenging conditions in developing countries provide opportunities for domestic firms to develop capabilities that they can exploit to their advantage in countries with similar conditions (e.g., Cuervo-Cazurra and Genc 2008, Guillen and Garcia-Canal 2013, Ramamurti 2012). However, successful internationalization by few developing country firms within industries indicates that ownership advantages are not conferred to all firms facing similar home country conditions. What then are the sources of differential ownership advantages among developing country firms that can explain the heterogeneity in internationalization patterns? And what are the implications of those firms’ internationalization for the evolution of their industry in a region with multiple developing countries?

Our paper explores these questions in the context of the African mobile telecommunications industry since its effective beginning. Initially, business models in mobile telecommunications were based on value chain activities developed for advanced countries, and the challenging conditions in most African nations were deemed particularly unfavorable for the development of this modern industry (Kiplagat and Werner 1994, Noam 1999). Yet, as the industry evolved, mobile subscribers increased rapidly in the continent, with the mobile penetration rate crossing 60% by 2012.

Prior research suggests that firms’ capabilities are enhanced when their pre-entry (or pre-founding) experience provides a fountainhead of knowledge specific to their industry (Agarwal and Shah 2014, Klepper 2009). Studies on advanced economy industries have shown that early entrants with such pre-entry experience achieve exemplary performance, and play a vital role in expanding their domestic industry’s initial and subsequent product segments (e.g., Agarwal et al. 2004, Argyres and Mostafa 2016, Klepper and Sleeper 2005). Thus, these trailblazers’ pre-entry experience influences the evolution of not only their capabilities but also their industries. As firms’ capabilities form a key basis for their ownership advantages (Dunning 1980, 1988, Dunning and Rugman 1985, Zaheer 1995), we explore the evolution of African mobile telecommunications industry and sources of ownership advantages among

early entrants originating from Africa, by considering the role of pre-entry experience in the post-entry development of the entrants' capabilities.

We note, however, that important contextual factors are likely to condition this development process (Hoskisson et al. 2000). When a developing region is unlikely to generate knowledge of modern value chain activities, local entrants face the challenge of acquiring this knowledge from advanced economy firms (Amsden 2001, Chandra 2006, Krugman 1979); however, advanced economy business models may be unsuitable for developing countries' challenging market conditions (Prahalad 2004), and firms in developing countries frequently encounter various operational hazards due to weak rule of law (Fafchamps and Minten 2001, Henisz 2000, Siegel 2007). While local entrants can leverage capabilities for overcoming market and operational challenges in the regional industry to enter and compete in other regional developing countries, creating such ownership advantages would require learning about existing value chain activities and directing their post-entry capability development toward overcoming those challenges. Understanding how such capabilities emerge and the role of pre-entry experience in this evolutionary process may provide insight into the impetus behind internationalization by developing country firms. We take a deep dive into the history of the African mobile telecommunications industry to gain this insight.

Using data collected by research organizations, and information in corporate annual reports, we identified every mobile operator that entered an African country, and documented several characteristics of each operator since its entry into the country. We exploited information from archival documents and interviews with industry veterans to trace firms' pre-entry experiences, and reconstructed the business histories of multiple firms to corroborate the emergent findings (Eisenhardt 1991). We then drew conjectures about firms' foreign entry rates and market reach (number of subscribers) within African countries, and used our panel data to test our conjectures. While analytical narratives and hypotheses testing are typically employed in historical research and organization studies, respectively, we followed a growing body of work (e.g., Agarwal et al. 2018, Braguinsky and Hounshell 2016), by combining both approaches. This methodology's hallmark uses historical research to guide quantitative analysis, and through triangulation, highlight the underlying mechanism behind the phenomenon under study (see also Ingram et al. 2012).

Historical evidence we present suggests that during the industry's formative years, while most regional firms (i.e., firms originating from Africa) struggled to develop adaptive capabilities, a few firms initiated radical adaptations to

existing business models from the outset, utilizing their pre-entry industry-specific knowledge. Their founders guided uncertain adaptive searches to success and led their internationalization initiatives, by adapting to host countries' contentious policy environments, transferring adaptive solutions for deploying robust mobile networks, and attracting consumers from low-income segments. Quantitatively, we find that these trailblazers had a greater likelihood of foreign entry (greater market reach) than other regional firms, which was greater still in host countries with particularly weak rule of law (a disproportionately large low-income population). These patterns corroborate that their key ownership advantages reflected their capabilities for overcoming the industry's challenging market and operational conditions.

Our findings bear important implications for the entrepreneurship and internationalization literatures. A key gap in entrepreneurship literature concerns whether firms' pre-entry experience shapes ownership advantages for successful internationalization beyond their domestic market (Moeen 2017, Moeen and Agarwal 2017, York and Lenox 2014); in the internationalization literature, sources of differential ownership advantages among developing country firms remain unaddressed (Ramamurti 2012). Our triangulated analysis of the African mobile telecommunications industry shows that local firms' capabilities diverged since their founding, with few trailblazers exploiting industry-specific knowledge through their pre-entry experience and their founders directing post-entry capability development to create ownership advantages for regional internationalization. Thus, our study links firms' pre-entry experience to their ownership advantages, highlighting entrepreneurial leadership's intermediary role. Our study also reveals that early entrants' capabilities can shape an industry's evolution across a developing region when such capabilities lead to ownership advantages for regional internationalization. Although African countries presented challenging conditions for mobile operators, trailblazers exploited their ownership advantages, turning challenges into opportunities, each expanding to multiple African countries. Our findings thus suggest that pre-entry experience and entrepreneurial leadership are fundamental for regional firms' success and for propelling the regional industry into a high-growth phase.

## **LITERATURE REVIEW, INDUSTRY CONTEXT, AND DATA SOURCES**

### **Brief Literature Review**

Recent research has explored firms' pre-entry experience as a source of their capabilities (reviewed in Agarwal et al. 2014, Klepper 2009). Much attention has focused on *employee spinoffs* or *employee spinouts*, referring to new firms established by former employees of industry incumbents. Typically, spinoff founders bring extensive

industry experience and recruit, from their former employers, those employees who have complementary, specialized skills (Phillips 2002, Shah et al. 2017a). In several advanced economy industries, spinoffs have outperformed other start-ups and provided a major impetus for developing their industries.<sup>1</sup> Spinoffs' superior capabilities have been attributed to their pre-entry, industry-specific knowledge (Agarwal et al. 2004, Klepper and Sleeper 2005), which has been linked to the development of their post-entry value chain activities (Argyres and Mostafa 2016, Qian et al. 2012).

While this literature suggests that firms' pre-entry experience is fundamental in the coevolution of their capabilities and industry, it is silent on how such experience influences ownership advantages, and thus, shapes an industry's evolution across countries. Prior studies have focused primarily on within-country, advanced-economy industries, and a few studies that examine emerging economy industries have also featured within-country industries (e.g., Braguinsky and Hounshell 2016, Mostafa and Klepper 2018). Insights into developing internationalization capabilities can offer important implications for establishing a modern industry in developing countries, which face many constraints in generating successful firms.

Scholars have noted that entrants in developing countries face substantial hurdles in accessing industry-specific knowledge from foreign sources through market-based channels, including costs of searching for suitable sources and contractual hazards associated with "knowledge-for-cash" transactions (Amsden 2001, Chandra 2006, Mowery et al. 1996, Pack and Nelson 1999). In this regard, multinational subsidiaries have an advantage, as they can draw on the accumulated knowledge from their parents' network, and rely on organizational institutions that are more effective than markets for cross-border knowledge flow (Kogut 1988, Kogut and Zander 1993). However, multinational subsidiaries can also be a source of local spinoffs (Beamish and Banks 1987), but little is known about whether such spinoffs have an advantage over other local entrants in building post-entry capabilities for internationalization.

According to the internationalization literature, a firm leverages its ownership advantages to enter and compete in foreign countries (Dunning 1980, Rugman and Verbeke 2001), but faces considerable challenges, especially in developing countries characterized by their daunting market and operational conditions. Developing countries typically have a disproportionately large population of low-income consumers living in remote areas with

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<sup>1</sup> See, for example, Agarwal et al. (2004), and Franco and Filson (2006) on the disk drive industry; Argyres and Mostafa (2016) and Klepper (2007) on the automobile industry; and Klepper and Sleeper (2005) on the laser industry.

limited infrastructure (Prahalad 2004). Studies examining business model adaptations have suggested that, depending on the industrial context, firms need to modify their value chain activities to adapt to developing countries' challenging conditions, through a process rife with uncertainty (Chesbrough et al. 2006, London and Hart 2004, Prahalad 2004).<sup>2</sup>

Because of developing countries' weak rule of law, firms face greater exposure to operational hazards and limited legal recourse for damages. Extant research prominently features two hazards: policy risks (Delios and Henisz 2000, Holburn and Zelner 2010), and theft and vandalism (Fafchamps and Minten 2001, Hindriks et al. 1999). In a contentious policymaking environment, firms face substantial expropriation risks, but can also influence policy outcomes (Baron 2012) by building political connections (Faccio 2006, Siegel 2007), lobbying (Cotton 2012, Kim 2017, Schnakenberg 2017), and bribing (Jeong and Siegel 2018, Jeong and Weiner 2012). Theft and vandalism are partly motivated by limited law enforcement and a need to rectify perceived societal inequity (Kistruck et al. 2015).

Scholars have argued that as developing country firms deal with their home countries' inherent challenges, they face fewer difficulties than multinational firms when expanding into other developing countries (Cuervo-Cazurra and Genc 2008, Guillen and Garcia-Canal 2008). Yet, substantial variation in internationalization among developing country firms implies differential ownership advantages—despite their home countries' similar market and operational challenges. The internationalization literature remains largely silent on how capabilities develop leading to differential ownership advantages, and whether those capabilities are linked to developing country firms' pre-entry experience.

Our review of the research on pre-entry experience and internationalization suggests that both streams evolved in isolation, and important gaps remain in each. By examining the history of the African mobile telecommunications industry, our study takes a first step in filling these gaps and bridging the two streams.

## **Industry Background**

Nowhere in the world are development challenges more acute than in Africa. And yet, Africa's mobile subscriptions and penetration rates grew from a meager 1 million and 0.15%, respectively, in 1996, to a colossal 645 million and 62%, respectively, in 2011 (see Figure 1). Particularly impressive was the adoption of mobile services in

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<sup>2</sup> Even if the firm makes radical adaptations to its supporting (e.g., technology) and primary (e.g., marketing and distribution) value chain activities, and thereby succeeds in making its products accessible and affordable to this consumer segment, considerable uncertainty remains regarding whether such products will generate sufficient demand, given the consumers' meagre income and many needs. Examples on challenges of business model adaptations for low-income market segments can be found in Balu (2001), Chesbrough et al. (2006), Garrette and Karnani (2010), Prahalad (2004) and (Simanis and Hart 2001).

low-income countries. By 2011, Equatorial Guinea and the Democratic Republic of Congo (DRC) achieved mobile penetration rates over 50%, despite no measurable improvements in their country development indicators. Mobile infrastructure has enabled the offering of transformative development applications in agriculture, banking, health care, and education (Aker and Mbiti 2010, Jensen 2007, Shah et al. 2017b), and has been linked to creating employment opportunities (Klonner and Nolen 2008), and, more broadly, generating economic growth (Roller and Waverman 2001).

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Insert Figure 1 here  
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Historically, state-owned firms offered landline services in African countries and had a long record of poor performance. When privatization efforts were met with backlash, donor agencies pressured African governments to open up mobile services markets (Nellis 2005), but the limitation in spectrum allowed only a few licenses in each country. Thereafter, entry was primarily through acquiring existing firms. Typically, state-owned firms received the first licenses. Also, during the industry's formative years, some multinational firms established their subsidiaries. As many African countries barred full foreign ownership, multinational firms forged joint ventures with local governments and entrepreneurs, invariably assuming management control. Launching mobile operations required a large investment, and by the late 1990s, some entrepreneurs with capital also founded mobile firms.

### **Data Sources**

For mobile operators that entered the industry prior to 2000, we collected firm-level data from surveys conducted by the Development Research Group at the World Bank and the United Nations Economic Commissions in Africa. For later years, we gathered firm-level data mostly from the Private Participation in Infrastructure (World Bank) and CommsUpdate databases. Where data was missing, we incorporated information from corporate annual reports and databases from the GSM Association and the CDMA Development Group. We cross-checked data from multiple sources to ensure consistency and accuracy. We used these data sources to document mobile operators' timing of entry in each African country and their characteristics, including ownership structure and number of yearly subscribers.



Following prior research, we categorized firms by ownership type: multinational, state-owned, and entrepreneurial (i.e., new firms established in Africa by entrepreneurs).<sup>3</sup> We used archival sources (e.g., news reports, published interviews, company and industry reports, cases, trade journals, and books), interviews with industry veterans, and online sources (e.g., company websites, LinkedIn, and AfDevInfo<sup>4</sup>) to trace the backgrounds of entrepreneurial founders. The interviews and archival sources also provided our qualitative data.<sup>5</sup> We further categorized entrepreneurial firms by their founders' prior experience (Klepper 2002), denoting entrepreneurial firms with (1) *past related work and JV experience* when founders had had work experience in telecommunications (e.g. landline, satellite and radio communications, or ICT consultancy), and forged a joint venture with a multinational mobile company prior to establishing the start-up; (2) *past JV experience only* when founders had no related work experience but had forged a joint venture with a multinational mobile firm prior to establishing the start-up; (3) *past related work experience only* when founders had related work experience, but had not formed a joint venture with a multinational mobile firm prior to establishing the start-up; and (4) *past unrelated work experience* when founders had neither related work experience nor forged a joint venture with an multinational mobile firm prior to establishing the start-up.

## QUALITATIVE ANALYSIS OF HISTORICAL DATA

### Methods

We followed prior studies that drew qualitative data from past key events, managerial decisions, and firm outcomes to reconstruct business histories (e.g., Agarwal et al. 2018, Braguinsky and Hounshell 2016, Shah et al. 2017a). For each firm category, we sampled a minimum of two firms; traced their histories on pre-entry, founding conditions, and organization of their post-entry value chains; and compared their histories within and across firm categories to establish our emergent findings (Eisenhardt 1991, Eisenhardt and Graebner 2007, Yin 2014).<sup>6</sup> The

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<sup>3</sup> When the firm had multiple owners, we reported the type of ownership based on the owner that had a majority equity position (La Porta and Lopez-de-Silanes 1999, Megginson and Netter 2001). Typically, this owner also controlled the management.

<sup>4</sup> The AfDevInfo database records the biographical information of prominent entrepreneurs and managers of African origin.

<sup>5</sup> The archival sources comprise 29 published or aired interviews of entrepreneurs and top managers, 110 news articles and industry reports, 138 corporate reports, 108 professional and business profiles, 16 case studies, and three books. In total, we drew on 404 archival sources. We conducted interviews with 23 industry veterans. We also consulted several GIS (geographic information system) maps to examine mobile coverage in urban and rural areas by operators in several countries.

<sup>6</sup> For each category, we compiled business histories on the following number of firms (each category's total number of firms in the sample shown in parentheses): 14 (35) multinational firms, 12 (33) state-owned firms, and 26 (42) entrepreneurial firms; and among entrepreneurial firms: 4 (4) *past related work and JV experience*, 6 (8) *past related work experience only*, 2 (2) *past JV experience only*, and 14 (29) *past unrelated work experience*. In total we examined the business histories of 52 firms.

business histories revealed that four entrepreneurial firms with *past related work and JV experience*—Celtel, Investcom, MTN, and Orascom—spearheaded adaptations from the outset and subsequently expanded into African countries (see Table 1). Below, we present our findings on the influence of entrepreneurial firms' pre-entry experiences on their post-entry development of value chains.<sup>7</sup> We then document the key adaptations introduced by entrepreneurial firms with *past related work and JV experience*, and how those firms managed uncertain adaptations and their internationalization initiatives. Finally, we present our key findings on multinational and state-owned firms.

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## Historical Qualitative Findings

### *Influence of Pre-entry Experience.*

In 1995 the U.K. mobile telecommunications giant, Vodafone, and Mobile Systems International (MSI), a software solution provider for mobile operators, set up a joint venture in Uganda with financial backing from the U.K. Government and the World Bank. MSI's founder, Mo Ibrahim, a native of Sudan, had worked for British Telecom as a technical director. Under Vodafone's leadership, the joint venture rolled out a mobile network with a post-paid platform covering mostly urban areas; however, Uganda's wealthy customer segment was small, and chasing outstanding bills proved difficult. As losses mounted, Vodafone sold its joint venture stake to MSI, which then spun off its mobile operations as an independent firm, Celtel. At the time, business models for mobile services were based on value chain activities established in advanced economies, where strong physical infrastructure allowed for large-scale deployment, and wealthy consumers and a robust legal infrastructure provided a basis for lucrative post-paid services. This experience in Uganda, however, revealed such models were rendered ineffective when advanced economy conditions were absent, thereby creating urgency for Celtel to initiate adaptations in key value chains from the outset.

Similar urgency was faced by MTN, which was founded by a group of South African entrepreneurs, some of whom had worked at a satellite communications service provider. In 1994, the founders' previous joint venture with

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<sup>7</sup> Among entrepreneurial firms with *past related work and JV experience*, we focus on histories of Celtel and MTN, for illustration as they represent "extreme exemplars" (Eisenhardt and Graebner 2007, p. 27), which can be particularly revealing about their underlying mechanisms. Celtel and MTN were established after their founders' multinational partners had disbanded the mutual joint ventures, citing poor performance and limited growth opportunities. Yet, subsequently, as we document below, Celtel and MTN became great regional successes (see also Baron 2008, Hardyman and Leamon 2005, Jones and Campbell 2014).

U.K.-based Cable and Wireless International (CWI) had faced stiff competition from Vodacom (Vodafone's subsidiary) in South Africa's wealthy neighborhoods and subsequently, its foreign partners divested their stakes. MTN emerged with local partners at the helm, and focused on delivering services to rural areas and townships (MTN Group 1999).

The business histories of entrepreneurial firms with *past related work and JV experience* suggest that prior joint ventures with multinational operators supported their learning in mobile telecommunications. While local partners had neither previously established nor managed mobile operations, their prior related work experience and technical background enabled them to engage in day-to-day operations, and learn how to develop networks and mobile applications from their multinational partners. In an internal report, a MTN founding member noted:

None of us had any GSM experience, it was the Cable & Wireless expats ... who could claim any kind of expertise. We had to learn fast (MTN Group, 1999).

The multinational partner typically relocated 15–20 high-level, expatriate employees, and sometimes formally trained local partners and engineers. For example, at CWI's London office, some of MTN's founding engineers were trained on designing mobile networks. Designing networks required learning about regulations and suppliers' capabilities, while creating applications also involved analyzing market data. The multinational expatriates' role in creating the organizational environment for learning was succinctly explained by a local founding member we interviewed:

They [expatriate managers from multinational partners] provided structure into the organization. They came and said this is how things need to be rolled out, and we need these people to do it, this is how we are going to structure the department, these are the processes you need to follow, and we just got on and did it.<sup>8</sup>

Subsequently, the founders of entrepreneurial firms with *past related work and JV experience* employed experienced workers whom they had worked with in their joint ventures. These founding teams instituted similar organizational structures, replicating some value chain activities (e.g., billing and procurement), while initiating adaptations (e.g., network design and marketing, as documented below), effectively seeding their pre-entry knowledge.

Most entrepreneurial firms in the African mobile telecommunications industry were established by founders with *past unrelated work experience*. For example, Alieu Conteh exported coffee before establishing Congolese Wireless Network (CWN) in 1997. In a published interview, Conteh recounted his experience of setting up CWN:

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<sup>8</sup> Interview conducted on 2019, January 7.

I asked [the Minister of Post and Telecommunications] if I could submit a proposal for a mobile license... He said I had to provide proper documentation... Well, I knew zero about telecommunications. I asked my secretary, "Mrs. Baba, do you know anybody in telecom?" She said she did. This man, Gilbert Nkuli [a former employee of the country's state-owned landline operator], who became our first employee, went to the minister of communications and filled out the forms. I called another friend and asked him, "Do you know any telecom vendors?" He said he knew a single vendor, Nortel. We phoned Nortel in Paris. (Pontin 2007, p. 33)

Nortel was then contracted to build CWN's mobile network. The firm struggled to set up its key departments, and it took more than a year to launch CWN's service, which was marred by frequent disruptions.

CWN's challenges were not unique. In fact, the business histories of entrepreneurial firms with *past unrelated work experience* and of those with *past related work experience only* suggest similar challenges in organizing their mobile operations. Absent learning directly from multinational mobile operators in the pre-entry stage, these firms relied on local expertise, which, limited to existing landline/ radio communications, and IT services, did not lend itself to developing mobile telecommunications' core value chain activities (e.g., network design and applications). These firms, struggling to find experienced workers, needed to identify, recruit, and rely heavily on foreign contractors for turnkey solutions, which at the time were designed for advanced economy conditions and offered limited learning about the key value chain activities. Lacking foundational knowledge in core value chain activities, these firms (e.g., CWN) grappled to set up their key departments and were constrained in their ability to adapt those activities. They offered poor service and limited coverage (mostly in urban areas), thereby attracting few customers.

Interestingly, we find that entrepreneurial firms with *past JV experience only* relied extensively on contractors and expertise in local labor markets, and faced similar challenges in building post-entry capabilities. Although in the pre-entry stage their joint ventures were managed by experienced expatriate workers, the local partners, lacking previous related work experience, found it difficult to be actively involved in day-to-day activities, and assumed the role of silent partners. Subsequently, when the local founders established their independent firms, they struggled to recruit experienced workers from their previous joint ventures. Experienced workers were reluctant to leave a multinational subsidiary for a new start-up led by founders with seemingly limited experience in mobile telecommunications.

Comparing the business histories of entrepreneurial firms with *past related work and JV experience* with those having *past related work experience only* or *past unrelated work experience* highlights joint ventures with multinational operators as a key source of pre-entry mobile telecommunications knowledge. Comparing the business

histories of entrepreneurial firms with *past related work and JV experience* with those having *past JV experience only* suggests that the transfer of knowledge from multinational joint ventures to their spinoffs depended critically on the spinoff founders' work experience prior to forging the joint ventures. Also, the founding team of entrepreneurial firms with *past related work and JV experience* had learned the limitations of applying existing business models and, from the outset, reoriented their independent firm's focus on undertaking adaptations.

#### *Business Model Adaptations.*

Entrepreneurial firms with *past related work and JV experience* adapted their network design to offer services to rural areas and urban slums, where most consumers resided. Against standard practice, Celtel built its initial mobile network with fewer base stations, and outfitted its towers with more equipment and included large, more efficient generators in each station. Fewer base stations also meant fewer trips to transport fuel. However, if mobile traffic increased, Celtel would build more base stations. Such flexibility in their network designs enabled entrepreneurial firms with *past related work and JV experience* to make small investments initially, start operations quickly, and scale up based on conditions on the ground. Base stations were prone to theft and vandalism, which led to costly service interruptions. As these firms built networks in rural areas, they hired local workers, demonstrating benefits of their involvement and garnering local communities' support for protection (see also Karim et al. 2009, MTN Group 2004).

Entrepreneurial firms with *past related work and JV experience* also revamped conventional marketing and distribution value chain activities. MTN, for example, introduced a pre-paid platform that imposed neither the precondition of creditworthiness, nor any form of debt collection. Moreover, because handsets were expensive, MTN worked with an equipment supplier to develop and install community wireless payphones in such high-traffic areas as rural schools and clinics. It also created several applications aimed at low-income consumers, such as Me2U, which shared airtime among subscribers to encourage financially dependent individuals to become subscribers.

By 2002, the pre-paid platform was widely adopted in the industry, but the other three types of entrepreneurial firms continued to face limited growth prospects. Successful penetration also required building services to remote areas and driving up subscriptions from low-income segments, which entrepreneurial firms with *past related work and JV experience* achieved through a combination of harder-to-imitate innovative network designs and applications.

*Entrepreneurial leadership directing experimentation and internationalization.*

The innovative adaptations, rarely apparent from the outset, were preceded by substantial experimentation. MTN's expansion into rural areas in KwaZulu-Natal province is informative. MTN initially invited Vodacom to be a partner in this project; but Vodacom declined, citing operational challenges and limited market prospects. MTN's founders remained unwavering, and committed to funding the entire project. They assembled and directed a team of engineers (most of whom trained by CWI) to reconceptualize conventional network designs. The team conducted on-site visits, completed aerial surveys, and consulted with equipment suppliers and structural engineers to generate ideas, some of which were shelved based on their pilot results. Eventually, the team modified conventional network design practices through trial and error, and built 160 base stations, which became MTN's busiest portion of its entire South African network. Thus, while MTN had gained essential knowledge through pre-entry training on network design, new knowledge about local terrain conditions, network equipment, and tower construction also needed to be acquired and assimilated. All the while, the founders actively managed the team and steered the project to success.

In the early 2000s, the founders of the entrepreneurial firms with *past related work and JV experience* led aggressive international expansions within Africa. They created dedicated teams for rapid deployment of their adapted business models in their foreign ventures (see also Rivera-Santos and Rufin 2009). Yet, to enter a foreign African country, their firms needed to adapt to the host country's policymaking environment—especially the opaque nature of the license-bidding processes.<sup>9</sup> In recollecting his firm's experience in obtaining a license in Burkino Faso, a top executive of an entrepreneurial firm with *past related work and JV experience*, interviewed, noted:

If you only submit a tender, *you will get a surprise*. Even to submit a tender, [we] had to reach out to the president not the minister of telecom as [the former was the] real decision maker.<sup>10</sup>

In many African countries, power was concentrated in the hands of a few political leaders, and even the most qualified operators could face a high risk of bid failure unless they had received blessings from those leaders. In selecting their local partners in host countries, entrepreneurial firms with *past related work and JV experience* typically targeted business owners who had ties with those political leaders and financial capital, and sometimes hired "consultants" to

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<sup>9</sup> Allegations of corruption in awarding licenses abounded in several African countries. While the selection was often based on a set of criteria, including the applicant's bid amount and technical capabilities, critics point out that such "beauty contests" lacked transparency, and when auctions were held, they were susceptible to bid rigging (Mullins and Rhodes 2011, *Economist* 2000).

<sup>10</sup> Interview conducted on April 16, 2019.

establish political connections.<sup>11</sup> Other entrepreneurial firms aspiring to establish operations in foreign African countries resorted to similar tactics, and local influential entrepreneurs often placed their bids for licenses.

To compete in a host country's license-bidding process, the founders of entrepreneurial firms with *past related work and JV experience* typically lobbied local policymakers, noting that developing mobile services for the masses would be in the policymakers' best political interest, and that their firms could best achieve this goal, emphasizing their past successes. Such a goal often resonated well with host country politicians, as incumbent firms struggled to set up and expand their market reach, and African governments in general had limited industrial success to boast of. In the DRC, Celtel swiftly launched its services in 2000 with only five base stations, and within one year, had expanded across the country, acquiring more subscribers than the country's three incumbents combined.<sup>12</sup>

The entrepreneurial firms with *past related work and JV experience* evidently faced substantial uncertainty in directing both the adaptation of business models and expansion of services across African countries, but as the historical accounts indicate, their founders' ingenuity, resourcefulness, and decisiveness galvanized employees to solve uncharted problems. In an internal report, an employee of MTN commented on one of the firm's founding figures:

I do not believe I have ever met an individual who was so totally project-driven and result-focused. His energy and total commitment to the success of MTN was infectious and he was able to extract commitment from even the most disillusioned of people (MTN Group 2004).

Reflecting on his leadership style in Celtel, Mo Ibrahim said in a televised interview:

My leadership style... actually I think... is an inclusive approach... You need to include people, listen to everybody but then once a decision is made, you lead from the front... Then you go ruthlessly and do it... everybody falls in behind because they were given a chance. That is a way to really move forward and I think that's useful. Openness and decisiveness (London Business School 2011).

#### *State-owned firms and multinational firms.*

We conclude this section by summarizing the key qualitative findings on two other sources of industry entrants—state-owned firms and multinational firms. Almost all state-owned mobile operators were spawned from

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<sup>11</sup> The local partners held minority stakes, and partnership agreements typically had provisions for buyout. Also, hiring consultants was common in countries with frequent turnover of political leadership, as a direct political connection with a past regime could become a liability (see also Leuz and Oberholzer-Gee 2006, Siegel 2007). Typically, when a change in political leadership occurred, firms would hire consultants who had relationships with the new leadership.

<sup>12</sup> Yet, this lobbying strategy was not always successful. Sometimes, firms lacking technical qualifications were awarded licenses. In a few instances, the founders of entrepreneurial firms with *past related work and JV experience* decided to acquire the licenses of fledgling operations, and invariably needed to build them from the ground up.

public telecommunications companies, which transferred some of their employees to the new ventures. Yet, because of their backgrounds in landline operations, these firms relied heavily on contractors to carry out key value chain activities. Additional challenges plagued the state-owned mobile operators, including (allegedly) rampant corruption and bureaucratic interference (Nellis 2005, Parker and Kirkpatrick 2005). While their primary mandate was developing their local markets, they struggled to expand their operations in their home countries.

The business histories compiled on multinational mobile operators suggest that while they were instrumental in transferring industry knowledge to their subsidiaries, they were unwilling to invest in adaptations during the industry's early stages. If adaptations required knowledge of local conditions, what prevented these firms from taking such initiatives by relying on the knowledge of local partners or experts? According to our industry sources, high uncertainty surrounded not only how to adapt value chain activities but also whether new business models based on such adaptations would be profitable. For many multinational firms, investing in uncertain adaptations meant shifting managerial resources and attention away from post-paid services, which, at the time, was perceived to be more lucrative. Other concerns included corruption, expropriation risks, and political instability in many African countries.

Within Africa, multinational firms targeted countries deemed to have relatively stable operational conditions, and their subsidiaries focused on servicing high-income consumers, leveraging their capabilities in existing business models. Multinational firms from former colonial powers (e.g., France and the U.K.) were particularly drawn to their former African colonies, with which their home countries had typically maintained political and economic ties. These firms saw potential to use their home-country governments' influence to secure licenses and reduce expropriation risks. However, when their existing business models were unprofitable, they usually closed their operations (as Vodafone did in Uganda) and focused their investments elsewhere, forgoing investments in adapting value chain activities.

### **TRIANGULATION OF HISTORICAL QUALITATIVE AND QUANTITATIVE DATA**

According to our historical analysis, entrepreneurial firms with *past JV experience only*, *past related work experience only*, or *past unrelated work experience* did not appear to have any meaningful advantage from their pre-entry industry-specific knowledge. They were constrained in introducing their own adaptive solutions, and confronted similar post-founding challenges. In contrast, entrepreneurial firms with *past related work and JV experience* utilized their pre-entry knowledge to radically modify key value chain activities, and their founders guided such adaptive



searches and led their firms' foreign investments. If these trailblazers indeed developed adaptive capabilities for regional internationalization by dint of their pre-entry experience and founders' leadership, as our qualitative findings indicate, then we expect their internationalization outcomes to differ from those of other types of entrepreneurial firms.

Prior studies suggest that a firm's investment in developing countries depends critically on overcoming hostile operational conditions that arise from weak rule of law (Cuervo-Cazurra and Genc 2008, Dikova and van Witteloostuijn 2007). A key operational challenge is to address policy risks inherent in host countries by building political connections (Faccio 2006, Henisz and Delios 2004, Siegel 2007), which can be leveraged to influence favorable policies (Bennedsen and Feldmann 2002, Cotton 2012, Schnakenberg 2017). In many African countries, policymaking in mobile telecommunications—especially the granting of new licenses—was highly contentious, making political connections crucial. Yet, even with many contenders jockeying for influence, the trailblazers created an advantage by noting their potential to achieve investment goals aligned with political interests of the host country's policymakers. Another challenge was scaling up networks to minimize risks by safeguarding strategic assets (i.e., base stations). By featuring flexibility in network designs and engaging local communities, the trailblazers could deploy robust networks.

If the trailblazers could effectively mitigate policy risks and deploy robust networks in potential host countries, then they would enjoy operational advantages. Thus, we conjecture an entrepreneurial firm with *past related work and JV experience* to have a higher likelihood of foreign entry into a host African country than an entrepreneurial firm with *past JV experience only, past related work experience only, or past unrelated work experience*. Moreover, we posit this likelihood will be greater in host countries with relatively weaker rule of law, as the trailblazers' operational advantage would be greater in host countries with more pronounced operational challenges.

The challenges of low-income markets segments limit a firm's market reach (i.e., the number of consumers the firm sells to), but firms that successfully adapt their business models to attract low-income customers will have a relative advantage in market reach (London and Hart 2004, Prahalad, 2004). If the trailblazers gained such a market advantage through the documented adaptations in value chains for stimulating demand for low-income segments, then the market reach of an entrepreneurial firm with *past related work and JV experience* in a regional country would be greater than that of an entrepreneurial firm with *past JV experience only, past related work experience only, or past unrelated work experience*. We expect this advantage to be greater in countries with larger low-income segments; thus,

we conjecture that the larger the low-income segment of host country, the greater the market reach of an entrepreneurial firm with *past related work and JV experience* relative to an entrepreneurial firm with *past JV experience only*, *past related work experience only*, or *past unrelated work experience*.

Our historical analysis suggests that during the industry's formative years, multinational firms chose to forgo adapting their business model, focusing instead on high-income segments in countries with less turbulent operational environments, and where they could likely manage policy risks through the influence of home country governments (see also Jones and Khanna 2006, Makino and Tsang 2011). If the trailblazers could effectively address host-country operational challenges, then an entrepreneurial firm with *past related work and JV experience* would have a higher likelihood of foreign entry than a multinational firm in host countries with particularly weak rule of law, but this likelihood would diminish when the host country has relatively strong rule of law or is a former colony of the multinational firm's home country. Additionally, if the trailblazers could effectively attract low-income consumers, then we expect their market reach in an African country would be greater than that of multinational firms.

Finally, our qualitative findings indicate that state-owned firms concentrated on their local markets, but were burdened by various challenges, including constraints in their ability to learn and adapt value chain activities. Such firms would have limited foreign entry, and because of the trailblazers' potential market advantage, we conjecture that the market reach of an entrepreneurial firm with *past related work and JV experience* in a regional country would be greater than that of a state-owned firm. In this section, we test all these conjectures using our quantitative data.

## **Methods**

We augment our data on African mobile operators with country characteristics from the World Bank's development indicators, dropping observations from Somalia (which had sparse data on firm subscribers) and from Comoros, Djibouti, Eritrea, Ethiopia, Libya, São Tomé and Príncipe, and Swaziland (where only one operator was allowed during the period of study).<sup>13</sup> Our dataset thus contains information on mobile operators from 45 African countries from 1994 to 2012. Table 2 summarizes international expansion initiatives in our sample of African countries by firm types for two epochs: 1994–2004, when entry was primarily through greenfield investments, and 2005–2012, when the main mode of entry was acquisition, as several markets could not accommodate new licenses. As seen in

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<sup>13</sup> Our results were similar when we included these countries in the sample.

Panel 3, an entrepreneurial firm with *past related work and JV experience* had, on average, more foreign entries than any other type of firm, especially in the first epoch.

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Insert Table 2 here  
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### *Foreign Entry.*

Following prior studies, we model the decision to enter a host country as one option, along with a consideration of all other potential entry options in the region available to the firm in a given year (e.g. Holburn and Zelner 2010). We create a panel dataset in which each firm-year had multiple observations, and each observation reflected an entry option available to a firm. Once a host African country opens up its mobile market, it is added to the firm's set of country options for potential foreign entry. If the firm enters a host country, that country is dropped from its set of country options. The dependent variable *Foreign Entry* takes the value 1 if a firm enters into a host country through greenfield investment or by acquiring an existing license in a given year, and 0 otherwise. We estimate *Foreign Entry* by using logistic regression.<sup>14</sup>

Our key independent variables are dummies reflecting firm backgrounds. Each background variable—*Multinational Firm*, *State-Owned Firm*, and *Entrepreneurial Firm with Past Related Work and JV Experience*—is coded 1 if the firm belongs to the appropriate category, and 0 otherwise. We code *Entrepreneurial Firm with Any Other Three Types of Pre-entry Experience* as 1 if the start-up was an *entrepreneurial firm with past JV experience only*, *past related work experience only*, or *past unrelated work experience*, and 0 otherwise. According to our historical analysis, these three types of entrepreneurial firms shared similar challenges in developing adaptive capabilities, and we expect they would also have similar foreign entry effects. Nonetheless, in our baseline estimation, we will explore if *Entrepreneurial Firm with Past Related Work Experience Only*, *Entrepreneurial Firm with Past JV Experience Only*, and *Entrepreneurial Firm with Past Unrelated Work Experience*—each coded 1 if start-up is an entrepreneurial firm the appropriate pre-entry experience, and 0 otherwise—have economic and statistical significance relative to each other.

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<sup>14</sup> We note that entry occurrence is a small fraction of total observations; and following King and Zeng (2001), we confirmed the robustness of our results by analyzing a firm's entry using rare event logistic regression.

We add in our estimation the variable *Std. Rule of Law*, which is the standardized score of rule of law in a host country in a given year, using the mean and standard deviations of sample countries' rule of law in the same year.<sup>15</sup> We interact this variable with *Entrepreneurial Firm with Past Related Work and JV Experience* to investigate whether such a firm has a higher probability of foreign entry in host countries with comparatively weaker rule of law. To explore whether multinational firms prefer investing in host countries that (1) have relatively stronger rule of law, and (2) are former colonies of their home countries, we include the interaction of *Multinational Firm* and *Std. Rule of Law*, and the interaction of *Multinational Firm* and *Colonial Match* (the latter is coded 1 if the host country is a former colony of its home country, and 0 otherwise). *Colonial Match* is not entered separately because only multinational firms have home countries that were once colonial powers.

As the above interaction effects are expected to be independent of the size of the host country's low-income segment, we include as a control variable *Std. Population below \$4/Day*, which we calculate as the standardized score of the size of the country's low-income segment in a given year, using the mean and standard deviations of low-income segment sizes of sample countries in the same year.<sup>16</sup> Further, we control for the host country's broader market size and standard of living by including *Log GDP* and *Log GDP per Capita*. As macroeconomic fluctuations in the host countries can also influence entry, we include *Std. GDP Growth* and *Std. Inflation*. *Std. GDP Growth (Std. Inflation)* is calculated as a standardized score of a host country's GDP growth (inflation rate) in a given year, using the mean and standard deviations of growths (inflation rates) of sample host countries in the same year.

Firms originating from countries that are farther from a host country may be less familiar with the host country's environments; accordingly, we enter *Log Geographical Distance*, to capture the log-transformed distance between a host country and the firm's home country, based on the great circle formula (e.g., Makino and Tsang 2011). As prior research suggests an inverted-U relationship between market concentration and entry (e.g., Baum and Korn 1996), we include *# of Existing Operators* (in a host country) and its squared term,  $(\# \text{ of Existing Operators})^2$ . Finally,

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<sup>15</sup> We use the World Governance Indicator's "Rule of Law," which is defined as "perceptions of the extent to which agents [survey respondents] had confidence in and abide by the rules of society, in particular the contract enforcement and property rights." (World Governance Indicator; <http://info.worldbank.org/governance/wgi/index.aspx#doc> [19 March 2017]).

<sup>16</sup> Using the World Bank's poverty data, we calculate the size of the low-income segment by multiplying the host country's total population by the percentage of its population that earns \$4 per day. For presentation, we chose a cut-off (\$4/day) close to the income level of "base of the pyramid" (Prahalad 2004), but our results are robust to other cut-offs available in the poverty data (e.g., \$1.25/day, \$2/day, \$2.5/day, \$5/day, etc.).

to account for potential industrial growth opportunities, we enter the *Mobile Penetration Rate* (calculated as the ratio of the number of subscribers in the host country to its population in a given year). Table 3 provides descriptive statistics and intercorrelations for variables used in our foreign entry estimations.

#### *Market Reach.*

To test our conjectures on firms' market reach, we pool observations of each firm across all regional countries in which it had operations, and analyze each firm's number of subscribers since its entry into each country. We use generalized least squares (GLS) to estimate our dependent variable, *Log Subscribers*, which is the firm's log-transformed number of subscribers in a country in a given year. We include our firm background variables, and add *Std. Population below \$4/Day* and its interaction with *Entrepreneurial Firm with Past Related Work and JV Experience* to explore whether firms had greater market reach in countries with larger low-income segments. We account for the host country's broader market size by including *Log GDP*.

As we expect country characteristics that affect entry to also influence firms' market reach, our estimation includes all the country control variables from our previous analysis. Within a host country, early entrants in mobile telecommunications can have an advantage over later entrants due to scale economies and network effects (Shapiro and Varian 1998). We add the variables *Log Subscriber<sub>t-1</sub>* and *Log Age* (i.e., the firm's log subscribers in the previous period and log age, respectively, in the given host country), which are typically included in estimations of firm size or growth as controls for scale economies and early entry (e.g., Chen et al. 2012). Additionally, we enter *Entry Order* (firm's rank of entry), *# of Existing Operators*, and *Mobile Penetration Rate* in a given year in a host country. Table 4 provides descriptive statistics and intercorrelations for variables used in our subscriber estimations.

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Insert Tables 3 and 4 here  
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## **Findings**

#### *Foreign Entry.*

Table 5 presents our findings on firms' likelihood of foreign entry in our sample of African countries. In all specifications, we include country- and year-fixed effects, and report standard errors clustered by firm-year. In Model 1, we add the background variables *Multinational Firm*, *Entrepreneurial Firm with Past Related Work and JV Experience*,

*Entrepreneurial Firm with Past Related Work Experience Only*, and *Entrepreneurial Firm with Past JV Experience Only*. *Entrepreneurial Firm with Past Unrelated Work Experience* is the omitted category. *State-Owned Firm* is not included in the analysis as only one such firm carried out an international expansion during the studied period.

The coefficient estimate of *Entrepreneurial Firm with Past Related Work and JV Experience* is positive and significant, and significantly larger than that of *Entrepreneurial Firm with Past JV Experience Only* ( $\chi^2 = 6.34$ ;  $p > \chi^2 = 0.01$ ) or *Entrepreneurial Firm with Past Related Work Experience Only* ( $\chi^2 = 11.91$ ;  $p > \chi^2 = 0.00$ ). The coefficient estimates of *Entrepreneurial Firm with Past JV Experience Only* and *Entrepreneurial Firm with Past Related Work Experience Only* are small and statistically insignificant, suggesting that neither pre-entry experience conferred any meaningful advantage over *Past Unrelated Work Experience*. Accordingly, and for ease of interpretation of results, in Models 2–6, in addition to *Entrepreneurial Firm with Past Unrelated Work Experience*, we drop *Entrepreneurial Firm with Past JV Experience Only* and *Entrepreneurial Firm with Past Related Work Experience Only* (i.e., together, they form the reference group, *Entrepreneurial Firm with Any Other Three Types of Pre-entry Experience*).

In Model 2, the coefficient estimate of *Entrepreneurial Firm with Past Related Work and JV Experience* is positive and significant, and the absolute value of the difference between the coefficient of *Entrepreneurial Firm with Past Related Work and JV Experience* and that of *Multinational Firm* differs significantly from 0 ( $\chi^2 = 16.78$ ;  $p > \chi^2 = 0.0000$ ). We add in Model 3 the interaction of *Entrepreneurial Firm Past Related Work and JV Experience* and *Rule of Law*, in Model 4 the interaction of *Multinational Firm* and *Rule of Law*, and in Model 5 the interaction of *Multinational Firm* and *Colonial Match*. Model 6 is our full model.

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Insert Table 6 here  
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To provide meaningful interpretation of the coefficient estimates of the interactions, Figure 2 illustrates the effects of *Multinational Firm* and *Entrepreneurial Firm with Past Related Work and JV Experience* on the predicted probability of foreign entry when the continuous control variables are at their mean and dichotomous control variables are at their mode. Consistent with our conjectures, the figure suggests that the predicted probability in foreign entry by an entrepreneurial firm with *past related work and JV experience* (relative to an entrepreneurial firm *with any other three types of pre-entry experience*) is higher in host countries with weaker rule of law, and this effect is larger than a

multinational firm in host countries with weakest rule of law. While the predicted effect of a multinational firm on foreign entry is small and statistically insignificant for any value of rule of law, this effect, as illustrated in Figure 3, is larger when a multinational firm considers entering a host country that is a former colony of its home country, and the effect rises with the increase in rule of law. All of these findings are consistent with our conjectures.

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Insert Figures 2 and 3 here  
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#### *Market Reach.*

Table 6 presents our findings on market reach. Models 7–10 include explanatory and control variables, country- and year-fixed effects, and report robust standard errors, clustered by firm-year. In Model 7, we include *Multinational Firm*, *State-Owned Firm*, *Entrepreneurial Firm with Past Related Work and JV Experience*, and *Entrepreneurial Firm with Past Related Work Experience Only*. *Entrepreneurial Firm with Past Unrelated Work Experience* is the omitted reference group. *Entrepreneurial Firm with Past JV Experience Only* had insufficient observations to be included in the analysis.<sup>17</sup> The coefficient estimate of *Entrepreneurial Firm with Past Related Work Experience Only* is small and insignificant, but the coefficient estimate of *Entrepreneurial Firm with Past Related Work and JV Experience* is positive and significant, and significantly larger than that of *Entrepreneurial Firm with Past Related Work Experience Only*. Accordingly, in Models 8–10, we also drop the variable *Entrepreneurial Firm with Past Related Work Experience Only* (i.e., included in the reference group).

In Model 8, the absolute difference between coefficient estimates of *Entrepreneurial Firm with Past Related Work and JV Experience* and *State-Owned Firm* differs significantly from 0 (e.g., in Model 8,  $\chi^2 = 7.91$ ;  $p > \chi^2 = 0.005$ ), as does the absolute difference between the coefficient estimates of *Entrepreneurial Firm with Past Related Work and JV Experience* and *Multinational Firm* (e.g., in Model 8,  $\chi^2 = 9.62$ ;  $p > \chi^2 = 0.002$ ). These findings are consistent with our conjectures. In Model 9, we add the interaction of *Entrepreneurial Firm with Past Related Work and JV Experience*, and *Std. Population below \$4/Day*. The coefficient estimate of *Std. Population below \$4/Day* is negative (and significant in Models 7–9), suggesting that subscriber growth was held back in countries with disproportionately large low-income segments. Yet, the interaction of *Entrepreneurial Firm with Past Related Work and JV Experience* and *Std.*

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<sup>17</sup> Only two firms had such a pre-entry experience, and both sold their licenses within a short period of time.

*Population below \$4/Day* is positive and significant. According to Model 9, relative to the reference group, an entrepreneurial firm with *past related work and JV experience* had, on average, 20% higher subscriptions, and an increase in the size of the low-income segment by one standard deviation increased that firm's subscription by about 7.4%. Therefore, in line with our conjectures, we find that entrepreneurial firms with *Past Work and JV Experience* had a market advantage, especially in countries with disproportionately large low-income populations.

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Insert Table 6 here  
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Most acquisitions occurred after 2005, and typically the target firms and the acquirers were of the same type. However, as a further robustness check, we pool observations across all years prior to any acquisitions, and analyze firms' numbers of subscribers in Model 10. the coefficient estimate of *Entrepreneurial Firm with Past Related Work and JV Experience* was larger in magnitude than other models. It was also significantly larger than the coefficient estimate of *Multinational Firm* ( $\chi^2 = 4.70$ ;  $p > \chi^2 = 0.030$ ).

## DISCUSSION

In this section, we discuss the mechanism behind the observed patterns, limitations of our study, and theoretical implications of our findings, as well as offer our concluding remarks.

### **Mechanism at Play**

Scholars have suggested that through political connections in their home countries, entrepreneurs could become adept in dealing with politicians and learn about contentious policymaking processes (e.g., Boddewyn and Brewer 1994, Holburn and Zelner 2010). It could be argued, then, that successful internationalization in African mobile telecommunications industry was driven solely by regional founders' home country political connections. We analyzed the rate of foreign entry among our sample of entrepreneurial firms by including a dummy variable, *Political Connection*, which was coded 1 if the founders or their family members were affiliated with a political party and/or held important government positions (e.g., minister, member of parliament, or mayor), and 0 otherwise. The results, not reported in this paper, confirmed that the effect of *Entrepreneurial Firm with Past Related Work and JV Experience* was robust to the inclusion of *Political Connection*, which was neither economically nor statistically significant.



These results are consistent with our historical findings. Some entrepreneurial firms with *past JV experience only, past work experience only, or past unrelated work experience* acquired licenses through controversial bidding processes but subsequently abandoned their international expansion plans as they struggled to set up operations and keep them afloat. Those firms lacked the capabilities of building robust network deployments and attracting low-income consumers. Leaders in those capabilities were entrepreneurial firms with *Past Work and JV Experience*, whose political capabilities stemmed from a differentiated lobbying strategy aligning their business model capabilities with policymakers' political interests. In many African countries, political capabilities were clearly vital to manage policy risks, but were unlikely to be sufficient for regional firms' internationalization success.<sup>18</sup>

Some might contend that our results are driven entirely by unobserved entrepreneurial ability—that trailblazers' key to success could be the founders' ability, not knowledge gained from the joint ventures. We thus explored whether trailblazing founders had higher levels of education or of professional attainment in previous industries than founders of other entrepreneurial firms, as these observable characteristics are likely to correlate with unobservable entrepreneurial ability (e.g., Krueger and Lindahl 2001). Yet, we found no evidence of systematic differences in these characteristics. Additionally, for Celtel and MTN, the performance of the joint ventures with multinational firms was disappointing, leading to their disbandment. If entrepreneurial ability was the only factor needed to be successful, why initially make substantial investments in such joint ventures?

While our results cannot be explained entirely by selection, entrepreneurial ability—specifically, leadership—was paramount in guiding post-entry success. Our historical findings suggest that in the pre-entry stage, trailblazers' founding teams had played a limited role in shaping the strategic directions of joint ventures, which, however, provided important learning opportunities; in the post-entry stage, they steered adaptive searches and led internationalization initiatives. Our triangulated analysis shows entrepreneurial leadership's key role in the post-entry development of ownership advantages *conditional* on pre-entry learning. A quantitative analysis devoid of historical data would limit explaining the phenomenon based solely on pre-entry experience, which we were coded and included in our

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<sup>18</sup> As entrepreneurs who belonged to business groups could exploit their groups' political connections and resources, we also explored if firms established by such founders had an advantage in foreign entry and market reach. The results, not reported here, show that having business group affiliation had no significant economic or statistical effects on neither dependent variable, and the effects of *Entrepreneurial Firm with Past Work and JV Experience* remained robust.

estimations; an analysis based solely on qualitative data would limit explaining the development of capabilities without linking them to firm outcomes. Triangulation thus offers a powerful way to explore and corroborate a more nuanced mechanism behind the firms' underlying success (see also Agarwal et al. 2018, Braguinsky and Hounhell 2016).

### **Limitations**

As with any industry study, we must interpret our findings within the context where they arose. The mobile telecommunications industry emerged when new technology ushered in innovative possibilities, including the 2G standard that laid the groundwork for creating applications for airtime and money transfers (Jahanbakht and Mostafa 2021). However, uncertainties loomed large in harnessing new technology, and our findings suggest that not all early entrants could readily exploit the opportunities. Thus, while technological progress appears to have been necessary for industrial success, it was an insufficient condition for individual firm success.

Typically, an early entry confers substantial advantages in industries exhibiting economies of scale and network effects (Shapiro and Varian, 1998). However, in most countries, trailblazers, despite entering after other firms had been established, typically outperformed early entrants. According to our industry sources, given African countries' large low-income segments, the benefits of scale and network effects accrued when firms effectively attracted customers from those segments. Such prospects may have incentivized the trailblazers to invest in uncertain adaptations. Moreover, the adaptations in value chains did not lend themselves to intellectual property protection; and concerns about imitation and limited greenfield entry opportunities may have incentivized the trailblazers to aggressively internationalize. Additionally, while our study focuses on how spinoffs from multinational joint ventures gain ownership advantages, a related question concerns the conditions governing the creation of such joint ventures (see Aguilera 2007). Many African governments prohibited full foreign ownership, compelling multinational firms to forge joint ventures with local partners. Furthermore, in earlier years, a few donor agencies and governments willingly shared investment risks by becoming partners themselves, which could have attracted multinational firms. Future studies could explore the industrialization pattern when these boundary conditions are absent.

While our qualitative data suggest that during the industry's formative years, multinational firms chose to forgo investments in uncertain adaptations, our study makes no claim on the relative capabilities for adaptation between trailblazers and their pre-entry multinational partners. This strategic choice raises a counterfactual question: If

multinational firms had invested in adaptations, how successful would they have been? Further, the few studies examining the evolution of emerging economy industries, including ours, primarily focus on industries' early development (Braguinsky and Hounshell 2016, Mostafa and Klepper 2018). However, we know little about the competitive responses between trailblazers and followers as an industry matures, when some technological and market uncertainties are resolved, and key suppliers are established.

### **Theoretical Implications**

Prior research highlights the importance of joint ventures with multinational firms (Amsden 2001, Chandra 2006) and the local partner's own absorptive capacity (Cohen and Levinthal 1990; Lane and Lubatkin 1988), as key to transferring industry-specific knowledge from multinational firms to local partners. Trailblazers' business histories suggest that such conditions were in place in their pre-entry stage. Founders could engage actively in and learn effectively from their joint ventures with multinational firms, as they had relevant work experience. Later, in their own ventures, they hired experienced workers from the joint ventures, suggesting substantial knowledge transfer through this spinoff process (see also Shah et al. 2017a). In contrast, lacking relevant experience, the founders of entrepreneurial firms with *JV experience only* became silent partners in the pre-entry stage. These firms and entrepreneurial firms with *past work experience only* or *past unrelated work experience* were constrained in accessing industry-specific knowledge. Their founders had limited success in attracting experienced workers, instead relying largely on contractors through market-based contracts that were prone to challenges associated with inter-firm transfer of industry knowledge (Kogut 1988, Mowery et al. 1996, Winter 1987).

Our historical analysis also suggests that trailblazers' pre-entry knowledge set them on a path of capability development divergent from that of the other three subcategories of entrepreneurial firms. Research on adaptation suggests that a firm's established knowledge base is a natural starting point for new adaptive searches (Levinthal and March 1981, March 1991), with entrants' adaptive search largely shaped by their pre-entry knowledge (Dencker et al. 2009, Huber 1991). The foundational knowledge base can potentially draw organizational attention to adaptive problems, and prompt and facilitate an exploratory search for adaptive solutions through repeated interactions with external stakeholders (Ahuja and Katila 2004, Levitt and March 1981, March 1991).

The founders of trailblazers took cues from the challenges faced by their previous joint-ventures, initiated adaptations in their independent firms from the outset, suggesting their pre-entry knowledge was instructive of the need to alter value chains through exploratory searches. Such searches required not only utilizing relevant pre-entry experience (e.g. by applying their pre-entry knowledge of network fundamentals) but also acquiring new knowledge by effectively interacting with relevant stakeholders (e.g. such as consulting with equipment suppliers and structural engineers to modify networks for local conditions). Thus, insofar as pre-entry experience provides contextual knowledge that underpins effective interactions with external stakeholders, it mitigates the challenges of integrating new knowledge, thereby improving the productivity of exploratory searches (Henderson and Clark 1990, Weick 1995).

Yet, this capability development was not automatic. Consistent with prior work highlighting founders' role in charting capability development (Stinchcombe 1965, Braguinsky and Hounshell 2016), we find that the founders of trailblazers provided strong leadership by assembling experienced teams, setting the direction of adaptive searches, and when necessary, pivoting to alternative search paths. Adaptations such as community phones and the Me2U mobile application stimulated demand from low-income populations, whereas adaptations such as robust network designs enabled the mitigation of supply-side operational challenges in areas with weak rule of law. The founders also created advantages by recruiting dedicated teams to rapidly transfer their adapted business models in host countries and by lobbying host countries (Cotton 2012, Schnakenberg 2017), asserting their investment proposals, supported by proven adaptations, offered political benefits to host countries' policymakers.

Our qualitative findings also have implications for internationalization; in particular, the operational capabilities of navigating a contentious policy environment and safeguarding strategic assets would confer advantages when entering countries with particularly weak rule of law (Cuervo-Cazurra and Genc 2008, Holburn and Zelner 2010), while market capabilities would be advantageous in terms of market reach, especially in countries with substantial low-income populations (London and Hart 2004, Prahalad, 2004). Our quantitative findings corroborate that trailblazers exploited those ownership advantages. Triangulating our quantitative and qualitative data, our analysis suggests that trailblazers' operational and market capabilities for internationalization evolved in a path-dependent way, emerging from pre-entry, industry-specific knowledge; however, key to shaping and leveraging capabilities to internationalize into multiple African countries were entrepreneurial astuteness, ingenuity, and willingness to take risks.

Studies suggest that diversifying entrants' advantages include access to resources and complementary assets (see for example, Chen, Williams and Agarwal 2012, Klepper 2002). In African mobile telecommunications, state-owned diversifying entrants were inherently politically connected, but faced well-documented challenges of mismanagement (Nellis 2005). They relied on markets for turnkey solutions, and had limited market reach due to the technology gap between landline and mobile services. In contrast, establishing multinational subsidiaries represented a more technology-related entry. However, early in the industry's evolution, multinational subsidiaries chose to forgo investing in uncertain adaptations to develop low-income market segments. Consistent with prior studies (Holburn and Zelner 2010, Makino and Tsang 2011), we find multinational firms were strategic in entering African countries that were former colonies of their home countries and/or characterized by relatively stronger rule of law.

Multinational firms' strategic choices might reflect a relatively higher option value to wait. Firms might choose to delay uncertain investments, as conditions can change in the future (e.g., due to other firms' adaptations or the host country's improved institutional conditions), making the investment less uncertain and more financially attractive (Cherian and Perotti 2001, McDonald and Siegel 1986). Compared with entrepreneurial firms, multinational firms likely have greater latitude for delaying uncertain investments, as they can exploit their substantial resources and complementary assets to establish competitiveness in the future, when uncertainties recede (Rivoli and Salorio 1996). For entrepreneurial firms, focusing on African countries' relatively high consumer market segments could potentially expose them to stiff competition from more resourceful multinational firms. In fact, Vodacom's early lead in South Africa's post-paid services led to MTN's urgent pursuit of innovative adaptations. Multinational firms' strategic delay opened a window of opportunity for local trailblazers to develop adaptive capabilities and expand their operations to multiple African countries. A key implication is that a firm taking this "wait-and-see" approach during an industry's formative years incurs an opportunity cost associated as competitors, in the meantime, can potentially gain ownership advantages through successful adaptations and establish themselves regionally.<sup>19</sup>

## **Concluding Remarks**

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<sup>19</sup> In the later stages in the industry, a few multinational firms reoriented their focus to offering services to the masses by adapting their business models (Jahanbakht and Mostafa 2020). Vodacom Tanzania and Vodafone's subsidiary in Kenya, Safaricom, became market leaders in their respective countries, with the latter introducing the successful mobile banking service, M-Pesa, in 2007. By 2008, Vodafone, despite having shown interest in several African countries, including Algeria and Nigeria, missed out on the opportunity to enter those countries, where other operators had already established their dominance (see also Whalley 2014).

We began with a puzzling pattern of internationalization: although developing country firms face similar home country conditions, only a few successfully internationalize in other developing countries but often do so more successfully than multinational firms. We explored this puzzle in the context of the African mobile telecommunications industry by utilizing both historical qualitative and quantitative data. Our findings contribute to extending and bridging the entrepreneurship and internationalization literatures. Regional firms' outcomes in terms of foreign entry and market reach in African countries varied substantially, suggesting differential ownership advantages for addressing African countries' challenging operational and market conditions. The underlying capabilities leading to differential advantages can be traced to regional firms' pre-entry experience, with entrepreneurial leadership being the key intermediary in shaping those capabilities. Our study also adds to extant research on within country industry evolution, by demonstrating that the evolution of adaptive capabilities for market and operational challenges not only contributes to early entrants' success in international expansion but also shapes the evolution of the industry across an entire region of developing countries.

## REFERENCES

- Agarwal, R., Echambadi, R., Franco, A. M., Sarkar, M. B. 2004. Knowledge transfer through inheritance: Spin-out generation, development, and survival. *Academy of Management Journal*, 47: 501–522.
- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207-32.
- Agarwal, R., Braquinsky, S., & Ohyama, A. 2018. Centers of Gravity: The Effect of Shared Leadership and Stability in Top Management Teams on Firm Growth and Industry Evolution. NBER Working Paper 24742.
- Agarwal, R., Shah, S. K. 2014. Knowledge sources of entrepreneurship: Firm formation by academic, user and employee innovators. *Research Policy*, 43(7): 1109-1133.
- Ahuja, G., Katila, R. 2004. Where do resources come from? The role of idiosyncratic situations. *Strategic Management Journal*, 25(8-9): 887-907
- Aguilera, R.V. 2007. "Translating Theoretical Logics across Borders: Organizational Characteristics, Structural Mechanisms and Contextual Factors in International Alliances," *Journal of International Business Studies*, 38 (1): 38-46
- Amsden, A. H. 2001. *The rise of "the rest": challenges to the west from late-industrializing economies*. Oxford University Press, USA.
- Argyres, N., Mostafa, R. 2016. Knowledge inheritance, vertical integration and entrant survival in the early U.S. auto industry. *Academy of Management Journal*, 59(4): 1474-1492.
- Balu, R. 2001. Strategic innovation: Hindustan Lever. *Fast Company*, 47: 120–124.
- Baron, D. P. 2008. *MTN Group Limited*. Stanford P-65, Harvard Business Publishing.
- Baron D 2012 *Business and its Environment*. Prentice Hall: Upper Saddle River, NJ, 7th Edition.
- Baum, J. A., Korn, H. J. 1996. Competitive dynamics of interfirm rivalry. *Academy of Management Journal*, 39: 255–291.
- Beamish, P. W., Banks, J. C. 1987. Equity joint ventures and the theory of the multinational enterprise. *Journal of International Business Studies*, 18: 1–16.
- Bennedson, M., & Feldmann, S. E. 2002. Lobbying legislatures. *Journal of political Economy*, 110(4): 919-946.
- Boddewyn J.J., Brewer T.L. 1994. International-business political behavior: new theoretical directions. *Academy of Management Review* 19(1): 119–143.
- Braquinsky, S., Hounshell, D. A. 2016. History and nanoeconomics in strategy and industry evolution research: Lessons from the Meiji - Era Japanese cotton spinning industry. *Strategic Management Journal*, 37(1): 45-65.

- Buenstorf, G., Klepper, S. 2009. Heritage and agglomeration: the Akron tyre cluster revisited. *The Economic Journal*, 119(537): 705-733.
- Chandra, V. (Ed.). 2006. *Technology, adaptation, and exports: How some developing countries got it right*. Washington, DC: World Bank Publications.
- Chen, P. L., Williams, C., Agarwal, R. 2012. Growing pains: The effect of pre-entry experience on impediments to growth. *Strategic Management Journal*, 33(3): 252-276.
- Cherian, J. A., Perotti, E. 2001. Option pricing and foreign investment under political risk. *Journal of International Economics*, 55(2): 359-377.
- Chesbrough, H., Ahern, S., Finn, M., Guerraz, S. 2006. Business models for technology in the developing world: The role of non-governmental organizations. *California Management Review*, 48: 48-61.
- Cohen, W. M., Levinthal, D. A. 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35: 128-152.
- Cotton, C. 2012. Pay-to-play politics: Informational lobbying and contribution limits when money buys access. *Journal of Public Economics*, 96(3-4): 369-386.
- Cuervo-Cazurra, A., Genc, M. 2008. Transforming disadvantages into advantages: Developing-country MNEs in the least developed countries. *Journal of International Business Studies*, 39: 957-979.
- Curwen, P., & Whalley, J. (2014). *Mobile telecommunications networks: Restructuring as a response to a challenging environment*. Edward Elgar Publishing.
- Delios, A., Henisz, W. J. 2000. Japanese firms' investment strategies in emerging economies. *Academy of Management Journal*, 43: 305-323.
- Dencker, J. C., Gruber, M., & Shah, S. K. 2009. Pre-entry knowledge, learning, and the survival of new firms. *Organization Science*, 20(3): 516-537.
- Dikova, D., Van Witteloostuijn, A. 2007. Foreign direct investment mode choice: entry and establishment modes in transition economies. *Journal of International Business Studies*, 38(6): 1013-1033.
- Dunning, J. H. 1980. Toward an eclectic theory of international production: Some empirical tests. *Journal of International Business Studies*, 11: 9-31.
- Dunning, J. H. 1988. The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19(1): 1-31.
- Dunning, J. H., & Rugman, A. M. 1985. The influence of Hymer's dissertation on the theory of foreign direct investment. *The American Economic Review*, 75(2): 228-232.
- Dunning JH, Narula R. 1998. The investment development path revisited: some emerging issues. In *Foreign Direct Investment and Government: Catalysts for Economic Restructuring*, Dunning JH, Narula R (eds). Routledge: London, U.K.; 1-41.
- Eisenhardt, K. M. 1991. Better stories and better constructs: The case for rigor and comparative logic. *Academy of Management Review*, 16(3): 620-627.
- Eisenhardt, K. M., Graebner, M. E. 2007. Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1): 25-32.
- Faccio, M. 2006. Politically connected firms. *American Economic Review*, 96(1): 369-386.
- Fafchamps, M., & Minten, B. 2001. Property rights in a flea market economy. *Economic Development and Cultural Change*, 49(2): 229-267.
- Franco, A. M., Filson, D. 2006. Spin-outs: Knowledge diffusion through employee mobility. *RAND Journal of Economics*, 37: 841-860.
- Garrette, B., Karnani, A. G. 2010. Challenges in marketing socially useful goods to the poor. *California Management Review*, 25: 29-47
- GSM Association. 2001. *Africa Mobile Observatory Report 2011: Driving Economic and Social Development through Mobile Services*. Retrieved November 10, 2019 from: <https://www.gsma.com/spectrum/wp-content/uploads/2011/12/Africa-Mobile-Observatory-2011.pdf>
- Guillen, M. F., Garcia-Canal, E. 2013. *Emerging markets rule: Growth strategies of the new global giants*. New York: McGraw-Hill Education.
- Hardymon, G. F., Leamon, A. 2005. *CelTel International B.V.: June 2004 (A)*. HBS 9-805-120, Harvard Business Publishing.
- Helfat, C. E., Lieberman, M. B. 2002. The birth of capabilities: Market entry and the importance of pre-history. *Industrial and Corporate Change*, 11: 725-760.
- Henderson, R. M., & Clark, K. B. 1990. Architectural innovation: The reconfiguration of existing. *Administrative Science Quarterly*, 35(1): 9-30.
- Henisz, W. J. 2000. The institutional environment for multinational investment. *Journal of Law, Economics, and Organization*, 16(2): 334-364.
- Henisz, W. J., & Delios, A. 2004. Information or influence? The benefits of experience for managing political uncertainty. *Strategic Organization*, 2(4): 389-421.
- Hindriks, J., Keen, M., & Muthoo, A. 1999. Corruption, extortion and evasion. *Journal of public Economics*, 74(3): 395-430.
- Holburn, G. L., Zelner, B. A. 2010. Political capabilities, policy risk, and international investment strategy: Evidence from the global electric power generation industry. *Strategic Management Journal*, 31: 1290-1315.
- Hoskisson, R. E., Eden, L., Lau, C. M., Wright, M. 2000. Strategy in emerging economies. *Academy of Management Journal*, 43: 249-267.
- Huber, G. P. 1991. Organizational learning: The contributing processes and the literatures. *Organization Science*, 2(1): 88-115.

- Ingram, P., Rao, H., & Silverman, B. S. 2012. History in strategy research: What, why, and how?. In **History and strategy** (pp. 241-273). Emerald Group Publishing Limited.
- International Telecommunications Union (ITU). 2007. **Telecommunications/ICT Markets and Trends in Africa 2007**. Retrieved November 10, 2019 from: [https://www.itu.int/ITU-D/ict/statistics/material/af\\_report07.pdf](https://www.itu.int/ITU-D/ict/statistics/material/af_report07.pdf)
- Jahanbakht, M., & Mostafa, R. (2020). Coevolution of policy and strategy in the development of the mobile telecommunications industry in Africa. **Telecommunications Policy**, 44(4).
- Jahanbakht, M., & Mostafa, R. (2021). The Emergence of GVCs for Frontier Markets: Insights from the African Mobile Telecommunications Industry. Ivey Business School working paper.
- Jensen, R. 2007. The digital provide: Information (technology), market performance, and welfare in the South Indian fisheries sector. **Quarterly Journal of Economics**, 122: 879–924.
- Jeong, Y., & Siegel, J. I. 2018. Threat of falling high status and corporate bribery: Evidence from the revealed accounting records of two South Korean presidents. **Strategic Management Journal**, 39(4): 1083-1111.
- Jeong, Y., & Weiner, R. J. 2012. Who bribes? Evidence from the United Nations' oil - for - food program. **Strategic Management Journal**, 33(12): 1363-1383.
- Jones, B., Campbell, D. 2014. **Mobile telecommunications: Two entrepreneurs enter Africa**. KEL 805, Harvard Business Publishing.
- Jones, G., Khanna, T. 2006. Bringing history (back) into international business. **Journal of International Business Studies**, 37: 453–468.
- Karim, A., Putimahtama, T., and Mullins, J. 2009. Terry Rhodes (A). London Business School case No 708-042-1
- Kim, I. S. 2017. Political cleavages within industry: firm-level lobbying for trade liberalization. **American Political Science Review**, 111(1): 1-20.
- King, G., Zeng, L. 2001. Explaining rare events in international relations. **International Organization**, 55: 693–715.
- Kiplagat, B. A., Werner, M. C. (Eds.). 1994. **Telecommunications and development in Africa**. IOS Press.
- Kistruck, G. M., Webb, J. W., Sutter, C. J., & Bailey, A. V. 2015. The double-edged sword of legitimacy in base-of-the-pyramid markets. **Journal of Business Venturing**, 30(3): 436-451.
- Klepper, S. 2002. The capabilities of new firms and the evolution of the US automobile industry. *Industrial and Corporate Change*, 11(4): 645–666.
- Klepper, S. (2007). Disagreements, spinoffs, and the evolution of Detroit as the capital of the US automobile industry. *Management Science*, 53(4), 616-631.
- Klepper, S. 2009. Spinoffs: A review and synthesis. **European Management Review**, 6: 159–171.
- Klepper, S., Sleeper, S. 2005. Entry by spinoffs. **Management Science**, 51 (8): 1291-1306.
- Klonner, S., Nolen, P., 2008. **Cellphones and rural labor markets: Evidence from South Africa**. Working paper. Colchester, UK: University of Essex.
- Kogut, B. 1988. Joint ventures: Theoretical and empirical perspectives. **Strategic Management Journal**, 9: 319–332.
- Kogut, B., & Zander, U. 1993. Knowledge of the firm and the evolutionary theory of the multinational corporation. **Journal Of International Business Studies**, 24(4): 625-645.
- Krueger, A. B., Lindahl, M. 2001. Education for growth: Why and for whom?. **Journal of Economic Literature**, 39(4): 1101-1136.
- Krugman, P. 1979. A model of innovation, technology transfer, and the world distribution of income. **Journal of Political Economy**, 87: 253–266.
- La Porta, R., Lopez-de-Silanes, F. 1999. The benefits of privatization: Evidence from Mexico. **Quarterly Journal of Economics**, 114: 1193–1242.
- Lane, P. J., Lubatkin, M. 1998. Relative absorptive capacity and interorganizational learning. **Strategic Management Journal**, 19(5): 461-477.
- Leuz, C., Oberholzer-Gee, F. 2006. Political relationships, global financing, and corporate transparency: Evidence from Indonesia. *Journal of financial economics*, 81(2): 411-439.
- Levinthal, D., & March, J. G. 1981. A model of adaptive organizational search. **Journal of Economic Behavior & Organization**, 2(4): 307-333.
- Levitt, B., & March, J. G. 1988. Organizational learning. **Annual Review of Sociology**, 14(1): 319-338.
- London, T., & Hart, S. L. 2004. Reinventing strategies for emerging markets: beyond the transnational model. **Journal of International Business Studies**, 35(5): 350-370.
- London Business School. 2011, June 24. **Profile: Mo Ibrahim, Chairman and Founder, Mo Ibrahim Foundation & Celtel International**.
- Makino, S., Tsang, E. W. 2011. Historical ties and foreign direct investment: An exploratory study. **Journal of International Business Studies**, 42: 545–557.
- March, J. G. 1991. Exploration and exploitation in organizational learning. **Organization Science**, 2: 71–87.
- McDonald, R., Siegel, D. 1986. The value of waiting to invest. **Quarterly Journal of Economics**, 101: 707–727.
- Meggison, W. L., Netter, J. M. 2001. From state to market: A survey of empirical studies on privatization. **Journal of Economic Literature**, 39: 321–389.
- Moen, M., 2017. Entry into Nascent Industries: Disentangling a Firm's Capability Portfolio at the Time of Investment versus Market Entry. Forthcoming. **Strategic Management Journal**.



- Moeen, M., Agarwal, R. 2017. Incubation of an industry: Heterogeneous knowledge bases and modes of value capture. **Strategic Management Journal**, 38(3): 566-587.
- Mostafa, R., Klepper S. 2018. Industrial development through tacit knowledge seeding: Evidence from the Bangladesh garment industry. Forthcoming. 64(2): 613-632 **Management Science**.
- Mowery, D. C., Oxley, J. E., Silverman, B. S. 1996. Strategic alliances and interfirm knowledge transfer. **Strategic Management Journal**, 17: 77–91.
- MTN Group. 1999. **5 Years of grit and glory: 1994–1999**. Internal MTN Group Report: unpublished.
- MTN Group. 2004. **Y'ello Freedom: 10 Years of Cellular Freedom: 1994–2004**. Internal MTN Group Report: unpublished.
- Mullins, J. Komisar, R. 2009. Can you balance a one-legged stool? Multidimensional business models. In Mullins, J., Komisar, R. 2009. **Getting to Plan B: Breaking Through to a Better Business Model**. Cambridge, MA: Harvard Business Press.
- Mullins, J., Rhodes, T. 2011. Managing ethically in corrupt environments. **Business Strategy Review**, 22: 50–55.
- Nellis, J. 2005. **Privatization in Africa: What has happened? What is to be done?** Washington, DC: Center for Global Development. Working Paper No. 127.
- Pack, H., & Nelson, R. R. 1999. **The Asian Miracle And Modern Growth Theory**. The World Bank.
- Polak, P., & Warwick, M. 2014. **Why entrepreneurs will beat multinationals to the bottom of the pyramid**. Harvard Business Review, 14(4), 532-550.
- Noam, E. M. (Ed.). 1999. **Telecommunication in Africa**. London: Oxford University Press.
- Parker, D., & Kirkpatrick, C. 2005. Privatisation in developing countries: A review of the evidence and the policy lessons. **Journal of Development Studies**, 41(4): 513-541.
- Phillips, D.J. 2002. A Genealogical Approach to Organizational Life Chances: The Parent-Progeny Transfer Among Silicon Valley Law Firms, 1946-1996. **Administrative Science Quarterly** 47: 474-506
- Pontin, J. 2007. Alieu Conteh: How an African entrepreneur put cell phones in Congo. **MIT Technology Review**. 110(5): 32-35.
- Prahalad, C. K. 2004. **The fortune at the bottom of the pyramid: Eradicating poverty through profits**. Upper Saddle River, NJ: Financial Times Press.
- Qian, L., Agarwal, R., Hoetker, G. 2012. Configuration of value chain activities: the effect of pre-entry capabilities, transaction hazards, and industry evolution on decisions to internalize. **Organization Science**, 23(5): 1330-1349.
- Ramamurti, R. 2012. What is really different about emerging market multinationals? **Global Strategy Journal**, 2: 41–47.
- Rivera-Santos, M., Rufin, C. 2009. **MTN Cameroon: The Competitive Advantage of Being African**. BAB 135, Harvard Business Publishing.
- Rivoli, P., Salorio, E. 1996. Foreign direct investment and investment under uncertainty. **Journal of International Business Studies**, 27: 335–357.
- Roller, L. H., Waverman, L. 2001. Telecommunications infrastructure and economic development: A simultaneous approach. **American Economic Review**, 91: 909–923.
- Rugman A. 2009. Theoretical aspects of MNEs from emerging markets. In **Emerging Multinationals in Emerging Markets**, Ramamurti R, Singh JV (eds). Cambridge University Press: Cambridge, U.K.; 42–63.
- Rugman, A. M., Verbeke, A. 2001. Subsidiary - specific advantages in multinational enterprises. **Strategic Management Journal**, 22(3): 237-250.
- Schnakenberg, K. E. 2017. Informational lobbying and legislative voting. **American Journal of Political Science**, 61(1): 129-145.
- Shah, S., Agarwal, R., & Echambadi, R. 2017a. Jewels in the Crown: Motivations and Team Building Processes of Employee Entrepreneurs. In **Academy of Management Proceedings** (Vol. 2017, No. 1, p. 10700). Briarcliff Manor, NY 10510: Academy of Management.
- Shah, S. K., Agarwal, R., & Sonka, S. T. 2017 b. **A Time and a Place: Non-Profit Engagement in the Creation of Markets and Industry Emergence**. Working Paper.
- Shapiro, C., Varian, H. 1998. **Information rules: A strategic guide**. Cambridge, MA: Harvard Business Press.
- Siegel, J. 2007. Contingent political capital and international alliances: Evidence from South Korea. **Administrative Science Quarterly**, 52(4): 621-666.
- Simanis, E., Hart, S. L. 2001. **The Monsanto company: Quest for sustainability**. Washington, DC: World Resources Institute.
- Stinchcombe, A. L. 1965. **Organizations and social structure**. Handbook of Organizations, 44: 142–193.
- Telegeography. **Globalcomms Database By Country**, 2012 data.
- The Economist**. 2000. Business: A beauty contest turns ugly. July 6. Retrieved November 10, 2019 from: <https://www.economist.com/business/2000/07/06/a-beauty-contest-turns-ugly>
- United Nations. 2012. **World investment report 2012: Towards a new generation of investment policies**. New York: United Nations Publication.
- Webb, J. W., Kistruck, G. M., Ireland, R. D., Ketchen Jr, D. J. 2010. The entrepreneurship process in base of the pyramid markets: The case of multinational enterprise/nongovernment organization alliances. **Entrepreneurship Theory and Practice**, 34(3): 555-581.
- Weick, K. E. 1995. **Sensemaking in Organizations**. Sage, Newbury Park, CA.

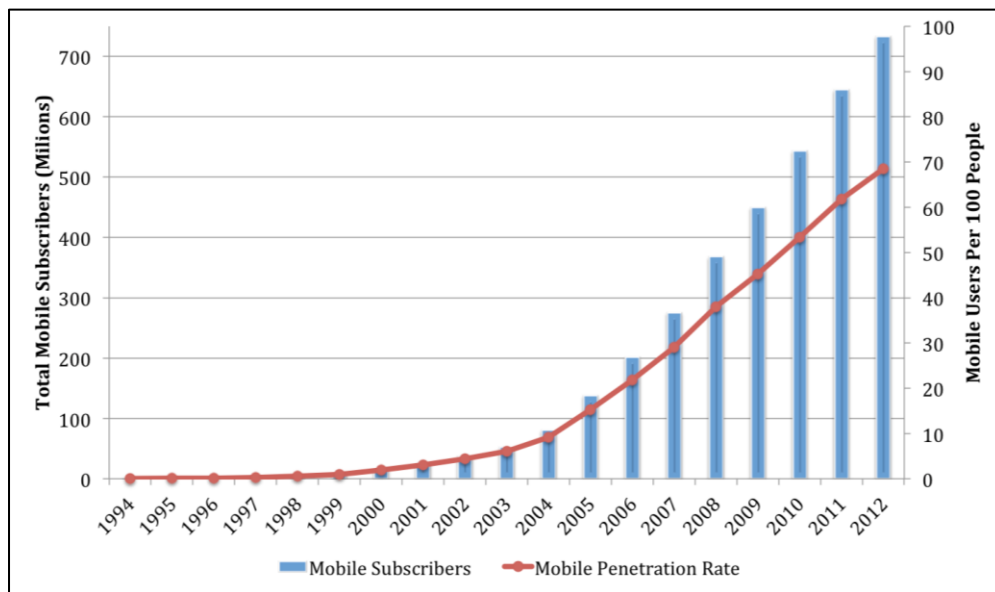
Winter, S. G. 1987. Knowledge and competence as strategic assets. In D. Teece (Ed.). *The competitive challenge*. Cambridge, MA: Ballinger: 159–184.

Yin, R. K. 2014. *Case Study Research Design and Methods*, Sage, Thousand Oaks, CA.

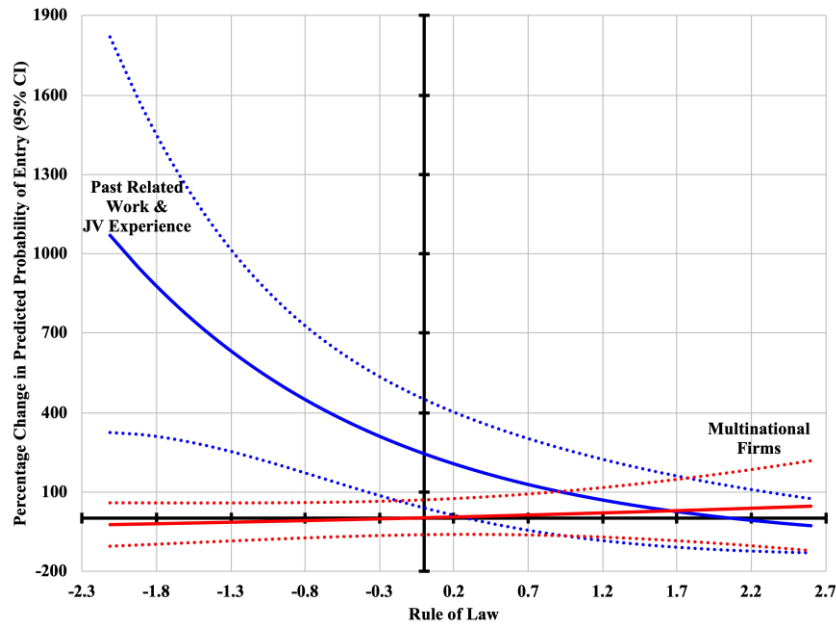
York, J. G., Lenox, M. J. 2014. Exploring the sociocultural determinants of de novo versus de alio entry in emerging industries. *Strategic Management Journal*, 35(13): 1930-1951.

Zaheer, S. 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2): 341–36.

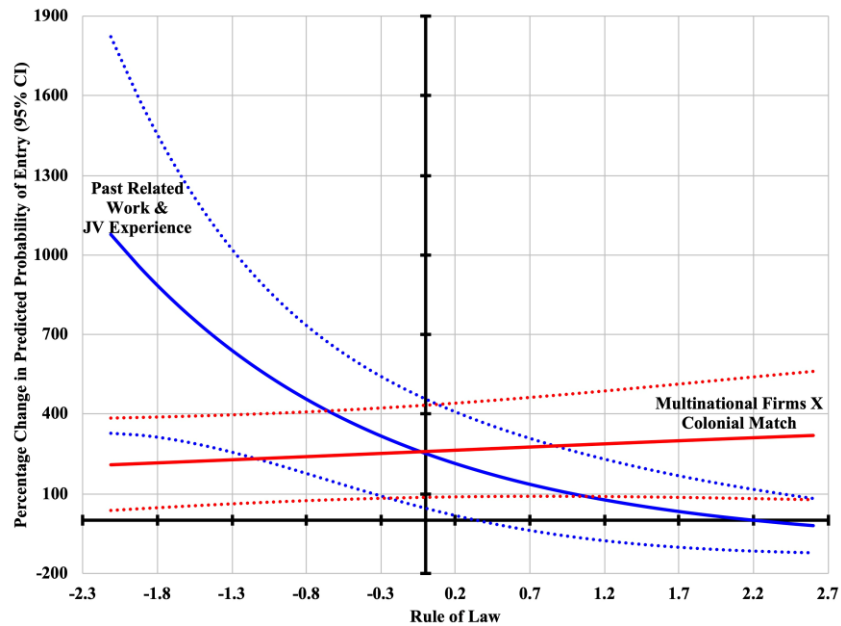
**Figure 1.** Africa's total number of mobile subscribers and mobile penetration rate, 1994–2012



**Figure 2.** The estimated effects of multinational firms and entrepreneurial firms with *past related work and JV experience* on predicted probability of foreign entry (relative to entrepreneurial firms with any other three types of pre-entry experience)



**Figure 3.** The estimated effects of *multinational firms and colonial Match*, and entrepreneurial firms with *past related work and JV experience* on predicted probability of foreign entry (relative to entrepreneurial firms with any other three types of pre-entry experience)



**Table 1.** Firms with past related work and JV experience, their pre-entry experience, and their mobile operations

Firm Name	Pre-entry Experience		First Independent Operation	Subsequent International Expansions
	Founders' Work Experience Prior to JV Partnership	MNE JV Partner		
Celtel	Among the key founders was Mo Ibrahim, who left British Telecom's wireless operations in 1989 and established MSI, which provided software solutions to mobile operators.	Vodafone, in Uganda (1995)	Uganda (1998)	Zambia, Malawi, Congo Brazzaville, Chad, Democratic Republic of Congo, Gabon, Sierra Leone, Sudan, Burkina Faso, Niger, Tanzania, Kenya
Investcom	Key founding members had family businesses that provided engineering services, mainly to satellite communications terminals in Lebanon.	France Telecom, in Lebanon (1995)	Ghana (1996)	Guinea, Burundi, Liberia, Guinea-Bissau, Benin, Sudan
MTN	Key founding members operated Multichoice, a South African firm that provided satellite television solutions to underdeveloped communities.	Cable and Wireless, in South Africa (1994)	South Africa (1998)	Uganda, Swaziland, Rwanda, Cameroon, Nigeria, Congo Brazzaville, Cote d'Ivoire, Zambia, Botswana
Orascom	Among the key founders was Naguib Sawiris, an engineer by training, who took the initiative to diversify the family-owned Orascom Group's business into information technology and telecommunications, which later spun off as Orascom Telecom.	France Telecom and Motorola, in Egypt (1998)	Togo (1999)	Gabon, Benin, Burundi, Zambia, Chad, Cote d'Ivoire, Congo Brazzaville, Zimbabwe, Burkina Faso, Uganda, Central African Republic, Tunisia, Algeria, Democratic Republic of Congo, Namibia

**Table 2.** Foreign entry within Africa by firm types

	1994–2004	2005–2012
# of Firms That Have Operated in This Epoch	45	73
Multinational Firms	25	34
Entrepreneurial Firms with		
<i>Past Related Work and JV Experience</i>	4	4
<i>Past Related Work Experience Only</i>	4	8
<i>Past JV Experience Only</i>	2	2
<i>Past Unrelated Work Experience</i>	10	25
State-Owned Firms	19	24
# of Foreign Entries by	147	94
Multinational Firms	81	55
Entrepreneurial Firms with		
<i>Past Related Work and JV Experience</i>	41	8
<i>Past Related Work Experience Only</i>	8	8
<i>Past JV Experience Only</i>	4	0
<i>Past Unrelated Work Experience</i>	9	23
State-Owned Firms	1	0
Average # of Foreign Entries	3.3	1.3
Multinational Firms	3.2	1.6
Entrepreneurial Firms with		
<i>Past Related Work and JV Experience</i>	10.3	2
<i>Past Related Work Experience Only</i>	2	1
<i>Past JV Experience Only</i>	2	0
<i>Past Unrelated Work Experience</i>	0.9	0.9
State-Owned Firms	0.05	0

**Table 3.** Descriptive statistics and variable intercorrelations for *foreign entry* estimations

Variable	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Foreign Entry	0.01	0.09	0	1													
2. Multinational firm	0.58	0.49	0	1	-0.005												
3. Entrepreneurial Firm with Past Related Work and JV Experience	0.06	0.24	0	1	0.06	-0.29											
4. Entrepreneurial Firm with Any Other Three Types of Pre-entry Experience	0.36	0.48	0	1	-0.02	-0.88	-0.19										
5. Std. Rule of Law	0	1	-2.11	2.18	-0.02	-0.02	0.02	0.004									
6. Colonial Match	0.03	0.18	0	1	0.04	0.16	-0.05	-0.14	-0.03								
7. # of Existing Operators	3.08	1.62	1	11	0.003	-0.08	-0.05	0.11	-0.22	-0.01							
8. Mobile Penetration Rate	29.64	31.52	0	148.69	-0.04	-0.13	-0.04	0.15	0.31	-0.04	0.24						
9. Std. Population below \$4/Day	0	1	-1.30	5.66	0.02	0.003	-0.002	-0.002	-0.27	0.0003	0.49	-0.13					
10. Log GDP	22.67	1.47	19.95	26.43	-0.01	-0.03	-0.01	0.04	0.06	-0.01	0.20	0.27	0.45				
11. Log GDP per Capita	6.67	1.08	4.97	9.52	-0.02	-0.02	0.01	0.01	0.52	-0.03	-0.17	0.58	-0.22	0.38			
12. Std. Inflation	0	1	-0.37	28.83	0.01	0.02	0.01	-0.02	-0.11	0.004	0.05	-0.05	0.18	0.02	-0.06		
13. Std. GDP Growth	0	1	-5.22	3.93	-0.01	-0.01	-0.01	0.01	-0.03	-0.01	0.01	-0.11	0.12	0.03	-0.07	-0.10	
14. Log Geographical Distance	8.46	0.89	0	9.56	-0.02	0.46	-0.09	-0.42	0.08	0.01	-0.07	-0.04	-0.04	-0.08	0.01	-0.002	0.01

Note. N = 28,222

**Table 4.** Descriptive statistics and variable intercorrelations for *market reach* estimations

Variable	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Log Subscribers	13.37	1.90	4.61	17.58																	
2. Multinational Firm	0.46	0.50	0	1	0.001																
3. State-Owned Firm	0.14	0.35	0	1	0.02	-0.37															
4. Entrepreneurial Firm with Past Related Work and JV Experience	0.26	0.44	0	1	0.07	-0.54	-0.24														
5. Entrepreneurial Firm with Any Other Three Types of Pre-entry Experience	0.15	0.35	0	1	-0.11	-0.38	-0.17	-0.24													
6. Std. Population below \$4/day	0	1	-0.64	5.35	0.28	-0.06	-0.004	-0.05	0.15												
7. Std. Rule of Law	-0.65	0.56	-1.70	0.67	0.07	0.22	0.03	-0.12	-0.19	-0.29											
8. # of Existing Operators	3.53	1.57	1	10	0.19	-0.11	-0.05	-0.05	0.26	0.66	-0.31										
9. Mobile Penetration Rate	41.74	34.50	0.24	179.47	0.39	-0.01	0.12	-0.11	0.02	-0.11	0.28	0.18									
10. Log GDP	43.75	1.55	40.83	47.18	0.65	0.02	0.10	-0.04	-0.08	0.51	0.14	0.22	0.24								
11. Log GDP per Capita	13.57	1.07	11.88	16.45	0.22	0.02	0.15	-0.05	-0.11	-0.12	0.48	-0.19	0.59	0.48							
12. Std. Inflation	0	1	-0.38	1.69	-0.01	0.04	-0.04	-0.03	0.02	0.20	-0.16	0.17	-0.12	0.03	-0.17						
13. Std. GDP Growth	0	1	-3.40	6.61	-0.02	-0.03	-0.02	0.03	0.03	0.19	-0.09	0.09	-0.16	0.01	-0.15	0.09					
14. Log Geographical Distance	6.53	3.51	0	9.38	-0.06	0.46	-0.70	0.18	-0.18	-0.12	0.07	-0.08	-0.09	-0.18	-0.13	0.03	-0.02				
15. Entry order	1.04	0.86	0	4	-0.05	-0.02	-0.19	-0.10	0.34	0.21	-0.32	0.40	0.09	0.02	-0.13	0.08	0.001	0.04			
16. Log Subscribers <sub>t-1</sub>	12.97	2.04	4.61	17.52	0.97	0.004	0.03	0.06	-0.12	0.27	0.07	0.20	0.43	0.63	0.23	-0.01	-0.03	-0.07	-0.08		
17. Log Age	1.72	0.75	0	3.00	0.45	-0.02	0.08	0.08	-0.15	-0.03	0.08	0.04	0.31	0.04	0.05	-0.01	-0.03	-0.001	-0.42	0.53	

Note. N = 1,145

**Table 5.** Estimations of the likelihood of *foreign entry*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Logit	Logit	Logit	Logit	Logit	Logit
<i>Std. Rule of Law</i>	0.203 (0.340)	0.203 (0.341)	0.316 (0.339)	0.015 (0.351)	0.205 (0.341)	0.245 (0.356)
<i>Entrepreneurial Firm with:</i>						
<i>Past Related Work and JV Experience</i>	1.631*** (0.338)	1.491*** (0.305)	1.310*** (0.337)	1.500*** (0.308)	1.486*** (0.306)	1.317*** (0.337)
<i>Past Related Work and JV Experience</i> × <i>Std. Rule of Law</i>			-0.600*** (0.178)			-0.527* (0.235)
<i>Past Related Work Experience Only</i>	0.317 (0.351)					
<i>Past JV Experience Only</i>	0.465 (0.444)					
<i>Multinational Firm</i>	0.372 (0.342)	0.237 (0.308)	0.246 (0.307)	0.309 (0.312)	0.045 (0.346)	0.063 (0.344)
<i>Multinational Firm</i> × <i>Std. Rule of Law</i>				0.348* (0.159)		0.111 (0.208)
<i>Multinational Firm</i> × <i>Colonial Match</i>					1.354*** (0.315)	1.363*** (0.317)
<b>Controls</b>						
<i># of Existing Operators</i>	0.741** (0.272)	0.739** (0.272)	0.748** (0.269)	0.739** (0.272)	0.738** (0.272)	0.746** (0.269)
<i># of Existing Operators</i> <sup>2</sup>	-0.040+ (0.023)	-0.040+ (0.023)	-0.041+ (0.022)	-0.040+ (0.023)	-0.040+ (0.023)	-0.041+ (0.022)
<i>Mobile Penetration Rate</i>	-0.012 (0.009)	-0.012 (0.009)	-0.013 (0.009)	-0.011 (0.009)	-0.012 (0.009)	-0.013 (0.009)
<i>Std. Population below \$4/Day</i>	0.358 (0.405)	0.357 (0.405)	0.356 (0.400)	0.363 (0.403)	0.345 (0.402)	0.346 (0.396)
<i>Log GDP</i>	-5.106 (3.882)	-5.106 (3.884)	-5.059 (3.863)	-5.163 (3.885)	-5.194 (3.891)	-5.192 (3.875)
<i>Log GDP per Capita</i>	5.768 (4.087)	5.775 (4.088)	5.660 (4.054)	5.866 (4.092)	5.842 (4.091)	5.796 (4.066)
<i>Std. Inflation</i>	-0.046 (0.033)	-0.045 (0.033)	-0.048 (0.035)	-0.044 (0.034)	-0.044 (0.034)	-0.047 (0.036)
<i>Std. GDP Growth</i>	-0.183 (0.162)	-0.182 (0.162)	-0.175 (0.162)	-0.180 (0.162)	-0.182 (0.163)	-0.174 (0.163)
<i>Log Geographical Distance</i>	-0.132* (0.053)	-0.136* (0.053)	-0.143** (0.056)	-0.122* (0.054)	-0.119* (0.055)	-0.120* (0.059)
Host Country-Fixed Effect and Year-Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	28,222	28,222	28,222	28,222	28,222	28,222

Note. Standard errors, clustered by firm-year, are reported in parentheses.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .



**Table 6.** Estimations of *market reach*

	Model 7 GLS	Model 8 GLS	Model 9 GLS	Model 10† GLS
<i>Std. Population below \$4/Day</i>	-0.163+ (0.088)	-0.163+ (0.088)	-0.170+ (0.089)	-0.131 (0.092)
<i>Entrepreneurial Firm with:</i>				
<i>Past Related Work and JV Experience</i>	0.228* (0.099)	0.213** (0.083)	0.199* (0.085)	0.361** (0.111)
<i>Past Related Work and JV Experience</i> × <i>Std. Population below \$4/Day</i>			0.074* (0.035)	0.088* (0.044)
<i>Past Related Work Experience Only</i>	0.047 (0.143)			
<i>Multinational Firm</i>	0.038 (0.099)	0.021 (0.078)	0.022 (0.078)	0.180+ (0.104)
<i>State-Owned Firm</i>	-0.105 (0.123)	-0.114 (0.114)	-0.128 (0.116)	-0.210 (0.162)
<b>Control Variables</b>				
<i># of Existing Operators</i>	-0.007 (0.025)	-0.007 (0.025)	-0.005 (0.025)	0.022 (0.032)
<i>Mobile Penetration Rate</i>	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.001 (0.001)
<i>Std. Rule of Law</i>	0.055 (0.074)	0.055 (0.074)	0.055 (0.074)	0.065 (0.092)
<i>Log GDP</i>	1.499* (0.587)	1.491* (0.587)	1.472* (0.586)	0.842 (0.691)
<i>Log GDP per Capita</i>	-1.839** (0.599)	-1.831** (0.598)	-1.804** (0.598)	-1.093 (0.696)
<i>Std. Inflation</i>	-0.443** (0.140)	-0.442** (0.140)	-0.445** (0.140)	-0.561*** (0.166)
<i>Std. GDP Growth</i>	0.010 (0.016)	0.010 (0.016)	0.009 (0.016)	-0.009 (0.016)
<i>Log Distance to Firm's Home Operation</i>	0.001 (0.012)	0.002 (0.011)	0.001 (0.012)	-0.006 (0.016)
<i>Entry Order</i>	-0.104** (0.040)	-0.105** (0.040)	-0.102** (0.039)	-0.057 (0.052)
<i>Log Subscribers<sub>t-1</sub></i>	0.731*** (0.035)	0.733*** (0.035)	0.729*** (0.036)	0.704*** (0.036)
<i>Log Age</i>	-0.175** (0.057)	-0.176** (0.057)	-0.169** (0.057)	-0.160** (0.059)
<i>Country-Fixed Effect and Year-Fixed Effect</i>	Yes	Yes	Yes	Yes
<i>Observations</i>	1,145	1,145	1,145	816

†Model 10 includes only firm-year-country observations prior to acquisition, if any.

Robust standard errors, clustered by firm-year, are reported in parentheses.

\*  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .