# THE RELATIONSHIP BETWEEN RISK TAKING AND PERFORMANCE OF SMALL AND MEDIUM AGRO PROCESSING ENTERPRISES IN KENYA

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**Abstract**

*The element of risk taking in entrepreneurial orientation reflects calculated and manageable risks. Risk taking is a dominant attribute of entrepreneurship as the higher the risk-taking orientation, the higher a firm's profitability and growth. This purpose of this paper was to establish the influence of entrepreneurial risk taking and firm performance of agro processing small and medium enterprises in Kenya. The study findings revealed that risk taking has a positive impact on firm performance of agro processing SMEs in Kenya. The implications of these findings for managerial practice and suggestions for further research are discussed.*

*Keywords: Entrepreneurship, Entrepreneurial Orientation, Risk taking, Firm Performance, Agro Processing SMEs, Kenya*

## INTRODUCTION

In many developing countries, small and medium enterprises (SMEs) constitute the bulk of industrial base (Kormawa, Wohlmuth & Devlin, 2011). SMEs play an increasingly important role as they address poverty by creating jobs; disperse economic activities in the countryside, and provide broad-based sources of growth (Singh, Garg & Deshmukh, 2008; Kropp, Lindsay & Shoham, 2006). Agro processing SMEs, in particular, contribute significantly to value added creation, maximize the efficiency of the resource allocation and enhance distribution by mobilizing and utilizing local human and material resources (Cunningham & Rowley 2007). Despite their importance, agro processing SMEs are faced by global competition, market liberalization, rapid technological advances and the introduction of stricter quality and safety regulations (Da silva, Baker, Shepherd, Jenane & Miranda da Cruz, 2009). Today's dynamic environment requires SMEs to be entrepreneurial if they are to survive, grow of have superior performance (Fairoz, Hirobumi & Tanaka, 2010). Firm - level entrepreneurship is Key to enhancement of firm performance of small firms (Wiklund & Shepherd, 2003; Lumpkin & Dess, 1996; Patel & D'Souza, 2012). Empirical studies done in developed and transition economies suggest that risk taking as a firm - level strategic posture has constitutes a potential source of competitive advantage and has positive, long-term effect on growth and financial performance of SMEs (Wang & Poutziouris, 2010).

## Statement of the Problem

In the period 2008 – 2012, the agro processing industries in Kenya experienced low firm performance, especially the food and beverage, which is the largest component in the agro processing manufacturing sector. In 2012, the food and beverage industries registered a 0.3 per cent decline after experiencing a 1.6 per cent decline in 2011. Other agro processing industries involved in the preparation and preservation of fish, processed liquid milk, production of bakery products, processed and preserved fruits and vegetables registered a drop by 10.4, 13.7, 14.9 and 2.5 per cent, respectively during the said period (ROK, 2013). In addition, the workforce in agro processing industries reduced by approximately 2 per cent (ROK, 2012). During the same period, the average growth percentage remained stagnant at 3 to 4 per cent. This growth rate is low given that the Kenya Vision 2030 expects that agro processing industries to grow at a rate of 10 per cent annually (ROK, 2007).

If allowed to continue, low firm performance of agro processing SMEs will lead to dominance by primary agro-based commodities, thereby increasing the country's vulnerability to international market price fluctuations (Onjala, 2010). It will also lead to low incomes for those employed in agro processing SMEs with correspondingly low standards of living. This threatens
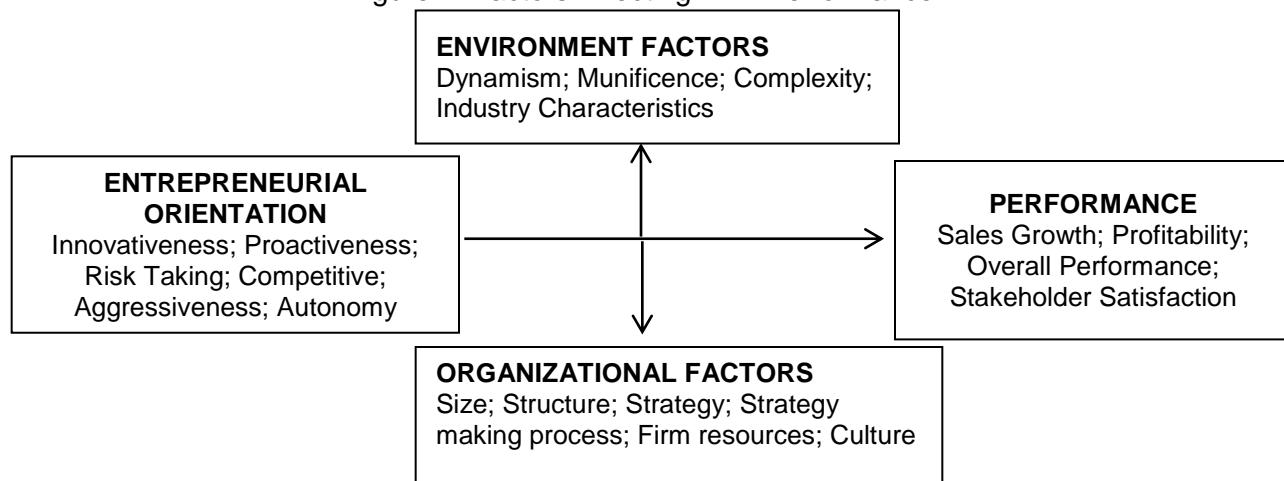
the long term survival of these enterprises and can lead to closure despite the fact that the agricultural products are grown in Kenya (Kormawa, Wohlmuth & Devlin, 2011). A few researches of entrepreneurial orientation in SMEs have been conducted in Kenya have centered on overall entrepreneurial orientation and how it affects firm performance, rather than the individual and independent influence of entrepreneurial orientation dimensions such as risk taking and its influence on firm performance on SMEs. Osoro (2012) examined the effect of entrepreneurial orientation of the business performance of SMEs in the Information Technology in Nairobi. The study failed to identify the influence of risk taking dimension of entrepreneurial orientation on firm performance of SMEs. This paper seeks to fill that gap by establishing influence of risk taking on firm performance of agro processing SMEs in Kenya.

## LITERATURE REVIEW

### Risk Taking

There are many theoretical studies which examine the entrepreneurial orientation- performance relationship. This study adopted the Lumpkin and Dess (1996) conceptual model of EO-performance relationship (Figure 1) wherein entrepreneurial orientation which consists of five dimensions (autonomy, innovativeness, risk taking, proactiveness and competitive aggressiveness) that affects performance of firms (sales growth, profitability, overall performance, stakeholder satisfaction) is moderated by environmental factors and organizational factors. Entrepreneurial orientation as a firm level strategy is used by entrepreneurial firms to enact their organizational purpose, sustain their vision and create competitive advantage (Wiklund & Shepherd, 2005).

Figure 1: Factors Affecting Firm Performance

**ENVIRONMENT FACTORS**
Dynamism; Munificence; Complexity; Industry Characteristics

**ENTREPRENEURIAL ORIENTATION**
Innovativeness; Proactiveness; Risk Taking; Competitive; Aggressiveness; Autonomy

**PERFORMANCE**
Sales Growth; Profitability; Overall Performance; Stakeholder Satisfaction

**ORGANIZATIONAL FACTORS**
Size; Structure; Strategy; Strategy making process; Firm resources; Culture

Source: Lumpkin, G.T., & Dess, G.G. (1996). Clarifying the entrepreneurial construct and linking it to performance. Academy of Management Review, 21(1), 135-172.

In this study, risk taking dimension of entrepreneurial orientation was used. Risk-taking is often used to describe the uncertainty that results from entrepreneurial behavior (Tajeddini, 2010). The risk-taking dimension of entrepreneurial orientation captures the extent to which the firm's processes involve and/or ignore risks (McMullen & Shepherd, 2006). Risk taking involves engaging in calculated and manageable risks in order to obtain benefits, rather than taking daring risks which are detrimental for firm performance (Dess & Lumpkin, 2005; Morris, Kuratko & Covin, 2008). Begley and Boyd (1978) posit that entrepreneurial firms' propensity to take risks is between low and moderate levels. Firms that adopt a modest level of risk taking are high performers when compared to those firms that assume very high or very low levels of risk taking (Kreiser, Marino & Weaver, 2002; Otieno, Bwisa & Kihoro, 2012). Risk taking also entails a willingness to commit significant resources to opportunities having a reasonable chance of costly failure and a willingness to break away from the tried-and-true path (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005; Okpara, 2009).

**Firm Performance**

In the field of strategic entrepreneurship, firm performance has been considered as an important construct. There has been no agreement, however, among researchers on the appropriate measure of performance. Previous studies have suggested that growth and financial measures are important performance measures for small enterprises (Murphy, Trailer & Hill, 1996; Wiklund, 1999). A few studies have used non-financial measures of firm performance such as customer and product performance, customer satisfaction and employee turnover (Glancey, 1998; Liu, Manolova & Edelmann, 2009; Yucel, 2011). Growth measures are considered to be more accurate and easily available than account-based measures and hence superior to financial measures. According to Green and Brown (1997) growth is an important demonstration of entrepreneurial behavior for small firms. On the other hand, financial measures are considered critical in determining the survival and success of the firm ( Zainol & Ayadurai, 2011).

Financial measures, however, are considered unstable and sensitive to changing industry-related factors. They are easily manipulated and hence do not reflect the real performance (Al-Swidi & Al-Hosam, 2012). In addition, a heavily reliance on financial measures could hinder future competitive advantage as they do not reflect drivers of future performance and value creation (Keh, Nguyen & Ng, 2007). Proponents of a combination of both growth and financial performance measures argue that these measures give a richer description of the actual performance of the firm than each does separately (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005).

Firm performance may be measured using subjective measures or objective measures. Objective measures are obtained from firm's annual accounts and are considered as more appropriate (Moreno & Casillas, 2008). Lack of formal procedures and control, however, makes it very difficult to obtain objectives measures. Additionally, owner/managers are generally unwilling to release financial information to outsiders (Chao & Spillan, 2010). On the other hand, subjective measures involve seeking for the perception of the owner/manager relative to that of competitors during a certain time period (Idar & Mahmood, 2011). Venkatraman and Ramanujam (1986) posit that subjective measures are reliable and subject to minimal functional biases. They can accurately reflect objective measures and are highly consistent with how the firm actually performed as indicated by objective measures (Lumpkin & Dess, 2001). Comparison with competing firms in the market reveals important supplementary information, especially whether the firm is simply pulled against market trends (Wiklund, 1999).

## Risk Taking and Firm Performance

The importance of risk taking and its influence on firm performance has been highlighted in both theoretical discussions and empirical research. At the theoretical level, the willingness to engage in relatively high levels of risk taking behavior enables SMEs to seize profitable opportunities in the face of uncertainty which leads to long term profitability (McGrath, 2001). Empirically, risk taking firms are able to secure superior growth and long term profitability in contrast to risk avoiders (Yang, 2008; Wang & Poutziouris, 2010; Ahimbisibwe & Abaho, 2013). On the basis of these findings, the following hypothesis if proposed:-

**Ho$_1$:** There is no relationship between risk taking and the firm performance of small and medium agro processing enterprises in Kenya.

## RESEARCH METHODOLOGY

## Population and Data Collection

Primary data was collected by means of a self – administered, semi structured questionnaire completed by owner/managers of agro processing SMEs. A census of agro processing SMEs registered with Kenya Association of Manufacturers was used. A number of assumptions underlay the use of self-administered questionnaires. First, it was assumed that the respondents were capable of answering the relevant questions knowledgeably and accurately. Secondly, that the top managers were expert informants due their experience and insight about their enterprises and the industry. Additionally, it was assumed that the answers given by the respondents were representative of firm behavior and practice (Lyon, Lumpkin & Dess, 2000).

The questionnaire was pretested for reliability and validity on 20 agro processing SMEs that were not registered members of Kenya Association of Manufacturers but comparable to members of the study population. The pre-test sample was selected using purposive sampling technique. After the pilot test, any items that were not clear, or were confusing or could cause bias were modified or omitted. A total of 111 questionnaires were sent out but only 97 usable questionnaires were received giving a response rate of 87.3% which was considered to be very good. Fourteen questionnaires were dropped because they were missing vital information needed in the analysis. According to Mugenda (2008), a response rate of 50% is considered adequate, 60% and above good, and above 70% very good.

The possibility of non-response bias was measured using the extrapolation method of Armstrong and Overton (1977) by comparing the means of early respondents and late respondents based on number of years in operation. Non-response bias exists when there is a significant difference between the answers of the early respondents and the non-respondents who are assumed to be similar to late respondents (Bryman & Bell, 2011). In this study, the early respondents were 51 and the late respondents were 46. The t-test yielded no statistically significant difference and it was concluded that there was no significant non-response bias in the study.

**Measures**

The entrepreneurial dimension risk taking in the firms was measured using 5 items on a five point Likert scale. All measures used were grounded on literature. The questions solicited respondents to evaluate 1) the firm's tendency to commit a large portion of its resources in order to grow 2) the firm's propensity to invest in high risk projects which promises high returns 3) the firm's predisposition to finance its major projects through heavy borrowing 4) the firm's affinity to continuously seek opportunities related to its present operations 5) the firm's tendency to use true and tried practices and technologies to explore new opportunities. Firm performance which included sales and employee growth and profitability was measured by using a five point Likert scale ranging from 1=not at all satisfied to 5=extremely satisfied. In this study, it was very difficult to collect objective data because the owner/manager was unwilling to release firm's information to outsiders. Subjective approach was adopted in this study where firm performance was measured based on the perception of the owner/manager. They were requested to state their satisfaction with firms' performance for the past five years in comparison to their competitors.

## ANALYSIS AND FINDINGS

### Characteristics of the Respondents

The majority (62.3%) of the owner/managers were male while 37.7% were female. Majority (47%) of the respondents were between 31 to 40 years, 37% were between 21 to 30 years, 14% were between 4 to 50 years and 2% were below 21years.  Most (41.2%) of the respondents held bachelor degree holders, 39.2% held diploma,11.3% held master degree holders, 6.2% held certificates while 2.1% held a doctorate degree. The majority (38.5%) of the respondents had worked for a period between 5 to 9 years, 26.9% for less than 4 years, 19.3% for a period between 10 to 14 years. A few (3.8%) had worked for a period between 15 to 19 years while 11.5% had worked for over 20 years. Most of the firms were limited liability companies, 14.4% were sole proprietorships while 10.9% were partnerships. Most (40%) of the firms had been in operation for 15 years while 24% for 5 to 9 years, another 22%  had been in operation for less than 5 years, yet another 14% had been in operation for a period between 10 to 15 years.  The distribution of the respondents according to business activities indicated 72.2% were engaged in food and beverage manufacturing while 4.1% were engaged in leather and footwear manufacturing, another 8.2% were engaged in textile and garment manufacturing and yet another 15.5% in paper and board manufacturing. The average firm employed between 51 in 2009 (SD= 50.646) and 78 employees in 2013 (SD= 69.490).

### Measurement Model

The outer or measurement model assessed the relationship between the observable variables and the theoretical constructs they represent. A reliability test was conducted to determine the internal consistency of the measures used. The Cronbach alpha ($\alpha$) value for risk taking was 0.600 while firm performance had a value of 0.751 which is higher than the recommended threshold of 0.500 demonstrating adequate reliability (Hair, Black, Babin & Anderson, 2010). The variables were validated through factor analysis. Before performing exploratory factor analysis, two statistical tests were performed to assess the suitability of the data for structural detection; Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The result of KMO was found to be 0.612 above the threshold of 0.5 and Bartlett's Test of Sphericity was significant at $p<0.044$ which indicated that the data was useful for factor analysis (Kaiser, 1974). The variability of each observed variable that could be explained by the extracted factors were checked by extracting the communality values. The extracted communalities were found to be 0.655 which was greater than 0.5 thus demonstrating that the variables fitted well other variables in their factor (Pallant, 2010). Factor analysis was assessed

using Principle component analysis. Two items of risk taking and one item of firm performance were deleted as they had factor loadings lower than 0.5 (Cooper & Schindler, 2011).

Confirmatory factor analysis was estimated on multiple criteria of construct reliability, convergent and discriminant validity. All the variables exhibited construct validity as the composite reliability was 0.787 above the acceptable threshold of 0.6 and the cronbach alpha ($\alpha$) was 0.514 above the acceptable threshold of 0.5 (Ahimbisibwe & Abaho, 2013). The Average Variance extracted (AVE) for risk taking was 0.655 and for firm performance was 0.616 which exceeded the cut off value of 0.5, thus confirming convergent validity (Bryman, 2012). To satisfy the requirement of discriminant validity of the measurement model, this study followed the criterion suggested by Fornell and Larcker (1981). The discriminant validity was confirmed as the square root of a construct's AVE was greater than the correlation between the construct and other constructs in the model (Madhoushi, Sadati & Delavari, 2011).

There was a moderate correlation between risk taking and firm performance ($r = 0.536$, $p < 0.05$).The normality of data was assessed by examining its skewness and kurtosis (Pallant, 2010). The result showed that skewness was within the range of -0.203 and + 0.306 and kurtosis was within the range of -0.156 and + 0.626 which complied with the normality threshold of -1 to +1 (Cooper & Schindler, 2011). Multicollinearity was tested using Tolerance and Variance Inflation Factor. The tolerance value was 0.884 and the VIF value was 1.131 showing that there was no multicollinearity associated with risk taking and firm performance variables (Martz, 2013).

## Structural Model and Hypothesis Testing

The structural or inner model identification was accomplished by examining path coefficients or betas for hypothesis testing (Hair *et al.*, 2011). The paths between the constructs represent each hypothesis. Structural Equation Modeling partial least squares (SEM-PLS) was used for model analysis and hypothesis testing. SEM-PLS was used because of four reasons. First, PLS makes no prior distributional assumptions and is applicable to small populations. Secondly, PLS analyzes complex model with large set of relationships among constructs and sub-constructs (Esposito Vinzi, Trinchea & Amato, 2010). It provides more flexibility in modeling second order constructs and formative constructs (Chin, 1998). Thirdly, PLS can account for measurement errors of latent constructs and assess significance of structural models simultaneously. Lastly, PLS examines the causal relationships among latent variables in situations of high complexity and low theoretical information (Byrne, 2001).

The structural model was evaluated by examining the $R^2$ values and the size of the structural path coefficient. The stability of the estimates was examined by using the t-statistics

obtained from a bootstrap test with 500 resamples. The resultant T-tests statistics from the bootstrapping procedure provided the basis for determining which relationships are statistically significant (Hensler, Ringle & Sinkovics, 2009). The statistical objective of SEM-PLS is to show high $R^2$ and significant t-values, thus rejecting the null hypothesis of no effect. $R^2$ values range between 1 and 0 where 1 means a perfect prediction of the structural model (Hair *et al.* 2010). Table 2 below sets out the path coefficient and the t- values observed with the level of significance achieved from bootstrapping.

Table 2: Path Coefficient and T-values of Risk Taking

|  | Original Sample | Sample Mean | Standard Deviation | Standard Error | Path Coefficient | T Statistics | P-value |
|---|---|---|---|---|---|---|---|
| **risk -> FP** | 0.271805 | 0.299313 | 0.071621 | 0.071621 | 0.272 | 3.795042 | 0.05 |

As indicated in Figures 3, the path coefficient between risk taking and firm performance was positive and significant with a path coefficient of 0.272 and a significance level of 0.05 (β=0.272, p<0.05). The path coefficient implied that for every 1 unit increase in risk taking, firm performance was increased by 0.272 units. The value of $R^2$ coefficient was 0.074 which indicated that 7.4% of the variation in firm performance can be accounted for by risk taking. Based on the assessment criterion suggested by Cohen (1988), the outer model was found to reflect a very weak predictive relevance.

Figure 3: Path coefficient for Risk Taking and Firm Performance
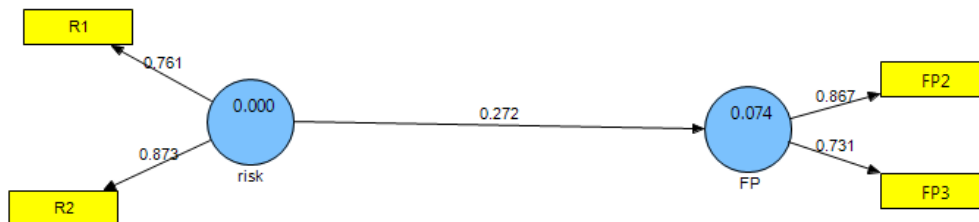


T-statistics was used to test the significance to the relationship between risk taking and firm performance where critical values for t-statistics should be greater than 1.96 at 0.05 significant level. The resultant T-tests statistics are illustrated in Figure 4 showed that the model was significant at 95% significance level for a two tailed test with t = 3.795. The results showed that risk taking has a positive and statistically significant relationship with firm performance. The null hypothesis $Ho_1$ was rejected and the alternative hypothesis that stated that there is a relationship between risk taking and firm performance of small and medium agro processing enterprises in Kenya was supported.

Figure 4: T-statistics for the relationship between risk taking and firm performance
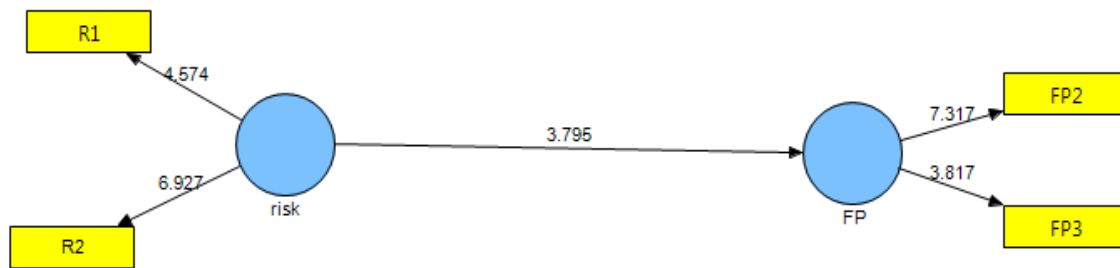


## DISCUSSION AND CONCLUSIONS

The findings of this study show that risk taking has a great impact on firm performance of agro processing SMEs in Kenya. Specifically, risk taking has a significant positive effect on firm performance of agro processing SMEs in terms of growth and profitability ($\beta=0.272$, $p<0.05$, $t=3.795$). The results are consistent with the findings from other studies that establish that risk taking influences the firm performance of small firms (Rao, 2012; Awang, Ahmed, Asgher & Subari, 2010). The performance of agro processing SMEs could benefit from its owner/mangers being risk takers. Owner/managers agro processing SMEs need to adopt an entrepreneurial mindset wherein at the heart lays the ability of the owner/managers to accept and manage risk. It is the primary way agro processing SMEs can successfully seize profitable opportunities in the face of uncertainty. The findings demonstrate that the ability of SMEs to stay competitive is directly related to the intensity of taking risks. The findings contribute to the resource based theory by illustrating the important role of risk taking as a strategy that leads to competitive advantage of SMEs.

## SUGGESTIONS FOR FURTHER RESEARCH

The present study has a number of limitations that need to be addressed in further research studies. First, the study focused on agro processing SMEs in Kenya which affects generalization of the study findings to other industries and regions. There is need for more context specific research in developing countries before establishing a general theory on the relationship between risk taking and firm performance. Second, due to the difficulty experienced in getting financial performance measures of agro processing SMEs in Kenya, this study relied solely on subjective, self-report measures. There is a need for future studies to use objective indicators of financial measures or non-financial measures such as customer satisfaction, market share and innovation performance. Third, the study established the relationship between risk taking and firm performance. Future studies should investigate the role of contingency factors in the risk

taking and firm performance relationship under the contingency models of entrepreneurship such as the resource endowment or organizational structures (Covin & Slevin, 1991; Lumpkin & Dess, 1996).

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