Research Article

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Non-Traditional Agricultural Export Performance in Ghana. Exporting SMEs' Characteristics, Export Mode, and Institutions

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ABSTRACT

Increasing focus of African economies, including Ghana, on non-traditional agricultural exporting (NTAE) small and medium enterprises (SMEs) to counter declining earnings from traditional exports fall short to expectation. This study investigates this gap by looking at unstructured data, and the drivers of NTAE SMEs that can enhance performance and support sector policy initiatives.

The research question to be answered is: *Which SME characteristics, export mode and institutions (services and finance) are positively related to export performance in the NTAE sector in Ghana?* This study applied PLS SEM analysis. The drivers of significance are export knowledge, corporate governance, product development, and professional and technical support. Although building social networks and export modes were found to be significant, they negatively affected the export performance. The cost implications limit the research to a cross-sectional study. Perceived export performance was used because the respondents did not provide export statistics. Most research on NTAEs in Ghana has focused on either subsectors or SMEs. This study adds value by focusing on SMEs in the NTAE sector, providing insights to policymakers and the government for intervention and policy formulation. Government policy implications include direct investments in shipping and air freight, tax rebates, concessions, and access to finance for NTAE SMEs. Managerial implications show that knowledge of export processes, export market regulations, and international consumer preferences is essential.

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Introduction

The non-traditional agricultural export (NTAE) sector is becoming increasingly important in African countries [1-3]. The start of the NTAE sector in Ghana can be traced back to the early 1980s, when declining export earnings led to diversification of the export base [4]. The focus on the NTAE sector is in part due to its high-value products and governmental export diversification strategies focusing on this sector, with the aim of countering declining earnings and dependence on traditional exports such as cocoa, timber, cashew, gold, and other minerals [4, 5]. NTAEs include exotic fruits, vegetables, and agricultural products [6]. With the increasing importance of the NTAE SME sector, there is a need to investigate what works best for this sector, and ultimately for economic growth and development. In Ghana, statistics from the Ghana Export Promotion Authority (GEPA) 2020 show that NTAEs grew by 3,210% (from the 1990s), but what is missing from the data are the drivers of NTAE SMEs that can enhance performance and support policy initiatives. The limitations of GEPA data, though supplemented by studies, provide reasons to explore the significant drivers of NTAE SME performance in Ghana [4,6,7]. The plethora of literature on Ghana's export and SMEs, is mostly on finance, internet use, marketing, environment and resources and a growing amount of literature on NTEs and SMEs and some research on NTAE sub-sectors but a theoretical gap still exists that needs to be explored to identify which drivers at the NTAE SME level, stimulate or hinder NTAE performance [8-19]. This study investigates this gap and contributes to the literature by identifying significant drivers that facilitate or hinder NTAE SMEs [4, 20-25]. The research question to be answered is: *Which SME characteristics, export mode, and institutions (services and finance) are positively related to export performance in the NTAE sector in Ghana?* This information will enhance discussions on whether there are drivers peculiar to the NTAE SME sector [3, 26-30]. The findings would also form the basis for further analytical studies on the sector identification of export performance drivers to improve policy direction.

The remainder of the paper is structured as follows: a discussion on trends in NTAE performance, drivers of export performance and RBV theory, an explanation of the conceptual model, and hypothesis development. The research methodology explained the data collection, analysis, and results. The conclusion discusses

the findings, policy implications, and identifies the limitations of the study and recommendations for future research.

Trends in NTAE, Drivers of Export Performance and RBV Theory

A look at the trend of the NTAE sector in Ghana
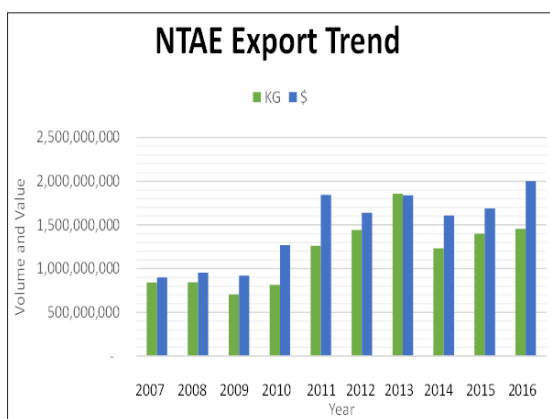
Source: GEPA Annual Report 2018
Figure 1: NTAE Export Trend

over the last decade (2007-2016) shown in [Figure 1] suggests that there has not been a sustained increase in NTAEs in terms of both volume and revenue. Hinson provides some explanations for this by suggesting that in the non-traditional export (NTE) sector, this is occasioned by a lack of training, finance (especially from banks), and equipment (22;324 , 31-32). Although exports increased in the same decade, there was no documentation to support whether the same SMEs recorded/registered in 2007 remained in business until 2018, the growth in these SMEs (micro to small, small to medium, medium to large), and the trend for new entrants to the NTAE sector.

During the earlier decades (1980s to 2000), most African economies set the right conditions for diversification into NTAEs through major macroeconomic reforms and agricultural policies [33]. From the 2000s onwards, Sub-Saharan African (SSA) countries made gains in the product market (World Development Report (WDR) 2008) . Developing countries increased the market share of NTAEs to 43%, and by 2013, the export performance of some SSA countries reached $1billion in NTAEs and led NTAE exporters in 2019 according to World Trade Organization (WTO) statistics [34]. SSA's share in world agricultural exports declined to 2.9% in 2018, outpaced by the growth in world agricultural exports from 2000 to 2018. This disparity supports the debate on what accounts for the NTAE performance.

To date (2022) studies on the determinants of export performance have been broad [35]. However, for most exporting SMEs "export performance is influenced by controllable internal determinants" and "impacted by uncontrollable determinants which can be internal (management characteristics, firm's characteristics and

competencies) or external (industry characteristics, foreign and domestic market characteristics)", include innovation activity, social and political conditions to do with international air/seaports, competitive freight rates, private sector marketing capabilities among others (35;120, 36-37). The importance of NTAE SMEs to economic development indicates that studies on SMEs in general and drivers of export performance are relevant to institutional reforms or frameworks related to sector regulations, disparities, and alignment as may pertain to the NTAE sector [15, 20, 22, 38-44]. The drivers of "export performance may be contingent not only on the firm-level factors" but also on the "characteristics of individual entrepreneurs and their institutional environment" related to export production, export assistance, and export infrastructure and services (45;1006, 46). From these studies, the drivers of NTAE performance appear to be SME/firm resources, various government policies, institutional support, and infrastructure.

The resource-based view (RBV) theory, originally attributed to Wernerfelt, examines a firm's resources and products [47]. Unlike products, resources can be attributed to a broader set of resources [48]. Within the context of this study, the RBV is used to explain the SMEs characteristics including entrepreneurial strategy, innovation, and export mode, supply capacities and institutions -services and finance as a premise for investigating theory related to the firm [49-51]. Most important is the reliance on the RBV to discuss the environment of the NTAE SMEs' export chain activities, relationships, and determinants of the internationalisation process relevant to our study context [47, 52]. The RBV theory focuses on the internal determinant factors "that have a potential effect on exporting (resources and capabilities)" given that a "firm's resources are closely related to its export performance" and RBV contributes to theory and logical rigor of export-related studies (53;105, 54;82, 55). The business and strategic management literature uses the RBV approach to explain the complicated external business environment, internationalisation issues, and export performance [56].

Discussion of Conceptual Model and Hypotheses
In this study, the selection of drivers is based on the literature, including Ghanaian studies which examined the institutional (external environment) and firm-level factors (internal environment) of NTAE SMEs (8, 21, 57). Easmon et al (58;267). In applying the RBV theory found innovation to be a "core driver of exporters' international business success". To this extent, the RBV theory underpins SMEs' internal capabilities, as evidenced by its capital, including human, social, physical, and notional assets. The drivers of SMEs' internal capabilities are drawn on to develop the conceptual model. This analysis was initially run on all the variables identified as drivers of export performance and the drivers with significant statistical measures selected. The observed variables (outer model) that explain the latent variables (inner model) and hypothesised relationships with export performance [Figure 2] are discussed.
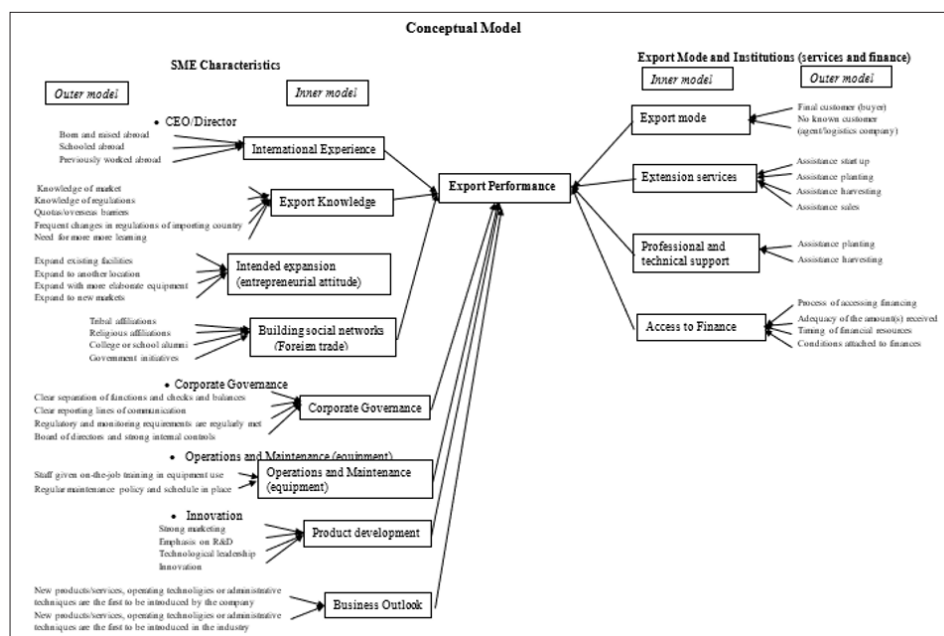
Figure 2: Conceptual Model

SME Characteristics

SME characteristics include the internal resources of the firm explained by international experience, export knowledge, intended expansion, building social networks, corporate governance, operations and maintenance of equipment, product development, and business outlook. International experience is "the degree to which the firm's management has acquired overseas experience, professional foreign direct investment (FDI) experience, and training in international business" (59;86). This equips managers with insights to better manage international operations, learning/ potential for learning, export experience and international networks [53, 60-63]. In our study international experience is derived from the manager's exposure to an international context, either being born, raised, or schooled abroad and aids the SME's export and international activities [64-65]. Eriksson et al (66;9). discuss export knowledge as experiential knowledge involving foreign business knowledge ("knowledge of clients, the market and competitors") and foreign institutional knowledge ("knowledge of institutional frameworks, rules, norms and values"). Such knowledge is shared by explicit knowledge (institutionalised knowledge) and tacit knowledge and produces intermediate innovative outcomes [67]. These attributes of export knowledge generate export propensity, intensity, and performance [68]. Knowledge of markets, regulations, quotas/barriers, and the need for more learning in international markets make up export knowledge in this study and enables SMEs to identify opportunities in foreign markets and develop competitive capabilities for export performance [69]. Entrepreneurial attitude (intended expansion) works through entrepreneurial strategy, internationalisation, marketing capabilities, and incremental increases in resources in an optimum way [70]. It enhances the firm/SME resource base, provides leverage to enter foreign markets and expands its international scope [71, 72]. Expansion of existing facilities, expansion to another location, expansion with more elaborate equipment and expansion to new markets define the intended expansion of a firm and entrepreneurial orientation and has positive effect on internationalization of SMEs [73]. Firms that cultivate and nurture strong ties with (inter)national partners gain access to network resources and build on their internal capabilities [74]. Firms likely export better when they "benefit from foreign networks (ownership and financial linkages), domestic networks (chambers of commerce, links to regulation), and communication networks (e-mail, internet)" because social network relationships are an important source of technological and market information (75;2, 76). Social networks are networks developed through tribal affiliations, religious affiliations, college/school alumni, or government initiatives that are built on trust and moral obligations and facilitate learning [76]. In general, social networks support the export performance. These discussions lead to the following hypothesis:

H1 International experience of NTAE SMEs is positively related to export performance.
H2 Export knowledge of NTAE SMEs is positively related to export performance.
H3 Intended expansion of NTAE SMEs is positively related to export performance.
H4 Social networks of NTAE SMEs are positively related to export performance.

Corporate governance "a set of relationships between a company's board, management, its shareholders, and the society within an institutional framework" ensures efficient allocation of resources, accountable stewardship, and promotes an institutional framework that leads to better performance (8, 77;8). It falls into two categories: behavioural patterns of the firm related to measures of performance (internal) and a normative framework that links to rules and regulations (external) [78,79]. "Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (80;737). This study defines corporate governance as a clear separation of functions and checks and balances, clear reporting lines of communication, regularly met regulatory and monitoring requirements, a board of directors, and strong internal controls. Studies in the NTE sector in Ghana have found a positive relationship between corporate governance and SME performance of SMEs [81-82]. Regarding the operations and maintenance of equipment, the literature has focused mostly on modern maintenance practices, such as total productive maintenance (TPM), to reach organizational efficiency. The concept of

total productive maintenance emphasizes the effectiveness of equipment and maximizing output [83, 84]. The literature supports a maintenance culture where SMEs look to overall equipment effectiveness (OEE) and adopt mobile maintenance [85-87]. In this study, the operations and maintenance of equipment are described as providing staff with on-the-job training in equipment use and adhering to a maintenance policy and schedule. Products may be developed along the value chain processes where value added at the each/any stage gives the firm a competitive advantage through better products or production practices [88]. This is further extended by Terziovski who found that for manufacturing SMEs, entrepreneurial innovation is most relevant to product development, and globalised competition places increasing pressure to continuously innovate and upgrade product quality to remain competitive using strategy [89-91]. In this study, strong marketing, emphasis on research and development (R&D), technological leadership, and innovation explain product development which generates sustainable competition and enhances performance [92]. The business outlook is the positive effect of technology leadership on SME performance through innovative orientation for added value [93]. Internal innovation processes that rely on the firm's own innovation resources are better suited for small businesses because "SMEs adopting innovation strategy provide the management direction and guidance necessary to ensure the correct focus on customer value" for sustainability and competitiveness (94;2397-8, 95). The business outlook is explained by new products/services, operating technologies, or administrative techniques being first introduced by the company and new products/services, operating technologies, or administrative techniques being first introduced in the industry, and add to the structural capital of a firm [96]. Based on these discussions, the following hypotheses are proposed:

H5 NTAE SMEs corporate governance is positively related to export performance.
H6 Equipment operation and maintenance in NTAE SMEs is positively related to export performance.
H7 NTAE SMEs product development is positively related to export performance.
H8 Business outlook of NTAE SMEs is positively related to export performance.

Export Mode and Institutions (services and finance)
The export mode of a firm depends largely on how it organises efficient export operations by assessing asset specificity, information asymmetry, and market uncertainty based on transaction costs [97, 98]. Firms determine this by assessing whether the net benefits of the export market exceed the fixed costs [99]. The export mode is explained as both exports to a final customer (buyer) and exports through an agent or logistics company in this study. SMEs "establish their 'export mode' to best exploit and develop their firm-specific resources" and protect themselves from appropriation (100;1014). Some NTAE SMEs and farmers rely on extension services to strengthen their capacity because "for small and medium business to urban areas, *such* assistance will place special emphasis on export marketing, quality control and meeting delivery schedules" (101;32). Extension services include transfers of new knowledge, technology, skill development, and advice from institutions and researchers to farmers, their partners, and market actors [102-104]. The extension service in this study is assistance/investment (government and non-governmental organisation (NGO)) provided to farmers, processors, their partners, and market actors during start-up, planting, harvesting, and sales, and reduces information asymmetry [103, 105]. NTAE SMEs also rely on professional and technical support which are unpaid

and provided through tangible or intangible services [104, 106]. Advisory services cover the actors involved in the advisory activity and the relationships they maintain with each other and with other external actors, and the methods used by advisory service actors to create knowledge and know-how in individual and/or collective learning processes [102]. In our study, professional and technical support in the NTAE sector was the assistance provided during planting and harvesting. NTAE SMEs require a supply of finance to venture into export markets. Generally, about 90% of SMEs in Ghana find access to finance constraints due to limited access to capital markets and poor support from the government and traditional banks [32]. However, the lack of data makes it difficult to assess the financing gap, but the nature of credit supply is such that "there will always be some borrowers whose demand for credit is not satisfied in full or include terms they consider inappropriate" (14;341). While repressive financial policies and monitoring costs negatively influence the traditional bank loan conditions to SMEs the credit schemes for NTAE SMEs channeled through the traditional banks are faced with the same loan condition [21, 39]. In this study, access to finance is explained by the process of accessing finance, adequacy of the amount(s) received, timing of financial resources, and the conditions attached to finances. The importance of these discussions supports the following hypotheses:

H9 NTAE SME export mode is positively related to export performance.
H10 Extension services to NTAE SMEs is positively related to export performance.
H11 Professional and technical support to NTAE SMEs is positively related to export performance.
H12 NTAE SMEs access to financial resources is positively related to export performance.

Export Performance
Export performance is the ability of the exporting SME to offer goods and service of international standard, worth the global market price, obtaining appropriate returns and "the outcome of the firm's export activities" (5;4, 107). The literature presents subjective (perceptions of performance) and objective (sales, profits) measures, and some studies have "found that subjective approaches were closely correlated with objective measures" and used in research where objective data are unavailable (95;157, 108-109). To operationalise export performance, we follow studies in which perception indicators were used as a measure of export performance. In this study, export performance is explained by looking at company export performance compared with other export companies in the local market, a measure of company export performance in the international market, quality of the export product, and competitiveness of the export product (proxies for sales/revenue), all measured on a 'Likert scale' [12, 20].

Research Methods
The study covered 12 of the 16 regions, separated into three zones:1) *Savannah zone*–Upper West, North East, Savannah, Northern; 2) *Forest zone*–Ahafo, Brong Ahafo, and Ashanti; 3) *Coastal zone*, eastern, Volta, western, central, and Greater Accra. To investigate the research question, we use a study approach similar to Yamoah et al [15]. and use the directory of exporters from various sources to enhance the Ghana Export Promotion Authority (GEPA) database, of which 412 (85%) are NTAEs. A simple random sampling methodology was used to select the 235 NTAEs. To contribute to the discussions on the research question, a two-stage approach was used. First, an exploratory pilot study (the

10 SMEs were excluded from the main survey) was undertaken to ensure face validity. Next, simple random sampling was used to select potential respondents, out of which 152 participated in the main survey (response rate of 65%). Validation of survey responses was conducted in 2022. Four experienced field assistants and two field supervisors conducted face-to-face interviews with the top management of the NTAE SME, with repeated visits in several cases. Assurance of confidentiality and the ability of the interviewers to clarify questions enhanced the reliability of the data. This study applied partial least squares structural equation modelling (PLS SEM) because it has a better predictive value.

Measurements
Most responses are on a 7 point 'Likert' scale ranging from 1 (to a very low extent) to 7 (to a very high extent). Responses to the open-ended questions were used to support discussions on the findings and form the basis for some of the recommendations.

Firm size (number of employees), the number of years of company operation (firm age), and number of years in export business (firm experience) are used as control variables in this study because "control variables account for factors … that could explain variance in the dependent variable" (11;6, 20). The descriptive statistics show that firm age had a mean of 12.69 and standard deviation of 9.73, firm experience had a mean of 10.69 and standard deviation of 8.62 and firm size had a mean of 98.34 and standard deviation of 304.18. The standard deviation of firm size is explained by the inclusion of seasonal workers during harvesting. Independent T test conducted for (additional) control variables, namely location, product type, education, and gender, showed a general lack of significance on the performance level (dependent variable). For the independent variables, the significance levels were not affected, and the reliability test (Cronbach alpha) for these variables was low (< 0.7). For parsimony and to improve the robustness of the model, these control variables are excluded .

The constructs' international experience, intended expansion, product development, operations and maintenance, corporate governance, and export mode show good results with means above 5.1, although the export mode has the highest SD . In contrast, access to finance was regarded negatively by respondents, with a mean of 3.06. The dependent variable export performance has a high mean of 5.3 and a low SD. The control variables of firm age and firm experience show that companies have, on average, 11 to 12 years in business. The firms are mostly medium-sized companies with an average of approximately 100 employees. The large SDs of the control variables reflect the wide variability of firms in terms of age, experience, and number of employees. All constructs had a CA above 0.7, except for export mode (0.666)

and, operations and maintenance (0.646). The factor loadings show how well the items loaded on the constructs except for intended expansion, building social networks, product development, and extension service, each of which had one low variable factor loading ranging from .394 to .57, but good CA, so the construct was maintained [110]. The variance inflation factor (VIF) measures multicollinearity among variables with a recommended value of five, although a VIF value of ≤ 10 can be used [111]. The variance inflation factor (VIF) values showed 2 values above 5. 'Religious affiliation' had 5.407 and 'Timing of financial resources' had 5.760. Descriptive statistics were run for each of these variables, making up the export performance (reflective) construct. The means ranged between 4.68 and 5.91 and the standard deviations ranged between .996 and 1.369. The factor loadings ranged from .621 to .801. The result for the construct showed a mean of 5.3, standard deviation of 1.17, and CA of .701. The robustness of the measures of export performance was tested using the summated values of the independent constructs in the regression for each reflective measure of the dependent variable (export performance) [112]. The R square ranged between .412 and .598, and the adjusted R square ranged between .128 and .403.

[Table 1] presents AVE (a measure of convergent validity) and its correlations. The Fornell-Larcker (FL) criterion is used to determine discriminant validity and "compares the AVE of each construct with the squared inter-construct correlations" (113;328). The AVE ranged between 0.8 and 0.892 for all variables, meeting the acceptable level of 0.5 for convergent validity [114]. The analysis for internal consistency/composite reliability showed a minimum value of 0.78 (above 0.6), thus supporting convergent validity [11]. The findings indicated that the measures satisfied the criterion for discriminant validity. Although "building social networks" had an AVE of 0.481, this variable was included because the results of reliability and other validity tests were strong. The values on the diagonal are all larger than the AVE values in the respective columns, indicating that the construct correlations with other constructs are smaller than the correlation between the construct's underlying items. Some correlations were found between the variables. Business outlook and intended expansion ($r = 0.438$); business outlook and product development ($r = 0.435$); building social networks and international experience ($r = 0.458$); corporate governance and operations and maintenance ($r = 0.489$); corporate governance and export performance ($r = 0.475$); evaluation of financing sources and export knowledge ($r = 0.411$); export mode and international experience ($r = 0.462$); and extension services and professional and technical support ($r = 0.489$). These correlations ($r ≤ 0.5$) were not considered strong enough to pose a challenge to PLS SEM analysis.

Table 1: Average Variance Extracted (AVE) and Correlations

NO.	VARIABLE	AVE	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1.	Business outlook	0.888	0.942															
2.	Building social networks	0.481	0.096	0.694														
3.	Corporate governance	0.760	0.395	-0.156	0.872													
4.	Operations and maintenance	0.736	0.396	-0.192	0.489	0.858												
5.	Access to finance	0.752	-0.103	-0.287	0.120	0.145	0.867											
6.	Export mode	0.749	0.296	0.226	0.042	0.029	-0.048	0.866										
7.	Export knowledge	0.639	0.074	-0.327	0.227	0.216	0.411	0.034	0.799									
8.	Extension service	0.624	0.205	0.173	-0.020	-0.019	-0.067	0.072	-0.153	0.790								
9.	Export performance		0.283	-0.210	0.475	0.369	0.102	-0.160	0.301	-0.109								
10.	Firm size	1.000	0.131	0.036	0.188	0.226	0.094	0.103	0.100	-0.067	0.252	1.000						
11.	International experience	0.789	0.296	0.458	-0.045	-0.079	-0.200	0.462	-0.265	0.180	-0.168	0.124	0.888					
12.	Intended expansion	0.633	0.438	0.030	0.261	0.335	-0.088	0.197	-0.083	0.140	0.133	0.016	0.151	0.795				
13.	Product development	0.580	0.435	0.101	0.349	0.311	0.034	0.091	-0.022	0.085	0.290	0.048	0.111	0.337	0.762			
14.	Professional and technical support	0.892	0.131	0.159	0.020	0.022	-0.092	-0.022	-0.050	0.489	0.089	0.018	0.084	0.092	0.055	0.945		
15.	Firm experience	1.000	0.258	0.110	0.024	0.127	-0.091	0.027	0.056	0.058	0.197	0.276	0.069	0.085	-0.053	0.071	1.000	
16.	Firm age	1.000	0.222	0.035	0.084	0.111	-0.089	0.039	0.081	0.103	0.243	0.298	0.042	0.058	-0.043	0.101	0.859	1.000

Results/Data Analysis and Discussions
Descriptives
The sample characteristics of SMEs are discussed analysing relevant variables and viewpoints.

The data show that 41% of firms are small SMEs, followed by 31% medium-sized SMEs, and 29% micro-SMEs. Predominantly, SMEs (83%) are in the coastal zone and 7% are in the forest zone and 10% in the savannah zone. This finding is similar to that of a previous pilot study [6]. Sixty-nine percent of CEO/managers have tertiary, postgraduate, or professional education. By inference, institutional support (capacity building and incentivised training) is required to support SMEs in exports, because of the high proportion (31%) of SMEs CEO/managers with basic or secondary education. The statistics also indicate that in the NTAE sector, CEO/managers are predominately male (79%), whereas 48% of export products are non-processed with little or no value-added, 11% are semi-processed, and 41% are processed products.

In terms of challenges faced by NTAE SMEs, 52% of respondents state inadequate monetary interventions (finance, interest rate, and loans), 38% of respondents state poor/inadequate logistics, roads, transport, and storage facilities; 25% of respondents state poor/inadequate government policy, government interventions, and bureaucracy; 18% state poor/absent services, utilities, institutional services, poor handling affecting quality of products, etc.; 9% of respondents state poor marketing of products, packaging, knowledge of export market requirements, rules, etc., and 10% of respondents did not answer.

The NTAE SMEs have general views on improvements in the sector. The majority of respondents (53%) suggest improvement in government macro policies, sub-sector policies, institutional policies, promoting private sector initiatives and programs; 33% of respondents consider improvement in government policy on finance, bank policy on NTAE SMEs, insurance of/for agriculture, public private partnership finance schemes, and financing initiatives; 26% of respondents state improvement in export mode, expansion of harbour and services and infrastructure; 14% of respondents believe improvement in training and affordability of training programs, improved utility services, provision of professional services, and placing competent personnel in charge of government institutions. Of the remaining respondents, 11% suggest improvement in networking through associations, provision of real-time information on trade regulations, and protection of intellectual property, and 15% provide no suggestions.

PLS SEM Analysis

Partial least squares structural equation modelling (PLS SEM) is applied to analyse data because of its better predictive values for latent variables and of the population and advantage with non-normal data used in behavioural research studies [111, 114-116]. The use of formative and reflective measures is consistent with the majority of PLS SEM analyses found in the literature and exploratory research [117].

The results for the outer models (latent variables and indicators) on SME characteristics, export mode, and institutions are discussed with respect to p values. For SME characteristics, the constructs of international experience, product development, export knowledge, corporate governance, operations and maintenance, and business outlook are all significant at the 99% level ($p<0.01$). Building social networks has significant results at the 99% level ($p<0.01$), 95% level ($p<0.05$), and 90% level ($p<0.1$). Intended expansion has all explanatory variables significant at the 99% level ($p<0.01$) except for "expand to new markets" (0.120) which is insignificant.

Export mode and institutions (services and finance) have significant results for all explanatory variables at the 99% level ($p<0.01$) for the constructs export mode, access to finance, and professional and technical support. Extension service has significant results for all variables at the 99% level ($p<0.01$) except for 'harvesting' (0.295) which is insignificant. However, this variable is maintained, as it does not affect the CA results. The outer model results for export performance, firm size, firm age, and firm experience are significant at the 99% level ($p<0.01$).

The inner model shows the recursive (path) relationship between the exogenous constructs [111;141]. The results for the inner model are shown in [Table 2], indicating the path coefficients and p-values. The model was tested for endogeneity using the Durbin-Wu-Hausman (DWH) test which showed no endogeneity among the variables. (Ho: variables are exogenous. Durbin (score) chi2(1) = 1.45042 (p = 0.2285) Wu-Hausman F(1, 128) = 1.31158 (p = 0.2542)).

The results for the coefficients (β), R^2, adjusted R^2 and hypothesized relationships with export performance is presented in [Table 2]. The model used all 152 observations and had an R^2 of 0.427 and an adjusted R^2 of 0.364, which is high. Goodhue et al [116]. suggested that for a sample size of 150 with a simple model, R2 should be above 0.27, and the adjusted R^2 should be above 0.25. The model shows that for the control variables, only firm size has a positive effect on export performance. The independent variables are all hypothesized to have a positive relationship with export performance. The reasons and underlying factors are provided in the discussion of the conceptual model.

Table 2: PLS SEM estimates for the internal and external environmental factors related to export performance of NTAE SMEs in Ghana

Variables		MODEL Export Performance	
		Path Coef.	P Value
International experience	H1 (+)	-0.046	0.638
Export knowledge	H2(+)	0.167	**0.032
Intended expansion	H3(+)	-0.003	0.974
Building social networks	H4(+)	-0.084	**0.020
Corporate governance	H5(+)	0.265	***0.000
Operations and maintenance	H6(+)	0.045	0.597
Product development	H7(+)	0.181	**0.020
Business outlook	H8(+)	0.108	0.247
Export mode	H9(+)	-0.192	**0.045
Extension service	H10(+)	-0.154	0.132
Professional and technical support	H11(+)	0.134	**0.047
Access to finance	H12(+)	-0.038	0.694
Firm size		0.124	*0.099
Firm experience		-0.005	0.972
Firm age		0.165	0.263
Observations		152	
R-squared		0.427	
Adj. R-squared		0.364	
*** p<0.01, ** p<0.05, * p<0.1			

The results show that export knowledge (H2 +), corporate governance (H5 +), product development (H7 +), and professional and technical support (H11 +) are positively related to export performance; thus, these hypotheses are accepted. In contrast, the constructs building social networks (H4 +) and export mode (H9 +) are significantly negatively related to export performance, so these hypotheses are rejected. The other constructs in our model are not significantly related to export performance; therefore, the related hypotheses are not supported. The results are interesting because not all drivers identified in the literature appear relevant to NTAE SMEs. Within the context of SME' internal environment, corporate governance, innovative strategies (product development), and export knowledge are significant drivers of export performance. This means that, for NTAE SMEs, export knowledge determined by the requirements of buyers, rules, or standards of importing countries is most relevant to their success. Corporate governance structures are also important for SMEs, most likely given the network resources they have and the various NTAE supply chains in which they operate. These supply chains could explain the innovative strategies SMEs adopt in product development. Although building social networks is significant, it has a negative relationship with export performance. A possible explanation may be that tribal and religious affiliations, contacts via college and school alumni, and government initiatives are not the best ways to find leads for export orders, and the time spent on these networks is ineffectual. The external environment for NTAE SMEs shows mixed results for export modes and institutions. Professional and technical support has a positive relationship with export performance. Contrary to the hypothesized relationship, export mode shows a negative relationship with export performance. The result for the export mode may not be surprising, as NTAE SMEs are restricted in terms of the means to transport products. A look at the aspects that the government can influence clearly shows that professional and technical support is important but that it is not given enough attention in terms of policy interventions. Access to finance (although not significantly related to export performance) forms an aspect of advisory services that can be improved. Further explanations for these results are discussed in the conclusion and used to answer the research question.

Conclusions and Recommendations

This study explores 152 cases of NTAE SMEs, focusing on SME characteristics, export modes, and institutions (services and finance) related to export performance to answer the research question: *Which SME characteristics, export mode and institutions (services*

and finance) will be positively related to export performance in the NTAE sector in Ghana? In answering the research question, the analysis and findings provide some interesting insights on the NTAE SMEs external and internal environment.

External Environment
Support for NTAE SMEs through government extension services and the financial sector shows no positive relationship with export performance, suggesting that the implementation of policy(s) and the policy framework of the public sector may still be weak. The private sector driven by associations needs better organisation to harness knowledge sharing and foster a positive competitive environment for firms seeking to internationalise. The CEO/managers of SMEs in our study indicate that access to finance remains a problem, as mentioned in earlier studies [14, 18, 19, 21]. However, the government's monetary policy toward the NTAE sector has improved which may explain why access to finance does not have a significant negative relationship with export performance [118]. Export mode is mentioned as important [100] but in our study, export mode shows a negative relationship with export performance. This may be because most SMEs are restricted to the schedules of export carriers/freight forwarders to export their goods. Large export carriers or freight forwarders determine the market by the volume of exports and may be offset by the seasonality of some horticultural products (irregular markets). Carriage via air freight is expensive and leads to uncompetitive product prices. Government options for improving the situation include direct investments in shipping and air freight, tax rebates, concessions, and access to finance for NTAE SMEs. Professional and technical support has a significant positive relationship with export performance, consistent with the other study showing sector improvement from private sector initiatives [105]. The government could consider creating more incentives for the private sector to provide essential services to NTAE SMEs, including public-private partnerships.

Internal Environment
The positive result for corporate governance proves that the organisation (ordered process) of NTAE SMEs is very important for export performance. Operations and maintenance are not significant, although the literature provides some support for a negative relationship [84, 119]. The positive correlation between corporate governance and operations and maintenance may explain why we did not find a negative relationship. NTAE SMEs' innovation strategies are reflected in the positive relationship between product development and export performance. Successful NTAE SMEs innovate to meet consumer expectations. No significant relationship is found for business outlook, similar to Dierkes et al [120]. who found that the business outlook (technology leadership) was not significantly related to export performance. The reason for this finding might be that Ghanaian SMEs tend to mimic each other, so the technology advantage might be short-lived (5;20). The results for the means and SDs suggest that CEO/managers have a relatively high level of export knowledge and an entrepreneurial attitude and apply good corporate governance in their companies. The finding that knowledge of export markets is positively linked to export performance means that knowledge of export market regulations and international consumer demand are most important to SMEs, and, applied to their advantage. This is a clear improvement compared with the early 2000s, when exporters were caught off guard by the change in demand from EU buyers. The lessons learned from such experiences have likely shaped the quest for export knowledge by NTAE SME exporters.

Gaps for Further Research
In general, it can be said that this study focuses on the views of NTAE CEOs and perceived export performance instead of reliable export statistics which are not provided. The use of cross-sectional data can lead to problems related to causality. The possible reverse effects of export performance on the independent variables cannot be ruled out. Therefore, the study models are tested for endogeneity and causality. Since there is significance in 'T' test results for some of the independent variables other analytical approaches may provide some interesting findings. Costs limited the possibilities for conducting a longitudinal study that would help provide more certainty about endogeneity and the direction of the relationships. The study sample is categorised (non-processed, semi-processed, and processed) as opposed to being classified (horticultural products, oil seeds and nuts, dairy products, etc.) because of the absence of standardised sub-sector classifications making recommendations generic to the NTAE sector as a whole and not specific to sub-sectors. It would be helpful for future studies to go more in-depth into the different subsectors. In addition, 83% of the sample cases are based in the coastal zone, which may provide bias toward the NTAE SMEs inland.

Ethical Compliance
The research did not include studies on human participants.

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