Factors Influencing the Intensity of Export Success in Ghaha's Horticultural Industry

Irene S. Egyir Ph.D
Department of Agricultural Economics and Agribusiness
University of Ghana
P. O. Box 68, Legon-Accra, Ghana.

Edwin Clifford Mensah, Ph.D
Associate Professor of Economics
School of Business
The University of North Carolina at Pembroke
One University Drive
P.O. Box 1510, Pembroke, NC 28372-1510, USA.

Felix Agyei-Sasu
Department of Agricultural Economics and Agribusiness
University of Ghana
P. O. Box 68, Legon-Accra, Ghana.

Abstract

Export success and the ability to sustain oneself in the international horticultural markets have become more critical in the recent years given the current global economic downturn. The extent of success is even much critical for enterprises in the horticultural export chain. The goal of this study is to identify the factors that influence the intensity of export succes. A semi-strutured questionnaire was used to collect data from 52 managers and representatives of horticultural exporting firms in Ghana. By estimating a tobit model of the intensity of export success, our results reveal that a manager's level of education, experience, training, entreprenuerial orientation, presence of export department, product diversification and government support directly influences the intensity of export success.Export barriers and constraints in accessing working capital negatively influenced the intensity of export success.

Keywords: Tobit, export success, horticulture, enterprises, Ghana

1. Introduction

Given that exposure to international trade can significantly contribute to economic growth and social development, export-led growth has become a primary development strategy in the global economy. Export-based growth has an immediate beneficial impact on jobs, income opportunities, and the creation of a new basis for capital, technology, and skills can be created (Fromm and Dornberger, 2005). Export growth occurs when firms in the sector are successful; it is much more effectual when the intensity of export is high.

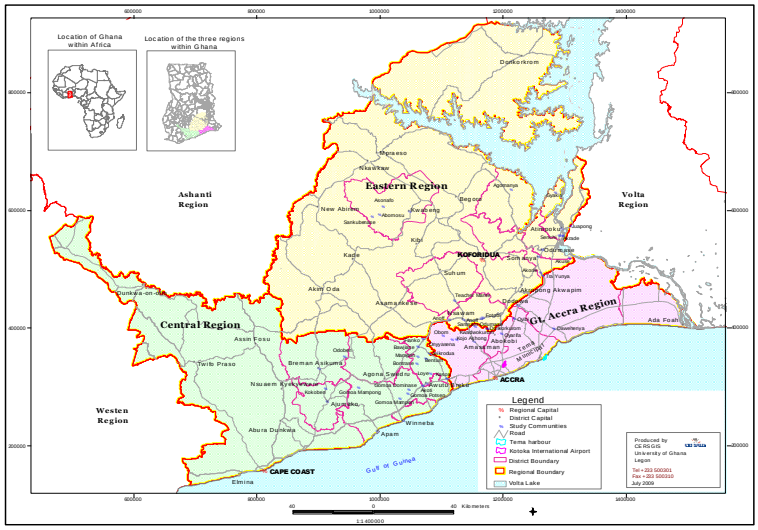
Successive governments in Ghana have therefore made major efforts over the years to stimulate exports through diverse policy instruments. There has been practical evidence since the early 1980's under the economic recovery programme (ERP) and the structural adjustment programme (SAP) which followed (Buasi, 2000). The ERP aimed at making export promotion the focal point, coupled with export diversification (ISSER, 2006). The monopoly of cocoa as the major traditional export crop was questioned and horticultural exports (NTAEs) such as pineapple, papaya, mango, and chillies were given attention. Studies by Baah-Nuakoh *et al.* (1996) on 'exporting manufacturers from Ghana' showed that the structural adjustment policies (SAP) that accompanied the economic reform programme (ERP) of the 1980's created incentive systems conducive for the expansion of non-traditional exports, yet, the factors that would ensure survival in the export sector and improve the intensity of success was never outlined. Furthermore, although various determinants of export performance or success have been established by researchers the factors that influence the intensity of export success are not known. Estimating the intensity of success therefore, is the focus of this study.

2.1 Methodology & Model

2.1.1 *Data Collection Procedure*

The study was conducted in the Central, Eastern and, Greater Accra Regions of Ghana which constitutes the southern tropical belt. These regions have the right edaphic conditions for the efficient production of horticultural export crops. Besides these, most of this area of cultivation are linked with relatively good road networks and are relatively closer to the terminals of Ghana's point of exit for internationally tradable commodities namely; the Kotoka International Airport, and Tema Habour (see figure 1). The districts demarcated in the map forms major areas where most of the horticultural products are obtained.

Figure 1: Map of Ghana Showing Belt of NTAE and Study Area



Source: CERSGIS, 2009

A sample size of 52 horticultural exporters was obtained. Respondents were identified from current list provided by the Federation of Association of Ghanaian Exporters (FAGE) in Ghana's Fresh Produce Exporter's Directory, 2008. FAGE acts as the mother of all export associations from which the sample was drawn from. There was face-to-face interviewing using a semi-structured questionnaire.

2.1.2 *Theoretical Model*

Following most econometric studies on the intensity, especially, of adoption as in Baidu-Forson (1999), a Tobit estimation was employed to determine the factors that influence the intensity of export success. Here, the binary dependent variable, successful or not successful is not appropriate. In his study of adoption of land enhancing technology in the Sahel, Baidu-Forson (1999) suggested that, valuable information may be lost due to the use of binary dependent variable. The dependent variable used here is therefore censored at success. To obtain intensity dependent variables for analysis, the mean index (the mean performance score) is subtracted from the average score of each firm's aggregate performance score (see appendix1 for performance indicators). Those with negative resultant values were tagged to zero (0) and those with positive values were recorded in their absolute terms. Hence the intensity of export success here refers to the extent to which a firm's average score deviates from the mean. It is given as: $(AS - \overline{XS})$

Where

AS is the firm's average performance score

XS bar is the mean index (mean performance score)

Estimations in the tobit model assume a tobit index (T) where $T = \beta' x_i$ and the vector, β includes a constant. If (T) falls below a critical threshold level(T^*), the success level is estimated to be zero. Therefore, the expected value of $y_i, E(y_i)$, is defined as:

$$E(y_i) = T - T^* \geq 0 \quad if\ T \geq T^*, \quad successful$$
$$E(y_i) = 0 \quad if\ T < T^* \quad unsuccessful \qquad (1)$$

The expected value of y_i is computed directly as:

$$E(y_i/x) = F(\frac{x'\beta}{\sigma})(x'\beta) + \sigma f(\frac{x'\beta}{\sigma}), \qquad (2)$$

Where:

x is the vector of the explanatory variables,

β is a vector of *Tobit* maximum likelihood estimates; and

σ is the standard error of the error term.

The effect of a change in any independent variable on $E(y_i/x)$ (marginal effect) is given as:

$$\frac{\delta E(y/x_{it})}{\delta x_i} = \varphi\left(\frac{\beta x_i}{\sigma}\right)\beta_i \qquad (3)$$

2.1.3 *Empirical Model*

Collected survey data were analyzed using descriptive statistics and econometric models with the statistical software packages SPSS and Eviews. The estimated model is specified by equation 4:

$$y_i = \beta_0 + \beta_1 gen + \beta_2 educ + \beta_3 mpe + \beta_4 mtrain + \beta_5 ent + \beta_6 firmsize + \beta_7 prodiv + \beta_8 expdpt + \beta_9 rd + \beta_{10} gis + \beta_{11} eb + \beta_{12} wci \qquad (4)$$

The independent variables included owners of enterprises (manager), organizational and institutional factors postulated to influence the success of enterprises. These variables include; *Gender (GEN)*, measured as a dummy variable, 1 if respondent is a male and 0 otherwise, *Education Level (EDUC)*, operationalized as the number of years spent by a manager in formal education, *Manager's Past experience in exporting (MPE)* is operationalised as a dummy; 1 if respondents ever had experience in terms of foreign trade and travels before current position, or 0 otherwise, *Managers Training (MTRAIN)* is measured as a dummy on whether the manager has been trained in export management; 1 for yes and 0 otherwise, *Entrepreneurship (Personal Agency Belief)(ENT)* is measured as a product of locus of control and perceived self-efficacy. Personal Agency Belief = f (LOC*SE) (Harper, 2003). *Firm size (FSIZE)* is measured by the average number of workers per month, *Product Diversification (PODIV)* is measured as the number of different horticultural commodities exported by a firm, *Export Department (EXPDT)* is operationalised as dummy; 1, if the firm has an export department and 0, otherwise, *Research & Development (RD)* is measured by the percentage of expenditures on R&D to output/annual income ratio, *Government or institutional support (GIS)* is used as an indicator of whether an exporting firm has ever received financial, technical or both support from either government or an institution.

It was measured by a dummy variable that equals 1 when exporter has ever received support and 0 otherwise, *Export Barrier (EB)* on a four point scale (1= not very important; 4= very important), importance of political situation; socio-cultural complementarities; lack of adequate distribution channels; and importance of standards and technical regulation are measured following Mavrogiannis *et al.*(2008). The average score for each firm is computed and dummied; 1, if export barrier has an important effect on export, 0, otherwise, *Working Capital Accessibility (WCA)* this variable measures the perceived working capital accessibility situation in the country. It is measured on a five point scale where managers were ask to rate their access to financial institutions, or funds. One extreme being "*very difficult"* and the other "*very easy*." The score for each firm is dummied; 1, if access to working capital is very difficult or difficult and 0, if access to working capital is neither difficult nor easy to very easy.

3. Results and Discussions

The regression results in Table 1 show the importance of certain managerial, organizational and institutional factors that influence intensity of export success. It is quite obvious from our results in Table 1 that a manager's education level (EDUC), positively affects the intensity of export success of enterprises in the horticultural sector of Ghana and an increase in the level of education increases the level of intensity of export success by 1.1% at the 5% level of significance (Table 1).

Table 1: Tobit Analysis of Determinants of Export Success Intensity

Dependent Variable: EXPORT SUCCESS INTENSITY (Censored Normal)				
Variables	**Coefficient**	**Std. Error**	**Marginal Effects**	**Intensity**
C	-1.522331	0.634577**	-0.5217	
GEN	-0.113034	0.316661	-0.0387	-0.07433
EDUC	0.017283	0.008857**	0.0059	0.011383
MPE	0.367213	0.152939**	0.1259	0.241313
MTRAIN	0.609802	0.191852***	0.2090	0.400802
ENT	0.000248	0.000120**	0.0001	0.000148
FIRMSIZE	-0.000273	0.000516	-0.0001	-0.00017
PRODIV	0.069135	0.019904***	0.0237	0.045435
EXPDPT	0.456189	0.182450***	0.1563	0.299889
RD	-0.157349	0.109721	-0.0539	-0.10345
GIS	0.580474	0.172008***	0.1989	0.381574
EB	-0.324375	0.162320**	-0.1112	-0.21318
WCI	-0.471940	0.192503***	-0.1617	-0.31024
R^2	0.536893	Log likelihood	-25.13155	
Adjusted R^2	0.378462	Avg. log likelihood	-0.483299	
S.E. of regression	0.315624	Mean dependent var	0.342720	
Sum squared resid	3.785497	S.D. dependent var	0.400346	

Source: Field Survey, 2008.
***, **and * are significant at 1%, 5%and 10% resp.

Table 2: Component of measurement scale (developed into five point likert scale)

Measures	Authors
1. Goal achievements of the firm	Katsikeas, *et. al,* (1996)
2. Satisfaction with firm's international performance	White *et al,* (1998); Evangelista (1994)
3. Export Sales Volume Growth	Köksal, (2008); Mavrogianis *et al.*, (2008); Leonidou *et al.*, (2002);
4. Export Sales Value Growth	Shamsuddoha and Ali (2006); Leonidou *et al.*, (2002)
5. Firms Profit in Exporting	Köksal (2008); Katsikeas *et al*, (1996, 2000); Francis and Collins-Dodd (2000); White *et al.*, (1998)
6. Market Diversification/share (number of countries exported to)	Köksal (2008); Chen *et al.,* (2006); Katsikeas *et al.*, (1996, 2000); Francis and Collins-Dodd (2000); Fraser and Hite (1990)
7. Export Intensity (export proportion of sales)	Chen *et al.*, (2006); Francis and Collins-Dodd (2000)

Source Author's compilation

The benefits attained from education enlighten a manger and tends to foster the adoption and adaption to new technology and ideas which ultimately helps to improve the firm's performance. Also, the results indicate that, a manager's past experience in exporting has a significantly positive influence on the intensity of success in a crop exporting firm by about 24.1% at the 5% level. The level of experience and subsequent exposure to international trade allow managers to learn the intricacies of trading in the foreign environment, and equips them with skills and strategies needed for success in the export industry.

Likewise, managers training in export management and a manager's entrepreneurial ability level were found to be significant at the 1% and 5% significance level respectively and had a direct relationship with export intensity.

The result implies that, participation in an export management training course increases the intensity of export success of a firm by about 40.08 percent. Furthermore, training in export management acquaints management with the current requirements of the export market thereby ensuring that the right product is presented to the market to ensure good performance of the enterprise. These results underscore the value of in-service training in this industry given the complex procedures involved in meeting required standards. Our estimate also reveals that entrepreneurship has a significantly positive effect on the intensity of export success at the 5% level. In other words, the higher the level of entrepreneurial ability of managers in the horticultural export sector the higher the extent of export success.

The organizational factors including product diversification and the presence of an export department had a direct relationship with the intensity of export success in horticultural enterprises in Ghana and were all significant at the 1% level. The addition of another export commodity traded by the firm also increases the intensity of export success by 2.37 percent. Different non-traditional agricultural commodities have different market prices and also the seasonality of these products makes it reasonable for a profit maximizing firm to balance resource portfolio in exporting the commodities in order to reap revenue all year round. Should market performance of one commodity fail, there is another commodity to rely on hence ensuring the sustenance of the firm. Also, it can be inferred from our results that, the presence of an export department in a firm increases the intensity of export success by about 30 percent.

The results of the impact of institutional factors influencing the intensity of export success indicates that a percent increase in government or institutional interventions in the fresh produce industry significantly increased the intensity of export success by about 19.89 percent. This means that, governmental efforts aimed at relieving the non-traditional agricultural crop exporting firms will go a long way to increase the intensity of export success by about 19.89 percent. Export barriers were found to reduce the intensity of export success at the 1% significant level. An increase in export barriers thus reduces the intensity of export success by about 11.12 percent. The importance of the political atmosphere and the stability of regimes which favor trade liberalization cannot be over emphasized. Other barriers such as the lack of adequate distribution channels; standards and technical regulation and other socio-cultural factors may have a significantly negative impact on the intensity of export success. Similarly, working capital inaccessibility negatively influences the intensity of export success at the 1% significance level. It is therefore not surprising to see that the difficulty in assessing financial instruments by firms reduced a firm's intensity of export success by about 16.17 percent.

4. Conclusion

The evidence provided so far suggests that managers training in export management and mangers past experience matters in efforts to improve intensity of export. Therefore firm owners and stakeholders in the horticultural enterprise should take interest in personnel development in terms of training in export management and build up of experience in exporting. The presence of export department and product diversification as well increases the intensity of export success, hence horticultural exporting firms should institute export department and also consider diversifying their horticultural products to minimize the risk of losing revenues.

The role of government and institutions is also found to be critical in helping exporters increase their export intensity. They should therefore not relent on their interventions in the horticultural sector but rather introduce policies and programs that would encourage exports of horticultural products.

Finally, the issue of working capital inaccessibility and trade barriers in the horticultural export sector should be addressed by the government of Ghana and various stakeholders since they hinder the intensity of export success.

References

Baah-Naukoh, A., Jebuni, C.D. and Asante, Y. (1996), Exporting Manufacturers from Ghana. Is Adjustment Enough? Accra: University of Ghana &Overseas Development Institute, Chameleon Press Ltd, London.

Baidu-Forson G. (1999). "Factors Influencing Adoption of Land-enhancing Technology in the Sahel: Lessons from a case study in Niger. *Agricultural Economics*, Vol. 20, pp.231-239.

Buasi, S.N. (2000), "Perceived risk and the pre-export behaviour of firms: a conceptual model". *Journal of Management Studies*. Vol.15. No. 1. January 2000.

Chen, M. X., Otsuki, T. and Wilson, J.S. (2006), "*Do Standards Matter for Export Success"*. World Bank Policy Research Working Paper 3809. World Bank, 1818 H Street, NW, Washington, DC 20433.

Evangelista, F.U. (1994), "Export Performance and its Determinants: Some empirical evidence from Australian manufacturing firms", in Cavusgil, S.T. and Axinn, C. (eds), *Advances in International Marketing*, JAI Press, Greenwich, CT, Vol 6, pp. 207-29.

Francis, C. and Collins-Dodd, (2004), "Impact of exports promotion programmes on firm competencies, strategies and performance: The case of Canadian high technology SMEs". *International Marketing Review*. Vol. 21, No. 4/5, Emerald Group Publishing Limited.

Fraser, C., and Hite, R.E. (1990), Impact of International Marketing Strategies on Performance in Diverse Global Markets. *Journal of Business Research*. Vol. 20 No. 3, 249-262.

Fromm, I. and Dornberger, U. (2005), "Measures and Determinants of Export Success in Agri-Businesses: A firm-level analysis of small and medium-sized enterprises in Honduras", University of Leipzig, Small Enterprise Promotion & Training, Germany, Deutscher Tropentag, October 11-13, 2005, Hohenheim.

Harper, D.A. (2003), Foundations of Entrepreneurship and Economic Development. Routledge, London and New York.

ISSER (2006), The State of the Ghanaian Economy, University of Ghana, Legon, Accra.

Katsikeas, C.S., Leonidou, L.C. and Morgan, N.A. (2000), "Firm-Level Export Performance Assessment: Review, evaluation, and development", *Journal of the Academy of Marketing Science*, Vol. 28 No. 4, pp. 493-511.

Katsikeas, C. S., Nigel, P.F. and Ioannidis C. (1996), "Determinants of Export Performance in a European Context". *European Journal of Marketing*, Vol. 30 No. 6, pp. 6-35.June 1995. MCB University Press.

Köksal, H. M. (2008), "How Export Marketing Research Affects Company Export Performance: Evidence from Turkish companies". *Marketing Intelligence & Planning*. Vol. 26, No. 4, pp. 416-430. Emerald Group Publishing Limited 0263-4503.

Leonidou, L.C., Katsikeas, C.S. and Samiee, S. (2002), "Marketing Strategy Determinants of Export Performance: A meta-analysis", *Journal of Business Research*, Vol. 55 No. 1, pp. 51-67.

Mavrogiannis, M., Bourlakis, A.M., Dawson, J. Philip and Ness, R. Mitchell (2008), "Assessing Export Performance in the Greek Food and Beverage Industry: An integrated structural equation model approach". *British Food Journal*. Vol. 110 No. 7, pp. 638-654. Emerald Group Publishing Ltd. 0007-070X

Shamsuddoha, A. K. and Ali Yumus M. (2006), "Mediated Effects of Export Promotion Prgrammes on Firm Export Performance". *Asia Pacific Journal of Marketing and Logistics*. Vol. 18 No. 2 pp: 93-110. Emerald Group Publishing Ltd.

White, S.D., Griffith, D.A., and Ryans(Jr.), J.K., (1998), "Measuring Export Performance in the Service Industries". International Market Review, Vol. 15 No. 3, pp. 188-204, MCB University Press, 0265-1335.