EFFECT OF ENTREPRENEUR CHARACTERISTICS ON PERFORMANCE OF NON-TIMBER FOREST PRODUCTS SMALL AND MEDIUM ENTERPRISES IN KENYA

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ABSTRACT Limited literature is available on the relationship between entrepreneur characteristics and performance of non-timber forest products small and medium enterprises raising debate whether the link is tenable with such firms. Thus, a study covering 314 small and medium enterprises in nine counties in Kenya was conducted to explore the relationship. The coefficient of determination, F statistic, and the t-value and their significance levels were used in presenting the relationship between entrepreneur characteristics and firm performance. The results show that that firm performance is significantly affected by entrepreneur characteristics of age, managerial skills, industry experience and social skills. Thus, it is concluded that entrepreneur characteristics and performance of non-timber forest products small and medium enterprises are empirically related. Firms run by relatively young, well-experienced and skilled entrepreneurs register better performance. It is necessary, therefore, that the non-timber forest products small and medium enterprises match their strategic decisions with characteristics of owners/managers to enhance their competitiveness and performance. The implications of this study are that specific policy measures are necessary to encourage the many well trained but unemployed young people to engage in businesses. Additionally it also implies that specific training programmes are necessary to equip the practitioners with necessary theoretical and practical capacities to enhance performance of their firms.

Key words: entrepreneur characteristics, firm, non-timber forest products, performance, small and medium enterprises

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Introduction
The link between entrepreneur characteristics and firm performance has received a lot of focus by studies. Studies (Erikson, 2002; Westerberg & Wincent, 2008; Islam et al., 2011) show that characteristics of an entrepreneur which include demographic factors, individual background, personal traits, entrepreneur orientation, and entrepreneur readiness play an important role in performance of small and medium enterprises (SMEs). These factors which form the character and behaviour of the entrepreneur are crucial internal capacities that impact on firm performance (Schreckenberg et al., 2006; Dubey, 2008; Zoysa & Herath, 2007; Islam et al., 2011). Thus an enterprise reflects the characteristics of the entrepreneur whose commitment and vision are central to firm performance. The entrepreneur combines both tangible and intangible resources into a business organization (Gómez, 2006). Erikson (2002) observed that characteristics of the entrepreneur are determinants of firm performance. Essentially, firm performance is determined by the attributes of the entrepreneur driving the process.

Among the various businesses in Kenya, the non-timber forest products small and medium enterprises are emerging as green businesses with dual potential in conservation and development. These are the firms that deal with biological resources of plant and animal origin other than wood derived from forests and trees outside forests including fruits, aloe, herbs, essential oils, resins and honey (Food and Agriculture Organization [FAO], 1995). Such resources are classified as non-timber forest products (NTFPs) and are broadly referred to as a sub-sector under the agribusiness sector that encompasses products with origin from agricultural resources. The contributions by NTFPs firms are by acting as market outlets for the forest resources and thus, generate income and increase value of forest resources to local communities. The support of the NTFPs firms is more significant to resource poor people and particularly women and the youth dealing with these resources. Three quarters of the poor in Kenya live in rural areas where a nearby forest is the main source of livelihood (Mbuvi & Boon, 2008). Estimates in Africa show that over two-thirds of the continent’s 600 million people rely on forest products for subsistence uses and/or as sources of cash income derived from a wide range of timber and non-timber forest products (Sunderlin et al., 2005; CIFOR, 2005). At the global level, the NTFPs generate US $115.5 to US$117 billion annually (Shanley et al., 2008).

Despite vast potential of the NTFPs firms, they have been neglected in most studies making it hard to infer on their performance. Distinctly less focus is placed on firms dealing with timber and non-timber forest products. Limited literature is available on the relationship between entrepreneur characteristics and performance of NTFPs firms. Information on effect of the entrepreneur demographic and social background on performance of these firms is scattered; specifically, the effects of age, gender, education, experience and skills on performance of NTFPs firms is not certain. The available information include studies by Center for International Forestry Research (CIFOR) on a project for commercialization of non-timber forest products in Mexico and Bolivia (Marshall et al., eds., 2006; Schreckenberg et al., 2006). Unfortunately, the studies failed to explore the effect of entrepreneur characteristics on firm performance. How various characteristics
including demographic and individual background of the entrepreneur affect recognition and exploitation of business opportunities and overall performance of NTFPs firms is not clear. Most NTFPs firms are poorly organized with most of them remaining informal and uncompetitive. In this paper, therefore, attempts are made to extend frontiers of knowledge regarding how entrepreneur characteristics affect performance of NTFPs firms. Specifically, the effects of age, gender, education, managerial skills, industry experience and social skills on firm performance are investigated. The following hypothesis was formulated for testing:

$H_1$: There is no significant relationship between entrepreneur characteristics and performance of SMEs

The study relied on the resource based view (RBV) and theories relating to entrepreneur characteristics to expound on how entrepreneur characteristics affect firm performance. The targeted entrepreneur characteristics depict knowledge, talents, skills, abilities, experience, intelligence, and training advanced under RBV as some of the resources and capabilities necessary for achieving competitive advantage (Wernerfelt, 1984; Barney, 1991; Castanias & Helft, 1991; Conner & Prahalad, 1996). The theories relating to entrepreneur characteristics explicate various traits that contribute to supply of entrepreneurs including education background, skills and experience (Kubeczko & Rametseimer, 2002; Greve & Salaff, 2003).

**Methodology**

The study was conducted as a cross-sectional survey covering 314 NTFPs firms selected from nine counties with the highest distribution in Kenya: Garissa (13), Kajiado (13), Kilifi (22), Kitui (25), Kwale (16), Machakos (13), Makueni (16), Mombasa (61) and Nairobi (135). A stratified sampling procedure was applied to establish sampling units, and a questionnaire with open and closed format questions was administered to entrepreneurs of randomly selected NTFPs firms. Questionnaires from 283 out of the 314 NTFPs firm had satisfactory answers indicating 90 percent response rate. Following data cleaning process, 277 questionnaires, which is 88 percent were found usable and adopted in this study for further analysis. At county level, the response rate was the highest (100 percent) in Garissa, Kilifi, Kitui, Kwale and Makueni Counties and least in Nairobi (81 percent). Respondents in Nairobi were skeptical and not willing to participate in the interviews. The busy schedule and fears that disclosures on performance of business would elicit tax payment penalties could have been some of the reasons for unwillingness to provide information.

To minimize occurrence of measurement errors, the study exercised prudence to ensure that the measurement items and interviews yielded accurate and adequate data. To achieve validity of the questionnaire, available literature on the effect of entrepreneur characteristics on firm performance was reviewed; consultations were made with subject matter specialists over the conceptual, contextual, specification of scales of measurements and analytical procedures to apply; and conducted pilot study to validate data with real research content. Reliability was established through computation of Cronbach alpha coefficient for each construct. The Cronbach’s alpha values ranged from 0.761 (entrepreneur characteristics category) to 0.945 (firm level...
institutions category). These Cronbach's alpha values were above the cut-off coefficient of 0.7 defined for the study indicating that the items were accurately measured and had adequate levels of internal consistency.

The data collected was subjected to tests for linearity, normality of the distribution, multicollinearity and homoscedasticity using Statistical Package for Social Sciences (SPSS), to check if it met the conditions of the assumptions. Examination of scatter plot pointed to linear relationships between the dependent and independent variables. Both the graphical and numerical methods performed confirmed that the data was normally distributed. The Condition Index (CI), Variance Inflation Factors (VIF) and tolerance fell within the acceptance range pointing to lack of multicollinearity problem in the regression models used for the study. The assumption of homoscedasticity was confirmed with error term being same across all values of the independent variables. Thus, multiple linear regression analysis was performed to establish and test the hypothesis for the existence of relationships between the six entrepreneur characteristics and firm performance using the following model:

\[
FP = \beta_0 + \beta_1 \text{AGE} + \beta_2 \text{GE} + \beta_3 \text{EE} + \beta_4 \text{MK} + \beta_5 \text{IE} + \beta_6 \text{SK} + \varepsilon
\]

Where FP is firm performance, AGE is age, GE is gender, EE is education, MK is managerial know-how, IE is industry experience, SK is social skills and \(\varepsilon\) is error term. Firm performance was inputted in the model as performance index computed as the mean value of the performance metrics applied during data collection: sales growth, profit growth, market share growth, client satisfaction and efficiency. Performance of SMEs is often complex and is well captured by an index that combines both financial and non-financial metrics (Hashim 2000; Chelliah et al. 2010; Zulkifli and Perera 2011). The six entrepreneur characteristics including age, gender, education, managerial know-how, industry experience and social skills were fitted in the model as individual variables. Respondent firms indicated entrepreneur age as number of years from date of birth. Equally, gender, education, managerial know-how, industry experience and social skills were indicated as sex category, highest level of education attained, managerial skills course attendance, years running a business and subscription to social clubs or groups, respectively.

**Results**

Multiple linear regression analysis was performed to determine whether entrepreneur characteristics had any significant effect on firm performance. The null hypothesis that there is no significant relationship between entrepreneur characteristics and performance of firms in the NTFPs sub-sector was tested against alternative hypothesis as a two-tailed test at 95 percent confidence level (\(\alpha = 0.05\)) that there is significant relationship between entrepreneur characteristics and performance of the firms. The results of multiple regression analysis are shown in Table 1.
From Table 1, the coefficient of determination ($R^2$) of the five entrepreneur characteristics (independent) on the firm performance as dependent variable was 0.220. The adjusted $R^2$ value was 0.202 and closer to $R^2$ value implying that 20.2 percent of variance in firm performance in the population was explained by the model. The analysis used age, education, managerial skills, industry experience and social skills leaving out gender whose inclusion resulted in reduced adjusted $R^2$ value indicating over fitting of the model.

The F statistic (12.150) for the model was statistically significant at five percent significance level ($p \leq 0.05$) and, therefore, the overall model was significant. Thus, the null hypothesis that there is no significant relationship between entrepreneur characteristics and firm performance was rejected in favour of alternative hypothesis, that there is a significant relationship between entrepreneur characteristics and performance.

The calculated t-values for the estimated coefficients of age (1.991), managerial skills (3.551), industry experience (2.274) and social skills (4.893) were significant at five percent significance level ($p \leq 0.05$). Based on the foregoing results of regression analysis, the model fitted with performance as dependent and entrepreneur characteristics as independent was specified as:

$$FP = 1.799 - 0.094 \text{AGE} + 0.395 \text{MK} + 0.133 \text{IE} + 0.549 \text{SK}$$

From the regression equation, the intercept was 1.799, implying that firm performance would be 1.799 when all the independent variables were zero. Also, a unit increase in age (that is, increasing age of the
entrepreneur) would bring about a decrease of 0.094 in firm performance, ceteris paribus. Similarly, an increase in managerial and social skills, and industry experience by one unit each, that is changing to entrepreneurs with managerial and social skills, and industry experience would result in an increase in firm performance by 0.395, 0.549 and 0.133, respectively, ceteris paribus.

Discussion
The exclusion of other entrepreneur characteristics such as self-confidence, perseverance, desire to be boss, will to succeed, autonomy, innovativeness, risk taking, pro-activeness, and competitive aggressiveness in the model could explain the low $R^2$ and adjusted $R^2$ values. However, studies have pointed out that low R-squared values are not always bad, and are even expected in studies of this nature. What matters most is the level of significance. Odundo (2012) points out that such level is acceptable given that the study only focused on a few variables rather than modeling for performance indicators in general. Islam et al. (2011) in a study on business success in Bangladesh obtained the $R^2$ of 0.213. Equally, the study by Adegbite et al. (2006) observed that the 10 personal entrepreneurial characteristics applied in regression analysis could only explain 19.7 percent of variation in the sales turnover of the industries.

The negative relationship between firm performance and age indicates that SMEs operated by young adult entrepreneurs had better performance than competition. This finding supports the results by other studies that business firms operated by young entrepreneurs have better performance. Amran (2011) in a study on Malaysian public listed family businesses observed that young entrepreneurs performed better than mature ones as they changed and grabbed opportunities faster thus, increasing firm performance. Carlsson and Karlsson (1970) noted that mature entrepreneurs tended to be more risk averse than younger ones, thus negatively impacting on firm performance.

The positive relationship between firm performance, and managerial skills and industry experience shows that training and experience are crucial in the venture performance. Fielden et al. (2000) in a study on micro and small business start-up in North-West England reported that skills and experience are very crucial to enterprise survival while experience from previous job, and on the job experience are key factors in enterprise duration, growth and survival. Martin and Staines (2008) indicate that managerial skills assist managers to solve issues that are directly relevant to the current, fast shifting business environment. Mfinanga (2008) in a study on paratransit situation in Dar es Salaam observed that managerial skills are important in running any business. Although the influence of education on performance in this study is not significant, the better performance by poorly educated entrepreneurs could be due to the compensating effect of experience and managerial trainings received. Gomide et al. (2004) suggests a link between sales turnover and business training. According to Khayesi (2009), the objective of training is to help owners of SMEs improve their skills.

The strong influence of social skills on performance lies in the advantages associated with collective actions through membership to clubs. Economic and social networks are very useful in assembling the resources needed for starting and managing manufacturing
industries (Burnett, 2000). Bowen et al. (2009) in their study on management of business challenges among SMEs in Nairobi observed that memberships to social as well as professional clubs provide necessary networks that bring beneficial effects such as information and experience sharing, technical know-how and bargaining power to entrepreneurs running SMEs. Kamalakumati and Sathiyakala (2013) in their study on impact of entrepreneurial characteristics on the organizational development of the small business entrepreneurs observed that small businesses could strengthen their social networks by forming clubs to get connected with large scale businesses.

The findings of this study affirm the observations in literature that the entrepreneur characteristics have significant effect on firm performance. Equally, the findings support the RBV and theories relating to entrepreneurship that skills and experience are important in enhancing firm performance. The assumption by the RBV that a firm can obtain sustainable competitive advantage by having strategically relevant resources and capabilities that are embedded in the entrepreneurs and employees inform of skills and tacit knowledge (Polanyi, 1966; Wernerfelt, 1984; Castanias & Helft, 1991) is strongly supported by the findings of this study. Equally, the findings also support the advancement by the socio-cultural and other theories explaining entrepreneur characteristics that skills, experience and social networks are important in entrepreneurial action and behaviour (Dubini & Aldrich, 1991; Greve & Salaff, 2003). The findings of this study, therefore, provide evidence that age, skills and experience matter; there is need for the firms to enhance their capacities by adopting employment policies that target young staff that have requisite skills and experience.

**Conclusions**

The general objective of this study was to establish the relationship between entrepreneur characteristics and performance of the NTFPs firms in Kenya. The entrepreneur characteristics have a strong and direct effect on the performance of NTFPs firms. From the findings, it is concluded that entrepreneur characteristics and performance of NTFPs firms are empirically related. Entrepreneur characteristics of age, managerial skills, industry experience and social skills affect firm performance; firms operated by youthful and experienced owners/managers with high managerial know-how and social skills perform better than competition. This view that entrepreneur characteristics and firm performance are empirically related is consistent with positions by various studies. O’Farrell and Hitchens (1988) and Erikson (2002) concluded that the characteristics of the entrepreneur are central to the determinants of SME performance. Islam et al. (2011) concluded that entrepreneur characteristics have significant effect on business success of SMEs.

This study enriches the resource based view (RBV) by providing support for the argument that a firm can obtain sustainable competitive advantage by having strategically relevant resources and capabilities that are embedded in the owners/managers and employees inform of skills and tacit knowledge. In addition, the signs and magnitude of influence of entrepreneur characteristics on firm performance help enrich the theories of entrepreneurship that; SMEs run by relatively young, well-experienced and skilled
entrepreneurs are competitive and register better performance.

**Implications of the study**

Arising from the key findings, this study has a number of implications. The personal attributes of an entrepreneur in this sector has been found to have effect on the performance of their businesses. This implies that business incubation programmes should emphasize acquisition of necessary qualities. Enrolment and participation in societies or associations/clubs or professional bodies were found to be critical in the networking and build-up of social skills.

Specialized training programmes in entrepreneurship should be organized to equip potential and existing entrepreneurs with necessary theoretical and practical skills in business management. Enrolments of start-ups in incubation programmes would be critical. Policy measures to encourage the many well trained young people but with high unemployment to engage in businesses are necessary. However, this study was limited to only few entrepreneur characteristics that explained about 22 percent of the variation in firm performance, thus a need for studies to increase scope of entrepreneur characteristics and assess their effect on firm performance.

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