The Moderating Effect of Firm Age and Firm Size: Internationalization of Small and Medium Enterprises (SMEs) Towards Export Performance in Agro-based Firms in Sri Lanka.

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1. Introduction

The internationalization of Small and Medium Enterprises (SMEs) is identified as the main strength of economic growth, competition, and new workplace design (Bužavaitė et al., 2019) as well as the important strategic sector for promoting economic growth and social development in developed and developing countries(Prasanna et al.,2022). Exporting is the most adopted mechanism for entry and expansion mode of internationalization Madushanka and Sachitra (2021). Research on the exporting experience of SMEs has faced many relevant issues, such as firm-specific characteristics like firm size and firm internal and external environmental factors.

As a firm-specific resource, firm size determines its competitiveness (Felzensztein et al., 2022), the firm's exporting actions, and its success (Love & Ganotakis, 2013). Smaller companies vary from big companies in ownership, independence, management style, and size/scope of operations (Ruzzier & Ruzzier, 2015). Larger companies will be able to compete more successfully and efficiently than smaller companies because they have more resources and capabilities (Abdul-Talib et al., 2011). In RBV, firm size is considered as a proxy for organizational resource base. While small companies have limited resources, larger companies have more human and financial capital and productive capacity (Stoian et al., 2011). Most of the research indicates that firm size moderates firm performance and internationalization, despite the fact that some researchers came to the opposite conclusion (Farooq et al., 2021). Majocchi et al.(2005) empirically tested the impact of firm size on export intensity; in addition to that, the additional salient feature that helps internationalization is the firm's age(Ruzzier & Ruzzier, 2015). Older businesses also stand a better chance of surviving than newer ones. A firm's age is defined as the number of years in operation of a firm measured from the time of commencement to date (Mabenge et al., 2022). The majority of researchers found a direct correlation between firm age and internationalization. Many researchers have emphasized the moderating effect of firm age on performance and internationalization (Aziz & Samad, 2016; Lakshman et al., 2023).

The SME sector in Sri Lanka accounts for more than 75% of the total number of enterprises, 45% of employment opportunities, and 52% of the Gross domestic product (Robinson & Kengatharan, 2020). In the Sri Lankan context, Small and Medium Enterprises cover various sectors such as agriculture, manufacturing, construction, and service industries (Bernard et al., 2019). According to the Census and Statistical Department of Sri Lanka's report, there are 1,017,267 micro, small and medium enterprises, compromising 73% of all SMEs operated in rural areas in Sri Lanka (Bandara et al., 2024). However, 82% of export enterprises provide only around 5% of total export-to-export earnings (Mudalige, 2017). Also, 70% of SMEs are closed down within three years of commencement, and 60% of them within the first year of commencement. According to the above discussion, while some firms perform well in the international and domestic markets, some of them are not in the international market within a short period of time. The above research issues provide plausible explanations to explore these

in greater detail in the present and in the future. The main objective of the study was to identify whether there is an effect of firm age and firm size on the internationalization of SMEs towards the export performance of agro-based SMEs in Sri Lanka.

2. Materials and Methods

Due to the nature of the phenomenon studied in this study, we have adopted a quantitative approach, positivist paradigm and analytical survey-based methodology. The general population of this study is 3800 SMEs in Sri Lanka. The target population was 1352 SMEs that exported agro-based products to the export directory of the Export Development Board (EDB) in Sri Lanka in 2018. Among these 1352 agro-based SMEs in the four provinces as Western Province, North-Western Province, Southern Provience and Central Province in Sri Lanka. Considering the proviencial contributions, North Western Provience recorded the highest contribution to agriculture activities within the share of 18.3 per cent to the GDP following 14.6 per cent 13.7 per cent and 11.4 per cent in Southern Provience, Central Provience and Western Provience respectively. Total of 301 SMEs were in the sample. Based on the nature of this study it tries to explore the internationalization of agro-based SMEs. These three proviences. The present study uses random sampling under the probability sampling technique. The research was conducted through SMEs involved in the agro-based sector, which operates in above provinces. Owners and managers of SMEs were considered as the sample unit. The questionnaire for the present study was distributed through email to potential respondents to participate in the survey. Further, relevant SME owners and managers were contacted via telephone, inviting them to take part in the survey by filling out a Google form (online questionnaire). The questionnaire was available to respondents for three months. In addition, private face-to-face interviews with SME owners and managers of the companies were conducted to fill out the questionnaire. For statistical analysis, Smart PLS software has been used to meet the research objectives and to test the hypothesis constructed. Data analysis starts with the application of exploratory factor analysis (EFA) as a purification mechanism to minimize the data and uncover underlying factors. The next stage deals with the applicability of confirmatory factor analysis (CFA) to test and improve model fit indices. The last stage involves a path diagram on Smart PLS software to determine the moderating effects with their level of significance. After having a thorough evaluation of prior empirical research, this study uses well-established multi-item measures to find the relationship between independent and dependent variables.

The current study consists of one dependent variable as export performance and two independent variables as external environment and external environment. The variable internal environment has four dimensions as firm capability, financial capability, management capability, and entrepreneurial orientation. Governmental support, networks, and economic integration are the three dimensions in external environment. The study uses multi-item five point Likert-scales attached by 1="Strongly disagree", and 5 = "strongly agree" and three open ended questions to measure the size of the firm, age of the firm, and engage in international activities..This study identifies four type of variables- dependent, independent mediating, and moderating variables to develop the theoretical framework. The moderating variable is the variable that affect or strengthens the linkage between independent and dependent variables. Moderating variable may be formed as qualitative and quantitative"(As Azam et al..2021).

3. Results and Discussion

Internal consistency is most commonly used measure of reliability, which applies to the consistency among the variables in a summated scale. High Cronbach's alpha values indicate that response values for each participant across a set of questions are consistent According to the table, all the variables have higher Cronbach's Alpha values than their benchmark levels. It means that items are sufficiently consistent to indicate the measure is reliable.

Exploratory Factor aAnalysis(EFA) was conducted for all constructs. The items BC1, BC2, BC3, BC4, BC5, FC1, MC3, MC6, EO1, EO2, GS1,GS2, GS3, GS4, UT1, UT2, NR1, NR2,NR3, NR4,NR5,NR6, NR7, NR10, and NR13   loaded unexpectedly. Those items were removed before further analysis. After removing those items the following results were obtained.

Table 1: Factor loadings and reliability

Dimensions and Items	Composite reliability	AVE	Cronbach's Alpha
Firm Capability	0.898	0.639	0.849
Financial Capability	0.881	0.598	0.821
Management Capability	0.896	0.684	0.845
Entrepreneurial Orientatio	0.949	0.726	0.936
Government Support	0.909	0.769	0.865
Economic Integration	0.945	0.776	0.927
Networking	0.890	0.429	0.869
Internationalization	0.908	0.532	0.848
Export performance			0.931

According to the results of the AVE analysis, the first-order constructs, all the AVE values are above the rule of thumb of 0.50. Further, this table shows that the CA and CR statistics are above the threshold of 0.70. Overall, CA and CR values indicate that the survey respondents agree that each set of the 57 sub-information items relates to the respective 08 information dimensions.

Confirmatory Factor Analysis (CFA) via Individual Measurement Model
Under this section, CFA is carried out at the overall measurement model level. Here, the variable internationalization mediates the 02 (two) independent variables, and export performance is treated as the dependent variable. Further, the size and age of the firm are considered the moderating variables.

Table 2: Hypothesis testing

Hypothesis	Relationship	Std. Beta	Std. error	t- value	Decision	f^2	95% CI LL	95%CIUL
H1a:	BC -> INT	0.265	0.059	4.568**	Supported	0.081	0.166	0.357
H1b:	FC -> INT	0.361	0.057	6.31**	Supported	0.167	0.27	0.453
H1c:	MC -> INT	0.141	0.057	2.404*	Supported	0.025	0.046	0.233
H1d:	EO -> INT	0.016	0.048	0.302	Not Supported	0.000	-0.059	0.09
H2a:	GS -> INT	0.001	0.051	0.101	Not Supported	0.000	-0.079	0.092
H2b:	NR -> INT	0.128	0.04	3.245**	Supported	0.038	0.061	0.19
H2c:	UT -> INT	0.158	0.045	3.566**	Supported	0.054	0.08	0.224

** p<0.01, *p<0.05 (Effect size impact indicator are according to Cohen(1988), f^2 value 0.35(large), 0.15(medium), and 0.02(small))
According to the findings, all other dimentipons except entrepreneural orientation and government support are statistically significant in the model.

Table 3: Moderating effect of age on internationalization

Relationship	Std. Beta	Std. error	t-value	Decision	f^2	95% CI LL	95%CIUL
Age -> INT	-0.51	0.435	1.171	Not supported	0.007	-1.281	-0.18
Age*INT -> INT	0.01	0.008	1.204	Not supported	0.008	-0.003	0.023

According to the results given in the above table, the Age variable does not directly affect the internationalization of SMEs. However, hypothesis H6 tested the indirect effect of the relationship between the internal environment and the internationalization of SMEs. According to the results, the relationship between the internal environment and the internationalization of SMEs strengthens with the firm's age. However, the said impact is insignificant. Hence, H6 is rejected. The results shows that international operations of agro-based SMEs are not moderated by the age of the firms. Because of sub-contracts, personal relationships directly open the window for exports.

Table 4: Moderating effect of firm size on internationalization

Relationship	Std. Beta	Std. error	t- value	Decision	f^2	95% CI LL	95%CIUL
Size -> INT	0.93	0.366	2.584	Supported	0.021	0.393	1.552
Size*INT -> INT	-0.003	0.001	2.673**	Supported	0.021	-0.005	-0.001

According to the table, internal environmental factors and the internationalization of SMEs are weakened by the size of the firm. This moderating effect is statistically significant. Since the enterprises can be classified into different categories according to their size, the most common criterion is the number of people employed. Therefore, this study employed the number of employees as the predictor for firm size, as used in previous research. Abbasi & Malik (2015) observed that firm size impacts internationalization as larger companies are more likely to have more room for international operations regarding 50 listed companies on the stock exchange in Pakistan. Conversely, the result of this study reveals that firm size does not moderate the relationship between internal environment, which consists of firm capability, financial capability, entrepreneurial orientation, and management capability. It also found that firm size is a direct predictor of internationalization. The findings reveal that firm size could determine SMEs in Sri Lanka to better international operations.
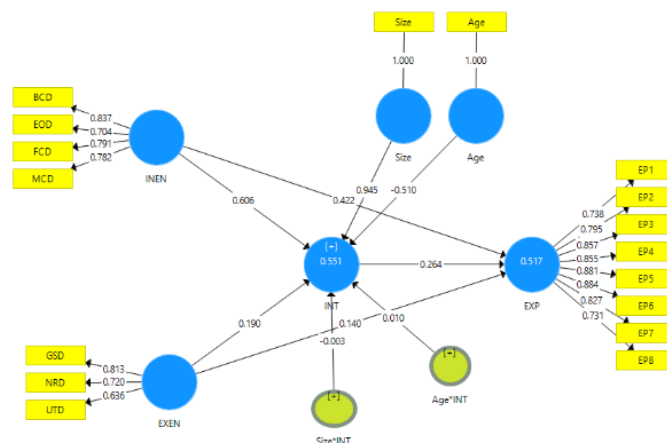

Figure 1: The visual output for SMARTPLS algorithm

4. Conclusion

This research found that factors in the internal environment, namely firm capability, financial capability, and management capability, positively influence SME internationalization towards export performance in Sri Lanka. The study results reveal that firm size does not directly affect the internationalization of SMEs and does not moderate the impact of internal and external environment internationalization of SMEs. The reason for this is that most industries also export their goods through an intermediate firm. So, the no of employees, which denotes the firm size, is not a considerable factor in internationalization. Further, the relationship between the internal environment and the internationalization of SMEs strengthens with the firm's age. However, the said impact is insignificant. The firms receive cost advantages in the long run. However, our study focuses on agro-based industries. As they are agro-based industries, age is not an important determinant of the internationalization of Sri Lankan agro-based industries. The beginners start to export via intermediatory firms, which have a direct relationship with foreign importers; the outcome of this research will enhance our understanding of the success factors of SME internationalization and provide insights for policymakers and SME managers in Sri Lanka.

5. Keywords

Agro-based Firms, Export Performance, Internationalization, Small and Medium Enterprises (SMEs)

6. References

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