APPLIED PSYCHOLOGY

APPLIED PSYCHOLOGY: AN INTERNATIONAL REVIEW, 2016, *65* (1), 99–131
doi: 10.1111/apps.12033

Unpacking the Personal Initiative–Performance Relationship: A Multi-Group Analysis of Innovation by Ugandan Rural and Urban Entrepreneurs

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This article considers determinants of innovative performance of entrepreneurs in developing countries. Innovation is viewed from a personal initiative perspective. We distinguish two mechanisms through which entrepreneurs who show personal initiative are innovative. The first mechanism is business planning. The second mechanism is the acquisition of resources that can be accessed through a social network of relations. We argue that the two mechanisms depend on the context of innovation. Planning will be more beneficial in more dynamic environments. In dynamic and individualistic-oriented environments it will be more beneficial to actively develop networks. In more static, collectivistic-oriented environments personal initiative will be less beneficial. The model was tested using a sizable survey of 283 rural and 290 urban entrepreneurs in Uganda, a country located in East Africa.

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We are grateful to all our colleagues and assistants who helped us with the data collection. Michael Frese is grateful for a travel grant from the Deutscher Akademischer Austausch Dienst (DAAD; A/07/26080), and a grant from the MOE-National University of Singapore (R-317-000-084-133). For their constructive and insightful criticisms, we thank the editor and three anonymous reviewers of this journal.

INTRODUCTION

This article considers determinants of innovative performance of entrepreneurs in developing countries. In recent years a growing consensus has emerged among scholars that entrepreneurship is best defined as an activity that involves the processes of discovery, evaluation, exploitation of opportunities, and the set of individuals who discover, evaluate, and exploit them (Shane & Venkataraman, 2000). Innovation is an inherent aspect of entrepreneurship, although not all entrepreneurship is necessarily innovative entrepreneurship (Stewart, Carland, Watson & Sweo, 2003). Innovation can take different forms as is illustrated by the definition of the famous economist Schumpeter (1934, p. 65) who saw innovation as "new combinations"; these new combinations refer to the introduction of new or improved products, production techniques, and organisation structures; as well as the discovery of new markets and the use of new input factors. The focus is therefore on the introduction of new products and processes to the firm and the local market in a developing country, in our case Uganda. In African developing countries, technological innovation as the result of research and development efforts does not happen often. However, innovation is important, given that innovation brought about by entrepreneurs is one of the main forces that drive economic growth of societies (Szirmai, 2008) and of individual companies (Rosenbusch, Brinckmann, & Bausch, 2011). Although there is widespread agreement that innovative entrepreneurship is of major importance for developing countries, there is a paucity of research into this topic (Szirmai, Naudé, & Goedhuys, 2011), as pointed out by Audretsch, Keilbach, and Tamvada (2009, p. 3): "The literature on entrepreneurship and innovation however ignored developing countries for a long time."

Following the recommendation of Rank, Pace, and Frese (2004), innovation is viewed from a personal initiative perspective in this article. Personal initiative means to be self-starting, proactive, long-term oriented, willing and able to overcome barriers. These are all essential ingredients of innovation. To be innovative, an entrepreneur has to be proactive, that is, anticipate opportunities to introduce new products or processes, and needs to be actively gathering information and the resources required to implement the innovation. Quite often implementing ideas becomes bothersome, and to be successful the entrepreneur has to persist and actively overcome obstacles. The active approach implied by personal initiative has been shown by a number of researchers as one that leads to successful entrepreneurship in developing countries (Frese, Brantjes, & Hoorn, 2002; Krauss, Frese, Friedrich, & Unger, 2005; Hiemstra, van der Kooy, & Frese, 2006; Frese, Krauss, Keith, Escher, Grabarkiewicz, & Luneng, 2007). However, there have been hardly any studies on the relation between

personal initiative and innovative entrepreneurship, especially in a developing country context.[1]

Although scholars agree that personal initiative is linked to performance, it is not clear through what mechanisms personal initiative affects performance. Many studies link personal initiative to entrepreneurial success through the mechanism of planning. However, the effectiveness of planning in the context of entrepreneurship is a debatable issue (Chwolka & Raith, 2012; Brinckmann, Grichnik, & Kapsa, 2010; Rauch, Frese, & Sonnentag, 2000). Some scholars are skeptical about the value of planning, arguing that business planning is an activity primarily carried out to gain legitimacy (Karlsson & Honig, 2009). Others argue that planning inhibits creativity (Allinson, Chell, & Hayes, 2000), and that time spent on business planning results in lower returns than dedicating time to activities of acquiring resources and building the organisation (Bhidé, 2000). In contrast to scholars who view planning as detrimental to performance, other scholars argue that planning is beneficial because resources are used more effectively, decision speed is increased, and flexible actuation is supported (Delmar & Shane, 2003). Formal planning has also been argued to be important because it helps to set goals as well as ways to achieve those goals (Shane & Delmar, 2004). Similarly, Frese et al. (2007) argue that informal mental planning helps small business owners to be flexible when they are confronted with unexpected events.

The other mechanism that links personal initiative with performance is the acquisition of resources that can be accessed through a social network. Thompson (2005) argues that the social resource perspective provides a useful argument for the mechanisms through which proactive persons may get things done. He finds that proactive employees are more active network builders, and as a consequence have more success in their career. Proactive network building may especially be of importance to entrepreneurs since they rarely possess all the resources and capabilities necessary to start up a new venture or exploit an opportunity. Identifying and acquiring external resources is a vital process in entrepreneurship (Starr & MacMillan, 1990). The literature suggests that entrepreneurial success is increased by resources that are provided by social networks (see Hoang & Antoncic, 2003; Johannisson, 2002). However, relatively few researchers focus on proactively gaining access to social resources (Zhao, Frese, & Giardini, 2010).

The aim of this research is to further clarify the link between personal initiative and innovative performance. We argue that personal initiative

[1] There is a burgeoning literature on social entrepreneurship in developing countries (Mair & Martí, 2006). Although there are similarities with commercial entrepreneurship the differences dominate, especially concerning resource acquisition (Austin, Steverson, & Wei-Skillern, 2006).

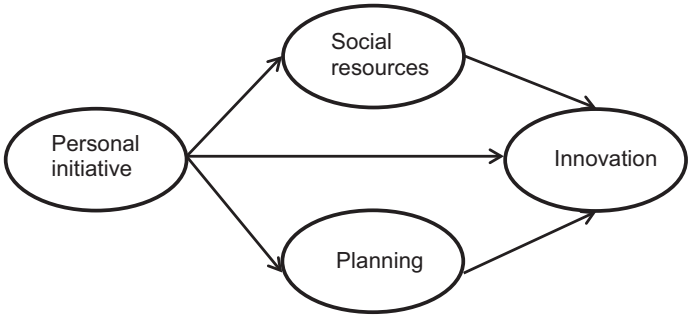

FIGURE 1. The theoretical model.

affects innovation through two mechanisms, which are planning and the acquisition of social resources. The major contribution of this paper is the presentation of evidence showing that these two mechanisms depend on the context of innovation. We make a distinction between a more static and collectivistic rural region and a dynamic individualistic urban region. Our argument is that planning will be more beneficial in dynamic environments. Although this seems counterintuitive since dynamism and uncertainty involves lack of knowledge, planning can be helpful especially in uncertain environments because it reduces distraction (Diefendorff & Lord, 2004), produces better knowledge of contingency conditions (Tripoli, 1998), and leads to more flexibility (Scott & Delmar, 2004). We also argue that in dynamic and individualistic environments it is more beneficial to actively develop networks, while in more static, collectivistic environments personal initiative will be less beneficial.

In the remainder of this article we discuss and test a conceptual framework based on the suggested concepts (see Figure 1 for the model). First of all, we discuss the relationship between personal initiative and an active approach on networking, planning, and innovation. Second, we focus on the access to social resources as an independent variable and discuss its relation with planning and innovation. Third, we focus on the relation between planning and innovation. Finally, an argument indicating that the model yields different results in rural and urban regions is presented. The model was tested using a sizable survey of rural and urban entrepreneurs in Uganda, a country located in East Africa. One of the major advantages of our data is that we were able to use direct measurements of access to social resources instead of indirect proxies such as network size (Aldrich & Reese, 1993; Brüderl & Preisendörfer, 1998; Greve & Salaff, 2003).

The Relation between Personal Initiative and Innovation

Innovation typically involves personal initiative which has been defined as being "self-starting, [showing] long-term pro-activity, and persistence in the face of barriers and obstacles that need to be overcome" (Frese, 2009, p. 444). Bateman and Crant (1993) conceptualise people with active behavior as individuals who are relatively unconstrained by situational forces and who effect environmental change.

Innovation often requires proactive creativity (Unsworth, 2001). Entrepreneurs need to actively explore the environment for opportunities, take action and be persistent to exploit opportunities. Entrepreneurial opportunities can be thought of as potentially profitable, but hitherto unexploited projects (Casson & Wadeson, 2007). This definition does not imply that opportunities are present in pre-packaged form simply waiting to be exploited (Shane, 2000). Opportunity identification is a creative process in which entrepreneurs need to combine information in novel ways. In addition to proactive creativity in the idea generation phase, personal initiative is also needed for the implementation of innovations. While recognising opportunities and generating innovative ideas is in itself not a simple task, implementing innovations is often even more challenging (West, 2002b). For instance, during our fieldwork, we came across one rural entrepreneur who produced small wooden stools. He was aware of a demand for larger chairs, and, as he told us, producing larger chairs would be more profitable. However, although there was a clear recognition of this opportunity, it was very difficult for the entrepreneur to implement this idea because the resources needed (extra wood, equipment, transportation, etc.) were difficult to acquire, as well as the know-how to produce the larger chairs.

Planning and Social Resources as Mediators of the Relation between Personal Initiative and Innovation

We argue that the relation between personal initiative and innovation is mediated by planning and social resources. Mediation implies that personal initiative on the one hand affects planning, which affects innovation, and on the other hand personal initiative affects social resources, which then affects innovation. In the remainder of this section we discuss the effect of personal initiative on planning and social resources. Then we discuss the effect of planning and social resources on innovation.

Personal Initiative, Planning, and Innovation. Personal initiative is related to elaborate and proactive planning (Rauch & Frese, 2000, 2007). Plans have been described as mental simulations of actions that are made to control actions (Frese, 2009). A plan is a bridge between goals (intention) and action (Miller, Galanter, & Pribram, 1960). Plans are steps towards impor-

tant goals to be achieved within a few days, weeks, months, or a year. The African entrepreneur that we mentioned above wants to produce comfortable chairs, instead of small wooden stools. For this entrepreneur to do so, he can make plans to acquire the wood needed, where and how to learn to craft the chairs, and so on.

Personal initiative relates to the desire to develop proactive plans not suggested by others. If people anticipate and prepare for future opportunities and threats to overcome barriers, they make better plans for future events (see Frese, Fay, Hilburger, Leng, & Tag, 1997). In a series of studies on African entrepreneurs in diverse countries, Frese and his collaborators found that personal initiative affects planning: the more personal initiative, the more elaborate and proactive plans are (Frese et al., 2007). Elaborate and proactive planning requires energy and direction which are related to feasibility and desirability. People have to know that they are able to achieve something, and that they want to achieve something before they invest in elaborate and proactive planning.

Innovativeness implies a high degree of creativity, a high degree of planning for implementation, and good leadership to deal with the chaos that surrounds innovativeness (Bledow, Frese, Anderson, Erez, & Farr, 2009; Mumford, Hunter, & Byrne, 2009). Action theory maintains that plans are crucial for transforming intention into action. Plans facilitate anticipation of changes in the action environment. It has been empirically shown that planning influences success (Frese et al., 2007). Plans help people to get started by mobilising extra effort (Gollwitzer, 1996), and by making people more persistent in the face of set-backs (Diefendorff & Lord, 2004). Planning reduces uncertainty and insecurity (Frese, 2009).

On the face of it, planning is often seen to be contradictory or an alternative to innovation—after all, planning is more methodical than creativity, and attention to detail may be negatively related to innovation (Miron, Erez, & Naveh, 2004). However, once one develops a wider view, it becomes apparent that attention to detail may have a positive function because implementing a creative idea requires attention to detail (West, 2002a), and indeed implementation of ideas is crucial for innovation. The same is true in the case of planning. Planning is needed to think through creative ideas and to put them into action. Hence, based on the above we expect that the relation between personal initiative and innovation is mediated by planning.

Personal Initiative, Social Resources, and Innovation. Entrepreneurship is action that takes place within a social context of personal and business relations (Jack & Anderson, 2002). During startups and in the subsequent phases of the entrepreneurial process, an entrepreneur seeks external resources such as equipment, space, money, advice, information, emotional

support, and reassurance (Birley, 1985; Zimmer & Aldrich, 1987; Starr & MacMillan, 1990).

Personal initiative is required for developing networks rich with social resources. It is important because one needs to be self-starting, proactive, and able to overcome barriers when pursuing new social contacts (Zhao et al., 2010). Janssen (2012) found that nascent entrepreneurs who showed more personal initiative also had more active "rational" network styles. Studying a sample of 256 undergraduates, Janssen found that personal initiative led to more planning of network formation, active collection of network information, and active monitoring of network contacts. In the same study it was also found that people who have more active network styles have better access to social resources (i.e. more people willing to help in various ways). Hence, proactive entrepreneurs would on average have more and better social resources. Zhao et al. (2010), in their study, found that proactive entrepreneurs were more prone to see the social network as an opportunity set, more active in approaching people and expanding a network.

The size and richness of the social resources that can be accessed via a social network explain variation in entrepreneurial success and entrepreneurial behavior (Butler & Hansen, 1991; Greve, 1995; Jack & Anderson, 2002). This is why social resources of entrepreneurs have been referred to as social capital (Westlund & Bolton, 2003).[2] Nascent entrepreneurs with better access to social resources such as information and social support are more likely to successfully go through the startup process (Davidsson & Honig, 2003), and will exhibit higher growth rates (Zhao & Aram, 1995; Zhao et al., 2010). High technology startups can enhance their performance by "constructing" efficient social networks (Baum, Calabrese, & Silverman, 2000).

Access to social resources will have a positive impact on innovation. First, social relations are channels for gaining access to information about new developments (Granovetter, 1973). Second, when the implementation of innovations is problematic, which happens often, network support helps entrepreneurs to be more persistent when encountering those set-backs (Brüderl & Preisendörfer, 1998). There is evidence that access to social resources helps innovation, although most evidence is indirect and restricted to research and development output of firms in developed countries. Biotechnology startups with a higher number of commercial ties have a higher innovation output (Shan, Walker, & Kogut, 1994). Biotechnology firms that are more centrally located in a network of alliances exhibit higher learning rates (Powell, Koput, & Smith-Doerr, 1996). The research and development

[2] Social capital has been celebrated as a unifying concept in sociology and economics; however, social capital has been criticised as well, since it has many different interpretations (see for review Adler & Kwon, 2002; Westlund & Bolton, 2003).

output (in terms of patents) of firms increases as a function of the number of alliances those firms have (Ahuja, 2000). While prior work has demonstrated that there is a relation between network structure and innovation, inadequate attention has been paid to the relation between the content of a network and innovation (Rodan & Galunic, 2004).

Based on the above we hypothesise that:

H1: Personal initiative is positively related to innovation.

H2a: The relation between personal initiative and innovation is mediated by planning.

H2b: The relation between personal initiative and innovation is mediated by social resources.

The Context of Personal Initiative and Innovation: Rural and Urban Regions

The model we discussed above does not incorporate the context of innovation. We distinguish between two different kinds of environment for African entrepreneurs, a rural and an urban environment. There are two related differentiations that appear in rural and urban regions. The first differentiation is of an environmental nature, while the second differentiation is of a cultural nature.

In African rural regions, agricultural activities are predominant, although the share of agricultural activities has diminished somewhat (Bryceson, 1996). African urban regions provide a more dynamic market environment for non-agricultural businesses (Bell & Albu, 1999). In African urban environments, preferences of customers are more rapidly changing, and are less predictable than in more static rural environments. Moreover, in African urban regions more entrepreneurs are active in industries characterised by rapidly changing technologies. Dynamic urban regions reflect conditions that according to discovery theory are a breeding ground for opportunities (Alvarez & Barney, 2007). Opportunities arise in dynamic environments because of exogenous shocks, such as technological changes, or changes in customers' preferences. In contrast, in static rural environments, opportunities are scarcer and harder to identify (Casson & Wadeson, 2007). Thus, in static environments there are less obvious opportunities to innovate compared to more volatile environments. That is why to innovate in static rural regions entrepreneurs need to put in more proactive effort. Opportunities are not exogenously given, but have to be created in an endogenous learning process. In this creation process, entrepreneurs' actions are the essential source of opportunities. Rural entrepreneurs cannot wait for exogenous shocks to create opportunities; they have to act (Alvarez & Barney, 2007).

Hence, rural entrepreneurs need to show more personal initiative to innovate than their urban counterparts. There are more active and compensating coping strategies needed to be innovative in the rural areas. We therefore hypothesise that:

> *H3*: In rural regions there will be a stronger relationship between personal initiative and innovation than in urban regions.

As expressed above, urbanites have to cope with a more dynamic environment. One important dimension of dynamism is unpredictability and the resulting uncertainty of decision makers (Davis, Eisenhardt, & Bingham, 2009). Uncertainty is a much more pressing issue in urban settings in comparison to rural settings. Uncertainty is reflected in a lack of knowledge about the effects of one's actions (Alvarez & Barney, 2007; Frese, 2009), which interrupts routine action (McMullen & Shepherd, 2006). One possible way to cope with uncertainty is planning, although the desirability of planning in uncertain environments is a debated issue. Proponents of planning argue that especially in dynamic environments planning will be beneficial (e.g. Delmar & Shane, 2003; Shane & Delmar, 2004; Frese, 2009). Other scholars argue that in dynamic environments more flexible strategies other than planning are required (Mintzberg & Waters, 1985; Alvarez & Barney, 2007). In a recent meta-analysis, Brinckmann et al. (2010, p. 36) found that planning is more beneficial to small firms than new firms. They doubted the benefits of planning in uncertain circumstances and we feel that this conclusion is unwarranted. There are many factors that distinguish new firms from small firms, for instance the maturity of business planning structures and procedures. A really fair test of the usefulness of planning would be to compare similar enterprises in uncertain and certain environments. In addition, there is direct evidence of the usefulness of planning in uncertain environments (van Gelderen, Frese, & Thurik, 2000; Delmar & Shane, 2003; Frese et al., 2007).

We argue that planning is an effective tool to manage uncertainty. Uncertainty can be managed by proactively preparing for it, and by creating back-up plans. Through planning, an entrepreneur searches for problem areas and opportunities before they occur. Planning provides an entrepreneur with a template that can be applied in various situations, which is especially helpful in uncertain environments because it helps entrepreneurs deal with the limited processing capacity of the human mind (Frese & Zapf, 1994). Planning also has motivational effects that help in uncertain environments because it facilitates goal-setting and persistency (Shane & Delmar, 2004). Although the usefulness of planning in unpredictable environments seems counterintuitive since uncertainty involves a lack of knowledge, planning can be helpful especially in uncertain environments. Planning reduces

distraction (Diefendorff & Lord, 2004), and it produces better knowledge of contingency conditions, time allocation to tasks, and a clearer focus on priorities (Tripoli, 1998).

H4: In rural regions there will be a weaker relationship between planning and innovation than in urban regions.

Rural regions are culturally less complex and more collectivistic than urban regions (Triandis, 1989; Hofstede, 2001). The rural region that we studied in this article, namely Mpigi District in Central Uganda, is mainly characterised by the "Baganda" culture, which emphasises inclusion and collectivity. In Africa there is a marked cultural contrast between rural and urban regions. In large African cities, such as the urban region that we studied, namely Kampala, the traditional collective African self-concept has been altered to a much more individualistic self-concept. This change is due to various reasons such as modernisation, and an increasing cultural complexity caused by growing population density and migration of different tribes into the main cities (Vaunne & Schoeneman, 1997).

The collectivism in the rural regions may make it less useful to show personal initiative to develop social networks. In collectivistic cultures people may often not have a choice of whom they relate to (Triandis, 1989). Persons in collective cultures are "born into" the network. Social networks in rural collective cultures are larger and more cohesive (Kashima, Yamaguchi, Kim, Choi, Gelfand, & Yuki, 1995), and consist predominantly of kinship relations, which are the base for reciprocity and solidarity (Sahlins, 1972). Hence, acquisition of social resources is more or less automatic, and proactive development of social networks will be less beneficial. Moreover, in collective cultures, a high degree of agency in the form of personal initiative with regard to social networks may actually backfire because such people will be seen as having grand ideas, who are subverting traditional norms and relationships (Kashima et al., 1995).

In contrast, primary ties in urban regions are often dispersed among multiple sparsely interconnected social networks that require more initiative to develop. Obtaining social resources in urban sparsely knit, ramifying network structures is not only a matter of obligations, as is predominantly the case in rural areas in Africa. Urban entrepreneurs need to be proactive to obtain social resources. They need to identify which potential contacts will somehow help to identify and realise future opportunities as well as be active in establishing and maintaining the relation.

The more dynamic the economy of an area (urban regions), the more it is necessary to actively develop networks. In contrast, the more conservative an area (rural regions) is, the less necessity and chance to change one's networks actively—there will be no positive function of a high degree of personal

initiative with regard to networks. These arguments lead to the following hypothesis:

H5: In urban regions there will be a stronger relationship between personal initiative and social networks than in rural regions.

METHOD

We collected data by means of a survey in May 2008 amongst Ugandan entrepreneurs. Entrepreneurial activity in Uganda is quite high. Over one in three adult Ugandans is engaged in some form of entrepreneurial activity. The entrepreneurship rates are high amongst men, the young part of the population (aged between 25 and 34 years), and the better educated and higher earners. The GEM reports 2003–11 indicate that although the Government of Uganda has made many positive strides towards encouraging entrepreneurship, in terms of international comparisons, Uganda is still weak in terms of physical infrastructure, commercial infrastructure, and research and development. The regulatory burden and administrative bureaucracy associated with entrepreneurship is perceived to be too high. The taxation structure is unfavorable for firms, especially for small and medium start-ups. The cost of capital and penetrating markets remains high, with formal lending interest rates close to 30 per cent. Financial support, commercial and professional support, and infrastructure is less accessible and is also highly priced.

Sample

There are no adequate sampling frames of entrepreneurs available in Uganda. We therefore employed a sampling procedure based on the Global Entrepreneurship Monitor (GEM) project approach for selecting respondents (see Walter, Balunywa, Rosa, Sserwanga, Barabas, & Namatovu, 2003, 2004, for more details on the GEM in Uganda). This sampling procedure has been tested, and one of the authors of this study had extensive experience working with the procedure since he was one of the principal investigators with the GEM study. For budgetary reasons, the sample area for this study was restricted to two districts in Central Uganda: Kampala, which is the capital city and leading commercial town of Uganda, and a rural area, namely Mpigi District.

The sample was selected following a number of steps. First, in each district, three parishes were randomly selected. In the next step local officials provided us with lists of households, indicating which households had one (or more) member(s) as an entrepreneur. The local officials had an accurate knowledge of the working activities of people in the area (around 750–1,000 people reside

in each area). From our experiences in the GEM studies in 2003/04 we were confident that the lists were fairly accurate (Walter et al., 2003, 2004).[3] The selection of households, and subsequently the respondents within the households, was carried out randomly. If there was more than one entrepreneur within one household, the adult entrepreneurial family members were numbered according to their age, assigning number one to the oldest and the highest number to the youngest household member. A respondent was then selected according to a random number chosen from a random number table: the second oldest person was selected if the random number chosen was a two, the fifth oldest if the random number was a five, etc.

Since in Uganda questionnaires cannot be mailed, faxed, or couriered to respondents without causing selection bias, given the limited availabilty of postal and communication services, the data had to be gathered via face-to-face interviews. The interviews were carried out by a team of 10 interviewers. All but one interviewer had extensive previous experience as an interviewer working for the Global Entrepreneurship Monitor projects. During the training, sampling procedures, translations of key terms in the questionnaires, and handling of respondents was stressed. The interviewers were finally field tested to assess their ability to handle the data collection before they embarked on the data collection exercise.

The data collection took place in the first two weeks of May 2008. In almost all cases the selected respondent was willing to participate in the study. In Kampala there were five refusals, while in Mpigi two people refused to participate. Hence, an unusually high response rate of about 99.3 per cent was reached. Each interview continued until the informant had completely described the issues. On average an interview took 45 minutes.

In total 737 entrepreneurs were interviewed. After an interview with a respondent, the interviewer would answer six questions about the interview and the respondent. Based on this information 40 observations were excluded: 17 observations because the interviewer seriously doubted the reliability of the answers provided by the respondent, and 23 observations because the interviewer indicated that the respondents had trouble understanding the questions. We also excluded 124 business owners who co-owned a business together with other people, since we were interested in the individual decision maker. In this group most entrepreneurs had one (53 cases) or two (36 cases) co-owners. Therefore during the data analysis, a data-set of 573 entrepreneurs was used, 283 entrepreneurs from the rural region and 290 entrepreneurs from the urban region.

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[3] Although local leaders are very knowledgeable about the activities of people in their area, using local leaders as a source may introduce some bias because of coverage errors in that the leader may not be aware of all entrepreneurial activity.

Measures

In this section we describe the construction of the variables that were used in the analysis. The items as well as summary statistics for those items are displayed in Table 1.

Innovation. To measure innovation we used a set of five dichotomous items that measured whether the entrepreneur had introduced or invested in new or improved products or processes. These items were adapted from the first South African Innovation Survey, so they were tested and validated in an African context (Oerlemans, Pretorius, Buys, & Rooks, 2003; Rooks, Oerlemans, Buys, & Pretorius, 2005). Two items of the set of five were removed because of measurement invariance. We used the remaining three items as indicators of innovation (see Table 1).

Innovation in the Ugandan context of small enterprises is obviously not a major research and development breakthrough. Often innovation is about the introduction of new products/services to the market or the firm. To get an impression of the face validity of our measure we asked entrepreneurs in rural and urban regions for examples of their innovations and investments. One rural entrepreneur who produced drums told us that he introduced the "Jembe" drum. This kind of drum was different from the usual drums because it used thread made from fish nets, unlike the old ones that used cow hide thread. These drums are very marketable with tourists. In addition, the entrepreneur also introduced drums that have stands. Another rural entrepreneur produced stools, and told us that he invested in a material to produce a new stool design. An urban entrepreneur told us that he was a web-designer, and that he saw the need for web-marketing, so he introduced a new (to the market) web-marketing method using social media. Another urban entrepreneur invested in machinery to be able to produce better printing services.

To test the construct validity of our innovation measure, we conducted a separate validation study. Using the same innovation questions we interviewed 25 Ugandan entrepreneurs; for every entrepreneur we also interviewed a contact of the entrepreneur to get independent information about the innovativeness of this entrepreneur. On average there was high agreement between the scores of the entrepreneur and his or her acquaintance. The average innovation score of the entrepreneur had a high correlation with the estimation by the acquaintance ($r = 0.71$; $p < .001$). These findings speak for the construct validity of our innovation measure.

Planning. In the questionnaire a list of gestation activities was included, that is, behaviors that entrepreneurs exhibit when starting up a business, that were developed by Davidsson and Honig (2003). Davidsson and Honig

TABLE 1
Means, Standard Deviations, Skewness, Kurtosis, and Standardised Factor Loadings for the Observed Variables Divided into the Rural and Urban Samples

		Urban sample					*Rural sample*				
Variable		*Mean*	SD	*Skew.*	*Kurt*	*Fact.*	*Mean*	SD	*Skew.*	*Kurt.*	*Fact.*
Innovation											
i1	In the last three years, has your business introduced products or services that were new or improved to the market?	0.41	0.49	0.37	–1.87	0.66	0.43	.50	0.28	–1.92	0.43
i2	In the last three years, have you invested resources to improve your (business) machinery or tools?	0.37	0.48	0.53	–1.71	0.93	0.57	.50	–0.26	–1.93	0.78
i3	In the last three years, have you invested resources to improve your (business) premises?	0.45	0.50	0.21	–1.95	0.84	0.54	.50	–0.18	–1.97	0.80
Planning											
p1	Have you developed projected financial statements (such as income and cash flow statements)?	0.23	0.42	1.25	–0.43	0.57	0.51	.50	–0.02	–2.00	0.40
p2	Do you have an informal plan for internal use?	0.35	0.48	0.61	–1.62	0.89	0.54	.50	–0.16	–1.97	0.97
p3	Do you have a business plan?	0.35	0.48	0.64	–1.59	0.99	0.58	.50	–0.32	–1.87	0.92
Social resources											
s1	# contacts who will offer financial support	2.26	2.09	0.77	0.07	0.79	2.98	2.49	0.89	0.96	0.73
s2	# contacts who can introduce business owner to other persons	2.74	1.97	0.48	–0.19	0.93	3.55	2.40	0.59	1.02	0.78
s3	# contacts who will offer social / emotional support	2.83	1.90	0.39	–0.30	0.90	4.34	2.14	0.59	1.52	0.85
Personal initiative											
a1	You actively attack problems	3.74	0.90	–0.85	0.31	0.66	3.46	3.46	–0.78	–0.59	0.62
a2	Whenever there is a chance to get actively involved. you take it.	3.72	0.93	–0.98	0.84	0.50	3.99	3.99	–0.72	0.58	0.19
.a3	You take initiative immediately even when others don't	3.67	0.93	–0.65	0.23	0.48	3.63	3.63	–0.66	–0.41	0.33

Additional measures	M	SD	*Min-max*	M	SD	|t|[a]	df
Competitive intensity	3.82	0.99	(1 = low–5 = high)	3.80	1.12	0.23	730
Consumer loyalty	3.02	1.27	(1 = high–5 = low)	2.83	1.18	2.06*	730
Flexibility	4.27	0.53	(1 = high–5 = low)	4.52	0.57	6.04*	730
Conditions of life are excellent	5.46	1.39	(1 = disagr.–7 = agree)	4.21	1.62	11.18	734
Social network size	3.09	1.96	(0 = min.–15 = max.)	4.82	2.28	11.04*	735
Social network density	0.13	0.27	(0 = min–1 = max.)	0.31	0.31	8.07*	735
Horizontal individualism	0.28	0.63		–0.26	1.03	8.22*	734
Vertical individualism	0.12	0.54		–0.09	0.68	2.79	734
Horizontal collectivism	–0.07	0.53		0.11	0.49	7.40	734
Vertical collectivism	0.00	0.74		0.03	0.75	1.02	734

[a] Independent sample *t*-test of difference of mean rural and urban sample, * $p < .05$.

originally identified 20 gestation behaviors. However, in the context of a developing country many of these gestation behaviors, for instance applying for a patent, were not really applicable. We selected four items that reflect planning behavior: Two items on the development of a business plan and projected financial statement, and one item on the use of an informal plan for internal purposes (one item had to be dropped because of measurement variance). Hence we use three items as indicators of planning as can be seen in Table 1.

Social Resources. To obtain network data we followed a standard survey method of collecting ego-centered network data (Marsden, 1990). We used name-generators and interpreters to measure different aspects of the network of entrepreneurs. In a name-generator, respondents are asked to mention contacts, while in the name-interpreter respondents are asked about characteristics of the respective contacts. Multiple name-generators are more reliable than single name-generators when it comes to measuring the size and composition of the network (Marin & Hampton, 2007). Two of the three name-generators were intended to measure business contacts, while one of the three name-generators was intended to measure personal contacts.

In the first name-generator we asked about personal contacts with the following question: "From time to time, most people discuss important personal matters with other people. Looking back over the last six months, who are the people with whom you discussed an important personal matter?" The second question was about contacts with whom business matters were discussed: "From time to time, entrepreneurs seek advice on important business matters. Looking back over the last six months, who are the people with whom you discussed an important business matter?" The third question was about business contacts that could provide material support: "If you were seeking material support for your business from other entrepreneurs. Looking back over the last six months, who are those entrepreneurs?" For every name-generator question the respondent was asked to list names. The maximum number of names was five. Limiting the number of alters is a standard way to cope with time constraints while maintaining measurement precision and decreasing measurement bias (Burt, 1984, p. 315).

There were a number of questions about each person cited on the name-generator. One important question was a list of possible resources that could be obtained from the cited contact. Using this information we constructed three variables that were intended to measure the access to critical entrepreneurial resources. The first was *financial support*, the total number of contacts in the network an entrepreneur can obtain financial support from. The second variable was *social support* (the total number of people in the network who provide social support). Social support is crucial for human beings; it has been found to be related to "coping success" across a variety of

population groups, settings, and life problems (Barrera, 1986; Uehara, 1990). Emotional support is an important asset for entrepreneurs becasue often entrepreneurs starting up a business will be confronted with serious set-backs (Brüderl & Preisendörfer, 1998). The third variable, *reference support*, was the number of contacts in the network who are willing and able to introduce the entrepreneur to resourceful others outside the ego-network.

Personal Initiative. We used three items from a scale developed by Frese et al. (1997). Respondents could answer using a 5-point Likert scale, with 1 = *Does not apply at all* to 5 = *Applies completely* (see Table 1 for the items).

Additional Measures. In the theoretical section, we assumed that rural and urban regions in Africa differ in two related aspects. African urban regions are a more dynamic market environment. In African urban environments, preferences of customers are more rapidly changing and less predictable than in more static rural environments. We also assumed that rural regions are culturally less complex and more collectivistic than urban regions. To verify the differences between regions we used additional measures. In the questionnaire we asked questions about competitive pressure (items: "Customer loyalty is low in your kind of business", and "Competitive intensity is high in your kind of business"), well-being and needs of the entrepreneur (items: "The conditions of my life are excellent", and "You want to have greater flexibility for your personal and family life"), and social networks in the questionnaire (contacts and relationships between contacts).

To check whether rural and urban areas differ in individualism and collectivism, we used a measurement scale devised by Triandis and Gelfand (1998). They suggest that there are different kinds of individualism and collectivism, and distinguish between emphases on horizontal and vertical social relationships. Generally speaking, horizontal patterns assume that one individual is more or less like every other individual. By contrast, vertical patterns consist of hierarchies, and each individual is different from other individuals. The ways in which these relative emphases combine with individualism and collectivism produce four distinct patterns: horizontal individualism (HI), example item: "I'd rather depend on myself than another"; vertical individualism (VI), example item: "Winning is everything"; horizontal collectivism (HC), example item: "I feel good when I cooperate with others"; and vertical collectivism (VC), example item: "Parents and children must stay together as much as possible." We tested the scale employing a confirmatory factor analysis. Three items had low factor loadings close to zero and were removed. Two items were removed because of the measurement variance between the two groups (Drasgow, 1984). The resulting measurement model fitted the data well ($\chi^2(58) = 120.581$, $p < .001$; GFI = .969; RMSEA = 0.38; CFI = 0.957).

TABLE 2
Correlations between Measured Variables (Correlations Above the Diagonal are from the Rural Sample, Correlations below the Diagonal are from the Urban Sample)

	Social resources	*Planning*	*Innovation*	*Personal initiative*
Social resources		.21**	.17*	–.27*
Planning	.58***		.45***	.14*
Innovation	.57***	.71***		.56**
Personal initiative	.33***	.34***	.30**	

Note: * $p < .01$; ** $p < .05$; *** $p < .001$.

ANALYSES AND RESULTS

Statistical Analysis

The correlations between the measured variables are displayed in Table 2. In Table 2 correlations above the diagonal are from the rural sample, and correlations below the diagonal are from the urban sample.

To estimate the model, we made use of structural equation modeling (SEM). SEM addresses the issue of measurement error, and simultaneously estimates a system of structural equations, which makes it a natural choice for models including mediating variables. Moreover, current SEM programs such as AMOS are well suited for multi-group analysis. We used the estimation procedure in AMOS 18 (Arbuckle, 2009) to construct a structural equation model. In line with the work of Anderson and Gerbing (1988), the measurement and structural models are estimated sequentially to reduce interpretational confounding and to limit complexity.

Goodness of Fit. To assess model fit we used multiple goodness of fit criteria. Our total sample size was moderately large ($n = 573$), which would lead to a high significance of our model even when it is only minimally false (Bentler & Bonett, 1980). Therefore to assess the goodness of fit for our model we used five additional indicators of goodness of fit (TLI, CFI, GFI, RMSEA, and SMRM). Hu and Bentler (1999) recommended that practitioners use cutoff values close to .95 for indices such as the TLI, CFI, and GFI in combination with a value close to or lower than .09 for SRMR and values smaller than .06 for the RMSEA.

Maximum Likelihood Estimation. The two dependent variables innovation and planning were measured using categorical items which violates the assumption of multivariate normality (Finney & DiStefano, 2006). To deal

with non-normal data, Browne (1984) developed an asymptotically distribution-free (ADF) estimator, but a very large sample size is needed to obtain reliable weight matrices. Hence, we relied on maximum likelihood estimation, which is known to be quite robust against the violation of the normality assumption (cf. Boomsma & Hoogland, 2001; Curran, West, & Finch, 1996). Boomsma and Hoogland (2001) conclude that for large models, under a variety of non-normal conditions maximum likelihood estimators have relatively good statistical properties compared to other estimators. Simulation studies suggest that under conditions of severe non-normality, ML parameter estimates are still consistent but not necessarily efficient (Curran et al., 1996). To check the robustness of our results we used aggregate scores for innovation and planning (which had dichotomous indicators), and got similar results. In addition we used the bootstrap method as well for estimating standard errors, and the results of this analysis were similar to our earlier findings.

Missing Values. Missing values were hardly an issue. Most observed variables had only two missing values; the years of education registered the most missing values (in total 12 cases). Missing values were imputed using a maximum likelihood algorithm as recommended by Schafer and Graham (2002).

Discriminant Validity. To establish discriminant validity of our measures we used a method proposed by Anderson and Gerbing (1988), who proposed that "Discriminant validity can be assessed for two estimated constructs by constraining the estimated correlation parameter . . . between them to 1.0 and then performing a chi-square difference test" (p. 416). Using this procedure, comparisons of all constructs in pairs were made and in all of those cases the fit of the model dramatically worsened. Hence, we concluded that our measures were sufficiently different from each other for them to be used separately.

Measurement Invariance. An important measurement issue is that to compare groups of individuals, one must assume that the numerical values under consideration are on the same measurement scale (Drasgow, 1984; Vandenberg & Lance, 2000). In other words for this study the tests should exhibit "measurement invariance" across the rural and urban groups. If the scores are not comparable (i.e. on the same measurement scale) across groups, then differences in the pattern of correlations of the measurements are potentially artifactual, and may be substantially misleading (Reise, Widaman, & Pugh, 1993). We checked measurement variance by testing for factorial invariance (i.e. testing whether factor loadings are equal across groups). We compared a baseline measurement model where all the

factor loadings were allowed to vary between the rural and urban sample with a measurement model where equality restrictions were placed on the factor loadings. We did not restrict factor variances and co-variances because they were expected to be sample specific, whereas factor loadings should be equal (MacCallum & Tucker, 1991; Reise et al., 1993). A chi-square test showed that measurement variance was present (the restricted model resulted in a significant increase in chi-square). A search for variant items (those items with significant different factor loadings in the sample) resulted in the removal of five items. The resulting measurement model (the model that is reported here) was invariant across groups.

Common Method Bias. We made use of self-reported data, which has the well-known potential for measurement error because of common method variance. We took measures to reduce method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) by ensuring that in the questionnaire we counterbalanced the question order. We also used items and scales that were validated in earlier research in African settings. Given the lack of archival data in Uganda and the setting of the interviews, it was, unfortunately, not feasible to collect information from archival sources.

Using post-hoc procedures we attempted to detect whether common method bias was present. First we attempted to fit a model where each item was not only an indicator of an unmeasured latent method factor, but also its substantive trait. As is often the case in practical applications (Podsakoff et al., 2003, p. 891), this model could not be estimated. Alternatively we performed the widely used Harman's single factor test. In this test each item was treated as an indicator of an unmeasured latent method factor. This model was then compared to our measurement model. The fit of the one latent method model was much worse, $\chi^2(108) = 1602.201$, than our regular measurement model, $\chi^2(96) = 267.709$. The chi-square difference was highly significant ($\Delta\chi^2(12) = 1334.492$; $p = .000$). This suggested that there was not one single common method factor that produced correlations in our data. However, considering Harman's single factor test to be insensitive (Podsakoff et al., 2003, p. 889), we cannot conclusively rule out common method bias based on this result.

Comparing the Rural and Urban Regions. We presumed that rural and urban regions differed in two respects, namely, dynamism of the environment and collectivism. To verify whether the regions indeed differed, a comparison of the regions using the additional information gathered in the interviews and post-hoc interviews was carried out. Descriptive statistics of the variables and *t*-test of the difference in mean between the rural and urban samples are shown in Table 1.

Most enterprises in the rural region are agricultural and manufacturing enterprises. The manufacturing enterprises often produce furniture and metal fences. The rural region, Mpigi, is well known for the production of drums. The majority of the urban enterprises in Kampala are consumer and business services. These can be businesses such as saloons, but also web-design and video production studios.

As can be seen in Table 1, the urban regions registered a significantly lower loyalty of customers. This validates the assumption that urban regions are more dynamic. However, although the type of industries in the two regions differed, the experienced intensity of competition was about the same.

Entrepreneurs in rural regions indicated that they were significantly more constrained / less flexible in their actions. They also reported that their well-being was lower than that of their urban counterparts. Social networks of rural entrepreneurs are larger than their urban counterparts. The networks of rural entrepreneurs were found to be dense, which meant that in most cases a contact of an entrepreneur would be known to the entrepreneur (in rural regions). The number of people who depended on the entrepreneur was significantly higher in rural regions. We also collected information on cultural beliefs of entrepreneurs (using a measurement scale devised by Triandis & Gelfand, 1998), and found that, consistent with prior research, the urban sample was characterised by a more individualistic culture whereas the rural sample was characterised by a more collectivistic culture.

Hypotheses Testing

Our theoretical model specifies that personal initiative affects innovation directly and indirectly. Moreover, we argued that the strength of the relations between personal initiative and innovation, planning and innovation, and personal initiative and social resources will be context dependent.

The model as depicted in Figure 1 produced an improper solution, since one of the error variances was negative (error in measurement of planning). One possible reason that such a so-called Heywood case occurs is a structural misspecification (Bollen, 1989). In our case specifying a path from social resources to planning was needed to achieve a proper solution (see Figure 2). Theoretically, it seems reasonable that social resources affect planning. Social relations provide vicarious experiences and direct feedback. On the other hand it can also be argued that planning leads to more social resources. Individuals who plan better will by and large be more successful in selecting more resourceful partners. Hence, although we specified a model with a path from social resources to planning, we are not certain about the causality of the relation between social resources and planning.

We hypothesised that three relationships would be context dependent. We followed a standard procedure to test whether relationships differ between

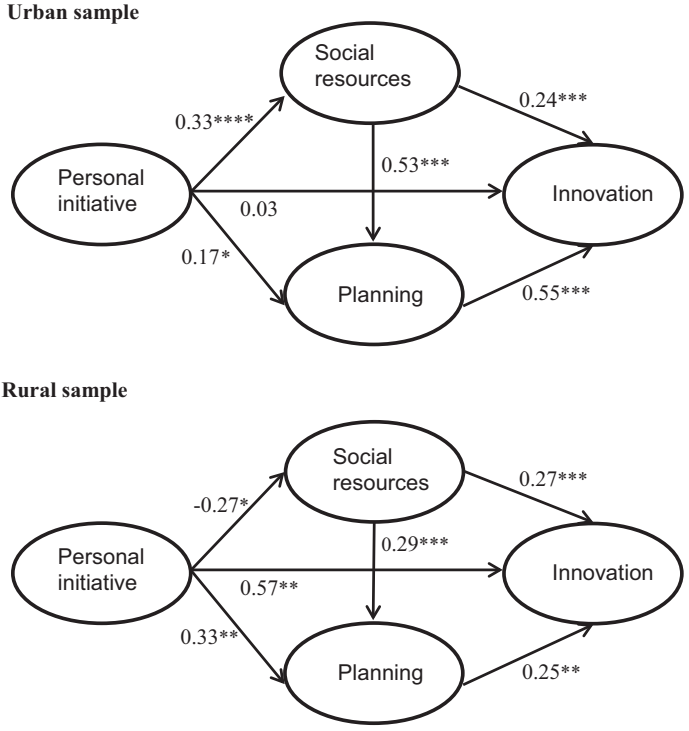

FIGURE 2. Path coefficients for the urban and rural sample ($\chi^2(97) = 267.730$, $p < .001$; RMSEA = 0.056; SRMR = 0.083; GFI = 0.928; CFI = 0.946; TLI = 0.927).

the two samples (Hermstad, Swan, Kegler, Barnette, & Glanz, 2010; Druley & Townsend, 1998). We initially estimated a model in which all path estimates were constrained to be equal between the rural and urban samples. Then we removed constraints sequentially, one parameter at a time. We used the likelihood ratio test to assess whether removing a constraint led to a significant improvement of the model fit. If the model fit did not improve, the parameter was constrained to be equal again. We specified a model in which all parameter estimates were equivalent between the rural and urban samples. This model did fit the data, although the fit was moderate ($\chi^2(102) = 326.236$; $p < .001$; RMSEA = 0.062; SRMS = 0.149, GFI = 0.911; CFI = 0.929). We then released the constraints in the order of the hypotheses. In all cases except the path between social resources and innovation, releasing the constraint of equality led to model improvement (for the detailed results see Table 3). The resulting model produced an acceptable fit to the data ($\chi^2(97) = 267.730$; $p < .001$; RMSEA = 0.056; SRMR = 0.083; GFI = 0.928; CFI = 0.946).

TABLE 3
Estimated Path Coefficient, Likelihood Ratio Tests of Difference between Urban and Rural Samples, and Goodness of Fit Statistics (Standardised Coefficients in Parentheses)

	Total sample		*Urban sample*		*Rural sample*		*Significance difference estimates*	
	Path Coef.	p-*value*	*Path Coef.*	p-*value*	*PathCoef.*	p-*value*		
Innovation ← Personal initiative	0.157 (0.186)	0.002	0.029 (0.030)	0.642	0.601 (0.567)	0.001	9.156	0.002
Innovation ← Planning	0.397 (0.444)	0.000	0.490 (0.553)	0.000	0.215 (0.246)	0.004	13.129	0.000
Social resources ← Personal initiative	0.439 (.137)	0.052	1.270 (0.329)	0.000	−1.302 (−0.269)	0.016	26.096	0.000
Planning ← Personal initiative	0.236 (0.250)	0.000	0.179 (0.168)	0.024	0.405 (0.334)	0.008	3.212	0.073
Innovation ← Social resources	0.046 (0.176)	0.000	0.058 (0.240)	0.000	0.058 (0.266)	0.000	not significant	
Planning ← Social resources	0.112 (0.382)	0.000	0.145 (0.528)	0.000	0.074 (0.293)	0.000	6.913	0.009
No. of observations	573		290		283			
Chi-square	$\chi^2(102) = 326.236$, $p < .001$		$\chi^2(97) = 267.730$, $p < .001$					
RMSEA	0.062		0.056					
SRMR	0.149		0.083					
GFI	0.911		0.928					
CFI	0.929		0.946					
TLI	0.908		0.927					

In Table 3, unstandardised and standardised path coefficients can be found. Standardisation avoids under-identifiability due to arbitrariness of scale, and eases the interpretation of results (McDonald & Ho, 2002). The first hypothesis (H1) states that personal initiative is positively related to innovation. As can be seen in Table 3 this hypothesis is supported, but only in the rural sample. There is no significant association in the urban sample. Hence, H1 receives partial support. Hypotheses 2a and 2b state that the relation between personal initiative and innovation will be mediated by planning and social resources. To establish mediation, we followed a procedure as recommended by Hair, Black, Babin, and Anderson (2010). The first step was to establish significant relationships between the constructs. As can be seen in Table 2, all constructs were significantly correlated. In the second step we estimated a model with only the direct effect between personal initiative and innovation, and compared this to our model as reported in Table 3 (and Figure 2). The standardised path coefficients in the model containing only the direct effect between personal initiative and innovation were highly significant in both samples ($\beta_{rural} = .58$, $\beta_{urban} = .30$). Including planning and social resources in the model affected the coefficient in the urban sample but not the coefficient in the rural sample. The standardised coefficient in the rural sample dropped from .30 to nearly zero (.03). Hence, in the urban sample, full mediation was established. However, in the rural sample the coefficient was hardly affected by including the planning and social resources ($\beta_{without\ mediators} = .58$, $\beta_{with\ mediators} = .56$). Hence, Hypotheses 2a and 2b are only partially supported. The relation between personal initiative and innovation is mediated by planning (H2a) and social resources (H2b) in the urban sample, but not in the rural sample.

Hypothesis 3 states that in rural regions there would be a larger positive relationship between personal initiative and innovation than in urban regions. This hypothesis was strongly supported by our results ($\Delta\chi^2(1) = 9.156$; $p < .002$). There was a positive significant association between personal initiative and innovation in the rural region, while there was no association in the urban region. Hypothesis 4 was also strongly supported. The association between planning and innovation was much weaker in the rural sample ($\Delta\chi^2(1) = 13.129$; $p < .000$). Hypothesis 5 received strong support as well ($\Delta\chi^2(1) = 26.096$; $p < .000$). The association between personal initiative and social resources was *positive* in the urban region, while it was *negative* in the rural region.

DISCUSSION

In this article we studied the link between personal initiative and innovation of entrepreneurs in a developing country. We argued that personal initiative influences innovation through two mechanisms, namely planning and the

acquisition of social resources. We also argued that the mechanisms are context dependent. Planning will be more beneficial in more dynamic and uncertain environments. In dynamic environments, entrepreneurs need to show more personal initiative to acquire social resources. In contrast, in more static conservative environments there is less necessity and chance to change one's networks actively and less personal initiative is needed to acquire social resources. Using a large survey of rural and urban entrepreneurs in Uganda, we find strong support for our hypotheses.

The major contribution of this study is that we show that the relation between personal initiative and innovation is context dependent. In urban settings the relation is fully mediated by planning and social resources; innovation is only indirectly affected by personal initiative. In contrast, in rural settings the relation is not mediated by planning and social resources. Innovation is directly as well as indirectly affected by personal initiative. While in urban settings entrepreneurs who show personal initiative build more resourceful networks, our results show that in rural regions personal initiative can even be associated with *fewer* social resources. In both regions entrepreneurs who show more personal initiative plan more as well. However, in rural regions while entrepreneurs who show personal initiative plan more, planning is less effective.

Our findings suggest that entrepreneurs who show personal initiative take the context of their decisions into consideration. These entrepreneurs use situational cues provided by the context to decide which behavior is instrumental in implementing innovation. In the rural region proactive entrepreneurs do not develop their networks, since their networks are not conducive to innovation. Instead they plan their business to the same degree as their urban counterparts, although planning is less beneficial in the less dynamic rural regions. To compensate for the limited effectiveness of planning and social networking, rural entrepreneurs find other ways to innovate. This is suggested by the large direct effect of personal initiative on innovation, even after planning and social resources are included in the model. Hence, our findings suggest that entrepreneurs who show personal initiative make complex trade-offs between different mechanisms depending on the context.

The findings in this study are of particular interest with regard to entrepreneurial network research. In a critical review, Hoang and Antoncic (2003) observed that two main trends have emerged in network research within entrepreneurship. In one stream of literature, researchers are mainly interested in the impact of networks on entrepreneurial outcomes, such as business survival and growth. In the other, less popular stream of research, the development of networks is studied, that is, the network and its associated resources is the dependent variable. Our study combines the two approaches and treats the network, that is, network resources, both as a dependent variable and an independent variable. In our view, this provides a more

complete understanding of entrepreneurial networks than a one-sided approach. Generally, in entrepreneurship research, networks are studied within one social context, often an industrialised setting. This applies to quantitative and qualitative studies (see Jack, 2010, for a review). Our findings suggest that the broader social context influences how networks "operate" and how they are developed. The exclusion of the social context of networks may explain why some entrepreneurial network research failed to find network effects (Hoang & Antoncic, 2003).

In particular two dimensions of the social context are noteworthy and should be considered for inclusion in future studies. In our theory we assume that the two regions differ in terms of dynamism and collectivism / individualism. We argue that in dynamic environments, networks will be more beneficial since networks provide resources to cope with dynamism. We also argue that in collectivistic settings, networks will be less beneficial since individuals are more often born into their network, and there is less freedom to enter into new resourceful relationships. Our findings corroborate these ideas. We find that proactive network building is especially beneficial in dynamic and individualistic environments. So, in contrast to Greve and Salaff (2003) who find that networking patterns are the same in a number of countries (note that they studied only urban samples), our findings suggest that within countries there may be large differences in networking between rural and urban regions. In collectivistic rural environments, entrepreneurs who show personal initiative may even stifle access to social resources. Kashima et al. (1995) found that people in individualistic cultures tend to see themselves as independent agents. In collectivistic cultures, agency, "doing things in your own way", is not accepted. Hence, personal initiative may result in an entrepreneur drifting apart from his network.

Recently there has been an increasing interest in the relation between personality and characteristics of the networks of those individuals (e.g. Sasovova, Mehra, Borgatti, & Schippers, 2010). Most of those studies focus exclusively on self-monitoring and its effects on networks. While this is understandable, since the concept self-monitoring concerns differences in the extent to which individuals are willing and able to monitor and control their self-expression in social situations, it may also lead to an incomplete understanding of network development. Our study contributes to this literature by showing that personal initiative is a personality characteristic that should be considered as well. Our study thus may have implications for the study of the relation between personality and networks and entrepreneurial network research in general.

Our findings underscore the importance of business planning, especially in dynamic environments. This corroborates the finding in the meta-analysis of Brinckmann et al. (2010) that business planning is positively related to the performance of entrepreneurial firms. However, our findings are not in line

with their conclusion that business planning is less useful in uncertain settings. We find that planning is more useful. Our findings support the notion that the benefits of planning increase especially in dynamic environments. The underlying idea is that planning reduces uncertainty. Under conditions of uncertainty when complex tasks are undertaken, entrepreneurs may find it difficult to establish how goals should be achieved. Planning helps them to understand how to achieve those goals as it helps people to understand the relationship between action and performance (Shane & Delmar, 2004). Our findings did support this notion as indicated by the fact that the more dynamic the urban setting, the more business planning proved to be of value.

Our results suggest that planning helps innovation, and this counters the idea that planning is an activity that hinders creativity. A number of scholars have argued that planning takes away time from other activities, such as creative idea generation. Planning could lead to cognitive rigidities, thus hindering creativity. We show that planning has a positive function; it is needed to implement creative ideas. The fact that we find that planning is significantly more important in the more dynamic hostile urban environment underlines the arguments presented earlier.

One of the strengths of this study is the detailed and direct measurement of social resources compared to other studies such as Zhao et al. (2010) and Greve and Salaff (2003) who take network size as a proxy. As a consequence of this approach we are neglecting other forms of social capital that are a function of the structure of the network, such as the bonding and bridging forms of social capital. Bonding refers to social networks between homogeneous groups of people and bridging refers to social networks between socially heterogeneous groups. Whereas we use a more individualistic conception of social capital, bonding and bridging social capital are more focused on the aggregate levels of society. Bonding capital is related to trust, solidarity, and specific reciprocity, while bridging capital, by contrast, is better for information diffusion.

A limitation of our study is that we only compare two regions. We assume and present evidence that these two regions differ in terms of dynamism and culture; however, we cannot rule out the possibility that there are other confounding variables that bias our results. An improved research design would be to include more regions, which would increase the multi-level character of the study. However, given the labor-intensive nature of the data collection (especially in rural areas), such a research design would be costly to execute.

There are a number of practical implications of this study. First, since personal initiative is shown to be an important factor in innovation in developing countries, in particular in rural areas, stimulating personal initiative is an important issue. Interventions could be for instance focused on the training of (nascent) entrepreneurs. One possibility is to follow the approach of

Glaub, Fischer, Klemm, and Frese (2012) who zeroed in on personal initiative and trained only active performance approaches. People were trained to develop active goal setting, active information search, active planning, and active feedback seeking. As a general rule it is most effective to make personal initiative training rather generic, so that it can be applied to a variety of settings (Fay & Sonnentag, 2010). Second, our results show that rural entrepreneurs do not profit from their social networks. Policy makers could help by creating network associations that help entrepreneurs get in contact with others outside their own immediate social circles. Third, policy makers should recognise that determinants in innovative entrepreneurship fundamentally differ between rural and urban areas. A one-size-fits-all approach may be less effective than a differentiated approach.

In conclusion, in this article we showed that the innovative performance of entrepreneurs in developing countries can be fruitfully explained by the degree of personal initiative that entrepreneurs show. We distinguished two mechanisms through which personal initiative may lead to innovation: business planning, and the acquisition of social network resources. We showed that the effectiveness those mechanisms depends on the social context. Planning is more beneficial in dynamic environments, while in individualistic-oriented environments it is more beneficial to actively develop networks. The successful inclusion of social networks and social context in our model suggests that psychological approaches to entrepreneurship can be successfully blended with sociological approaches.

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