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Table with 5 rows: About, Programs, Awards, Thought Leadership, Babson College Entrepreneurship Research Conference

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Founded by Babson College in 1981, BCERC is considered by many to be the premier entrepreneurship research conference in the world.

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The Entrepreneurial Research Conference was established to provide a dynamic venue where academics and real-world practitioners, through spirited dialogue, could link theory and practice.

Doctoral Consortium

A Doctoral Consortium is held in conjunction with the Conference and was created as a means to unite future entrepreneurship educators and scholars with established leaders and researchers in the field.

Frontiers of Entrepreneurship Research

Frontiers of Entrepreneurship Research contains the BCERC Proceedings of the conference and is the most comprehensive collection of empirical research papers on entrepreneurship.

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Baylor University

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The Abstract Submission site will be open from 9/13/21 - 10/13/21 for the 2022 BCERC.

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Learn more about the TOM Research Excellence Award

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FRONTIERS OF ENTREPRENEURSHIP RESEARCH 2011

PROCEEDINGS OF THE THIRTY-FIRST ANNUAL
ENTREPRENEURSHIP RESEARCH CONFERENCE

Sponsored by
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Neil C. Churchill and Bruce A. Kirchoff

Past Directors of the Babson College Entrepreneurship Research Conference

*In recognition of their vast contribution, dedication, compassion, and outstanding achievements as
pioneers and leaders in the field of entrepreneurship research.*

The papers and summaries published in this
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supplied by the contributing authors.
They are solely responsible for the contents
of their individual papers.

We thank them for their help and cooperation in the production of
FRONTIERS OF ENTREPRENEURSHIP RESEARCH 2011

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We will treasure the pleasant memories of the 2011 BCERC, our colleagues and our friendships, and the camaraderie we shared and enjoyed at the conference, until we chance to meet again, wishing you all well and thank you.

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SELF-EMPLOYED OR EMPLOYING OTHERS? PRE-ENTRY CAPABILITIES, ENTREPRENEURIAL ACTION, AND THE LEARNED RESOURCEFULNESS OF MICROCREDIT FIRM FOUNDERS

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SELF-EMPLOYED OR EMPLOYING OTHERS? PRE-ENTRY CAPABILITIES, ENTREPRENEURIAL ACTION, AND THE LEARNED RESOURCEFULNESS OF MICROCREDIT FIRM FOUNDERS



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ABSTRACT

We survey 612 entrepreneurs who are members of microcredit programs across three developing countries to examine the determinants of firm employment. We find that for opportunity-motivated entrepreneurs, a greater number of employees are predicted by pre-entry means (managerial skill, pre-planning, and business expertise) with these relationships mediated by differentiation-related innovation. We find that necessity-motivated entrepreneurs do not seek innovation as a means to growth. Rather their efforts to increase firm employment are enhanced by a set of learned repertoires which we identify as resourcefulness. Specifically, we find behavioral resourcefulness and social resourcefulness increased the likelihood of higher firm employment for necessity-motivated entrepreneurs while financial resourcefulness was not significant.

INTRODUCTION

Most firms start small and few grow (Aldrich & Ruef, 2006). A lack of size prevents economies of scale (Simon & Bonini, 1958), limits social connections with buyers and suppliers (Bruderl & Schussler, 1990; Stinchcombe, 1965) and often creates barriers to financial resources due to perceived risk by investors or bankers (Shane, 2003). Similarly, most new firms funded by microcredit agencies start as self-employment efforts and remain so. This has drawn criticism toward microcredit agencies for enabling the start-up of businesses that are not likely to grow, by individuals who are not really entrepreneurs and will not likely employ others (Karnani, 2007; Morduch, 1999). Some microcredit firms do grow, however, even if they are a minority. The question is what are the determinants that lead to growth in size and the employment of others?

The ability to move from self-employment to employing others is rare – especially among microcredit firms. The barriers are particularly high for the poor due to limited background related skills and resources that might enable firm development. Furthermore, the difficult environment the poor face can create a psychology of “learned helplessness” (Miller & Seligman, 1976) in which perceived or real uncontrollable events dominate even when opportunities might be present. Some individuals overcome these obstacles, but how? This question is addressed from an entrepreneurial action framework (McMullen & Shepherd, 2006). The willingness to bear uncertainty and act is a combination of means (pre-entry capabilities and resources) and motivation

(Baum, Locke, & Smith, 2001). However, we make the case that the path to higher firm employment differs by initial motivation.

First, we argue that those with opportunity-based motives work through an “innovation of ideas” finding opportunities for growth through novel or differentiated changes in products, sales or distribution of goods and services. The ability to recognize and act on innovations is a function of the historical trajectory of the firm (Carroll, Bigelow, Seidel, & Tsai, 1996).

Second, we argue that necessity-motivated entrepreneurs achieve higher employment enhanced by an “innovation of effort,” or what we identify as resourcefulness. If individuals are forced into entrepreneurship by a lack of other options, they are less likely to make necessary preparation or have skills and resources that match the opportunity that allows growth of a business of scale. Two key determinants that may alter entrepreneurial action are considered. First, we consider the role of pre-entry means or what others call capabilities (Helfat & Lieberman, 2002). We expect that the skills and level of pre-planning prior to entry shape the trajectory of the firm. Prior evidence from microcredit firms suggests that opportunity- versus necessity-motivated entrepreneurs had higher business performance (Bradley, McMullen, Artz, & Simiyu, 2010). In other words, those that were forced into business appear less likely to have the skills or make necessary preparation to grow a business of scale. Second, we consider the role of ‘learned resourcefulness’ (Rosenbaum, 1980) in moderating the ability of microcredit entrepreneurs to overcome obstacles in growing a business beyond self-employment. Learned resourcefulness is the opposite of helplessness and is a behavioral process of cognitive self-control regulations including: coping self instruction, problem-solving strategies, delayed gratification and self-efficacy. For example, delayed gratification or the ability to think towards the future, has been cited as important for moving from making ends meet to planning for business development in microcredit (Bruton, Khavul, & Chavez, in press).

Conceptual Development

For any action to occur, an individual must have motive, means, and opportunity. Motive addresses “the why” of action – the proximal and distal causes that underlie one’s decision to engage in a particular action. Means concerns “the how” of action – the capital (financial, human, social) needed to form an intention and convert it into action. And opportunity refers to “the where and when” of action – i.e., one is in the right place at the right time to act. In the case, of entrepreneurial opportunity, the right place and right time refer to whether demand currently exists for the entrepreneur’s product offering and whether he has the inventory available to make the sale. This leaves “the what” and “the who” of action. “The what” describes the nature of the action - creating a new venture. Finally “the who” refers to micro-credit clients.

Therefore, to determine the conditions under which the firms of micro-credit entrepreneurs grow, a closer examination of the entrepreneur’s motive, means, and opportunity are in order.

Opportunity as Innovation

The first element needed for entrepreneurial action to occur is opportunity. Entrepreneurial opportunities refer to situations in which products can be sold at a price greater than the cost of their production (Eckhardt & Ciuchta, 2008). Identification of such opportunities has then been conceptualized as an act of recognition, discovery, or creation (Sarasvathy, Dew, Velamuri, & Venkataraman, 2003). According to the recognition view of entrepreneurial opportunity, both demand and supply already exist. The entrepreneur simply matches the two in an act of arbitrage

(Kirzner, 1973). The discovery view, by contrast, suggests that the entrepreneur either discovers new means (a new source or method of supply) for existing ends (existing demand) or discovers new ends (new demand) for existing means (existing product offerings) (Hayek, 1945). Finally, the creativity view argues that both means and ends are evolving such that the entrepreneur creates new ends (new demand) by creating new means (new product offerings) or vice versa (Alvarez & Barney, 2007).

Under both the discovery and creativity views of entrepreneurship, some degree of innovation is required as entrepreneurs design entrepreneurial opportunities. Both views acknowledge that consumer needs are currently being addressed by existing products and that novelty is necessary to encourage consumers to abandon competitors' product offerings in favor of the entrepreneur's product offerings. However, the two views report different ways in which entrepreneurs go about differentiating their products from current offerings. The discovery approach tends to conceive of opportunities primarily in terms of path dependent innovations in which the entrepreneur seeks to entice customers to purchase his product by emphasizing how it is marginally superior to existing offers and therefore preferable in some incremental way. As such, these differentiation-based innovations are equilibrating actions in which entrepreneurs respond to inefficiencies in the market created by incomplete information through resource acquisition, resource recombination, and sales with the hope of making a profit (Kirzner, 1997). Through minor improvements of existing business models, these differentiation-based innovations contribute to a steady accumulation of resources as a result of out-competing less efficient incumbents. In turn, these increased resources provide the funds that enable additional investment and employment growth. Thus,

H1: In developing economies, differentiation-related innovation will be positively associated with firm employment.

The creativity view, by contrast, tends to conceive of opportunities primarily in terms of path creating innovations in which the entrepreneur seeks to entice customers to buy from him by emphasizing how his product is something entirely new and different from existing offers and therefore preferable in some radical way. As such, these novelty-based innovations are disequilibrating actions in which entrepreneurs bring new products or services to the local, regional, or national market. Through entirely new business models, these novelty-based innovations create new markets in which no competition exists yet and entrepreneurs enjoy monopoly rents. This leads to rapid resource accumulation and the funds necessary for investment and employment growth. Thus,

H2: In developing economies, novelty-related innovation will be positively associated with firm employment.

Both forms of innovation represent opportunities to profit from entrepreneurial action. Although the creativity view contributes to the emergence of an entirely new market that is likely to lead to employment growth, it is also a much riskier endeavor than the discovery view owing to the uncertainty inherent in novelty. Even though differentiation-related innovations are likely to lead to smaller returns than successful novelty-innovations, they also require less upfront investment and are less likely to fail. In resource-impooverished contexts, such as micro-credit, entrepreneurs may be more concerned about preserving capital by preventing unsuccessful outcomes than maximizing returns by ensuring successful outcomes. This suggests that hostile environments favor a conservative approach to entrepreneurship, differentiation-related innovations, and therefore slower employment growth.

Motive

The next element needed for entrepreneurial action to occur is motive. The global entrepreneurship monitor has distinguished between opportunity-motivated entrepreneurship (OME) and necessity-motivated entrepreneurship (NME) (Reynolds, Bygrave, Autio, Cox, & Hay, 2002). NME suggests that one was pushed into entrepreneurship by circumstances beyond his or her control and therefore was forced to choose among whatever opportunities were available at that moment (McMullen, Bagby, & Palich, 2008). The entrepreneur must then try to make the best of a bad situation. NME, therefore, appears to favor the discovery mode, exploiting opportunities that have already been identified by others. Innovation is still required, but it is an incremental form that emphasizes “the how” – i.e., a new way to conduct an existing profit-generating activity – and favors differentiation-related innovation. OME, by contrast, implies that the entrepreneur was pulled into entrepreneurship by the attractiveness of the opportunity. Consequently, the entrepreneur had the luxury of waiting to act until he had a novel idea that he found more promising than alternative income-generating activities (McMullen et al., 2008). Because opportunity-motivated entrepreneurs can prepare before plunging into entrepreneurship, they appear to be better equipped to create new opportunities. Thus, they can innovate in terms of “the what” – a new activity to generate profit – or “the how” – a new way to conduct an existing profit-generating activity. Thus,

H3: In developing economies, opportunity-motivated entrepreneurship more than necessity-motivated entrepreneurship will be positively associated with higher innovation.

An entrepreneur’s ability to employ others depends on demand for his or her firm’s goods or services. Demand exists when customers are willing and able to purchase a firm’s products. This willingness and ability can increase in selective and non-selective ways. Whereas rising incomes from economic growth tend to favor firms non-selectively, actions taken by the entrepreneur tend to be selective. Attempts to increase willingness might include advertising or innovative efforts or to differentiate a product relative to competitors or to offer a product that competitors do not (McMullen, 2011). Attempts to increase ability include innovative extensions of credit to individuals previously considered too risky to lend to or use of sales representative distribution tactics to improve product accessibility for rural customers (McMullen, 2011). If hiring employees requires demand for the firm’s products, and if demand requires customers that are willing and able to purchase, then entrepreneurs typically must engage in some form of innovation to make their goods or services preferable to alternative offerings. Thus,

H4: In developing economies, innovation will mediate the relationship between motives (opportunity or necessity-motivated entrepreneurship) and firm employment.

Means

The final element needed for entrepreneurial action to occur is means. Means includes the capital (financial, human, social) and labor skills necessary to manage the production of some good or service. Consequently, it involves the ingredients (financial capital) necessary to follow the recipe of production (Romer, 1994) but also the ability to execute and improve the recipe. Even if demand for a product exists, a firm cannot grow to hire more employees if the entrepreneur cannot manage the firm (Penrose, 1959). This involves having the human capital needed to convert a recipe into reality. Human capital includes family business experience and prior industry experience. From this experience, the entrepreneur is likely to learn about the benefits of

pre-planning and to acquire tacit knowledge (Polanyi, 1966) that contributes to managerial skill and business expertise. As these elements of human capital increase, the more likely it becomes that the entrepreneur will not only be a competent manager, but capable of deviating successfully from the recipe used by competitors. Thus,

H5: In developing economies, pre-entry means [(a) managerial skill, (b) pre-planning, (c) business expertise, (d) family business experience, (e) prior industry experience] will be positively associated with higher innovation.

Having more pre-entry means available, does not necessarily translate into a need for more employees. The firm's employment needs are driven by demand, which is likely to be driven by customers' willingness and ability to pay for the firm's products. These are influenced through innovation, but this innovation is partly made possible because one possess pre-entry means (Helfat & Lieberman, 2002). Thus,

H6: In developing economies, innovation will mediate the relationship between pre-entry means and firm employment.

Resourcefulness

New firms almost always begin with fewer resources than established competitors. Yet, some firms with less manage to outmaneuver their better-resourced competitors and overcome these initial disadvantages (Bradley & Mitchell, 2005; Ganz, 2000). Resourcefulness is a key descriptor often used by the general public when asked to describe entrepreneurs (Hornaday, 1982). However, its dimensions and measurement as a construct in the academic literature has yet to be fully developed.

We identify resourcefulness in the entrepreneurship context as learned behavioral, financial and social repertoires for dealing with problems, especially those of novelty, in starting a business. The novel problems faced by entrepreneurs are often associated with newness – (1) finding a niche in the market, (2) the development of reliable processes for offering goods and services, (3) as well as establishing social relationships internally with employees and externally with exchange partners and customers (Stinchcombe, 1965). Some entrepreneurs do this quite well with few available resources (Bradley, Shepherd, & Wiklund, 2010). Surveys of Inc. 500 companies in both the 1980's and 1990's indicate that two-thirds started with less than \$50,000 capital and almost always from personal sources (Bhide, 2000). In developing countries, entrepreneurs are more likely to enter markets with even less human and financial capital while often facing a business environment of greater uncertainty. We briefly describe how dimensions of resourcefulness might address these challenges to business growth.

Behavioral resourcefulness is the means by which individuals cope with situational and cognitive factors related to stressful life events. We adapt this from Rosenbaum's (1980) Learned Resourcefulness construct in which he identified acquired behaviors and skills by which a person regulates internal responses (such as emotions, cognitions, and pain) that interfere with the smooth execution of a desired behavior. For our purposes, these repertoires include: (a) use of coping self-instruction, (b) application of problem-solving strategies, (c) ability to delay immediate gratification, and the (d) belief in one's ability to self-regulate internal events (self-efficacy). The use of behavioral resourcefulness is illustrated by the following scenario:

Mary lives outside Jakarta, Indonesia. She only had schooling through the fourth year and then left to work with her parents on the family farm. She eventually learned sewing skills in her spare time. She eventually married and had two children but her husband passed away suddenly. She had hoped to apply her seamstress skills, but could not find a job at the local clothing factory. Initially, the temptation of emotional discouragement and a sense of helplessness were strong. Emotionally drained, a mother of two with little savings, she continually reminded herself that her knowledge of cloths and sewing could be used somewhere. She began to contract her skills as a repair and alteration seamstress. People liked her work because she stayed on schedule and was able to accept challenging jobs others could not solve. For the first time in years she had money to spare. However, rather than spending it, she put it into savings with the goal of buying a sewing machine that would speed up her work. She was also able to hire friends to help with the workload. She increasingly believed that she could find solutions to new problems that her business might encounter. She is now considered a successful businesswoman and employs a number of women in the community. While seamstress skills are common and Mary's approach to the business has not been particularly innovative, her ability to regulate her behaviors has enabled her to grow a sizable business.

Financial resourcefulness is the ability to creatively acquire and manage money where there is scarcity. It is not simply bootstrapping where an entrepreneur starts from personal finances or operates on business cash flow. It is also has a broader sense than bricolage (Baker & Nelson, 2005) where one makes due with the resources at hand. Rather, one also knows where to find resources outside the firm as needed to make the business grow (Starr & MacMillian, 1990). This pursuit of opportunity without regard to resources currently controlled (Stevenson & Jarillo, 1990) is heightened when slack resources are scarce (Bradley, Wiklund, & Shepherd, 2010) and is more likely the case with necessity-motivated entrepreneurs.

Social resourcefulness is the ability to coordinate and work with others outside the firm to solve problems. The ability to manage relationships with those outside the firm is a skill that can be applied to managing employees inside the firm as well. Ganz (2000) showed how an agricultural labor organization with few financial resources was able to coordinate and mobilize people to win against much better funded rivals.

While necessity-motivated entrepreneurs may not have preferred to start a firm, it doesn't prevent them from learning how to grow a business. Resourcefulness skills, whether available at founding or learned in process, each enhance the likelihood that entrepreneurs will overcome novel problems. Therefore,

H7: In developing economies, resourcefulness [(a) behavioral, (b) financial, (c) social] will positively moderate the relationship of necessity-motivated entrepreneurship and firm employment.

METHODS

Data

Our sample consists of 612 entrepreneurs that are members of microcredit programs across three countries and four unaffiliated agencies. Both primary and secondary data was collected. Two of the agencies were located in the vicinity of Nairobi, Kenya. The first group was sampled in

November 2009 (n=201) and the second in June 2010 (n=106). Data was also collected in June of 2010 from a microcredit agency in Burundi (n=143) - currently considered the poorest country in Africa. The fourth agency was located in Surabaya, Indonesia. Data collection was conducted in June of 2010 providing n=162 usable sets of responses. The surveys in Kenya were conducted in English with a trained surveyor available to clarify questions during the process. Surveys in Burundi and Indonesia were translated, and in cases of illiteracy, were read to the respondent and recorded by the surveyor.

Dependent Variables

Number of employees. Respondents were asked the number of people employed in the company besides themselves. Figure 1 provides a visual of the number of percent of respondents by country that employ increasing numbers of people. Indonesia had the lowest percentage of businesses with no additional employees while the agency in Burundi had the highest. The two Kenyan agencies had quite similar distributions.

Innovation as a change in products, processes, or markets that adds value was measured in two forms following prior work (Bradley, McMullen et al., 2010). *Novelty-related innovations* are disequilibrating actions in which entrepreneurs bring new products or services to the local, region or national market. This measure was a combination of three items ($\alpha = .86$). *Differentiation-related innovations* are equilibrating actions in which entrepreneurs respond to inefficiencies in the market created by incomplete information through resource acquisition, resource recombination, and sales with the hope of making a profit (Kirzner, 1997). This measure consisted of four items ($\alpha = .76$). For example, "The product/service I offer is pretty common, but I've figured out a better way to attract customers than many of my competitors." *Total innovation* was the sum of novelty and differentiation innovation items.

Independent Variables

Motive was measured by considering whether the business was started by the pursuit of an opportunity or out of necessity. *Necessity-motivated entrepreneurship* was two items related to opportunity cost ($\alpha = .60$). Responses were split at the mean and coded 1 if operating their business more out of necessity, or coded 0 otherwise. Means was measured by several pre-entry resources and capabilities. Managerial skill was three items ($\alpha = .61$) related to the organization, administration and development of the business. *Pre-planning* was three items ($\alpha = .60$) indicating the amount of forethought put into the business. *Business expertise* was a relative perceptual measure of technical skills or business training in comparison to competitors on a 1 to 5 Likert scale. This measure had a significant correlation to prior work experience in the same industry ($p < .05$). Entrepreneurs with more specific education and work experience are more likely to recognize opportunities (Casson, 2005) and to exploit those opportunities (Roberts, 1991). Exposure through work or vicariously through family members provides information and necessary skills to exploit opportunities and have shown higher rates of firm formation (Delmar & Davidsson, 2000) and incomes (Lentz & Laband, 1990). *Prior industry experience* was a dummy indicator of whether they had previously worked in the same industry in which they started their business. *Family business experience* was a dummy variable measure of the question: "Did your parents ever work for themselves or run their own businesses?" Resourcefulness was considered in three ways – human, financial and social. *Human resourcefulness* borrows from learned resourcefulness behavioral dimensions offered by Rosenbaum (1980). This formative measure was the sum of the following: self-coping mechanisms (2 items; $\alpha = .58$), delayed gratification (2 items; $\alpha = .66$), problem solving (2 items; $\alpha = .40$), and self-efficacy (3 items; $\alpha = .69$). *Financial*

resourcefulness was three items ($\alpha=.62$) and captures the notion of creatively using and finding resources as needed (Starr & MacMillan, 1990; Stevenson & Jarillo, 1990). *Social resourcefulness* was the ability to find and work with others rather than independently (2 items; $\alpha=.50$). For example, “I often coordinate with others to help my business grow.”

Control Variables

At the industry level, competitive intensity was measured as the *density* and *density squared* of competing firms in the same business reported by the respondent capturing the level of competition for opportunities. Business descriptions were classified according to 2-digit ISIC. Due to small numbers in some classifications, nine common groupings were formed and dummy variables created. The “other services” category was excluded in the analyses. We included social network controls following the approach taken by Ruef (2002). Entrepreneurs were asked the source of their initial business idea using a non-mutually exclusive coding scheme. *Strong ties* were with the number of family members or friends involved with the business. *Weak ties* were with the number of business associates such as customers or suppliers involved with the business. *Directed ties-discourse* was discussion picked up through media or trade press. *Directed ties-mimetic* was observation of existing competitors. *Network diversity*, or ties to a wide variety of people, should encourage access to information that facilitates innovative business opportunities (Aldrich & Zimmer, 1986). Diversity was calculated based on a list of the number of people from these groups that have been involved with the business from the following groups: family members or friends, lending group, business customers, and business suppliers. Network diversity was then computed in terms of Shannon and Weaver’s (1963) information entropy measure

Business controls include *business age* and *registration* with the government. Firms that do not disband are more likely to grow with age (Aldrich & Ruef, 2006) due to experience in the market. Registration with the government and operating in a more formal manner creates greater legitimacy among buyers and suppliers.

Founder controls include *age* as current year minus the birth year of the entrepreneur. Age incorporates the positive effect of experience and provides credibility when transmitting information to other people when seeking to obtain resources or develop the firm (Freeman, 1982). *Education* level in developed nations has been previously associated with greater likelihood to exploit entrepreneurial opportunities (Rees & Shaw 1986) and increased performance from those businesses (Gimeno, Folta, Cooper, & Woo, 1997).

Model Specification

Ordered-response models recognize the indexed nature of various response variables; in this application, innovation is the ordered response. Underlying the indexing in these models is a latent but continuous descriptor of the response. In an ordered probit model, the random error associated with this continuous descriptor is assumed to follow a normal distribution. We used Stata’s *oprobit* function with maximum likelihood estimation to analyze McElvey and Zavoina’s (1975) ordered probit model.

Models predicting number of employees were estimated using generalized linear model (GLM). We used maximum likelihood estimation and a Poisson distribution with a log link after comparing plots with the data shown in Figure 1. We also used robust standard errors with the cluster feature to account for *country effects*.

RESULTS

Table 1 presents the ordered probit models of means and motives effects on innovation opportunities. Table 2 presents results from GLM models predicting number of employees. In both tables the first model introduces the control variables. Models 1.2 and 2.3 in the tables introduce the main effects. Turning to the hypotheses, Model 2.3 provides a test of H1 and H2 predicting that innovation will have a positive effect on firm employment. The results were positive and significant for differentiation-related innovation ($p < .001$) while negative and not significant for novelty-related innovation ($p > .10$) providing support for H1 and a lack of support for H2. Hypothesis 3 regarding the relationship between motive and innovation shows a negative and significant relationship in Model 1.3 between necessity-motivated entrepreneurship and differentiation-related innovation ($p < .01$), and a negative but non-significant finding with novelty-related innovation ($p > .05$). This result supports H3 indicating opportunity-motivated entrepreneurs are more likely to pursue innovations and specifically those that are differentiation rather than novelty innovations. Hypothesis 4 regarding the intervening effect of innovation between motives and employment was examined with a Sobel test. The test was significant ($p < .001$, two-tailed) for differentiation-innovation, but not for novelty-innovation ($p > .10$, two-tailed). This can be interpreted as opportunity-motivated entrepreneurs achieve greater employment, at least in part, through differentiation-related innovation providing support for H4. The tests for H5, that pre-entry means are associated with higher innovation are shown for total innovation in Model 1.2, for differentiation-related innovation in Model 1.3 and novelty-related innovation in Model 1.4. We find general support for H5 on differentiation-related innovation, but not novelty-related innovation. Managerial skill ($p < .01$), pre-planning (.01), business expertise ($p < .001$) were all positively related to differentiation-related innovation. Only family business experience was negative with differentiation-related innovation ($p < .001$) and positive with novelty-related innovation. Testing H6 for the intervening effect of innovation between pre-entry means and firm employment was conducted with Sobel tests. Using differentiation-related innovation, H6 was supported for managerial skill ($p < .01$, two-tailed), pre-planning ($p < .05$, two-tailed), business expertise ($p < .001$, two-tailed), family-business expertise ($p < .001$, two-tailed), but not for prior-industry experience. Novelty-related innovation was not a significant mediator for any of the pre-entry means indicators. Hypothesis 7 predicts the moderating effect of three forms of resourcefulness on the necessity-motivated entrepreneurship and firm employment relationship. Model 2.4 shows a positive and significant relationship for the behavioral resourcefulness interaction term ($p < .001$) supporting H7a. Model 2.5 finds a positive but non-significant relationship for the financial resourcefulness interaction term ($p > .05$) which does not support H7b. Model 2.6 shows a positive and significant interaction between necessity-motivated entrepreneurship and social resourcefulness supporting H7c.

DISCUSSION AND CONCLUSION

Start-up businesses are challenged to move beyond self-employment. This is particularly true in developing economies where pre-entry means are limited and the institutional environment for business is inefficient (McMullen, 2011). This study shows two routes to increased firm employment. The first is through differentiation-related innovation. This approach is more likely pursued by opportunity-motivated entrepreneurs and the likelihood of innovation increases with pre-entry means. A second route to higher employment does not include innovation. Rather,

necessity-motivated entrepreneurs that have developed behavioral and social resourcefulness are also more likely to have higher employment.

Pre-entry means have been associated with innovation in previous research (Helfat & Lieberman, 2002). In a development context, innovations are less likely to be pursued and less likely to be successful (Bradley, Artz, & Hulett, 2010). We found that differentiation-related innovation were significantly more likely (Z-test; $p < .05$) to lead to higher firm employment. It is also worth noting that while pre-entry means increased likelihood of differentiation-related innovation, there was little evidence of a direct effect on firm employment. Incremental forms of innovation are a strong mediator to convert pre-entry means to larger firm size. The curious exception for means was family business experience which indicated a 1.47 times reduced likelihood of pursuing differentiation-related innovation {odds ratio = $\exp [1/(-.390)] = 1.47$ }, but a 1.11 time greater likelihood of pursuing novelty-related innovation {odds ratio = $\exp (.101) = 1.11$ }. It may be that family business experience leads to a greater commitment to past experience and practices with few incremental changes. On the other hand, those with prior family businesses also have the knowledge or social connections to see more novel or disruptive types of innovations (Tushman & Anderson, 1986).

For resourcefulness, we find that the effects for necessity and opportunity-motivated entrepreneurs differed. Behavioral resourcefulness was negative with number of employees as a main effect, but showed a positive effect as an interaction with necessity-motivated motives. Strong, focus, control of emotions as dimensions of behavioral resourcefulness may run counter to the high variance seeking and passion (Baum & Locke, 2004) that are common in opportunity-seeking entrepreneurs (Shane, 2003). Alternately, dimensions like delayed-gratification are likely to serve necessity-motivated entrepreneurs well. Financial resourcefulness was positive for opportunity-motivated entrepreneurs, but was not a significant factor for necessity-motivated entrepreneurs. Acquiring resources may be more important when pursuing opportunities that include some form of innovation as the costs may be greater or there may be a new combination of resources that a firm does not currently own. Necessity-motivated entrepreneurs may seek to make the most of the resources they currently own. Finally, both necessity and opportunity based entrepreneurs appear to benefit from social resourcefulness to increase employment. The ability to develop social connections inside and external to the firm are skills that allow the management of a greater number of employees.

This study provides important insights into how firms in developing countries move beyond self-employment using the capabilities and resources available. We find that there is more than one avenue to growth and it is somewhat dependent on entry motives. For entrepreneurs seeking opportunity, innovation is an intervening step in the process. For necessity-motivated entrepreneurs, we further delineate the resourcefulness construct and its enhancement of firm growth. While there are important, cultural and institutional differences within country as well, we provide a cross-country study that establishes generalizable results that we hope will provide further avenues for research in the development entrepreneurship area (McMullen, 2011).

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Figure 1: Frequency of Employees for Microcredit Firms by Agency and Country.

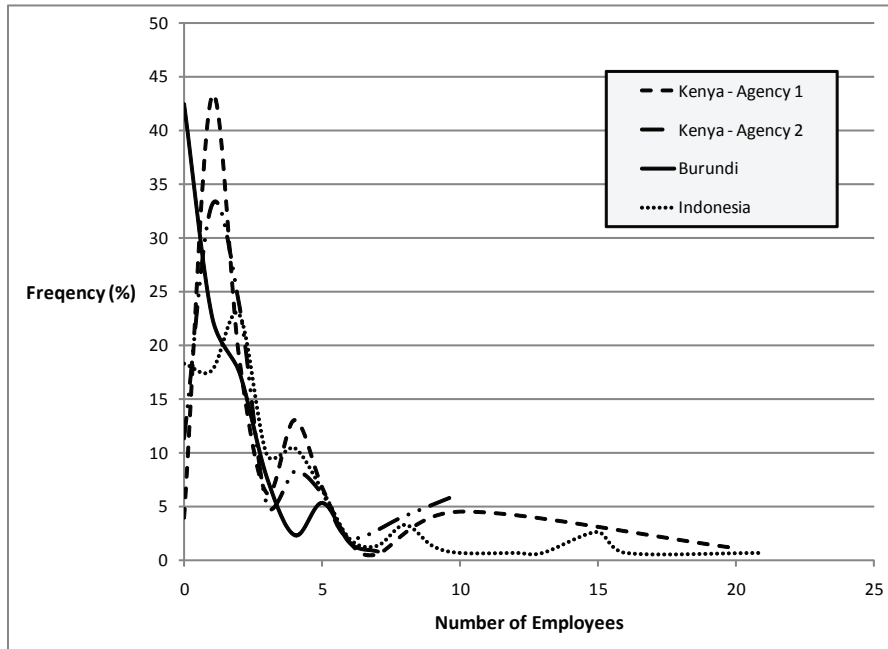


Figure 2: Proposed Model Predicting Firm Employment

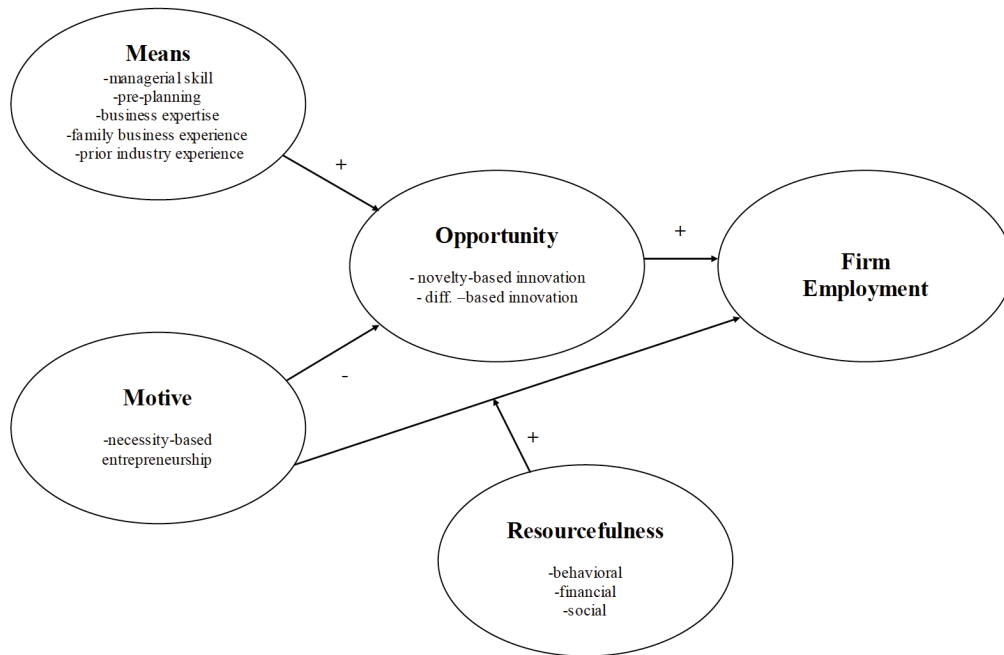


Table 1: Ordered Probit Models Predicting Innovation for Entrepreneurs in Three Developing Economies

Variable	Model							
	(1.1)		(1.2)		(1.3)		(1.4)	
Dependent variable	Total Innovation		Total Innovation		Innovation-Differentiation		Innovation-Novelty	
<i>Industry controls</i>								
ind. agriculture	-0.158	(0.200)	-0.359	(0.304)	-0.543	(0.287) +	0.063	(0.137)
ind. manuf.	0.001	(0.080)	-0.083	(0.210)	-0.064	(0.208)	-0.116	(0.211)
ind. wholesale	-0.059	(0.542)	-0.016	(0.444)	-0.234	(0.617)	0.185	(0.233)
ind. retail	-0.064	(0.115)	-0.072	(0.304)	-0.124	(0.311)	0.005	(0.152)
ind. hotel & restaur.	0.150	(0.103)	0.160	(0.258)	0.067	(0.265)	0.187	(0.135)
ind. transport	0.308	(0.180) †	0.347	(0.415)	0.080	(0.169)	0.423	(0.493)
ind. rental	-0.019	(0.082)	0.004	(0.142)	0.235	(0.157)	-0.297	(0.165) †
ind. edu & health	0.308	(0.233)	0.083	(0.413)	0.005	(0.352)	0.165	(0.285)
density	-0.034	(0.030)	-0.042	(0.034)	-0.035	(0.025)	-0.028	(0.027)
density squared/100	0.038	(0.037)	0.047	(0.051)	0.049	(0.038)	0.017	(0.037)
<i>Social network controls</i>								
weak ties	-0.047	(0.065)	-0.029	(0.077)	0.150	(0.053) **	-0.202	(0.016) ***
strong ties	-0.098	(0.065)	-0.111	(0.065) †	-0.314	(0.212)	0.079	(0.048) †
directed ties - discourse	0.107	(0.223)	0.219	(0.077) **	0.207	(0.097) *	0.248	(0.059) ***
directed ties - mimetic	0.046	(0.167)	0.094	(0.075)	-0.005	(0.113)	0.166	(0.082) *
weak ties - lending group	-0.024	(0.124)	-0.013	(0.112)	-0.082	(0.151)	0.136	(0.022) ***
network diversity	0.390	(0.173) *	0.130	(0.213)	0.223	(0.208)	0.062	(0.199)
<i>Business controls</i>								
business age	-0.017	(0.022)	-0.011	(0.013)	-0.013	(0.013)	-0.012	(0.015)
registered	-0.038	(0.220)	-0.131	(0.243)	-0.072	(0.333)	-0.047	(0.141)
<i>Individual controls</i>								
education	0.079	(0.038) *	0.066	(0.023) **	0.060	(0.015) ***	0.046	(0.020) *
age	-0.003	(0.010)	-0.001	(0.008)	0.000	(0.010)	-0.006	(0.001) ***
<i>Mears</i>								
managerial skill			0.270	(0.051) ***	0.291	(0.094) **	0.091	(0.068)
pre-planning			0.221	(0.062) ***	0.337	(0.129) **	0.000	(0.031)
business expertise			0.318	(0.102) **	0.320	(0.042) ***	0.182	(0.116)
family bus. experience			-0.221	(0.111) *	-0.390	(0.092) ***	0.101	(0.052) *
prior ind. experience			-0.075	(0.103)	-0.048	(0.157)	-0.094	(0.061)
<i>Motive</i>								
necessity-based ent.			-0.544	(0.239) *	-0.736	(0.246) **	-0.154	(0.273)
<i>Resourcefulness</i>								
resourcefulness - behavioral (RB)			-0.081	(0.052)	-0.048	(0.030)	-0.081	(0.046) †
resourcefulness - financial (RF)			0.139	(0.052) **	0.170	(0.032) ***	0.050	(0.059)
resourcefulness - social (RS)			0.035	(0.083)	0.045	(0.095)	0.010	(0.056)
<i>Goodness-of-fit</i>								
Log likelihood	-1783.59		-1669.89		-1446.02		-1283.84	
n parameters	20		29		29		29	

Case reported n = 560. Other services (ISIC 2 digit 93) was the omitted industry category

Unstandardized estimates reported along with robust standard errors in parentheses. Standard errors adjusted for 3 clusters by country code

† p<.10; * p<.05; ** p<.01; *** p<.001

Table 2: Generalized Linear Model with ML Estimates and Poisson Distribution Predicting Number of Employees

Variable	Model					
	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)
# Employees	# Employees	# Employees	# Employees	# Employees	# Employees	# Employees
<i>Dependent variable</i>						
<i>Industry controls</i>						
industry dummies not shown						
density	0.010 (0.004) *	0.002 (0.002)	-0.001 (0.006)	0.000 (0.006)	-0.001 (0.006)	-0.001 (0.005)
density squared/100	0.022 (0.001) ***	0.032 (0.009) ***	0.034 (0.016) *	0.032 (0.016) *	0.033 (0.015) *	0.032 (0.015) *
<i>Social network controls</i>						
weak ties	-0.107 (0.164)	-0.061 (0.185)	-0.065 (0.176)	-0.058 (0.176)	-0.069 (0.185)	-0.055 (0.175)
strong ties	-0.049 (0.072)	-0.029 (0.094)	-0.019 (0.062)	-0.023 (0.069)	-0.012 (0.045)	-0.022 (0.065)
directed ties - discourse	0.379 (0.060) ***	0.309 (0.053) ***	0.342 (0.059) ***	0.341 (0.054) ***	0.342 (0.054) ***	0.349 (0.070) ***
directed ties - mimetic	0.023 (0.090)	0.058 (0.080)	0.054 (0.070)	0.069 (0.067)	0.062 (0.061)	0.061 (0.074)
weak ties - lending group	-0.285 (0.133) *	-0.204 (0.177)	-0.226 (0.161)	-0.263 (0.167)	-0.241 (0.145) †	-0.260 (0.164)
network diversity	0.139 (0.233)	0.076 (0.243)	0.050 (0.234)	0.080 (0.204)	0.054 (0.222)	0.060 (0.227)
<i>Business controls</i>						
business age	0.021 (0.005) ***	0.016 (0.006) **	0.020 (0.008) *	0.021 (0.008) **	0.020 (0.008) *	0.020 (0.008) *
registered	0.108 (0.110)	0.105 (0.150)	0.147 (0.115)	0.120 (0.107)	0.147 (0.111)	0.157 (0.105)
<i>Individual controls</i>						
education	0.015 (0.006) *	0.014 (0.007) †	0.006 (0.013)	0.007 (0.014)	0.006 (0.012)	0.006 (0.014)
age	0.005 (0.004)	0.003 (0.004)	0.005 (0.007)	0.004 (0.007)	0.005 (0.007)	0.005 (0.006)
<i>Mears</i>						
managerial skill		-0.014 (0.083)	-0.067 (0.041) †	-0.072 (0.035) *	-0.069 (0.050)	-0.072 (0.049)
pre-planning		-0.119 (0.075)	-0.125 (0.101)	-0.132 (0.095)	-0.124 (0.100)	0.119 (0.102)
business expense		0.200 (0.074) **	0.172 (0.054) ***	0.159 (0.057) **	0.173 (0.050) ***	0.173 (0.047) ***
family bus. experience		-0.083 (0.097)	-0.016 (0.114)	-0.011 (0.113)	-0.018 (0.115)	-0.012 (0.113)
prior ind. experience		0.203 (0.115) †	0.199 (0.131)	0.192 (0.138)	0.182 (0.145)	0.192 (0.134)
<i>Motive</i>						
necessity-based ent.		-0.068 (0.252)	0.129 (0.253)	0.143 (0.259)	0.138 (0.253)	0.154 (0.282)
<i>Opportunity</i>						
innovation - novelty			-0.019 (0.019)	-0.015 (0.019)	-0.019 (0.019)	-0.018 (0.019)
innovation - differentiation			0.042 (0.005) ***	0.039 (0.004) ***	0.043 (0.008) **	0.045 (0.004) ***
<i>Resourcefulness</i>						
resourcefulness - behavioral (RB)			-0.058 (0.021) ***	-0.099 (0.027) ***	-0.057 (0.021) **	-0.054 (0.022) *
resourcefulness - financial (RF)			0.046 (0.040) *	0.039 (0.042)	0.017 (0.060)	0.041 (0.039)
resourcefulness - social (RS)			0.066 (0.029) ***	0.079 (0.026) **	0.068 (0.034) *	0.041 (0.052)
<i>Interactions</i>						
necessity-based ent. x RB				0.076 (0.023) ***		
necessity-based ent. x RF					0.101 (0.210)	0.156 (0.028) ***
necessity-based ent. x RS						
Constant	0.502 (0.240) *	-0.519 (0.652)	-0.904 (0.306) **	-1.352 (0.296) ***	-0.914 (0.316) **	-0.929 (0.413) *
<i>Goodness-of-fit</i>						
Pseudo Log likelihood	-1201.16	-1146.11	-1095.01	-1090.61	-1094.15	-1091.72
Deviance	1206.32	1134.56	1061.06	1052.27	1059.35	1054.49
AIC	4.55	4.49	4.41	4.40	4.41	4.40
n parameters	20	26	31	32	32	32

Case reported n = 511. Unstandardized estimates reported along with robust standard errors in parentheses. Standard errors adjusted for 3 clusters by country code
 Other services (ISIC 2 digit 93) was the omitted industry category
 † p<.10; * p<.05; ** p<.01; *** p<.001