G. & L. E. R., Vol. 27 No. 1, 2023

Hashim Khan [*]- Yasir Jehan [†]

THE EFFECT OF ECOLABELLING ON THE EXPORT PERFORMANCE OF TEXTILE FIRMS IN PAKISTAN

Received: 25 April 2022 / Accepted: 02 February 2023

Abstract

With greater competition and an increased demand for environmental compliance, Pakistan needs to focus on sustainable practices to boost its textile exports. Since textiles are one of the most important sectors in Pakistan's economy, the effect of ecolabelling on the export performance of textile firms was analysed in this study. For this purpose, export intensity was used as a proxy for export performance. The study utilized panel data on 136 textile firms listed on the Pakistan Stock Exchange (PSX) covering the period from 2009 to 2019. Empirical estimation was conducted by using the fixed effect model (FEM), random effect model (REM) and common effect model (CEM). The results of the study show that ecolabelling programmes have a significant positive effect on the export performance of textile firms. Finally, policy recommendations for industrialists and governments regarding the improvement of their export performance through the adoption of ecolabels for their products are presented.

JEL CLASSIFICATION: D21; Q56; Q37

KEYWORDS: ECOLABELLING; EXPORT PERFORMANCE; TEXTILE FIRMS; PANEL ESTIMATIONS

MPhil Student in Department of Economics, BachaKhan University, Charsadda, KPK, Pakistan.
[†] (Corresponding Author) Working as Lecturer in Department of Economics, BachaKhan University, Charsadda, KPK, Pakistan. *E-mail address*: Yasikhan09@gmail.com. +92-332-7333556.

1. Introduction

Concerns about industrial pollution are nothing new. In the late 1960s, nations realized that the present system of production is not very sustainable due to production being conducted at the cost of environmental deterioration. Therefore, these nations have introduced green taxes and other regulatory measures to control pollution (Galarraga 2002). In the race for higher economic growth and development, there is huge pressure placed on natural resources that could compromise their availability to sustain future generation. Human beings are living beyond their means because two-thirds of the world's resources have already been used up. The population is undergoing rapid growth, and there will be 9.7 billion people by 2050. Feeding this huge population would require 30% more water and 45% more energy that currently available. Further, the manufacturing demand for water and energy will increase by 400% by that time. These facts all indicate that there is a greater need for sustainable and environmentally friendly practices in production as well as in consumption.

Traditionally, direct systems (command and control systems) have been used to address environmental problems, but recently, these systems have been widely criticized for being able to solve the complex problems that a society faces regarding environmental degradation (Annandale et al. 2004). In the past, policy-makers mainly focused on legislative and regulatory restrictions for environmental protection, but recently the focus has been shifting from mandatory approaches to voluntary agreements between the polluter and regulator as an alternative to the mandatory approach (Segerson and Miceli 1998). Regulatory restrictions have protected the environment to a certain extent, but these command-and-control regulatory approaches have certain limitations, such as their large expense, protracted development, enforcement process, jurisdictional constraints and a tendency toward inflexibility over formality. Together, all these limitations lead to end-of-pipe pollution control rather than the prevention of pollution while imposing heavy costs on firms and regulators (Henriques and Sadorsky 2008). Therefore, after seeing the impact and results of involuntary initiatives, policy-makers have begun to focus on voluntary initiatives for environmental protection. In recent years, the government has been keen in encouraging institutions to implement voluntary environmental protection programs; for example, in the US, the

Federal Environmental Protection Agency has introduced numerous voluntary programs that have attracted thousands of businesses who have pledged to improve their environmental performance (Bork and Coglianese 2009).

It has been widely observed by researchers that, in some cases, voluntary environmental programs have been more effective than command and control programs in terms of environmental protection (Leon and Riveria 2007). Many businesses and regulators around the world are looking to replace the current rigid command-and-control mode with more flexible and adaptable programs for environmental protection (Toski and prakash 2002). The intensive use of voluntary environment initiatives in recent years poses a significant challenge to traditional economic theories. Many studies in recent years have identified the fact that voluntary environmental programs lead to more efficient productive activities (Paton 2000). Recently, voluntary environmental initiatives have gained more importance and are being recognized as the most effective tool for environmental protection. Ecolabels are one of the most important schemes within these voluntary environmental protection initiatives (Hayat et al., 2017). Green consumerism, or the demand for green products, can be defined as a situation in which purchase decisions are made under consideration of sustainable production practices. In this regard, consumer satisfaction, social values and self-identification of the product are the most important exogenous determinants of green consumerism. There is greater concern about the trade effect of ecolabelling. In the case of many developing countries, there is either no market access or firms have to bear the cost of recycling. In most developing countries, these industries include the paper, footwear, forest and textile industries (Glarraga 2002).

An eco-label is a seal of certification awarded to environmentally friendly products that meets the criteria specified by the eco-label issuance authority (UNOPS, 2009). Ecolabels provide information to consumers to help them distinguish between environmentally good and bad products and services. If consumers are environmentally conscious, then it may be of great benefit for firms to adopt ecolabelling programs to extend their market share. However, at the same time, there are some problems in adopting ecolabels, such as transparency in the assessment of the life cycle and the high cost of adopting ecolabels (Tomasz 2015). In 1978, Germany was the first country in the history of the world to introduce a national ecolabelling scheme, which was

called "Blue Angel". It was approved by the Ministry of Environment on the advice of the Minister of the Interior. Following Germany, many other countries have introduced their own national ecolabelling schemes, such as the EU Flower by European countries, Energy Star by the USA, and Eco Mark by Japan. Recently, many Asian countries have also introduced their own ecolabelling schemes. The initial motive behind this introduction of ecolabels was to protect the natural environment and promote sustainable production and consumption (Hayat 2017). In the U.S., Ecolabels began to be issued in the 1990s as a result of the United Nations Conference on Environment held in 1992. The Environmental Protection Agency (EPA) developed an eco-label called Eco Star for sustainable production and consumption, which had covered more than 40000 products across the world by 2010 (Atkinson 2014). The European Union started its own eco-label named EU Flower in 1989 to indicate the fulfilment of common standards in the region. Currently, a wide variety of ecolabels exist, representing different criteria and standards. There are five main drivers behind the adoption of EU Flower: (1) a common strategy, (2) public management, (3) the local income per capita, (4) sustainable public procurement criteria, and (5) international trade incentives (Prieto et al. 2019). Currently, there are 463 ecolabels that have been adopted by 25 industries in 199 countries around the world. There are three major types of ecocertification schemes: Type I (ISO 14021), Type II (S 14024), and Type III (ISO 14025). The standards for ISO 14021 are set by governments, and these are referred to as national ecolabelling schemes. The criteria for ISO 14024 are set by different collaborating firms, which is why these criteria are referred to as private ecolabelling schemes. The standards for ISO 14025 are set by international organizations, and these certifications are also referred to as third-party ecolabelling schemes (Hayat et al., 2019).

Therefore, considering the above background, this paper investigates the effect of ecolabelling on the export performance of textile firms. The research question addressed in this paper is "Do ecolabels improve the export performance of textile firms"? The null hypothesis to be tested is "Ecolabels positively affect the export performance of textile firms" against the alternative hypothesis that "Ecolabels negatively affect the export performance of textile firms".

2. Literature review

It has been widely observed by researchers that, in some cases, voluntary

environmental programs have been more effective than command and control programs for environmental protection (Leon and Riveria 2007). Many businesses and regulators around the world are looking to replace their current rigid command-and-control mode of operation with more flexible and adaptable programs for environmental protection (Toski and prakash 2002). The intensive use of voluntary environment initiatives in recent years poses a significant challenge to traditional economic theories. Many studies in recent years have identified the fact that voluntary environmental programs lead to more efficient productive activities than mandatory programs (Paton 2000). Recently, voluntary environmental initiatives have gained greater importance and are being recognized as the most effective tool for environmental protection. Ecolabels are one of the most important schemes of these voluntary environmental protection initiatives (Hayat et al., 2017). The motive behind this introduction of ecolabels was to protect the natural environment and lead to sustainable production and consumption (Hayat 2017). It is evident that about the information provided by ecolabels is important and has positive effects on consumer attitudes, thus the provisioning of information about different environmental standards as reflected by ecolabels can boost their production and sales (Taufique 2016). With growing consumer awareness about ecolabelled products, the sale of organic food has increased by 20 percent worldwide since 1990, which is approximately four times more than that of conventional food products. It is predicted that the market for these products will extend to 3.5 trillion by 2017 (Cai et al., 2017). For ecolabelling programmes to be successful, institutions must emphasize well-designed and coordinated ecolabelling schemes (Testa et al., 2013). The main purpose of introducing an ecolabelling scheme is to influence consumer behaviour so that consumers are more likely to purchase environmentally friendly products. In recent years, the market share of ecolabelled products has increased many-fold (Abe et al., 2002). The use of ecolabels positively and significantly affects firms' environmental and financial performance (Hayat et al. 2020). Wen and Lee (2020) concluded that environmental labelling significantly improves the financial performance of firms and increases their productivity. Environmental performance positively affects the export performance of firms (Ghwayeen 2018). Antonietti and Mazrucchi (2014) found that green investment strategies significantly affect total factor productivity and that this increase in total productivity stimulates export performance, especially in

more stringent environmentally regulated markets. Knowledge, attitude, the perceived credibility of ecolabels, level of education, income level, past green purchases and the presence of an elder in the house all positively affect green product initiatives (GPIs) (Cai et al., 2017).

2.1 Theoretical Framework

To provide a theoretical background for this study, we follow the theoretical framework of Bicakcioglu et al. (2019), which utilizes resource-based theory. According to resource-based theory, a firm can achieve both sustainability and competitive advantage in domestic and international markets with the help of its strategic resources, such as its assets, capabilities, and attributes, which are heterogeneously distributed among firms in the market. This means that firm resources are utilized in such a way as to increase their efficiency and effectiveness. In other words, the firm must have the necessary resources and capabilities to improve its export competitiveness and performance through the use of green business strategies.

However, previous research studies have highlighted that a single environmental strategy is not appropriate for all firms because both their available resources and their organizational structures are different from each other. Therefore, every firm should develop its own green strategy based on its internal and external factors, conditions and circumstances. Moreover, the main objective of implementing a green business strategy is achieve production through the use of ecofriendly technology. This indicates that manufacturing, supply chains, finances, human resources and international marketing should be conducted under consideration of the natural environment.

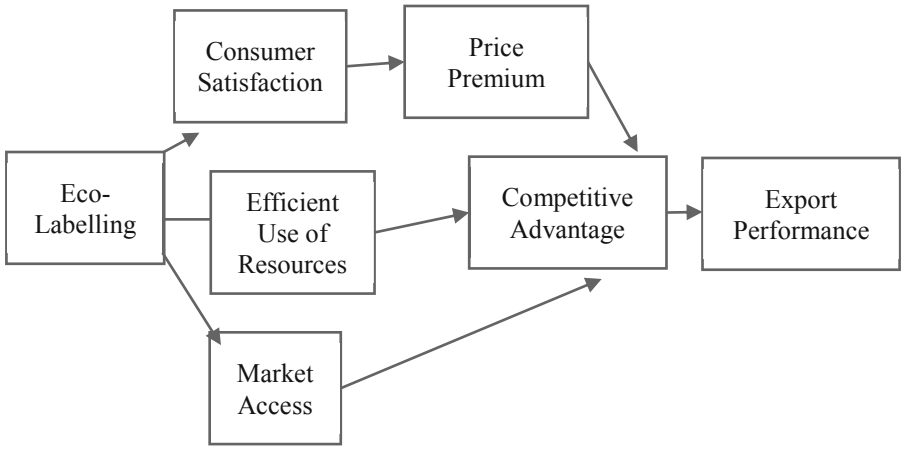
A number of studies have advocated that ecofriendly production techniques boost exports and the financial performance of a firm because these techniques are cost efficient, serve as demand boosters and lead to a competitive advantage in the international market. In addition, some studies have shown that environmentally conscious consumers, especially those in developed countries, put pressure on firms to adopt ecofriendly certificates such as ecolabels. Ecolabelled certified products clearly have a competitive advantage over nonecolabelled certified products, and in most cases, they receive a price premium that boosts overall firm-level export performance.

To bridge the link between the adoption of ecolabels and the export performance of the firms used for this study, I follow resource-based theory

and analyse the effect of ecolabelling on both the export performance and export potential of the selected textile firms, which are listed at PSX.

In the following sections, two models are presented for pursuing the two objectives. The first model addresses the effect of ecolabelling on the export performance of textile firms, and the second model addresses the fact that the adoption of ecolabels increases the export potential of the products of textile firms.

Figure 1. Overall Theoretical Framework derived from Resource-Based Theory



Source: Authors' own source

2.1.1 The effect of ecolabelling on the export performance of textile firms

To analyse the effect of ecolabelling on the export performance of textile firms, we follow the panel data model of Galdeano (2010). The specification of the model is given as follows:

$$EF_{it} = \alpha_i + \lambda_t + e_{it}\beta + x_{it}\gamma + \varepsilon_{it} \quad (2.1)$$
$$i = 1, \ldots\ldots, N, \quad t = 1, \ldots\ldots, T$$

where EF_{it} is the export performance of the firm derived by dividing the export sales of the firm by its total sales, and e_{it} is a dummy variable that is equal to 1 if the firm has adopted ecolabels and 0 otherwise. x_{it} is the set of time-variant explanatory variables including firm productivity, firm profitability (return on equity is used as a proxy for firm profitability), firm size (number of employees at the firm), firm age (number of years the firm has been in operation), the capital intensity ratio of the firm, the debt equity ratio of the firm, (variable is used as a proxy for firm financial leverage), and the labour costs of the firm. ε_{it} is the random error term, β and $\gamma$are parameters to be estimated, $i = 1, \ldots\ldots, N$ represents firms, and $t = 1, \ldots\ldots, T$ represents the time period. Finally, α_i represents the firm fixed effect, and λ_t represents the time/year fixed effect.

3. Data and Methodology

3.1 Data and its sources

In this study, panel data on 136 textile firms listed on the Pakistan Stock Exchange (PSX) from 2009 to 2019 are utilized. Of these 136 firms, 70 firms export their products, 37 firms do not export their products, and 29 firms partially export their products. To achieve the study objective, I use the data of 70 firms, which means that this study only considers those firms that export their products. This is because our dependent variable is exports intensity (EI), which is used as a proxy for exports sale/total sales. Data for this study was collected from the State Bank of Pakistan (SBP), the annual reports of the firms, and corporate websites. Moreover, after processing and checking the annual reports of the firms, ,77 firms were retained for this study. In these 77 firms, 15 firms use an eco-label, while 62 have no ecolabels the year in which they adopted an ecolabel cannot be confirmed. In addition, information on the ecolabelling of firms was taken from the ecolabelling index website.

3.2 Variable construction

Dependent variable
The export intensity as the sale/total sale of exports

Explanatory variables
Firm productivity (output volume/input volume)
Firm profitability (return on equity is used as a proxy for firm profitability)

Returnonequity as Net income/average shareholder equity
Firm size (number of employees of the firm)
Firm age (number of years the firm has been in operation)
Capital intensity ratio as the total assets/sales
debt equity ratio as total liabilities / shareholder equity
Labour expenditures of the firm

3.3 Econometric models

The following econometric model is used for empirical estimation.

$$EI= \beta_0+\beta_1 Ec+ \beta_2 FS+ \beta_3 PR+ \beta_4 AG+ \beta_5 DE+ \beta_6 LE+ \beta_7 CI+ \beta_8 RQ+ \varepsilon_i \quad (3.1)$$

where export intensity is the dependent variable denoted by EI, and Ec, FS, PR, AG, DE LE, CI and RQ are eco-label, firm size, productivity, firm age, debt equity ratio, labour expenditures, capital intensity and return on equity, respectively.

3.4 Estimation techniques

The aim of this study is to examine how export intensity is affected by ecolabels, firm size, productivity, firm age, the debt equity ratio, labour expenditures, capital intensity and the return on equity of textile firms. For this purpose, penal data estimation techniques have been used due to their higher variability, high degree of freedom, high efficiency, lower chance of collinearity and ability to control individual heterogeneity. For empirical estimation, we used a fixed effect model (FEM), random effect model (REM) and common effect model (CEM). To estimate these models, we also verified the stationarity of the dataset by using panel root tests such as the Levin-Lin-Chu test, Im, Pesaran-Shin (IPS) test and Fisher-type test. These tests indicate that export intensity, firm size, productivity, debt to equity ratio, labour expenditure capital intensity and return on equity are stationary at this level while only firm age is not stationary at this level, but rather stationary at the level of first difference (see table in appendix)

4. Results and Estimation

4.1 The common effect, specific fixed effect and random effect using export intensity as the dependent variable

The effect of export intensity on the other explanatory variables can be analysed on the basis of well-known methods: the common effect model (CEM), fixed effect model (FEM) and random effect model (REM). To choose between CEM, FEM and REM, the Hausman test was applied. The hypothesis in the Hausman test states that a "random effect is preferred over a fixed effect model". If the probability of the test is less than 0.05, then the null hypothesis is rejected.

4.2 Effect of export intensity

The effect of export intensity on the independent variable of textile firms can be categorized into four parts to check the reliability of these different variables against each other. First, the effect of the dependent variable, export intensity, on eco-label and firm size is analysed. Similarly, by adding two additional variables, the effect of export intensity on age and the debt equity ratio is investigated. In the third equation, two further independent variables, labour expenditure and capital intensity, are added. In the last equation, the impact of export intensity on two additional independent variables, capital intensity and return on equity, is studied. The results of these models are presented in the above table. There are 11 years of data ranging from 2009 to 2019 contained in 77 groups and 847 observations.

The F-statistics indicate the overall goodness of fit for linear regression. The null hypothesis states that the model is not a good fit and is used as a counterfactual against the claim that the model is a good fit. The dependent and independent variables included in the model are both a good fit and their inclusion has improved the overall significance of these models. If the estimated value is greater than the F-statistic, then the null hypothesis is rejected. For interpretation of the results, we have considered F-statistics, which are generally derived from the P value.

To choose between the fixed effect model (FEM) and random effect model (REM), we observed that the P value was less than 0.05, so the null hypothesis was rejected, and the alternative hypothesis that the fixed effect model (FEM) is preferred over the random effect model (REM) was accepted. Additionally, to inform the selection of models, this study employed the Hausman test. The

results of the Hausman test, that is, the P Value of the F-Statistics, are highly significant, so we have rejected the null hypothesis that the difference in coefficients is not systematic against the alternative that the difference in coefficients is systematic. In short, the results of the Hausman test show that the fixed effect model (FEM) is relatively better than the common effect model (CEM) and the random effect model (REM) in all cases.

Table 1 shows the results for the common effect model (CEM), fixed effect model (FEM) and random effect model (REM). However, to interpret these results, fixed effects are considered over random effects because, according to theory, most coefficients are statistically significant. The fixed effect model shows that firm size, firm productivity, debt equity ratio and return on equity are statistically significant and have a positive effect on the export performance of textile firms. Firm has a coefficient of .0000124, which means that a unit change in firm size leads to a 0.0000124 change in export performance. Similarly, the results of firm productivity indicate that firm productivity has a significant positive effect on export performance. This can be confirmed from its coefficient, which is 0.1051103. This means that a unit change in firm productivity leads to a 0.1051103 change in export performance. In the same way, the debt equity ratio and return on equity can significantly affect export performance, as shown by their coefficients of .000583 and .0000871, respectively. Therefore, this clearly indicates that a one unit change in the debt equity ratio and return on equity leads to 0.000583 and 0.0000871 changes in export performance, respectively.

Table 1. Common effect, specific fixed effect and specific random effect with export intensity set as the dependent variable.

VARIABLES	Common Effect Model	Specific Fixed Effect	Specific Random Effect
Ecolabel	0.0058	-0.0252	0.00589
	0.0293	0.03088	0.02938
Firm Size	0.000027***	0.000024***	0.000027***
	0.000011	0.000011	0.0000111
Productivity	0.0998507***	0.09732***	0.0998***
	0.021873	0.0233	0.02187
Firm Age	-0.00139	-0.00238	-0.0013
	0.00135	0.0019	0.00135
Debt to Equity Ratio	-0.0005***	-0.0005***	-0.00056***
	0.00008	0.000085	0.0000859
Expenditure	5.39e-0	-5.96e	-5.39e-0
	4.31e-08	4.29e-0	4.31e-0
Capital Intensity	0.0000159	0.0000169	0.000015
	0.0000125	0.000012	0.000012
R on equity	0.0000893***	0.000087***	0.000089***
	0.000015	0.000015	0.000015
Constant	0.4009	0.4451	0.4009
	0.054733	0.0693	0.05473
No of observations			
F-stat [Wald χ^2]	120.16	14.06	120.16
P Value	0.0000	0.0000	0.0000
Diagnostic Tests			
Hausman test			
H_0: The random effect model is preferred over The fixed effect model			
25.38	24.53	24.38	23.39
0.0000	0.0001	0.0002	0.0007

5. Conclusion

This study has discussed the environmental problems that the world is currently facing or will be facing in the future. With the passage of time, the world population is increasing at a rapid rate, posing complex economic and environmental challenges to human lives. There are two approaches to combatting environmental problems: the first is implementing a command and control system and the second involves the implementation of voluntary environmental initiatives. Ecolabelling programs fall under the category of voluntary environmental initiatives. Therefore, this research focuses on the pros and cons of adopting an ecolabelling scheme. Various countries are currently using this scheme for the protection of local manufacturers and to increase the difficulty of others exporting their products. It has also been found that the adoption of an ecolabelling program may improve the levels of firm financial and export performance in certain cases. This paper mainly focuses on the following research question: "Do ecolabels improve the export performance of textile firms"?

The study applied a model that uses export intensity as the dependent variable and eco-label, firm size, productivity, firm age, debt equity ratio, labour expenditure, capital intensity and return on equity as independent variables. To analyse these variables, a fixed effect model was used, which was confirmed to fit the data better than the random effect model on the basis of the Hausman test. The results illustrate that eco-label, firm age, labour expenditure and capital intensity all have an nonsignificant impact on export intensity, while productivity, debt equity ratio, firm size and return on equity all have a highly significant impact on export intensity. It is also found that only the debt equity ratio has a negative impact on export intensity, whereas productivity, firm size and return on equity all have a positive effect on export intensity. It is further suggested that firm size has a positive effect on export performance. Therefore, industrialists and governments need to increase the size of firms. For this purpose, they provide firms with soft loans. The study results also indicate that to realize the benefit of extending the size of international markets, firms need to adopt ecolabelling. Such adoption ensures better access to environmentally stringent markets. Ecolabelling is positively related to firm environmental and financial performance. To increase textile exports, an increasing number of firms need to adopt ecolabelling.

References

Al-Ghwayeen, W.S., Abdallah, A.B. (2018), *Green supply chain management and export performance*, Journal of Manufacturing Technology Management, 29(7), 1233-1252, DOI:10.1108/JMTM-03-2018-0079.

Bernardo, A. (2016), *Voluntary Programs Adoption: The Economy for the Common Good in South Tyrol*.

Bıçakcıoğlu, N., Theoharakis, V., Tanyeri, M. (2020), *Green business strategy and export performance: An examination of boundary conditions from an emerging economy,* International Marketing Review, 37(1), 56-75.

Carlson, A., Palmer, C. (2016), *A qualitative meta-synthesis of the benefits of eco-labeling in developing countries*, Ecological Economics, *127*, ,29-145, DOI: 10.1016/j.ecolecon.2016.03.020.

Duflou, J.R., Kellens, K., Dewulf, W. (2011), *Unit process impact assessment for discrete part manufacturing: A state of the art*, CIRP Journal of Manufacturing Science and Technology, 4(2), 129-135, https://doi.org/10.1016/j.cirpj.2011.01.008.

Faria, S., Rebelo, J., Gouveia, S. (2020), *Firms' export performance: a fractional econometric approach*, Journal of Business Economics and Management, 21(2), 521-542, https://doi.org/10.3846/jbem.2020.11934.

Galarraga Gallastegui, I. (2002), *The use of eco-labels: a review of the literature*, European Environment, *12*(6), 316-331, https://doi.org/10.1002/eet.304.

Galdeano-Gómez, E. (2010), *Exporting and environmental performance: a firm-level productivity analysis*, World Economy, 33(1), 60-88, https://doi.org/10.1111/j.1467-9701.2009.01188.x.

Hayat, N. (2018), *Eco-Labeling, Sustainability and Trade: Evidence from Pakistan* (Doctoral dissertation, Pakistan Institute of Development Economics (PIDE), Islamabad).

Hayat, N. (2019), *Factors determining government to introduce national eco-label scheme: Case Study of Pakistan Trade Partners 1994-2014,* Naveed HAYAT*, Anwar HUSSAIN**, and Heman Das LOHANO, Pakistan Journal of Applied Economics, 29(1), 53-70.

Hayat, N. Hussain, A. and Lohano H. (2019). *Pakistan Journal of Applied Economics*, *29*(1), 53-70.

Hayat, N., Hussain, A., Lohano, H.D. (2018), *What drives a textile firm to adopt an ecolabel?*, IBA Business Review, 13(1), https://doi.org/10.54784/1990-6587.1034.

Hayat, N., Hussain, A., Lohano, H.D. (2020), *Eco-labeling and sustainability: A case of textile industry in Pakistan*. Journal of Cleaner Production, 252, 119807, https://doi.org/10.1016/j.jclepro.2019.119807.

Henriques, I., Sadorsky, P. (2008), *Oil prices and the stock prices of alternative energy companies*, Energy Economics, 30(3), 998-1010, https://doi.org/10.1016/j.eneco.2007.11.001.

Leonidou, L.C., Katsikeas, C.S., Fotiadis, T.A., Christodoulides, P. (2013), *Antecedents and consequences of an eco-friendly export marketing strategy: The moderating role of foreign public concern and competitive intensity,* Journal of International Marketing, 21(3), 22-46, DOI10.1509/jim.12.0139.

Madaleno, M., Robaina, M., Dias, M. F., Meireles, M. (2020), *Dimension effects in the relationship between eco-innovation and firm performance: A European comparison*, Energy Reports, 6, 631-637, https://doi.org/10.1016/j.egyr.2019.09.038.

Pope, J., Annandale, D., Morrison-Saunders, A. (2004), *Conceptualising sustainability assessment*, Environmental Impact Assessment Review, 24(6) 595-616.

Saini, G.K. (2012), *Non-tariff measures affecting India's textiles and sainiclothing exports: Findings from the survey of exporters*.

Segerson, K., Miceli, T.J. (1998), *Voluntary environmental agreements: good or bad news for environmental protection?*, *Journal of environmental economics and management*, *36*(2), 109- 130, https://doi.org/10.1006/jeem.1998.1040.

Song, D., Sam, A.G. (2018), *Voluntary Environmental Program and Export Performance,* DOI: 10.22004/ag.econ.274425.

Wen, H., Lee, C.C. (2020), *Impact of fiscal decentralization on firm environmental performance: evidence from a county-level fiscal reform in China*, Environmental Science and Pollution Research, 1-13.