



# **Collective Actions, Dynamic Capabilities and Competitive Advantage: Empirical Examination of Minor Export Crop Farms in Sri Lanka**

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## **Authors' contributions**

*This study was carried out in collaboration between both authors. Author VS designed the study, wrote the literature, managed the analysis and the first draft of the manuscript. Author SCC reviewed the draft manuscript. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

**Aims:** Collective actions in the agribusiness sector take a variety of forms, including farmer cooperatives and supply chain coordination. Literature has acknowledged that agribusiness farms which engage in collective actions generate greater value-add and enhance socio-economic contributions of a country. However, its relative importance along with the dynamic capabilities possessed by farms and subsequently competitive advantage has received very little research attention. This study aims to fill the gap by determining their relationships by employing the resource-based view in combination with the dynamic capability theories.

**Study Design:** Specifically, the minor export crop farm owners involved in the commercial cultivation of cinnamon, pepper and clove in Sri Lanka were surveyed using a personally-administered, structured questionnaire.

**Results:** The results of regression-based path analysis indicate a significant relationship between

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collective actions and competitive advantage, as well as between collective actions and dynamic capabilities.

**Conclusion:** The study has extended our understanding of the importance of collective actions for the minor export crop farm owners. Research and managerial implications are provided together with future research directions.

*Keywords: Resource-based view; dynamic capabilities; collective actions; competitive advantage; agribusiness sector; minor export crop farms.*

## 1. INTRODUCTION

The growing global demand for agricultural products requires the agribusiness sector to be more competitive in the world market in order to obtain the benefits of increased demand [1]. This explains why scholarly attention on agribusiness has increased in recent years as the sector becomes increasingly industrialised, competitive as well as technologically and managerially intensive [2-5].

The resource based view (RBV) suggests that in order to achieve superior performance, a firm needs to develop the competitive advantage that creates value through its unique products or services [6]. Basically, the RBV focuses on the internal environment of a firm as a source of competitive advantage and emphasises that the resources possessed by firms have to be developed to compete in the environment [7-9]. Resources refer to the stock of available assets that are owned, controlled and used by the firm [10-13] to develop and implement its strategies. Because of their small size nature and limited financial and managerial personnel, agribusiness firms [farms] in developing countries typically seek advantages from collective actions [14,15] to build efficient competitive forms in the dynamic market environment. Hence, it seems logical to view collective actions as a form of unique resources because it comprises essential social relations and networks between a farm and its stakeholders [6].

Whilst the possession of resources is important, the dynamic capability theory suggests that capabilities are a source of inimitable and sustainable competitive advantage to firms because they transform resources into products or services that are superior to those of their competitors [16,17,6,11]. Capabilities are defined as the ability of a firm to perform its task which is related either directly or indirectly to its input-output process [17]. Hinterhuber [18] proposes that in order to obtain the competitive advantage, the resources and capabilities should share the

traits of being valuable, rare, inimitable, and are organised to be deployed. As such, the RBV is characterised by two basic maxims. First, resource endowments are heterogeneously distributed. Second, the presence of dynamic capabilities allows firms to sustain competitive advantage. In short, a firm needs to possess unique resources and exploit those resources through its dynamic capabilities to obtain competitive advantage [19,20].

However, very little attention has been paid in the agribusiness literature regarding the functional relationships between resources and capabilities, as well as between the resources of firms and their associated analysis related to competitive advantage, with particular reference to the role of collective actions. Lu [6] found that the closer the relations a firm can build, the more opportunities there are to establish links with new customers. In European countries, agri-food farms, especially those small and medium size in nature, have addressed their marketing problems by engaging in collective actions [15]. Likewise, they also found that small firms can obtain market access opportunities through engaging in collective actions. Hence, collective actions are viewed as a unique resource that should be exploited through the dynamic capabilities of farms for greater competitiveness.

In order to address this gap, the present study intends to develop and test a conceptual model linking collective actions, dynamic capabilities and competitive advantage, and at the same time investigating the mediating effects of the dynamic capabilities possessed by farms on the relationship between collective actions and competitive advantage within the context of the agribusiness sector. This is the view that agribusiness activities provide an opportunity to realise higher and stable income for farmers and other stakeholders.

The term agribusiness encompasses farms operating within the agricultural sector, including bulk commodities and high-value fresh products

[21]. The study focuses specifically on the minor export crops sector in Sri Lanka in view of the fact that this sector has since become one of the emerging sectors due to its highest foreign exchange earnings to the country. Minor export crops include cinnamon, cloves, pepper, sesame seed, cocoa, cashew nuts, and cardamom, with contributions to gross domestic product and total export recorded at 9.7% and 5.4%, respectively [22,23]. However, the major producers of these crops are increasingly feeling the pressure of growing demand versus limited productivity due to constraints in their resources and capabilities because of their family-owned, small-scale nature [4,24], which affect their competitive positions.

Employing a large-scale sample of entities with experience in the commercial cultivation of minor export crops farms in Sri Lanka, the study focuses on two dynamic capabilities (quality management capability and marketing capability) and their relationships with collective actions and competitive advantage. Due to the relative importance of the spices produced by the minor crops for food and medical supplies, dynamic capabilities such as quality management capability and marketing capability are recognised as important capabilities [25,4]. This view is also reflected in [26,27] who found that small-scale businesses could gain the competitive advantage by possessing these capabilities. Although several researchers have investigated the association between collective actions and marketing capability [15,6], no clear evidence is available in the agribusiness literature regarding the association between collective actions and quality management capability. This provides a good opportunity to investigate the relationships between collective actions, quality management capability and marketing capability, as well as the mediating role of the two capabilities on the relationship between collective actions and competitive advantage in the minor export crops sector.

The rest of this paper is organised as follows. The next section outlines the theoretical view of the main concepts of the study, followed by the development of a conceptual model and hypotheses to be tested. The research design in terms of the methodological approach used is elaborated next. The results are then presented and discussed. The paper ends with the conclusion and future research directions.

## **2. THEORETICAL REVIEW AND HYPOTHESES**

### **2.1 Competitive Advantage**

Competitive advantage is a term which relates to individual products or services, firm, sector, industry and nation [28,1]. However, insofar researchers and practitioners have paid the greatest attention to firm-level competitive advantage [29-31]. This is because the concept of competitiveness has taken central stage in discussions relating to firm-level business strategy [20].

From the perspective of firms, competitive advantage is the extent to which a firm is able to create a defensible or superior position over its competitors through its resources and dynamic capabilities [19,32,31]. This study defines competitive advantage of minor export crop farms as using collective actions configured by dynamic capabilities (quality management capability and marketing capability) to keep them separate from their competitors and to keep the farms active and growing.

Taking the cue from [33] where employing a valid and reliable measurement of competitive advantage in the agricultural sector is important to provide supplementary value for enhancing competitive advantage, this study adopts the five dimensions of price, quality, delivery dependability, time to market and exploiting market opportunities as recommended by several researchers [34,35,33].

### **2.2 Collective Actions**

Within the dynamic business environment, it is not rational to assume that resources are owned by a single firm [8]. Inter-firm exchange mechanisms regarding information, inputs and raw materials represent the resources of collective actions [6]. Collective actions mean developing networks and alliances [15] through the actions of group members to share market knowledge, sell together and develop business opportunities [36] with each other and with suppliers, customers and even competitors. Because of this, [37] acknowledges alliances as one of the most efficient competitive forms in this dynamic market environment.

Whilst collective actions of firms have been studied in different backgrounds [36,38,39,15] found that 80% of Italian agricultural farms engaged in collective actions with respect to

processing and marketing activities. Accordingly, small firms can obtain three main benefits from engaging in collective actions such as resource access, economies of scale and scope, as well as reduced transaction and coordination costs. Because of this, [39] discovered that business network positively and significantly affects competitive advantage of small and medium enterprises (SMEs).

In addition, [15] also highlighted that collective actions are mostly encouraged by the absence of firm with monopoly power. In the context of minor export crops farms, it is evident that there is no farm with monopoly power due to their nature of large in population, small in size and family-owned businesses. In addition, collective actions become favourable where local people know each other, work together and have family ties or common social lives [40]. These conditions are very much apparent in Sri Lanka since the Sri Lankan culture seems to emphasise on sharing and caring. Because of this, [15] emphasise that market orientation, cooperative spirit and initiator role are some of the most influencing factors to the success of collective actions. Hence, collective actions are considered as a vital resource to the minor export crop farms to achieve competitive advantage.

In contrast to resources such as human assets, physical assets, financial assets, technology, reputation and institutional capital [41-44,27] there have been no clear evidence in recent agribusiness literature regarding the role of collective actions [14,15] and competitive advantage. The following hypothesis thus ensues:

**H1:** *Collective actions significantly affect competitive advantage of minor export crop farms in Sri Lanka.*

### 2.3 Quality Management Capability

Quality management capability concerns with the ability to design, develop and produce products to fulfill customer requirements [45] which can lead to the enhanced competitive advantage of firms [46]. Specifically, competitive advantage can be created through total quality management practices in a firm [47,48].

The increasing demands for the spices by both the food and medical industries have created an obligation for the farms to ensure that the crops they produced are safe by meeting certain quality

standards in terms of raw materials, cultivation, environmental concerns and quality management practices. This is of the view that the ability to maintain the quality of the yields has become the most important differentiator in spice trading [49, 4,24] which affect competitiveness. This leads to the following hypothesis:

**H2:** *Quality management capability significantly affects competitive advantage of minor export crop farms in Sri Lanka.*

Through collective actions, farms acquire the information needed on the quality of crops and quality-related practices from other farm owners, suppliers, customers, competitors and authorities and share them with other farm owners. Hence, collective actions offer farm owners fresh and timely information directly from a known source to manage the consistent levels of their crop quality. Furthermore, customers are seeking the high level of quality spices since they are one of the main ingredients in food as well as medical products. These requirements are in favour of the role of collective actions in minor export crop farms. In addition, collective actions are also established to obtain shared loan facilities which enable farms to utilise high-quality raw materials, proper equipment and new cultivation methods. By possessing such quality management capability can enhance the role of collective actions amongst farms, which in turn enhances their competitive advantage. Hence, the following hypotheses ensue:

**H3:** *There is a significant relationship between collective actions and quality management capability of the minor export crop farms in Sri Lanka.*

**H4:** *Quality management capabilities significantly mediate the relationship between collective actions and competitive advantage.*

### 2.4 Marketing Capability

Marketing capability is the integrative process which utilises tangible and intangible resources to understand customer needs [50]. It consists of knowledge of firms of their customers and competitors. Hence, marketing capability is an ability to market the product [yield] by gathering knowledge of customers and competitors, integrating markets and pricing effectiveness [51]. In other words, marketing capability is the ability to sense the market [52].

Agada [53] and recently [4] identified marketing capability as important to farms. Possessing adequate capability on marketing allows farms to take advantage of market sensing activity to obtain information about the markets trends, their customers and competitors as well as skills in targeting the market, developing pricing strategies and monitoring the tactics of their competitors in terms of pricing and price changes. It is hence vital to identify the importance of marketing capability on the competitive advantage of the minor export crop farms. Hence, the following hypothesis ensues:

**H5:** *Marketing capability significantly affects competitive advantage of the minor export crop farms in Sri Lanka.*

The closer the relationships that a firm can build with its stakeholders, the more opportunities there are to establish links with new customers [6]. In European countries, agri-food farms, especially SMEs, have addressed their marketing problems such as obtaining market access by engaging in collective actions [15]. Moreover, information and ideas gathered through collective actions enable farms to get a better understanding of customers, competitors, market trends, pricing strategies, as well as identifying new suppliers. Hence, by possessing such collective actions, the minor export crop farms can improve their marketing capability which in turn enhances their competitive advantage. At the same time, the improvement in marketing capability also enhances the role of collective actions for greater competitiveness. The following hypotheses are thus proposed:

**H6:** *There is a significant relationship between collective actions and marketing capability of the minor export crop farms in Sri Lanka.*

**H7:** *Marketing capabilities significantly mediate the relationship between collective actions and competitive advantage.*

## 2.5 Conceptual Model

Collective actions (CAc) is identified as a key resource (independent variable) which appears to be critical for the minor export crop farms to attain competitive advantage (CA<sub>d</sub>) (dependent variable). At the same time, the study proposes two dynamic capabilities [quality management capability (QMC) and marketing capability (MC)] as mediating variables between collective actions

and competitive advantage. The hypothesised relationships between the variables are shown in the conceptual model in Fig. 1.

## 3. METHODOLOGY

### 3.1 Sample and Data

Amongst the minor export crops, cinnamon, clove and pepper are the main agricultural products representing spices where 66.2% of contributions toward export earnings are derived from them [23,4]. Known as the Spice Island, Sri Lanka was historically attractive to the Western nations for its richness in spice. The spice trade has since reshaped the modern world in this twenty-first century because spices are used as a flavouring for food and ingredient for medicine [49]. In fact, Sri Lanka is still famous for a range of spices including cinnamon, pepper and cloves [54]. Currently, the country is the largest exporter of cinnamon, fourth largest exporter of pepper and fifth largest exporter of clove in the world. Hence, these minor export crops provide significant contributions to the national agricultural production as well as export earnings of the country [22,55,56,4]. The scope of this study hence includes entities with experience in the commercial cultivation of the three minor export crops. In addition, this study considers three instead of one crop in order to increase the observed variances as well as to strengthen the generalisability of findings.

Currently, the minor export crops cover 14 districts in Sri Lanka [57]. Amongst them, the study identified the two highest growing districts of the selected crops. Subsequently, the two highest growing District Secretarial Divisions (DSDs) of each of the two districts were identified. There is total of 26,413 farms in the target population. The sample size was determined at 456 farms, with 152 farms per each crop. In order to obtain the said sample size, proportionate stratified random sampling technique was employed in this study.

### 3.2 Variables and Measures

A personally-administered, structured questionnaire was developed to collect data from the farm owners. In assessing competitive advantage at the firm level, [34,33] developed five dimensions to measure this variable, namely price, quality, delivery dependability, product innovation and time to market. Since product

innovation is not applicable to minor export crops, this construct was not considered. However, the dimension of exploiting market opportunities [35] was included in order to contextualise the study to the agribusiness sector. All in all, 18 items were included to measure the variable of competitive advantage of the minor export crop farms.

Based on prior studies on collective actions [14, 36,15], the study developed five items to characterise the variable of resources representing collective actions. They comprise: (1) trading partners who share market information; (2) training partners who discuss production issues; (2) sharing of credit facilities with other farmers; (3) assistance from trading partners to find new customers; and (5) share business knowledge with other farmers and vice-versa. In measuring quality management capability, the study used five measurement items: (1) the quality goal for yields; (2) compliance with specific cultivating standards imposed by the Agricultural Department; (3) the practice of environmentally friendly operations to improve product quality; (4) awareness of employees in maintaining product quality; and (5) the ability to maintain the quality of raw material suppliers. These items were adapted based on the quality management capability construct proposed by [58,45]. The variable of marketing capability was measured using five measurement items as follows: (1) knowledge of customers; (2) knowledge of competitors; (3) developing pricing programmes; (4) discovering strategies and tactics of other farmers; and (5) monitoring the prices of competitors and price changes. These items were adapted from prior studies [51,59, 60].

A total of 33 items were included in the survey questionnaire using a five-point Likert scale ranging from strongly disagree to strongly agree. These are on top of the three items used to solicit demographic information from the minor export crop farm owners such as farm owner gender, cultivation experience and the total area of cultivation. Prior to the administration of the questionnaire, it was randomly piloted on 30 farm owners, with 10 for each crop based on the list obtained from the Spice Council of Sri Lanka. The reliability rate is greater than 0.70 [61]. Besides, the correlation analysis showed adequate convergent and discriminant validity where all the items loaded on their corresponding variables, implying the robustness of the measures.

The main survey was administered in December 2015 and completed in April 2016 with data collected from 456 farm owners located in 12 DSDs in Sri Lanka. The majority of respondents are more than 50 years old, with 10 to 20 years of farming experience, hence enabling them to provide adequate and accurate responses to the study. In addition, the majority of them also reported the use of less than 5 acres of land to cultivate the three crops, signifying the small-scale nature of their businesses.

### 3.3 Data Analysis Method

This study utilised two analytical procedures: (1) the assessment of the adequacy of the measurement items; and (2) the assessment of the hypotheses constructed. In order to assess the adequacy of the measurement items, individual-item reliability, construct reliability, discriminant validity and the issue with multicollinearity were determined.

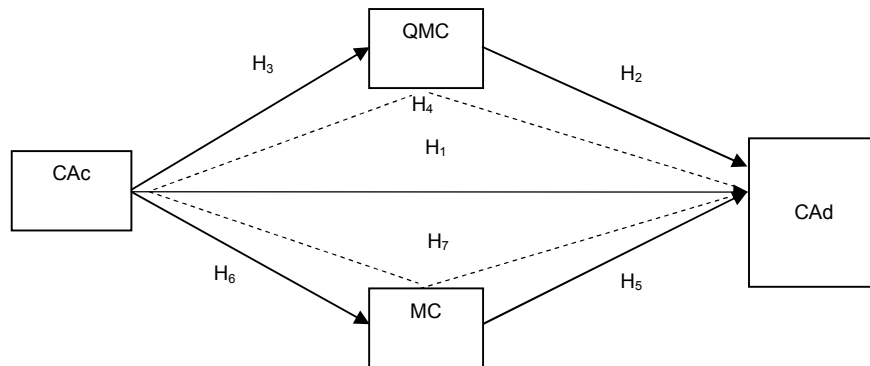


Fig. 1. Conceptual model

On the second procedure, regression-based path analysis [62,63] was employed to test the hypotheses constructed. According to [64,65], path-analysis is designed to work with multiple related equations simultaneously where it offers a number of advantages over some more familiar methods and therefore provides a general framework for linear modeling. Taking the cue from [66], the regression-based path analysis follows four steps in order to assess the mediating effects of variables and their significance. Accordingly, the path coefficient between independent and dependent variables has to be significant. Likewise, the path coefficient between independent and mediating variables, as well as between mediating and dependent variables should be significant as well. When the mediating variables are included in the model, the path coefficient between independent and dependent variables should decrease in size and has to be non-significant.

## 4. FINDINGS

### 4.1 Assessment of Adequacy of Measurement

The Kaiser-Meyer-Olkin (KMO) measure of sample adequacy was obtained to determine the appropriateness of factor analysis. According to [61], a KMO measure which is 0.50 or higher indicates the appropriateness of factor analysis. Generally, factor loadings with values above 0.70 are acceptable [67]. The results in Table 1 show that the KMO measure of the variables were greater than 0.50 ( $p < 0.05$ ), indicating the appropriateness of factor analysis.

The loadings of the items on their corresponding variables ranged from 0.765 to 0.869 (greater than 0.50), hence none of the 33 items were dropped from the analysis. In addition, all of the items loaded on their corresponding variables.

In addition, the reliability of individual items was also assessed by examining their internal consistency values through computing the construct reliability ( $< 0.90$ ), average variance extracted (AVE) ( $< 0.50$ ) and Cronbach's Alpha values ( $< 0.70$ ) [68,69]. The results in Table 1 show that the construct reliability, AVE and alpha values were above the suggested cut-off values, implying adequate reliability of the items.

The study also considered the computed AVE to test discriminant validity. It is recommended that the AVE should be higher than the corresponding

inter-construct squared correlations [68]. The results of this study supported the discriminant validity of each of the variables as the AVE values were far greater than the corresponding inter-construct squared correlations. Additionally, the AVE values were greater than the corresponding correlations between the variables, indicating that there is no multicollinearity issue in the conceptual model. Hence, all the variables are suitable for model testing.

Table 2 shows the descriptive statistics and inter-correlational values between the variables. There were significant correlations between the variables at 0.05 level. None of the correlation coefficients was above 0.85, indicating the absence of multicollinearity in the model [68].

### 4.2 Assessment of Hypotheses

From the standpoint of regression analysis, there are four assumptions that need to be fulfilled, such as: (1) all of the variables are measured on a continuous scale; (2) all of the variables follow a normal distribution; (3) relations associated with one observation are not correlated with the relations of any other observation; and (4) relationships amongst variables are assumed to be linear<sup>1</sup>. All the assumptions were adhered to in the study.

Table 3 shows the results of the three models which depict the relationships CAc, QMC and CAAd. It also shows the mediating effects of QMC on the relationship between CAc and CAAd. Following the assumptions, first, the path coefficient between the independent variable (collective actions) and the dependent variable (competitive advantage) has to be significant (model 3). Second, path coefficient between the independent and mediating variable (quality management capability) (model 1), as well as between the mediating and dependent variables (model 2) should also be significant. Third, when the mediating variables are included in the model, the path coefficient should decrease in size and has to be non-significant (model 2). Hence, all of the assumptions were fulfilled.

As shown in Table 3, collective actions were a significant predictor for both QMC and CAAd (model 1 and model 3), and that QMC was a significant predictor of CAAd (model 2). Hence,

<sup>1</sup> Matrix scatter dot diagrams drawn for all variables indicate positive linear relationships amongst the variables.

H1, H2 and H3 were supported. CAC is no longer significant ( $p = 0.2052$ ,  $p > 0.05$ ) with the presence of QMC as a mediator (model 2). Hence, the result confirms the mediating effect of quality management capability. The measure of the indirect effect of collective actions on competitive advantage showed a value of 0.3094, which was significantly greater than zero at 95% confidence interval. In addition, the  $R^2$  value of model 2 (0.7210) was greater than model 3 (0.3942). Since the direct effect (collective actions on competitive advantage) is significant too, it can be concluded that quality management capability partially mediated the relationship between collective actions and competitive advantage of the minor export crop farms. Hence, H4 was supported.

The study also examined the mediating effect of MC on the relationship between CAC and CAD. The outcome is shown in Table 4.

Model 1 and model 3 indicated that CAC was a significant predictor of both MC and CAD. Further, MC was a significant predictor of CAD (model 2). Hence, H5 and H6 were supported. Collective actions are no longer significant ( $p = 0.2010$ ,  $p > 0.05$ ) with the presence of MC as a mediator (model 2). Hence, the result confirms the mediating effect of MC. The measure of the indirect effect of CAC on CAD showed a value of 0.1722, which was significantly greater than zero at 95% confidence interval. The  $R^2$  value of model 2 (0.6069) was greater than model 3 (0.3942). Since the direct effect (collective actions on competitive advantage) is significant

too, it can be concluded that marketing capability partially mediated the relationship between collective actions and competitive advantage of the minor export crop farms. Hence, H7 was supported too.

## 5. DISCUSSION

The important role of collective action to the small-scale farms is reflected in the culture of sharing and caring inherited by the Sri Lankans and hence the support for H1. The finding is in line with the existing studies [36,38,15,39]. It reflects the nature of the social relations and networks built amongst the farms which are evident from the mean score (Table 2) for this resource. The farm owners have been working with their trade partners to share market information and to discuss production issues, as well as to seek their assistance to find new customers. In addition, the farmers have also been sharing business knowledge and credit facilities with other farm owners.

This study has also confirmed the literature on the importance of quality management capability and marketing capability as the more important capabilities in the agribusiness sector to improve the competitive advantage of the minor export crops farms [52,70,4,26], hence the support for H2 and H5. The findings imply that the farm owners should enhance their quality management capability through setting a clear quality goal for the yields produced, adopting the cultivation standards imposed by the government, employing environmental-friendly approaches, possessing adequate awareness of

**Table 1. Assessment of the measures**

Variable	KMO Measure	Bartlett's test of Sphericity	AVE	Construct Reliability	Cronbach's Alpha
CAC	0.875	0.000	0.63	0.952	.793
QMC	0.836	0.000	0.64	0.940	.814
MC	0.877	0.000	0.70	0.955	.830
Cad	0.857	0.000	0.61	0.978	.857

**Table 2. Descriptive statistics and correlation analysis between variables**

Variable	Mean	SD	CAC	QMC	MC
CAC	3.54	0.87			
QMC	3.38	0.91	.58*		
MC	3.31	0.82	.60*	.60*	
Cad	3.34	0.77	.62*	.52*	.67*

\* Correlation is significant at the 0.05 level (2-tailed)



Table 3. Mediating Analysis of QMC on CAc and CAd

Outcome: QMC						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.6424	.4128	.4282	184.3494	1.0000	454.0000	.0000
Model 1						
coeff	se	t	p	LLCI	ULCI	
constant	1.5681	.1146	13.6778	.0000	1.3428	1.7934
CAc	.4570	.0337	13.5775	.0000	.3909	.5232
Outcome: CAd						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.8491	.7210	.1679	585.3345	2.0000	453.0000	.0000
Model 2						
coeff	se	t	p	LLCI	ULCI	
constant	.5246	.0853	6.1484	.0000	.3569	.6922
QMC	.6771	.0294	23.0368	.0000	.6193	.7349
CAc	.2238	.0250	1.2764	.2052	.1747	.2729
Outcome: CAd						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.6278	.3942	.3639	295.3647	1.0000	454.0000	.0000
Model 3						
coeff	se	t	p	LLCI	ULCI	
constant	1.5863	.1057	15.0099	.0000	1.3786	1.7940
CAc	.5333	.0310	17.1862	.0000	.4723	.5942
TOTAL, DIRECT, AND INDIRECT EFFECTS						
Total effect of X on Y						
Effect	SE	t	p	LLCI	ULCI	
.5333	.0310	17.1862	.0000	.4723	.5942	
Direct effect of X on Y						
Effect	SE	t	p	LLCI	ULCI	
.2238	.0250	1.2764	.2052	.1747	.2729	
Indirect effect of X on Y						
Effect	Boot SE	BootLLCI	BootULCI			
QMC	.3094	.0253	.2621	.3582		
Normal theory tests for indirect effect						
Effect	se	Z	p			
.3094	.0265	11.6889	.0000			

product quality amongst employees and having suppliers who supply high-quality materials [49, 4,26,24]. Similar to quality management capability, possessing adequate marketing capability also allows the minor export crops farms to take advantage of market sensing activity to obtain information of their customers and competitors, as well as skills in developing pricing strategies and monitoring the tactics of their competitors in terms of pricing and price changes. This finding is also congruent with prior studies [52,70,71,27].

The associations between collective actions and the two dynamic capabilities have also been

confirmed, hence the support for H3 and H6. Further, the mediating roles of quality management and marketing capabilities to the relationship between collective actions and competitive advantage have also been confirmed, supporting H4 and H7. From the perspective of quality management capability, collective actions can facilitate sharing of information needed for the quality of crops as well as quality-related practices to enable farms to coordinate their actions and manage consistent levels of crop quality. Through shared loans, farm owners are able to use quality raw materials, proper equipment and new cultivation methods which further enhance their quality

Table 4. Mediating Analysis of MC on CAc and CAd

<b>Outcome: MC</b>							
<b>Model Summary</b>							
	<b>R</b>	<b>R-sq</b>	<b>MSE</b>	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
	.6492	.4125	.5651	87.7488	1.0000	454.0000	.0000
<b>Model 1</b>							
	<b>coeff</b>	<b>se</b>	<b>t</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>	
constant	2.1214	.1317	16.1075	.0000	1.8626	2.3803	
CAc	.3622	.0387	9.3674	.0000	.2862	.4382	
<b>Outcome: CAd</b>							
<b>Model Summary</b>							
	<b>R</b>	<b>R-sq</b>	<b>MSE</b>	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
	.7790	.6069	.2366	349.6548	2.0000	453.0000	.0000
<b>Model 2</b>							
	<b>coeff</b>	<b>se</b>	<b>t</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>	
constant	.5776	.1068	5.4063	.0000	.3676	.7875	
MC	.4755	.0304	15.6564	.0000	.4158	.5351	
CAc	.3610	.0273	1.3208	.2010	.3073	.4148	
<b>Outcome: CAd</b>							
<b>Model Summary</b>							
	<b>R</b>	<b>R-sq</b>	<b>MSE</b>	<b>F</b>	<b>df1</b>	<b>df2</b>	<b>p</b>
	.6278	.3942	.3639	295.3647	1.0000	454.0000	.0000
<b>Model 3</b>							
	<b>coeff</b>	<b>se</b>	<b>t</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>	
constant	1.5863	.1057	15.0099	.0000	1.3786	1.7940	
CAc	.5333	.0310	17.1862	.0000	.4723	.5942	
<b>TOTAL, DIRECT, AND INDIRECT EFFECTS</b>							
<b>Total effect of X on Y</b>							
	<b>Effect</b>	<b>SE</b>	<b>t</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>	
	.5333	.0310	17.1862	.0000	.4723	.5942	
<b>Direct effect of X on Y</b>							
	<b>Effect</b>	<b>SE</b>	<b>t</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>	
	.3610	.0273	1.3208	.2010	.3073	.4148	
<b>Indirect effect of X on Y</b>							
	<b>Effect</b>	<b>Boot SE</b>	<b>BootLLCI</b>	<b>BootULCI</b>			
MC	.1722	.0203	.1318	.2138			
<b>Normal theory tests for indirect effect</b>							
	<b>Effect</b>	<b>se</b>	<b>Z</b>	<b>p</b>			
	.1722	.0215	8.0264	.0000			

management capability. The empirical results also indicate that there are opportunities to improve on the marketing capability of the minor export crop farms if the farm owners build closer relations with each other in terms of gathering information and ideas about customers, competitors, suppliers, market trends and pricing strategies. The mediating effects suggest that both the quality management and marketing capabilities also enhance the need for collective actions for greater competitiveness.

## 6. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

Makadok [11] emphasises that firms can create competitive advantage by not just possessing appropriate resources, but also to integrate them with proper capabilities. This argument becomes valid to the situation where the resources are widely available and not rare. It is based on this premises that this study examined the interaction between resources and capabilities, in this case

between collective actions and marketing and quality management capabilities to understand how competitive advantage can be derived at in the minor export crops sector.

From the theoretical perspective, this study has extended our understanding of the applicability of RBV and the dynamic capability theory to the minor export crops sector. It has addressed the gaps in the literature regarding the roles and relationships between collective actions, quality management capability, marketing capability and competitive advantage. The findings show that collective actions are indeed a resource that should be exploited by the small-sized, family-owned minor export crop farms through both the capabilities for greater competitive advantage. At the same time, the study has also addressed the limitation in the literature regarding the association between collective actions and competitive advantage, as well as between collective actions and quality management capability. The mediating role of the two capabilities on the relationship between collective actions and competitive advantage has also been investigated through data collected from a fair representation of farm owners representing the three minor export crops. As such, it makes significant contributions to knowledge from this standpoint. Adding to the contribution is the significant lack of published research in relation to the source of competitive advantage amongst the family-owned businesses [72].

From the practical perspective, the research is very significant to Sri Lanka as far as the three minor export crops are concerned. The findings provide indications in terms of the priority to be set in order to enhance both the dynamic capabilities through collective actions for the farms to derive at the greater competitive advantage. To begin with, it is vital to create awareness amongst the farm owners on the imperative need to enhance their competitive position through harnessing their quality management capability and marketing capability by means of collective actions. The Sri Lankan farmers should leverage on their traditional culture of sharing and caring not only to create the competitive advantage for their farms but also for the country as a whole. Besides the experienced farmers who have been playing the initiator role to network and build collective actions with other farmers, a co-operative spirit needs to be developed amongst all farm owners in the respective crops for greater sharing of information and resources. The Spice Council

and the Agricultural Department can also play an equally important role to facilitate collective actions and the development of the capabilities by providing training, incentives and facilities.

It is hoped that this research provides the impetus for more studies to be conducted in the future. The valid and reliable constructs used in designing this study can be used by other researchers. Having said so, this study is set in the context of the three crops, and hence the ability to generalise the reported results to other types of minor crops remains restricted. Further research is needed to cover the other minor export crops. The causality interaction between the resources and dynamic capabilities can also be established through the use of a more powerful statistical tool such as Structural Equation Modeling in coming up with a more conclusive finding and directed practical implications. In addition, future studies should also consider other resources and capabilities than those covered in this study. It is also interesting if a comparative study can be carried out on farms in emerging nations which mainly export cinnamon, clove, and pepper such as Indonesia, Vietnam, Madagascar, Tanzania, and India, as well as amongst small, medium and large farms to explore and understand the relationships between the variables in an in-depth manner. Finally, as the sources of competitive advantage change over time, including the resources and capabilities required, a longitudinal study becomes necessary in order to capture the details.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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