



Firm Level Competitive Advantage in the Agricultural Sector: A Research Agenda

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Authors' contributions

This work was carried out in collaboration between both authors. Author VS designed the study, wrote the literature and wrote 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

Improvements in technology and information systems as well as changes in climate and economies have resulted in an increasingly competitive environment for the agribusiness sector. A better understanding of firm level competitiveness of this sector hence provides the necessary framework for agribusiness firms to compete at domestic and global markets. Although prior studies have proposed many frameworks to illustrate competitive advantage at the firm level, their practicability remains a concern. This study provides a critical review of the available frameworks and constructs a new one for the agricultural sector. A research model along with its theoretical and managerial implications is presented. Besides proposing a methodology for future studies, this study also serves to guide practitioners to decide on the key factors to consider when assessing the competitive advantage of agribusiness firms.

Keywords: Agricultural sector; competitive advantage; firm level; sources of competitive advantage.

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1. INTRODUCTION

The concept of competitiveness has since taken central stage in discussions of business strategy ([1] and [2]) which represent a major area of study in management [3]. Generally, this term refers to a comparative measure between companies within an industry or its external environment [4]. As such, both competitiveness and competitive advantage represent a multidimensional concept which can be described at the national, industry and firm level [5,6]. In fact, competitiveness can also be valid to regions and even individual products or services [7]. This explains why the extant literature has provided multiple definitions of the term competitive advantage by focusing on micro and macroeconomic levels [8].

Amongst the many levels, firm level competitive advantage has insofar received the greatest attention from researchers and practitioners [9,10,11]. This is not difficult to understand since in this rapid pace of competition, each firm is required to be more competitive and hostile. Competitive advantage at the firm level can be defined as the ability of firms to offer products and services that meet or exceed customer values currently offered by rivals, substitutes and possible market entrants [12,13,2,11]. Accordingly, competitiveness of a firm encompasses its ability to create, innovate, produce and sell goods and services in national and international markets and at the same time maintaining or enlarging its market shares [14] and profits [1]. Regardless of the differing definitions, competitiveness is seen as a situation defined and measured against one or more competitors [15]. It can be argued that firm level competitiveness is related to international, national and industry competitiveness. This is because in order to achieve international and/or regional competitiveness, a nation should improve its competitiveness both at the industry and firm level [16], whereas individual products and services are represented at the firm level.

Different economic and technical characteristics of an industry are decisive of the intensity of competitive pressure [17]. Depending on the industry, influencing factors on competitiveness could vary [18,19,20,21,22]. Although industry competitiveness is analysed as a separate segment, national competitiveness is only a collective expression of the capability of its economic units [14], thus giving rise to the role of individual firms in the creation and improvements of competitive advantage.

It can be observed from the literature that competitive advantage appears to be a relative term although it consists of three unique characteristics, namely long-term survival, difficult to imitate and difficult to identify [23]. It is for this reason that [5] suggests that its definition still has an opportunity to be developed. Further, what constitutes measures of competitive advantage for different industries, such as agribusiness firms in the case of this paper remains scarce and fragmented. A review of literature suggests that there are only a handful of studies available on agribusiness firms [24,25,26,27,28] with different sources of competitive advantage proposed. Therefore, exploring sources of competitive advantage of firms in the agricultural sector still provides room for further studies to be conducted.

A critical review of the literature is carried out with the purpose to identify gaps, after which specific measures for competitive advantage at firm level in the agricultural sector are proposed, leading to the development of an integrated framework along with a proposed definition of competitive advantage. This paper contributes not only in terms of proposing a methodology for researchers to comprehensively examine the measurement of competitive advantage of agribusiness firms but also in guiding practitioners of this sector to make key decisions regarding the important factors to consider.

2. THEORIES AND SOURCES OF COMPETITIVE ADVANTAGE AT FIRM LEVEL

The concept of competitive advantage is widely used in modern economic literature to evaluate the patterns of trade and specialisation of firms in commodities which have a competitive edge [29]. There are large volumes of scholarly output, both theoretical and empirical relating to sources of competitive advantage of a firm [30]. The following sub-sections discuss the theoretical sources of competitive advantage based on Porter's model and the resource-based view (RBV) theory. At the same time, empirical evidence of sources of competitive advantage at firm level is reviewed.

2.1 Porter's Model

Porter [31] proposes the five forces model that determines the overall competitiveness and profitability of an industry. In the model, competitiveness of an industry depends on the

strategic choices of firms. Accordingly, competition in an industry is defined by five structural parameters: (1) threat of entry of new competitors; (2) intensity of market rivalry; (3) pressure from substitute products; (4) bargaining power of buyers; and (5) bargaining power of suppliers. In order to create competitive advantage, Porter proposes that firms should pursue lower cost or product differentiation strategy. Based on the model, a firm can position itself in terms of two basic strengths, namely cost advantage and unique products. If the firm applies either cost leadership or differentiation strategy to a narrow market segment, then it is dealing with focus strategy [32].

However, [33] argue that competitive advantage is not possible without knowledge as a source of intellectual capital. This argument is drawn from [34] who conclude that Porter's model for strategic decision making has become obsolete due to the many changes in the competitive environment. Nonaka and Takeuchi [34] further emphasise that firms must rely on the use of its own capacities because of the changes in consumer needs and market transparency as well as increases in eventual competitors.

As a result, Porter's subsequent diamond model [11] identifies the determinants of competitive advantage of a nation, namely infrastructure and skilled labour (factor conditions), local demands for goods and services in an industry (demand conditions), existence or absence of supply industry (related and supporting industry) and managerial structure, as well as competition amongst themselves (context for firm strategy and rivalry). In other words, human resources, knowledge, natural resources, infrastructure and capital resources have been identified as factors influencing competitive advantage.

However, the diamond model only explains the competitive power of a nation in general [35]. In addition, [36] highlight several other limitations. Specifically, the model does not deal with how activities are planned that create key factor endowments, which factor creates sustainable sources of advantages, how to resist imitation as well as promote coordination of supportive institutions. Lall [37] further criticises the model that it is not relevant to innovation, new product and process formation tendency. Porter's model describes the attributes of an industry and environmental conditions that favours high levels of firm performance with primary focus on opportunities and threats in the competitive

environment [38]. [15] view the diamond model more of a description rather than facilitating the formation of alternative strategies. Ideally, the model should translate the macro-level factors into micro-level factors which directly impact on strategies of a firm. The existing strategies would need to be revised or reformulated on an occasional basis. Accordingly, Porter's model should comprehend with the notion of strategic conceptualisation such as organisational learning, relational view and market-based view [24] which gives rise to the strategic-based view.

Hence, new sources of competitive advantage must be explored and micro and macro level determinants need to be identified. In order to answer the limitations of Porter's diamond model, the RBV approach is used to identify the sources of competitive advantage.

2.2 Resource-based View Approach

The RBV theory is based on the economic rent concept and firm as a collection of unique resources and capabilities [38]. The RBV focuses on three main categories of resources, namely material (financial, buildings, equipment and technology), non-material (brands, licenses, reputation and network) and competencies (knowledge, organisational abilities, ability of identifying market opportunities and the ability to produce innovations) [39]. Hence, the RBV describes the fundamental sources and drivers of competitive advantage of a firm [3]. In other words, the theory provides an established theoretical model to examine the relationships amongst resources, process strategy and competitive advantage for firms [3].

The RBV is characterised by two basic maxims. First, resource endowments are heterogeneously distributed. Second, capabilities which allow the firm to sustain competitive advantage [40]. Accordingly, a firm needs to possess unique resources and exploit those resources through its capability. [12] and [2] indicate that the resources and capabilities of a firm need to be scarce to the industry but relevant to the activities of the firm in order to establish competitive advantage. Therefore, firms should be heterogeneous with respect to resources and capabilities.

Lack of customer focus, lack of market positioning and highly focused on large firms are the main limitations of RBV [41]. Poernomo [42] found that whilst valuable and rare resources

have positive effect on competitive advantage; valuable, rare and inimitable capabilities do not affect competitive advantage significantly. The arguments found support from [43] who assert that simple ownership of resources or capabilities is not sufficient to sustain competitive advantage, but only to achieve better performance.

In addition, the validity of the theory still remains an issue [44]. One major problem area of the RBV theory is the identification of empirical research methodologies to explain performance differences between firms. This raises the issue of sustainability of RBV as a scientific theory. As such, firms need to identify the sources that help them gain competitive advantage rather than the basic resources or capabilities.

2.3 Sources of Competitive Advantage at Firm Level

Generally, there are two sources of competitive advantage to any firm, namely external and internal. External competitive advantage comprises flexibility, quality of staff, quality of work and know how [45]. Correspondingly, [46] states that differentiation, low cost, niche market, technology, quality, vertical integration, service, synergy and culture as well as leadership styles support to achieve competitive advantage at firm level.

Firm and management characteristics accelerate the growth and profitability of firms to achieve sustained competitive advantage [47]. Firm characteristics include firm size, technology innovation, international competence as well as access to infrastructure and resources of other firms. Specifically, [48] confirm the relationship between firm characteristics and competitive advantage. Management characteristics comprise experience, commitment, attitude towards exporting, corporate social responsibility and perceived barriers. [49] emphasise that tangible assets (financial, physical, technological and organisational factors) and intangible assets (human, innovation and creativity, and reputation) determine the competitive advantage of a firm. [50] investigate the drivers of competitiveness in manufacturing firms in Greece and found that firm size, age and leverage affect competitive advantage.

It can be seen from the literature that most concepts and models of firm level competitiveness behave within the framework of

national environment. This is called the top-down approach [32]. However, this does not help to understand the behaviour of an individual firm or the varieties of characteristics of different firms in different industries, such as in the case of the agricultural sector. There is an obvious need to determine sources of competitive advantage of the agribusiness sector and its firms.

In order to develop the economies of emerging markets, it is necessary to develop the competitive ability of small and medium enterprises (SMEs) [3]. There are possibilities that the sources of competitive advantage in SMEs are different from larger firms [41]. This is because small businesses face a number of challenges in achieving competitive advantage such as achieving the aspirations of stakeholders, creating high quality products and meeting the increased customer demands [51].

Since most of the models on firm level competitiveness aim to investigate large and international firms, [32] create a new conceptual model that better fit SMEs. The findings indicate that networking, innovation and human resources play major roles in achieving competitive advantage for SMEs. However, several drawbacks are noted such as lack of institutional factors where the model still prefers competitive analysis of large-sized businesses. In addition, availability of variables such as administrative routines and networking limit the empirical application of the model.

Simpson et al. [51] found that small scale firms could gain competitive advantage by the use of energy efficiency improvement, waste reduction, increase recycling, quality improvement, and better environmental credentials. Kadocsa [52] identifies internal and external factors that influence competitiveness of small and medium scale firms in Hungary. The internal factors include marketing, innovation, productivity, knowledge-based development, capital supply, management, structure and compliance, whereas the external factors encompass employment, capital supply opportunities, business relations, alliances and networks. [53] confirm that differentiation strategy could be used to gain competitive advantage. [54] further found that characteristics of entrepreneurs, characteristics of enterprises, management strategies and external environment have significant impacts on the competitiveness of SMEs in Greece.

2.4 Competitive Advantage in the Agricultural Sector

The competitiveness of the global agribusiness sector has raised concerns amongst policy makers and economists on the need for competitive advantage in this sector, particularly amongst the developing countries [26]. The agricultural sector has contributed significantly to improving the economic well-being of nations [27]. The growing demand for agricultural products in the world requires the sector to be competitive in the world market in order to obtain benefits of increased demand [6]. Such competition demands agricultural producers (farmers) to capture greater value based on know-how [27]. Consequently, this view creates an interesting research to explore the competitive position of the agribusiness sector. This is in view that agribusiness activities provide an opportunity to realise higher and stable income for farmers and other stakeholders.

In agricultural products, the individual units of a commodity have exactly the same attributes. Hence, competitiveness is mainly driven by the price of products. Like any other industries, the agricultural sector needs to respond to environmental influences in order to preserve or improve its competitive advantage [55]. There are a considerably number of empirical evidence related to the competitive advantage of agribusiness firms [e.g. 24,56,25,26,27,57,6] which are explained in the following sub-sections.

2.4.1 Sources of competitive advantage in the agricultural sector

According to [56], agribusiness firms should develop individual as well as organisational capabilities through the formulation of appropriate strategies to achieve competitive advantage. The strategies include expect and embrace changes, understand the new agricultural industry, embrace analytical framework, be comfortable with data, demonstrate the integration of concepts and quantitative analysis, develop team work skills, take calculated risks, broaden the perspective, communicate and generate products.

Dlamini et al. [25] identify the factors influencing competitiveness of agribusiness firms in Swaziland. The results suggest that unavailability of professional labours, cost of inputs, and incompetent public sector personnel are the top

three constraints inhibiting competitiveness. Dziwormu [26] explore the factors affecting competitive advantage of small-scaled commercial agribusiness firms and discover that cost, experience and capacity utilisation to be the main factors that significantly affect competitive advantage. Another study by [28] found that collective action enhances the competitiveness of agrifood firms in Greece.

Interestingly, [21] determine the significant factors associated with competitiveness of agricultural products by adopting the cause and effect factor diagram. The factor diagram shows that the competitiveness of product or service depends on people, price, non-price factors, internal factors, quality and external factors.

In a more recent study, [27] describe the competitive structure and dynamics of dry chili export in Mexico. The revealed export advantage (RXA) index and constant market share analysis were utilised to identify the competitive position of Mexican dry chilies. The study found that low competitive advantage arises due to the low investment rates and insufficient government support. In order to overcome the issue of low competitiveness, policy instruments should apply to the development of management skills, organisational competencies and technological innovation process.

What can be concluded from these studies is that the effects of globalisation are reflected in the changes of the entire system of agribusiness, which lead to the changes in characteristics of competitive advantage to the entire agribusiness sector and firms. If competitive advantage is still a relative concept, exploring competitive advantage of agricultural firms still provides great opportunities for future research. Further, the agribusiness sector also comprises small and medium firms. As such, it is imperative to review the sources of competitive advantage of these firms in order to provide a comprehensive view of the same.

3. PROPOSED SOURCES OF COMPETITIVE ADVANTAGE FOR AGRICULTURAL FIRMS

Prior studies have acknowledged several sources of competitive advantage in different business sectors. Confirming [10], although many frameworks are available to illustrate firm level competitive advantage, the practicalities of those frameworks are rare. The extant literature

have focused on a limited number of constructs such as demand conditions, resources, productivity, innovation, quality and the like to identify sources of competitive advantage at firm level [58]. However, other important factors such as cooperation, level of technology, firm size, hostility of environment, cultural background and firm experience are not considerably incorporated to determine the factors affecting firm level competitive advantage. In light with the isolated variables which provide the need for a comprehensive framework and to consider changes in the environment, there is a greater need to explore and combine sources of competitive advantage, particularly for the agricultural firms. The following sub-sections elaborate on sources of competitive advantage for this sector which need to be considered by future research.

3.1 Farm Size

Firm size supports to achieve economies of scale and the ability to access to more market and investment opportunities [9]. It could also help to enhance its competitive advantage during good or bad economic conditions [50]. The size of a firm can be described in terms of the number of part- and full-time employees [59]. Similarly, it can also be defined by using total assets acquired by the firm [50]. Taking the case in point, farm size can be defined in terms of total output, labour or assets used, utilised agricultural area or the values of variables used [60].

Dziwornu [26] found that farm size significantly affects the competitive advantage of agribusiness firms. Because of this, [27] suggest that small farms - in terms of cultivation area - should reduce production cost, increase returns of scale and obtain higher levels of productivity. Ismail et al. [60] point out that there is no significant interaction effect between firm size and competitive advantage. Rapid advancement in technological and information systems, product outsourcing and globalisation may have caused this insignificant impact.

As such, the question of whether farm size affects competitive advantage and whether small farms perform better than their larger counterparts is still a debatable issue. Taking the cue from [54], besides firm size, other factors that influence the success of a firm include its experience, type of business and geographical location.

3.2 Farm Capital

Martin-de-Castro et al. [40] identify organisational culture, organisational structure and organisational learning as the main components of organisational capital. Following the identification and classification of intellectual capital, the study evaluates intangible resources and capabilities as organisational capital. In other words, besides knowledge that a firm incurs [33], the competitive strategy of a firm is constructed based on different cultures of the firm [38,61,40,62] as well as relationships in terms of authorities between people within an organisation [59,40].

Santhaaraj et al. [21] emphasise that by developing a better learning environment through informal learning opportunities provided to employees, this will create a committed and skilled workforce to respond to the changes in the competitive environment. Hence, it is suggested that firms must hire minds more than hands. This is because organisational learning mechanism engages with the knowledge assets of the firm [63].

Similar to organisational learning, any organisation that has a culture to support participative decision making will lead to competitive advantage in the marketplace [61]. However, [32] found that SMEs are lacking behind in terms of formal organisational structure. Small firms are engaging with their own ways of task fulfillment mainly to satisfy their customers. Hence, the practicality of analysing the association between organisational structure and competitive advantage of small firms remains a question of interest.

Customer relationship is a unique capability of a firm which can be considered as a source of competitive advantage [64]. Accordingly, firms should have a customer-oriented organisational structure to uplift customer relationships and to fulfil their dynamic demands [65]. Hence, building and maintaining customer relationships generate an important capability for small firms [66].

With respect to the agribusiness sector, [25] emphasise that competition and customer orientation have increased in the agribusiness sector where it has an obligation to engage in such an environment. Customer relationships depend highly on trust [67] and hence, keeping customers close to firms forms an intangible resource. Based on this premises, customer

relationships could be considered as an important component of farm capital along with organisational culture and knowledge.

3.3 Collective Action

Collective action refers to actions of group members to share market knowledge, sell together and to develop business opportunities [27]. Collective action through the networks of firms have been studied in different contexts [e.g. 27,66,68,23,69,70,28,71]. Accordingly, successful collective action is materialised when local people know each other, work together and have family ties [28].

Generally, small firms operate independently and therefore they experience lack of resources which poses a major barrier to enhance competitiveness. This is the case of small scale farmers who act individually and therefore do not have an opportunity to access to new markets like supermarket chains [27]. Yang et al. [72] emphasise that collaborative commerce amongst enterprises partners will enable increased competitiveness in a highly uncertain environment. Building and managing strong inter-firm relationships hence becomes an important factor to overcome resources limitation and to enhance competitiveness [66].

As a matter of fact, working collaboratively has been found to lead to increased knowledge and innovation in the agricultural sector [73]. This suggests that formal and informal knowledge and innovation must be combined in order to overcome the issues as well as to accelerate development of the sector.

3.4 Government Support

Providing adequate government support for production, marketing and establishing infrastructure facilities have been found to be directly linked to improved competitiveness of agricultural products [74]. Government might consider policy intervention such as tax and subsidies as well as to equalise the perceived competitive advantage between older and newer firms [59]. Bhuiyan [12] reveals that financial support from government can establish competitive advantage. In this context, support is expected in terms of lower taxes or tax breaks, information and promotional activities as well as training to support agricultural development. Further, government needs to build policy credibility to encourage successful growth of such firms [75].

Local governments can create impact through expenditure, taxes and fees, legal regulations and marketing. On the other hand, assistance in searching for partners, new output markets and establishing cooperation with supporting institutions are considered as government support to small firms [76].

Government support has been identified as important to achieve competitive position for small firms [59]. There is a connection between agricultural development with the development of rural areas [76]. [12] reveals that financial support from government can establish competitive advantage for small firms.

Latruffe [60] demonstrates that government intervention becomes one of the macro level determinants of competitiveness of firms. Such intervention in agricultural sector improvements include activities such as buying agricultural products, setting low interest rates for credit capital assets, imposing quality standards and offering a negotiable framework [28]. As such, the role of government in the agricultural sector is pervasive [77]. Having said so, however, there has been relatively less attention paid on investigating the impact of government support on the competitive advantage of agricultural firms, opening up possibilities for future research.

3.5 Environmental Practices

Environmental practices could potentially emerge as a source of competitive advantage [78]. The agricultural sector is in direct covenant with environmental factors [78]. Modern agricultural development is aimed at obtaining technically and economically efficient agriculture, human and environmental friendly agriculture, family farming and integrated farming [76]. Atkin et al. [79] demonstrate the significant positive impact between environmental practices and product quality, cost reduction and subsequently position in the marketplace.

A firm requires the complex coordination of human and technical skills in order to reduce environmental impact and to increase competitiveness of firms [80]. Environmental management is therefore an important area to initiate changes in routines and operations in order to enhance competitive advantage. Accordingly, green innovation [81] and cost advantage [82,83] will enable firms to achieve competitive advantage from the perspective of environmental practices. Sima [84] provides a

more comprehensive view on the positive impact of environmental practices which enhance competitiveness. The impacts include improved public image, new demands created, increased costs for competitors and reduced uncertainty of the importance of environmental investments.

Simpson et al. [51] argue that by adopting environmental practices, small firms can gain competitive advantage via increased product quality. However, specific studies have shown that SMEs have difficulty in achieving competitive advantage directly through environmental practices [85,86]. The mixed results provide opportunities for further exploration of the impact of environment practices on competitive advantage.

4. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

The concept of competitive advantage has developed into a formula for growth and sustainability worldwide across all industries. A firm is said to have a competitive advantage when it implements a value creating strategy not simultaneously being implemented by any current or potential competitors [38]. Hence, diverse sources of competitive advantage intersect on competitive advantage as the result of a process of strategy adopted by a firm [69]. The identification of the sources of competitive advantage has in fact become a major area of study in business strategy and management. The agricultural sector is no exception where growing demands for agricultural products across the world require this sector to be continuously competitive. Hence, there is a need for the sector and its firms to respond to environmental changes through the identification of sources of competitive advantage.

This study contributes to knowledge for it has highlighted the limitations of traditional frameworks and identifies a comprehensive list of sources of competitive advantage, particularly for the agribusiness firms. The literature suggests that different sources of competitive advantage across large, small and medium firms have been considered. However, not all of the identified factors suit agribusiness firms specifically. In addition, besides large agribusiness firms, the sector also comprises small and medium sized firms which further challenge the practicability of the proposed models. Care must therefore be taken in the selection of variables in future studies.

Besides considering variables that have been grounded empirically, there is also a need to explore the new sources of competitive advantage of agribusiness firms. This study proposes five sources of competitive advantage which can be used in combination with those that are currently available. In conjunction with this, the possibilities for future research have also been highlighted. In order to provide more solid scientific conclusion, an empirical investigation on factors such as farm size, farm capital, environmental practices, product quality, cooperation, innovation, farm experience and roles of governments need to be conducted in future. It is imperative to pay attention on sources that have direct associations with competitive advantage as well as the meandering ones.

Above all, any study undertaken must have a clear objective in mind of what constitutes competitive advantage of agribusiness firms, beginning with a clear definition. Generally, competitive advantage can be defined as specific strategies of using the resources available and other precise activities to keep the agribusiness firms separate from its competitors as well as to keep it active and growing. However, this definition should be viewed as a generic than a specific one to guide future studies.

The proposed factors such as farm size, farm capital, environmental practices and product quality, cooperation and innovation, farm experience as well as roles of governments also serve to assist policy makers and practitioners to measure and make key decisions in enhancing the competitiveness of agribusiness firms at the industrial, national, regional or even at the international level. An important area of research lies in developing a validated instrument of measurement that could be used across geographical locations, opening up the possibilities of measuring competitive advantage at industrial, regional or even at international levels.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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