Determinants of Firm Start-Up Size and Performance of Small and Medium Enterprises (SMEs): Empirical Evidence from Uganda

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This article uses the Gender Enterprise Survey (2015), which links Ugandan SMEs start-up size and performance to business environment, entrepreneurial and enterprise characteristics. The findings indicate that entrepreneur's education, business experience, business training, location, keeping business records, business working time and source of start-up capital are important in explaining enterprise start-up size and performance. Compared to male-owned enterprises, female-owned enterprises are consistently associated with small start-up size and lower performance. The major implication of these results is that providing business training, easing access to credit, business education and record keeping are required to promote SMEs start-up sizes and increased performance.

INTRODUCTION

The SME sector is very crucial in economies of developing countries with Uganda being no exception. Like other developing countries, over the past three decades or so, the government of Uganda has implemented a wide range of economic and institutional reforms, all intended to create a more conducive economic environment, and promote increased participation of the private sector in the economy. These reforms have resulted in GDP growth averaging 6.3 percent with a peak of 10 percent in 1994 (UBOS, 2015; NPA, 2015). However, despite the economic reforms that have been undertaken by the Ugandan government since the early 1980, Uganda is faced with an ever increasing problem of unemployment that is made worse by the declining levels of public sector employment due to

privatization of public parastatals. Like in many developing countries, SMEs in Uganda provide one of the most prolific sources of employment and income generation for people who lose employment or start employment for poverty reduction. The role of SMEs in economic growth remains important worldwide through their contribution to productivity growth, decent job creation, and source of income, training opportunities and basic services to the population, supply of business ideas, skills and innovations (Wiklundand & Shepherd 2005; UNIDO, 2006; Wong & Aspinwall, 2004; Bigsten et al., 2000; Lustgarten, 1995).

Ugandan government has undertaken various developments aimed at improving investments, productivity and performance of MSEs. They include the National Employment Policy (NEP, 2011), Business, Technical and Vocational Education Training (BTVET, 2003) Poverty Reduction Strategy Paper (2010), The Economic Recovery Strategy for Wealth Creation and Employment 2010-2015, Apex Private Sector Loan Scheme (APEX, 2003) and Uganda Vision 20-40. In particular, the Poverty Reduction Strategy policy document recognises the important role played by SMEs in poverty reduction efforts. In addition, government has undertaken initiatives that include National Youth Enterprise Fund (2013), Youth Venture Capital Fund (YVCF, 2012), Women Enterprise Fund and Presidential Initiative all of which underscore the government priority to facilitate the SME sector. However, Ugandan SMEs are faced with limited access to finance and ICT, entrepreneurial skills; irregular electricity power supply and failure to the ever changing socio-economic competitive environment (Namatovu et al., 2012, Prasad & Sreedevi, 2007; Tushabomwe-Kazooba, 2006; Orser et al., 2006, Stevenson et al., 2005; O'Neill & Duker, 1986). The potential and significance of SMEs stand however, in marked contrast to the lack of detailed understanding of the factors behind firm start-up size and firm performance in a rapidly growing East African economy. A number of studies on SMEs have been made, but most of them only focused on general description of the current situation of the SMEs sector. Research on the underlying factors of the determinants of enterprises start-up size and performance is still limited.

Therefore, against this background, the paper analyses the determinants of Ugandan SMEs start-up size and performance using enterprises level survey. The study seeks to provide answers to the following questions: Does the business training acquired influence both SMEs startup size and performance? Does prior business experience and start-up capital influence both startup size and performance of SMEs? What is the impact of other demographic and social-economic factors on SMEs startup size and performance in Uganda?

This paper contributes to the literature by focusing on the effect of entrepreneurial experience and other determinants of SMEs start-up size and performance using Instrumental Variable Quantile Treatment Effect estimation instead of the commonly used OLS models. Essentially, IVQTE yield causal inference rather than just mere association between variables than other techniques such as OLS. Given uneven distribution of SMEs sales, IVQTE has the appealing feature over OLS due to its ability to estimate quantile-specific effects that describe the impact of the covariates not only on the center but also on the tails of the outcome distribution. Also, OLS mean estimates usually fail to describe the full distributional impact unless the variable affects both the central and the tail quantiles in the same way which might not be the case of SMEs performance. In addition, IVQTE is preferred in analysing SMEs performance because the our interest focuses on the impact of covariates on points other than the mere overall performance. Exploring SMEs size at entry and performance opens up interesting avenues for public policy in developing countries like Uganda (Levinthal, 1991; Coad et al., 2012). Thus, understanding factors that influence SMEs start-up size will provide a new and complementary lens for exploring SMEs performance and the study findings will be useful in devising policies to achieve the desired SMEs sector.

In Section 2 we review the selected literature on SMEs start-up size and performance. The data and empirical strategy are described in Section 3. Section 4 presents and discusses the study findings, while the last section presents the concluding remarks.

SELECTED LITERATURE

There is a large theoretical and empirical evidence on the determinants of firm start-up size and performance (Reynold et al., 2004). Individual and business characteristics such as age, education, start-up management skills, number of owners, innovation, start-up capital, competitive environment, prior employment status, start-up capital and business sector are key determinants of firm startup size and performance (Bamford et al., 2004; Chell & Baines, 1998; Davidson et al., 2006; Johnsen & McMahon, 2005; Verheul & Thurik, 2001; Mata & Machado, 1996; Gorg et al., 2000; Almus, 2002; Storey, 2004; Shimizu & Kochhar, 2001; Reid & Smith, 2000; Thornhill, 2006). Evidence also shows that inequality in human capital, judicial efficiency and illegal competition influence firm size (Coleman, 2007; Kremer, 2013; Kumar & Zingales, 2008; World Bank, 2010). Gimeno et al. (1997) document positive effect of prior business experience on firm performance, but other studies find no impact of prior business experience on firm start-up size and performance (Metzger, 2007; Frankish et al., 2012; Nielsen & Sarasvathy, 2011). Also, there is mixed evidence with respect to prior business experience on firm start-up size and performance (Frankish et al., 2012). Other factors that affect SMES star-up size and performance include firm age, lack of general skills management, marketing and financial planning, lack of business plans and business records, poor banking and borrowing culture, local and international competition and limited access to information on market opportunities and tax legislation (Bardasi et al., 2007; Smallbone, 2001; Aidis et al., 2007; Robinson et al., 2009; Goswami & Dutta, 2015). No empirical study in Uganda has analysed factors for the firm at start-up and performance.

DATA AND EMPIRICAL STRATEGY

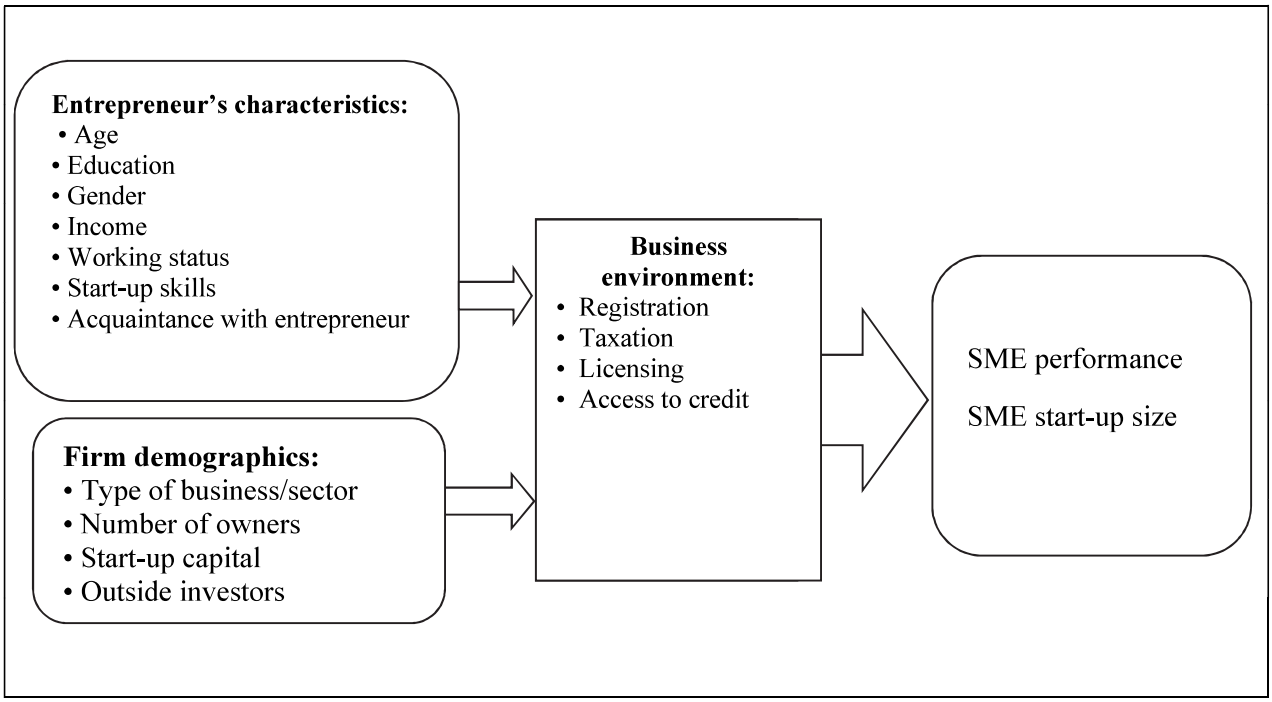
Data

This study employs the Uganda Gender Enterprise Survey (2015) data collected under the Gender Enterprise Survey project (2015). For this survey, a two-stage sampling design was utilized and the survey covered 1169 enterprises from 18 districts in the 9 sub-regions of the country. The Survey used standardized survey instruments and a uniform sampling methodology to minimize measurement error and to yield data that are comparable with the National Surveys by Uganda Bureau of Statistics. The data contain comprehensive information on the characteristics of the firm such as the age of owner, amount of start-up capital, owners' education, legal status of the business, prior business experience, previous employment status, employs wage workers or not, business location, entrepreneurial motivation and business goals. The survey also collected information on number of workers, sales and profits, were used to construct performance indicators. Also, the survey has information on legal status of the business, ownership and registration issues. In addition, the survey provides basic information such as gender, age, marital status of the business owner. The survey focused on enterprises that were in operation for at least three years before May 2015 and it covered only enterprises with trading activities at the time of the survey, implying that dominant enterprises were excluded. Thus, the data can be used to examine the determinants of enterprise start-up size and performance taking into account gender of the owner.

Empirical Strategy

Figure 1 presents a conceptual framework that we put forward to explore the impact of business environment, enterprise and entrepreneur's, characteristics on SMEs start-up size and performance among Ugandan SMEs. The development of this framework is based on the results from the reviewed studies. The study takes into account not only individual background variables but also enterprise demographic characteristics, and the business environment as well. This encompasses previous business experiences, start-up capital, gender of the owner and type of business among others.

FIGURE 1
CONCEPTUAL FRAMEWORK ANALYSING THE DETERMINANTS OF FIRM START-UP SIZE AND FIRM PERFORMANCE AMONG MSMES IN UGANDA



The main theoretical implications of the business environment, enterprise and entrepreneurs' characteristics on firm start-up size and performance are clearly illustrated. First, it demonstrates that entrepreneurs' characteristics such as gender, age, start-up capital and business experience should play a positive effect on SMEs start-up size and performance. Secondly, it is hypothesized that poor business environment in terms of lack of credit and stringent business registration are more likely to negatively affect SMEs start-up size and performance. In addition, enterprise characteristics in terms of number of owners and business sector should play a positive effect on SMEs startup size and performance.

THE MODEL

To understand the determinants of start-up size differences among Ugandan SMEs, first different probit models are estimated (Equation 1). In this analysis, the interest is to estimate the determinants of SMEs start-up size and ascertain whether there is a gender based start-up size difference between male and female-owned SMEs. From the theoretical framework (Figure 1), we consider start-up size status of SMEs conditional on entrepreneur and enterprise characteristics plus business environment as given by the following expression.

$$startupsize_{ij} = \alpha + \delta entr_{ij} + \varphi firm_{ij} + \lambda Bss_{j} + \varepsilon_{ij} \quad (1)$$

From Equation 1, $startupsize_{ij}$ denotes start-up size variable of interest for enterprise i that is male or female-owned by individual j. The start-up size is a binary variable code as "1" if an enterprise started as medium and "0" otherwise. In our model, $(entr_i)$ denotes a vector of entrepreneurial characteristics, $(firm_i)$ is denotes enterprise's demographic factors, (Bss) denotes the business

environment, while ε_i is a normally distributed error term. The entrepreneurial control variables employed in this model include gender of the owner, owner's age, business experience, owner's educational level, former employment status, marital status, residential status, while the enterprise characteristics include start-up capital, keeping business records and number of owners. In addition, business environment such as access to credit and stringent business registration are key factors that influence start-up. For the probit model estimated, marginal effects are reported.

To understand the effect of business environment, entrepreneur and firm characteristics on SMEs' performance in Uganda, Equation 2 is estimated using Instrumental Variable Quantile Treatment Effects (IVQTE) estimation. The advantage of using a IVQTE over other techniques such as OLS is that yield causal inference rather than just mere association between variables (Firpo, 2007; Abadie et al., 2002; Frolich & Melly, 2010). To examine the effect of entrepreneur and enterprise characteristics plus business environment is given by the following expression.

$$firperf_{ij} = \alpha + \delta entr_{ij} + \varphi firm_{ij} + \lambda Bss_j + \varepsilon_{ij} \quad (2)$$

From Equation 2, $firperf_i$ denotes SMEs sales performance. In addition, $entr_i$ is a vector of entrepreneur characteristics (age, education level, marital status, entrepreneurial skills, business experience, employees and gender), $firm_i$ denotes enterprises' characteristics (number of owners, start-up capital, registration status, age, firm size and bank account). Further, Bss is a vector of business environment (registration, access to credit, membership to business association, location of the enterprise) affect enterprise performance (Loscocco et al., 1991; McPherson, 1996; Daniels & Mead, 1998), while ε_i is an error term.

Basically, to obtain the direct causal effect of selected variables (prior business experience) on SMEs start-up size and performance, we instrument prior business experience of the owner by the business experience of the parents. The instrumental variable need to be binary, and this is satisfied in our case for IVQTE (Frolich & Melly, 2010). Note that even if parental experience is not fully exogenous, it will be more exogenous than the variable it is instrumenting itself.

RESULTS

Data Description

Table 1 provides the descriptive statistics for the profile of the sampled entrepreneurs. The average monthly sales are UGShs 950,000 with coefficient of variation of 3.03. We observe that 65% of entrepreneurs were male and about 32% of entrepreneurs received business training. We observe that average age of enterprise-owner was 27 years, with the youngest owner being 18 years and oldest 67 years. Entrepreneurs work on average 11 hours a day in their business but others work all day. Regarding literacy, 85% of entrepreneurs could read and write in both local language and English. Also, 38% of SMEs keep business records. Further, average number of workers was 4 workers, indicating that SMEs have the potential for employment creation for the growing labour force.

About 15% of SMEs use ICT in form of emails and website, 69% of SMEs were located in urban areas and 48% were registered. Also, nearly 37% of entrepreneurs have ever been apprentices. In terms of former employment status, the data reveal that 19% of entrepreneurs started business when they were still students, 20% when employed and 36% when they were unemployed. In addition 31% of entrepreneurs had prior business experience, 25% had business bank account and 75% personal bank account and, 23% of entrepreneurs got credit.

TABLE 1
SUMMARY STATISTICS FOR SELECTED DETERMINANTS OF START-UP SIZE AND PERFORMANCE

Variable	N	Mean	SD	Min	Max	cv
Firm monthly sale	1030	950,000	520,000	10,000	50,000,000	3.03
Sex of owner	1165	0.65	0.48	0	1	0.73
Got business training	1153	0.32	0.47	0	1	1.45
Household size	1167	5.92	3.84	1	40	0.65
Owner's age	1113	27.3	8.63	18	67	0.32
Firm age	1166	4.37	8.15	2	11	0.72
Business time	1144	11.15	3.45	0	24	0.31
Literacy	1164	0.85	0.36	0	1	0.43
Keeps Business records	1164	0.38	0.25	0	1	0.32
Total workers	1132	4.43	1.27	1	23	0.43
Use ICT	1169	0.15	0.36	0	1	2.34
Urban location	1147	0.69	0.46	0	1	0.67
Registered	1152	0.48	0.50	0	1	1.04
Apprentice	1167	0.37	0.48	0	1	1.30
Student	1161	0.19	0.39	0	1	2.05
Employed	1161	0.20	0.40	0	1	1.98
unemployed	1161	0.36	0.48	0	1	1.33
Other business idea	1163	0.72	0.45	0	1	0.62
Own business idea	1163	0.07	0.25	0	1	3.78
Spouse business idea	1163	0.21	0.41	0	1	1.91
Business bank account	1160	0.25	0.44	0	1	1.71
Personal bank account	1158	0.76	0.43	0	1	0.57
Prior business experience	1111	0.31	0.46	0	1	1.50
Got business credit	1111	0.23	0.18	0	1	1.21

Source: Author's computations from the Gender Enterprise Survey (2015)

EMPIRICAL RESULTS

Determinants of SMEs Start-Up Size

Table 2 presents the marginal effects for the determinants of SMEs start-up size in Uganda. The explanatory power of the models is rather strong. The estimation of the separate models (Table 2) for the male and female-owned enterprises is justified only under the condition that the regression coefficients and variances are different for the two groups of enterprises. The poolability test is carried out to test for the hypothesis about the heterogeneity of male and female-owned enterprises. The F-test is performed based on the null hypothesis that male and female owned enterprises is the same for the two kinds of enterprises. The F-statistics derived from the regression is 18.12, with a zero probability and rejecting the null at 1% level of significance thus justifying the estimation of separate regressions.

First, the findings show that linear age of an entrepreneur has a significant negative effect on starting a medium enterprise, while age squared has a significant positive effect on starting a medium enterprise. That is, age squared has a more positive effect for the largest business start-ups. Second, there is a strong positive relationship between an entrepreneur's business experience and firm startup size. The marginal effects show that one year of entrepreneur's business experience increases the probability of starting a medium size enterprise by 12% for male, 8% for female entrepreneurs and 6% for the entire sample. In addition, postsecondary education has a significant positive impact on firm start-up size in all models. In other words, entrepreneurs who have acquired postsecondary education tend to "start big," compared to their counterparts of lower education status. As expected, the number of owners has a positive effect on

firm start-up size, meaning that if there are several directors or owners of an enterprise, there are higher chances that they will start with a medium firm than a small one, probably because they are able to raise enough start-up capital. By gender, male entrepreneurs have a significant effect on firm start-up size. This may be so because male compared to female in most African countries, have more access to resources than female.

TABLE 2
MARGINAL EFFECTS FOR ESTIMATED DETERMINANTS OF SMES SIZE AT START-UP

Variables	Male M.E	Pval	Female M.E	Pval	Full Sample M.E	Pval
Age of firm owner	0.015	(0.103)	-0.026*	(0.073)	-0.019**	(0.014)
Age of owner squared	0.020*	(0.055)	0.030*	(0.065)	0.023***	(0.007)
Prior business experience	0.120***	(0.000)	0.080**	(0.025)	0.063***	(0.001)
Education (RC: Primary)						
Secondary education	0.046	(0.271)	-0.011	(0.855)	0.027	(0.431)
Postsecondary education	0.079*	(0.073)	0.091**	(0.018)	0.029***	(0.000)
Number of owners	0.012*	(0.064)	0.041**	(0.027)	0.015***	(0.001)
Female					-0.041***	(0.004)
Keeps records	0.017*	(0.054)	0.006**	(0.042)	0.015***	(0.000)
Own business bank account	0.061***	(0.000)	0.035**	(0.013)	0.041***	(0.000)
Paid workers	0.028*	(0.066)	0.012**	(0.037)	0.035**	(0.021)
Unpaid workers	0.051	(0.280)	0.021	(0.372)	0.074	(0.123)
Marital status (RC: Never married)						
Divorced	0.089	(0.135)	-0.059	(0.482)	0.042	(0.375)
Married	0.115	(0.235)	-0.138	(0.172)	-0.016	(0.815)
Employment status (RC: Wage employee)						
Student	0.030	(0.554)	-0.006	(0.942)	0.015	(0.740)
Unemployed	0.051***	(0.000)	0.015**	(0.012)	0.041*	(0.076)
Self-employed	0.007	(0.882)	0.014	(0.847)	0.005	(0.903)
Been an apprentice	0.039**	(0.015)	0.042***	(0.000)	0.044**	(0.014)
Urban	0.134***	(0.001)	0.032*	(0.079)	0.090***	(0.000)
Sources of funds (RC: Own savings)						
Gift or relatives savings	-0.017	(0.843)	-0.002	(0.981)	-0.020	(0.693)
Access to credit	0.036***	(0.002)	0.009*	(0.093)	0.022***	(0.000)
Start-up decision (RC: other decision)						
Owner's spouse	0.094*	(0.085)	0.041**	(0.012)	0.020*	(0.088)
Spouse's decision	0.028***	(0.000)	0.011*	(0.071)	0.042	(0.262)
Start-up location (RC: Household)						
Hired premises	0.169**	(0.017)	0.129*	(0.088)	0.157***	(0.002)
Roadside	-0.384***	(0.001)	-0.422***	(0.000)	-0.384***	(0.000)
Lo Likelihood	-616.27		-246.68		-363.13	
Chi-square	62.09		26.28		38.20	
Pseudo R-square	0.05		0.05		0.05	
Observations	635		389		1,024	

P-values in parentheses *** p<0.01, ** p<0.05, * p<0.1

With regard to wage paid workers and nonpaid workers, we observe that wage paid workers have a positive effect on firm start-up size while nonpaid workers have no significant effect on SMEs start-up size. Hiring a worker increases the probability of starting a medium SMEs by 3 and 1.2 percentage points for male and female-owned SMEs. The findings show that there is a 5 and 2 percent chance that a unemployed male and female entrepreneur respectively to start a medium size enterprise compared to their wage employed counterparts. Also, the marginal effects show that having been an apprenticeship

increases the likelihood of starting a medium firm by 4 percentage points for both male and female entrepreneurs. In addition, there is a positive relationship between urban areas and SMEs start-up size. Being located in an urban area, increases the probability of starting a medium enterprise by 13 percent for men, 3 percent for women compared to being in a rural area.

In addition, access to credit has a positive effect on SMEs start-up size compared to start-ups with no access to credit. As expected, entrepreneurs' own decision to start business has more significant positive effect on the initial size of the enterprise than business idea initiated by the spouse compared to when the business idea is initiated by others. As expected, entrepreneurs who operate their businesses in hired business units are less likely to start medium firms than their counterparts elsewhere while those that operate along roadside are more likely to start medium enterprises than those operating along roadside. Indeed roadside businesses are more likely to be sole proprietorship businesses.

Analysis of the Determinants of SMEs' Performance in Uganda

Table 3 presents IVQTE results for the determinants of SMEs performance using log of enterprise sales to ensure comparability with previous studies. First, our main result show that prior business experience has a positive impact on enterprise performance and the effect becomes even more important at the upper-quantiles. Second, being male has a significant effect of enterprise performance. Also, business training, household size and owners' age have a positive effect on enterprise performance and the effect becomes even more important at the upper-quantiles. Literacy level and being a member of a business association have a significant positive impact on enterprise performance and the effect is more important at the upper-quantiles.

As expected, our results show that owner's savings and number of owners have a big positive and significant effect on enterprise performance at the upper-quantiles. Also, the number of paid workers significantly and positively impacts on enterprise performance, while unpaid workers negatively and significantly constrain enterprise performance. Enterprises that employ paid workers increase performance by 0.56 percentage points at the upper-quantiles, while those that employ unpaid workers constrain performance by 0.13 percentage units. Our results reveal that enterprises located in urban areas, those that are registered and those that use ICT in form of emails and website for business have a big positive and significant effect on enterprise performance at the upper-quantiles.

Owners initial business idea and spouse's business idea significantly influence enterprise performance compared to business ideas from other sources. Business and personal bank account have a positive and significant effect on enterprise performance and the effect increases at the upper-quantiles. Furthermore, being married has a positive effect on enterprise performance at the lower quantiles, while use of mobile money payment has a significant effect on enterprise performance. Interestingly, distance travelled to business premises negatively affect enterprise performance. This could mean long distance workers, lose time travelling to workplaces and have to leave workplaces much earlier to get back to their homes. Also, access to credit is positively associated with enterprise performance, especially for big firms at the upper end of the distribution.

TABLE 3
DETERMINANTS OF SMES PERFORMANCE (SALES)

Variables	Qreg	pval	0.25	pval	0.50	p-val	0.75	p-val
Prior business exp	0.072**	(0.033)	0.092***	(0.000)	0.123**	(0.012)	0.146***	(0.001)
Male Owner	0.056***	(0.000)	0.229	(0.127)	0.308**	(0.042)	0.396**	(0.012)
Got business training	-0.290*	(0.060)	-0.084	(0.573)	-0.325**	(0.046)	-0.185	(0.305)
Household size	0.065***	(0.001)	0.062***	(0.004)	0.046**	(0.010)	0.046**	(0.027)
Owner's age	-0.003	(0.749)	0.008	(0.380)	0.007	(0.464)	-0.001	(0.903)
Owner's age-squared	0.008*	(0.044)	0.015*	(0.081)	0.107***	(0.000)	0.127***	(0.003)
Firm age	0.016	(0.518)	-0.003	(0.918)	0.029	(0.227)	0.059**	(0.013)
Firm age-squared	-0.416	(0.445)	-0.280	0.718)	-0.570	(0.239	-1.298***	(0.003)
Business work time	0.001	(0.975)	0.032	(0.147)	0.028	(0.192)	0.035	(0.110)
Literacy	0.081***	(0.000)	0.143	(0.816)	0.034*	(0.080)	0.075**	(0.015)
In business association	0.133*	(0.065)	0.092**	(0.019)	-0.003	(0.991)	0.103*	(0.091)
Start-up funds (RC: Own savings)								
Own savings	0.534***	(0.000)	0.022***	(0.000)	0.363**	(0.011)	0.563**	(0.014)
Gift or relatives savings	0.043	(0.488)	0.085**	(0.000)	-0.024	(0.947)	0.024	(0.158)
Number of owners	0.037***	(0.000)	0.014***	(0.000)	0.162**	(0.011)	0.067**	(0.027)
Paid workers	0.534***	(0.000)	0.022***	(0.000)	0.363**	(0.011)	0.563**	(0.014)
Unpaid workers	-0.132**	(0.039)	0.146**	(0.034)	-0.122	(0.316)	0.473	(0.716)
Use ICT	0.323*	(0.064)	0.282	(0.162)	0.256	(0.232)	0.059**	(0.011)
Urban area	0.366**	(0.013)	0.123	(0.439)	0.093	(0.231)	0.122*	(0.073)
Registered	0.157***	(0.000)	0.084	(0.575)	0.168*	(0.065)	0.127***	(0.000)
Ever been apprentice	-0.049	(0.738)	-0.146	(0.342)	-0.130	(0.415)	-0.119	(0.479)
Source of business idea (RC: Others)								
Own idea	0.082***	(0.004)	0.091*	(0.058)	0.090**	(0.043)	0.110***	(0.000)
Spouse's idea	0.059*	(0.690)	0.027*	(0.074)	0.007***	(0.000)	0.016	(0.804)
Business bank account	0.740***	(0.000)	0.600***	(0.002)	0.664***	(0.001)	0.948***	(0.000)
Personal bank account	0.508***	(0.002)	0.484***	(0.007)	0.509***	(0.005)	0.540***	(0.001)
Marital Status (RC: Never married)								
Divorced	0.026*	(0.090)	0.035	(0.895)	-0.010	(0.978)	-0.010	(0.978)
Married	0.026*	(0.090)	0.035	(0.895)	-0.010	(0.978)	-0.010	(0.978)
Use money	0.112***	(0.003)	0.433	(0.174)	0.496***	(0.003)	0.796***	(0.000)
Distance to business	-0.024***	(0.000)	-0.009*	(0.082)	0.081	(0.588)	-0.054***	(0.000)
Received loan (yes=1)	0.211***	(0.000)	0.073**	(0.043)	0.108***	(0.002)	0.128***	(0.000)
Constant	12.962***	(0.000)	11.589***	(0.000)	12.488***	(0.000)	13.219***	(0.000)
Observations	843		827		841		843	
R-squared	10.41		9.33		11.24		13.45	

P-values in parentheses *** p<0.01, ** p<0.05, * p<0.1

CONCLUDING REMARKS

We use probit and Instrumental Variable Quantile Treatment technique to analyse the determinant of start-up size and performance of SMEs in Uganda using the Gender Enterprise Survey (2015). It is noteworthy that prior business experience, age, business and personal bank account, owner's gender and start-up capital on SMEs start-up size and performance are important. Other factors significant in influencing both start-up size and performance include owner's education, business location, enterprise age, initial business ideas, number of owners, use of mobile money and previous work experience among others.

Our findings suggest that government measures aimed to ease business registration, access to start-up capital and business training are needed to promote investment in starting larger SMEs that can provide gainful employment and act as catalyst in enhancing innovation and promoting industrial development and overall enterprise performance. Also, government needs to review the business registration requirements and pass legislation to increase the rate of business registration. Entrepreneurs need to consider adopting measures that increase the performance and hence minimize early death of their enterprises such as improved business training, book keeping, and better business locations. In addition, entrepreneurs need to seek for ICT training in order to access to business information and services. They also need to form and enter in business partnership and limited companies rather than sole proprietorship businesses as a means of enhancing big start-up businesses as potential sources of gainful employment and enterprise performance.

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