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**ARE TRADE STANDARDS AFFECTING THE COMPETITIVENESS OF SMALL AND  
MEDIUM-SIZED AGRI-FOOD EXPORTERS? THE CASE OF EGYPT**

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# ARE TRADE STANDARDS AFFECTING THE COMPETITIVENESS OF SMALL AND MEDIUM-SIZED AGRI-FOOD EXPORTERS? THE CASE OF EGYPT

## PROBLEM STATEMENT

With the increasing attention paid to the specification of food quality standards, food safety and quality are increasingly becoming major concerns for most countries. In the EU especially, public and private sectors respond to this by imposing tighter food safety requirements. The international fresh produce market has therefore become more competitive and sophisticated. JAFFEE AND HENSON (2005) point out that quality and safety have become the dominant modes of competition in the global market for high-value agri-food commodities. On top of the tariff-based trade barriers still in force, this presents additional challenges for developing countries and raises concerns about their ability to cope with these emerging qualitative export requirements (GARCIA MARTINEZ & POOLE, 2004).

STAMOULIS *ET AL.* (2004) show that meeting food quality standards is increasingly playing a major role in determining market access for exports from developing countries. OKELLO (2005) indicates that adjustment processes associated with product quality compliance along value chains, in terms of production practices and management systems as well as related costs, may be restrictive for developing countries.

The existing literature on food safety and quality standards (FSQS) and developing countries focuses on the impacts of these measures on their export capability and performance. However, few studies have empirically investigated the compliance of small and medium-sized agri-food exporters in developing countries with the food safety and quality requirements of developed countries. Within this strand of literature, one group of authors argues that FSQS constrain the agri-food exports of developing countries (FUGAZZA, 2013), while several studies support the argument that FSQS could catalyse their export capability (MAERTENS & SWINNEN, 2009). Another focus in the literature is on the impacts of FSQS on small firms and poor households, and consequently on poverty reduction in developing countries (HENSON & HUMPHREY, 2008).

## OBJECTIVE

The question as to whether these concerns and findings also apply to Egyptian agri-food exporters' compliance with EU FSQS is one this study has attempted to answer. Specifically, the objective of the present study is to analyse empirically how FSQS influence the export success of small and medium-sized Egyptian food exporters.

The EU is the largest agricultural importer in the world, with imports reaching around 85 billion euros, 72 per cent of which originate in developing countries (EU, 2011). This represents potential opportunities for Egyptian agri-food exports, especially given the geographic proximity of Egypt to the EU, which could reduce transaction costs and improve the competitiveness of Egyptian commodities in comparison to other exporters as well as reinforce the strong political and economic relations between the two trading partners. Egypt's agri-food exports into the EU have risen more than six-fold since 1994 to more than one billion US dollars in 2014.

Despite these improvements in the export of Egyptian agri-food products to the EU, FSQS continue to present a major barrier to Egyptian agri-food exporters accessing the market. After Morocco, Egypt recorded the second highest number of border rejections. KAREEM (2014) shows that rejections of Egyptian food at the border to the EU rose from nine cases in 2002 to some 55 cases in 2012 or about 16.5 per cent of total EU border rejections imposed on food originating from African countries. ABU HATAB & HESS (2013) show that EU standards are one of the fundamental obstacles to Egyptian agri-food exports accessing the EU not only because of the strictness of the EU safety and quality regulations, but also because of the lower quality of Egyptian agri-food exports.

## METHODOLOGY

*Survey design:* A questionnaire about FSQS in Egypt's agricultural export sector was developed, translated into Arabic and pre-tested. The final version of the questionnaire included structured and open-ended questions, and consisted of eight sub-sections to obtain specific information on: 1) company characteristics, 2)

the company's awareness of different systems of certification, 3) the perception and application of standards, 4) the company's experience of border rejections, 5) the company's compliance strategy with agri-food standards, 6) the costs of compliance with quality and safety requirements, 7) the role of institutions and the assistance provided by Egyptian export authorities, and 8) the company's views on how to improve the ability of Egypt's agri-food exporters to meet EU-FSQS. The sample of firms surveyed in this study consisted of 216 Egyptian agri-food export firms (EAFEFs) that are actively involved in laboratory testing and consultancy from the General Organization for Export and Import Control (GOEIC) in Egypt with respect to FSQS for export purposes. The data collection process was concluded at the end of April 2014 and 89 interviews had been successfully conducted. This corresponds to a response rate of 41.2 %. Furthermore, it should be noted that the present study's sample represents about 41 % of all GOEIC firms in this category and should therefore be quite representative of these companies.

*Model specification:* The underlying research question behind the survey concerned the factors that determine the export success of EAFEFs. Since export success is not observable itself, proxies were identified to describe export success. Therefore the latent variable *export success*  $y_j$  was approximated through the following measurable items: 1) *foreign to domestic sales*: the higher the export volume, the greater the export success, 2) *rejection frequency*: the smaller the share of rejections, the greater the export success, and 3) *market shift* (Conversion capability of shifting exports from one export market to another due to standards): the smaller the shift difficulties, the greater the export success. Furthermore a vector is defined that contains all the independent variables in our study and expected to have an influence on  $y_j$ . Each of the three identified export success proxies is explained through a latent variable model:

$$y_j^* = f(x_i\beta_i + e) \quad e|X \sim N(0,1) \text{ for } j=1,2,3 \quad (1)$$

$\beta$  specifies the respective coefficient to be estimated. In the case of the ordered probit model,  $\beta$  is only unambiguously specified for  $P(y = 0|x)$  and  $P(y = J|x)$ . For the response options 0 and J the responses are not unambiguous.

Between each possible answer category, there are cut points in the model, named  $\alpha_j$ , whereby  $\alpha_1 \leq \dots \leq \alpha_j$ . These cut points indicate threshold values that determine the value up to which an answer possibility is chosen. In a binary probit model there is only one cut point  $\alpha$  since there are only two answer possibilities. The following three hypotheses were tested based on the model in equation (1): 1) the longer a company is active in the export business, the greater its export success; 2) good compliance with standards and a high number of implemented standards increase export success; 3) high compliance costs, rejection and redirection of export commodities towards the domestic market reduce export success.

## RESULTS

### *Descriptive analysis of the survey data*

*Company characteristics:* The exporting companies had different levels of experience in the export business: 36 % have been working in this field for over 20 years, 43 % for 10 to 20 years and 21 % have less than ten years' experience in agricultural export and are therefore quite new to the business. The proportion of export volume to total sales also varied between the companies. The majority had export sales of between 30 % and 70 %, but 20 % of the companies stated that they have less than 30 % export sales as a proportion of total sales, and a similar number of companies recorded more than 70 % export share.

*Awareness and implementation of certification systems:* **Error! Reference source not found.** shows that prior to *ISO 90001:2008* and *ISO 14001*, *EurepGAP* and *GLOBALGAP* were best known by exporters. Around two thirds of respondents were fully aware or aware of food standards and *HACCP* and *ISO 22000* control systems. The *SQF 2000/2001* system and the production safety standard *GMP* and *BASC* were comparatively unknown. The most common reason given for certification was to reduce rejections (88 %). The second reason most frequently given was that the certification was required by their respective importer (81 %). It was further indicated that greater sales could be made if a particular system was implemented (64 %) and that improvements in bargaining power with the importer were considered (70 %). Enhancing their reputation and competitiveness (62 %) were also given as reasons for implementing a standard.

*Perception and application of quality and safety standards:* almost every company (96 %) stated that FSQSS were very important or important to the choice of the export markets. According to the respondents, the export

markets with the most stringent requirements for imports in the view of the EAFEFs. It is noticeable that alongside many EU states, non-EU states such as Israel or Turkey also set high standards while the USA and Canada are placed last. As to the question of whether the exporters consider the requirements to be justified, nearly half of the companies considered them to be unjustified or very unjustified. Only 19 % said that the demands were very justified or justified. In more than 50 % of cases, the reasons given for the impairment of product quality were a lack of information, insufficient technological equipment, financing difficulties and stringent standards. Two thirds of the companies also assumed that other EAFEFs were also affected by these difficulties. Around 90 % of the interviewees indicated that the requirements would be completely unaffected by type of product or were very similar between products. Only 10 % assumed that standards differed between products. However, a majority expected standards to be lower if they switched from exporting basic foodstuffs to exporting processed food.

*Company experience of rejection of agri-food shipments:* Only 33 out of the 89 interviewed EAFEFs had had shipments returned due to non-compliance with the required policies. Most of them stated that rejections occurred on a very irregular or irregular basis. Just 18 % had shipments returned regularly or very regularly. The main reasons for rejections were microbiological contaminations, insects and chemical residuals or damaged packaging. The exporters had different strategies for avoiding return shipments, including sending product samples to certified laboratories for testing for chemical contamination, performing internal tests before harvest, during processing and during packaging to check whether the agricultural products fulfilled requirements, implementing internal quality control and traceability systems, testing for pesticides and outsourcing product labelling and packaging to specialist companies.

*Cost of compliance with quality and safety requirements:* Compliance with standards incurred costs for the companies. Almost half of them stated that these costs were 20-30 % of their total export costs. The remainder reported that compliance costs were between 30 % and 40 % of their total export costs. Most companies bore those costs themselves or took out a loan. Export NGOs supported about one third of them, and one quarter was backed by the government. In response to the question of what might prevent companies from investing more in production and post-harvest services, the exporters stated that an absence of government support programmes was the greatest problem. Two thirds of them declared that access to finance as well as incentives to invest in R&D were limited. Other reasons given were the inability to commercialise returns on investment, a long delay between investment and return on investment and a shortage in skilled labour.

In general the respondents assumed that small and medium-sized enterprises (SME) were more likely to be excluded from export markets than large companies (49 %). 32 % did not think that SMEs were disadvantaged. Disadvantages might arise from the higher costs involved in meeting standards. Two thirds of the interviewees thought that costs for SMEs were much higher or higher than for large enterprises. 11 % assumed the costs to be equal. 22 % stated that the costs of meeting standards were greater for large companies than for small ones.

### ***Econometric Results***

For the determinant *foreign to domestic sales (export sales, Model 1)* a significant relationship was found between *years' experience* and *implemented standards*. The marginal effects showed that the longer a company operated in the export business, the greater the share of its export. Negative marginal effects for *foreign to domestic sales* indicated a shrinking probability (*P*) that if the company had more years' experience in the export business, *export sales* would be below 50 %. Positive effects for *export sales* above 50 % compared to total sales suggested a rising *Probability* of having large *export sales* the longer the company is active in the export branch. The number of *implemented standards* also has a positive significant influence on the size of *export sales*. The more standards are implemented, the lower the *P* that *export sales* are below 50 % and the greater the *P* that *export sales* exceed 50 % of total sales.

An interesting image was found for *rejection frequency (Model 2)*. It was assumed that more *implemented standards* would lead to fewer return shipments. However the model showed the opposite. The more standards that were implemented, the higher the probability of companies having their exports rejected. One possible explanation might be that an agricultural exporter who is certified as meeting various different quality and safety standards is more likely to fail border controls and therefore have products rejected. Furthermore the availability of *skilled labour* plays a significant role in whether a company meets standards. The easier it is to find skilled personnel the lower the *P* of having return shipments. On the other hand the number of *seasonal workers* has a negative impact on *rejection frequency*. One cause of this might be that *seasonal workers* have to be trained and might not be familiar with standard requirements, resulting in products of insufficient quality possibly being packed for export. *Rejections* and their redirection towards the domestic market positively affected the return shipment rate, meaning that the more goods are redirected towards the home market instead

of being sold as exports, the higher the actual *rejection frequency*. At this point the causality is not that clear. It is assumed that the higher the *rejection rate*, the more likely it is that exporters redirect their export goods towards the domestic market instead of complying with the standards.

*Model 3* reveals that the probability of exiting the current export market falls if the company complies with standards and is able to acquire *skilled labour* to ensure compliance. Additionally a rising number of implemented standards increases the probability that the exporter does not perform a *market shift*. This could be due to the fact that it is expensive to become certified and certification is market specific. The agricultural exporter might to some extent be locked in if the company is certified for a certain system. Any shift would mean new certificates and therefore new *compliance costs*. However looking at all the model specifications, *compliance costs* were never a determining factor in the variables based on which export success was measured. Instead the estimations for the *availability of skilled workers* as regards standards management were significant. The implementation and application of standards therefore present more of a challenge in terms of internal management, staff training and administrative tasks than a monetary burden in relation to meeting costs of compliance.

## CONCLUSIONS

This paper approximated the export success of Egypt's small and medium-sized agricultural exporters through *foreign to domestic sales*, *rejection frequency* and *market shift*. Several factors were revealed to influence their export success. Monetary compliance costs were found not to have a significant effect on the export success proxies, indicating that it might be necessary to overcome the established paradigm regarding the role of compliance costs as a fixed cost investment. Instead, the results of the present study suggest that managerial skills and organisational quality and efficiency appear to be more important if companies are to meet FSQS.

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