



THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

Rehib Hag Ahmed Sirageldin Hag Ahmedⁱ

Assistant Professor in Economics,
Holy Quran University,
Sudan

Abstract:

The study focuses on the impact of strategic leadership on the competitive advantage by applying it to the horticultural sector in Sudan, Khartoum State, it is an applied and analytical study carried out in the periods (2013-2022). The statement of research problem is that, there is a defect in the competitive advantage of horticultural sector as a result of improper application of strategic leadership. The research main question was that, is there an impact of applying, the strategic leadership on competitive advantage of horticulture sector in Khartoum State? The research aims at identifying the relationship between strategic leadership and competitive advantage in the horticultural sector in Khartoum state. The study reached out a number of results most important of it: it works to enhance the competitive advantage between organizations, namely organizations concerned with the agricultural sector. Concentration on leadership and pioneers has become an urgent necessity to keep pace with the rapid development in various sciences, especially agricultural sciences. The study recommended, that attention should be made to infrastructure and export including but not limited to transportation, communication, storage, cooling, packaging, repackaging and display, which had a significant impact on Sudanese exports, facilitating the import of improved seeds and working to establish the seed industry locally, exempting horticultural crops from all fees and taxes, urging organizations to import fertilizers and pesticides to treat horticultural crops, and exempt them from customs duties, producing horticultural crops that compete in the markets by paying attention to fight pests that prevent the growth of crops, distorts their shape, and deviate them from competition in global markets. The study recommended that, there should be an integrated marketing information center to be close to embassies, economic and commercial attaches, encouraging participation in foreign fairs, creating partnerships with foreign investors in the field of horticultural exports marketing to create opportunities in global markets.

ⁱ Correspondence: email rihabhajahmed@gmail.com

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1. Introduction

Entrepreneurship, or leadership issue, is one of the issues that has recently drawn the attention of searchers and owners of organizations who carry out different activities, as these organizations aim to achieve excellence and gain competitive advantages by adopting some developmental approaches.

Sudan is characterized by many advantages which qualify it to be one of the leading countries in the field of horticultural export production, in which arable areas, irrigation water, climatic diversity, and technical expertise are available. Sudan has bases which enable it to meet all local and international needs from horticultural and agricultural crops. If this sector received a little attention and care, it would become a strong factor to the Sudanese national economy.

In this research, the researcher has focused on the impact of strategic leadership in achieving the competitive advantage of the horticultural sector, it is a case study carried out in Khartoum State in the period (2011-2021).

2. Research Problem

The statement of research problem is that, there is a defect and weakness in the competitive advantage in the horticultural sector in Sudan, attributed to improper application of strategic leadership. The research problem can be stated in the following questions? the main question is: to what extent the application of strategic leadership impacts on the competitive advantage of horticulture sector in Khartoum State.

2.1 Research Significance

The significance of this research emanates from the importance of entrepreneurship strategies and their impact on all business sectors, which can be identified as follows:

- 1) The significance of the study is that, it complements the scientific efforts exerted and fills the scientific gap in studying the impact of entrepreneurship and providing information that benefits administrators and entrepreneurs.
- 2) This study can be used as a reference for students in postgraduate studies in the patterns of strategic leadership.
- 3) This study highlights the importance and practice of strategic leadership in the horticultural sector, and reflects the advantages and benefits achieved by the application of strategic management which may reflect positive development of performance in this sector.

- 4) The importance of the horticultural sector, "the subject of the field study", this sector provides the national economy, individuals and society with necessary services.

2.2 Research Aims and Objectives

The research aims at achieving the following objectives:

- 1) Identifying the impact of creativity and innovation on the competitive advantage of horticultural sector in Khartoum State.
- 2) Identifying the impact of excellence and risk on the competitive advantage of horticultural sector in Khartoum state.
- 3) Identifying the impact of initiation and flexibility on the competitive advantage of horticultural sector in Khartoum State.

2.3 Research Hypothesis

In this research, the following hypotheses are made based on the importance and problem of the research, considering the elements of the research as follows: The first main hypothesis: There is a statistically significant relationship between strategic leadership and competitive advantage achievement in the horticultural sector in Khartoum state, and the following sub-hypotheses branch has emanated from it:

- 1) There is a statistically significant relationship between creativity, innovation and competitive advantage of horticultural sector in Khartoum state.
- 2) There is a statistically significant relationship between excellence, risk and the competitive advantage of horticultural sector in Khartoum State.
- 3) There is a statistically significant relationship between initiation, flexibility and competitive advantage of horticultural sector in Khartoum State.

3. Research Methodology

The researcher used the descriptive analytical, and historical approaches.

3.1 The Limitation of Study

Study limitations are the constraints placed on the ability to generalize from the results:

- A. The Sudanese Agricultural Bank in Khartoum State, Sudan.
- B. Mahjoub Awlad Agricultural Company, Khartoum State, Sudan.

3.2 The Research Time Frame

The research time frame was between 2011 to 2021.

3.3 The Research Human Limits

The population of the study consisted in administrative leaders and employees of the Agricultural Bank and Mahjoub Awlad Company in Khartoum State, Sudan.

3.4 Research Structure

The research is formed from an introduction, three sections, and a conclusion as follows: The introduction includes the significance of the research, its problem, questions, objectives, hypotheses, methodology, and structure. Part one focuses on strategic leadership and competitive advantage. Part two focuses on the role of the horticultural sector in the Sudanese economy, field study procedures, while the research conclusion includes the results, recommendations, sources and references.

4. Strategic Entrepreneurship and Competitive Advantage

4.1 Strategic Entrepreneurship

Some defined entrepreneurship as *“a dynamic and risky process that includes a combination of capital, technology and human skills.”* It is applicable in all businesses regardless of their size and economic or service orientation. Some scholars defined the terms as: (The process of carrying out a business and deploying the necessary resources and expecting the risks and benefits resulting from it), this term has been defined also as *“a creative activity, from which something can be built from nothing”*. Leadership is seen as a talent of feeling and the opportunity, but others underestimate it. The entrepreneur is an innovator who creates business through organizations, methods of production, markets, or new forms of organizations to achieve wealth, business incubators can contribute directly to supporting entrepreneurial businesses by establishing various projects and ensure financial capital (banking)ⁱⁱ, it is identified as *“to create valuable thing and allocate the time, effort and money necessary for the project in which the associated risks can be committed and benefits can be obtained”*ⁱⁱⁱ.

An entrepreneur is defined as: *“a person who establishes a new project in light of risks and uncertainty to achieve profits and growth by discovering good opportunities and mobilizing resources to invest them in the project.”* Therefore, an entrepreneur represents a person who possesses success factors to be used in specialized centers for exploration and development^{iv}.

4.2 Entrepreneurial Strategies

An entrepreneurial strategy can be defined as strategy adopted by the organization to achieve (creativity, innovation, excellence, risk acceptance, and initiative) to compete and cope with the environment. The entrepreneurial strategy is developed by an individual who possesses strong thinking focusing on secondary opportunities and problems and major and partial decisions to develop the organization^v.

ⁱⁱ Liussa, Fernanda, Tavares, Jose & Branco, Ruben. Entrepreneurship: Concept & Measurement, (2009), p4.

ⁱⁱⁱ Fayez Al-Najjar and Abdul Sattar Al-Ali, Entrepreneurship and Small Business Management, (Amman: Dar Al-Hamid for Publishing and Distribution, 2006), p5

^{iv} Ibid., pg11

^v Maysoon Ali Hussein, (Leadership in business organizations with reference to the experience of some countries, theoretical research), Babylon University Journal, Human Sciences, Issue (2), Volume (21), Baghdad: 2013 AD, p. 396

Entrepreneurial strategy encourages organizations to be creative, innovative, unique, take risks and exploits, as well as encourage employees to make decisions and take responsibility for these decisions^{vi}.

There are many factors which contribute to the formation of entrepreneurial businesses. The entrepreneurial organizations can enter the market through new products, new risks, and new opportunities, by taking advantage of related elements, creativity or taking risks, adventure, independence, innovation, competitive advantage and initiation.

Many writers' efforts on entrepreneurship and the dimensions of entrepreneurial orientation stressed on the importance of inspecting dimension and know its impact on individuals and organizations, and connect the concepts of entrepreneurial orientation with current theories in the strategy and economics, to adopt new methodology to reach more cumulative and practical results^{vii}.

4.3 Competitive Advantage

The concept of competitiveness is characterized by modernity and is not subject to a general economic theory. The concept appeared during the period from 1981-1987, which witnessed a large deficit in the trade balance of the United States of America (especially when trade exchange was carried out with Japan) and an increase in the volume of foreign debt. Attention was drawn to the concept of competitiveness reappeared with the beginning of the nineties as a result of new world economic system and the emergence of the phenomenon of globalization, as well as the general tendency to apply market economies^{viii}.

The competitive advantage has two dimensions to be achieved:

The First Dimension: The customer perceived value, where the competitive advantage of the organization is achieved if the customers realize that they get a higher value regarding to their dealings with the organization than others. The value is not limited to the comparison between price and quality, as the decisive element is due to whether the customer is convinced with what the organization offers from products or services^{ix}.

The Second Dimension: Excellence

In the framework of achieving excellence, the organization provides products or services that are difficult to be offered by other organization, it has multiple financial, human and even organizational resources, Therefore, its product or services are distinguished from the rest of the competitors, and this represent a competitive advantage, in addition to the advantage of the lowest cost to monitor and control costs.

^{vi} Bilal Khalaf Al-Sakarna, (Leadership Strategies and their Role in Achieving Competitive Advantage), Journal of the University College of Economic Sciences, Issue (seventeenth), Iraq: April 2008, pp. 89-90.

^{vii} Al-Najjar and Al-Ali, reference previously mentioned, p. 13

^{viii} Abd al-Hamid Abd al-Fattah al-Maghrabi, Strategic Management, Challenges of the Twenty-first Century, 1st edition, (Mansoura: The Arab Nile Group, Mansoura University, 1999), p. 27.

^{ix} His Excellency Fahmy Haider, previous reference, pp. 8-9

The importance of achieving competitive advantage is attributed to the following points^x:

- Creating value for customers to meet their needs and ensure loyalty, support and improves reputation and image of the organization in their minds.
- Achieving strategic distinction of competitors with relation to goods and services provided to customers, and realizing excellence in resources, competencies and strategies adopted in a highly competitive environment.
- Provides organization with a market share and profits to ensure survival and continuity in the market.

5. The Role of Horticultural Sector in the Sudanese Economy

The horticultural sector is the sector concerned with production and vegetables marketing, fruits, medicinal and aromatic and ornamental plants. These products are very diverse and require special attention. They also need high capital and advanced technical expertise, which enables the optimal independence of available resources, which leads to high-quality, and high-yield products. In recent years, you may notice an increase in demand for horticultural products locally and globally, whether fresh or processed product followed by nutritional awareness and a trend towards consuming healthy and safe products with an increase in purchasing power. Sudan is characterized by the variable climate environments, which helps to produce different types of horticultural crops at different times. This difference makes production season for many crops so long especially the mango, whose production lasts from December to August. Horticultural production covers the needs of local consumption and can be exported too abroad.

Sudan is considered to be as an ideal country in producing many types of vegetables and fruits, especially vegetables produced in Winter, which have popular European markets where competition is less, especially in the period from January to March, which represents the European winter period and the peak of winter horticultural crop production in Sudan. Sudanese products are considered to be free from fertilizers and pesticides. This makes Sudan as one of the important countries for the production of natural (organic) food^{xi}.

Horticultural production depends entirely on the private sector, which is characterized by small lands and the traditional production pattern with limited inputs and traditional technologies. This leads to weak production in quantity and quality, which requires an active role for the public sector in supporting infrastructure and transferring modern production technologies, through model farms, training, preparation centers and quality control.

^x Semlali Yahdih, The Impact of Strategic Management of Human Resources and Competency Development on the Competitive Advantage of the Economic Enterprise (Quality and Knowledge Approach), (Unpublished) Ph.D., University of Algiers: 2003-2004. p. 7.

^{xi} Semlali Yahdih, previous reference, p. 15

Horticultural crops include vegetables and fruits, which are considered to be as the main horticultural crops in the country. They also include some fresh legumes such as peas and green beans, in addition to some medicinal and aromatic plants.

The area cultivated yearly is estimated to be at more than 500,000 acres, with an estimated productivity of 3,383,000 tons. It includes several types and varieties of fruit, leafy and carrot vegetables, including vegetables produced in winter and summer, which are grown throughout the year. Sudan produces export crops such as melon, onion, green beans, okra, pepper, potatoes and eggplant.

The main fruit crops produced in Sudan include, bananas, mangoes, dates, citrus fruits, guavas, and some promising crops such as pineapple, papaya, and grapes. The fruit area is estimated at 350,000 acres, with a productivity of about 2,500,000 tons. Some of these crops are exported to abroad, such as mangoes, bananas, lemons, and dates.

The spices cultivated areas is estimated to be at 29,000 acres. The importance of this is emanated from the fact that some of them can be exported throughout the year, which gives the opportunity to double the area in production. The medicine crops and aromatic plants are diverse, they can be exported throughout the year, but they are collected in the land which exposes them to extinction. Ornamental plants include several types of flowers, roses, shade plants, landscaping plants and grass. Sudan has a good opportunity to produce flowers and roses for export^{xii}.

5.1 Agricultural Bank and Mahjoub Sons Company

5.1.1 The Agricultural Bank

The bank was founded on 6/17/1957 and commenced its actual activities in the year 1959 AD. It has carried its business since that date until now (about 57 years). The Bank has become a comprehensive banking institution and its strategic objective is to advance the national economy that depends on agriculture in both its plant and animal parts. The establishment of the bank as the first ever national bank in the country when all the operating banks were emanating from the foreign banks. The law establishing the bank was passed on 6/17/1957. The bank started carrying out its business in 1959 AD. The bank's work has evolved since that date until now (about 57 years) and it became one of the most important pillars of the banking sector that contributes effectively to advancing agricultural development and GDP growth. The bank is wholly owned by the state. It is a member of the Bank Deposit Guarantee Fund. The bank capital is composed of contribution between the Federal Ministry of Finance and the Bank of Sudan. The authorized capital is 5,000,000,000 Sudanese pounds. The paid-up capital is 858,000,000 Sudanese pounds^{xiii}.

^{xii} Samia Babiker Al-Hassan, *Issues of Environmental Awareness and Sustainable Development in Sudan* (Mohammed Omar Bashir Center for Sudanese Studies, Omdurman National University, Khartoum / Sudan: 1998 AD), p. 23.

^{xiii} Fathia Ali Khalafallah, *The Impact of Monetary and Financing Policies on Agricultural Finance (A Case Study of the Sudanese Agricultural Bank in the period 1995-2004)*. Unpublished research submitted for a master's degree in accounting, University of Juba, Faculty of Graduate Studies. p. 52

5.1.2 Mahjoub Sons Company

The African Agriculture Company (Mahjoub Sons), which is the leading company in Sudan in the field of crop production. The Company adopts scientific approach in promoting agriculture and its pioneering role in rain-fed agriculture. APPCO was founded in 1969, it is a subsidiary of Mahjoub Sons Group and the oldest and largest company in the group since its inception. The area cultivated is estimated to be at (43,000) feddans to more than (200,000) acres of land in different regions of Sudan. It produces a variety of food and cash crops including but not limited to, sesame, sorghum, maize, sunflower, and cotton. African Agriculture is Sudan's leading crop producer, recognized for its hands-on approach to developing agriculture and its pioneering role in rain-fed agriculture.

The late Mirghani Mahjoub founded the Mahjoub & Sons Ali Group, which is one of the leading companies in the agricultural sector and food industries in Sudan. The group operates in the agricultural sector and then expanded to include different sectors and industries from food packaging, manufacturing and transportation to media and television production. The group expanded to include 20 companies in five different industries.

5.1.2.1 Trade

The company includes Mahjoub & Sons Trading Co. Ltd. (Masot), African Cotton Trading Company (Africot), and two factories for cleaning and peeling.

5.1.2.2 Agriculture

African Plantation company owns only 43,000 acres, it focuses on cash crops such as (sesame, sorghum, sunflower, and cotton).

5.1.2.3 The Media

The company established two leading television channels and one advertising company, it has been able to add value to the country in a strategic way while ensuring that quality products and services are delivered to every home.

5.1.2.4 Food

The company had started with Delta Food and Packaging Co., Ltd. in 1994. It imported food products such as milk, sugar, lentils and rice and sold them wholesale to the local market, and established its own packaging factory and sold its products in small, consumable sizes to the retail market.

5.1.2.5 Industry

The industrial division consists of 3 new companies, and is also one of our newest divisions. Al-Mahjoub Pharmaceutical Company which mainly imports medicines and medical equipment to the Sudanese market.

Finally, Engineering Department MSG Engineering has two companies to work under. Al-Neelain Engineering and Spare Parts Company, which mainly imports and distributes agricultural machinery and equipment. The other company is Mahjoub Sons for Agricultural Inputs and Services (MSIS)^{xiv}.

6. Field Study Procedures

6.1 Study Population and Sample

In this research, the researcher distributed (170) questionnaires to the study population (the Agricultural Bank) and (Mahjoub Sons Company), and (150) questionnaires were retrieved, i.e., 88%. Mahjoub Sons Company, in order to obtain the required data, and all administrators and employees of the bank and the company were carefully selected.

6.2 Application of the Study Tool

The questionnaire was used as a tool for collecting data related to the hypotheses of study, which the researcher developed by looking at many previous studies related to the subject of the study, to measure the opinion of the respondents on the subject of the study (the impact of strategic leadership on the competitive advantage by applying it to the horticultural sector in Sudan, Khartoum State, Practical study During the period (2011-2021 AD). The questionnaire consists of two parts:

The first section: It includes the data related to the individuals of the study sample: it is the personal data related to the description of the study sample as follows: gender, age, academic qualification, years of experience, marital status.

The second section: The variables of the study and it includes (7) axes through which the hypotheses of the study are identified. These axes include (40) questions, with an average of (5) phrases for the first axis (functional creativity), (5) phrases for the second axis (innovation), (5) statements for the third axis (risk), (5) statements for the fourth axis (initiation), (5) statements for the fifth axis (uniqueness), (5) statements for the sixth axis (flexibility), (5) statements for the seventh axis (competitive advantage) measure the study hypotheses.

6.3 Study Scale

The degree of possible resolution was measured on the paragraphs to a five-point gradient according to the five-point Likert scale, in the distribution of the weights of the respondents' answers, which is distributed from the highest weight for which it was given (5) degrees, which is represented in the answer field (strongly agree) to the lowest weight for which it was given (1) One degree, which is represented in the field of the answer (strongly disagree) and between them there are three weights.

^{xiv} <http://mahjoubsons.com> , 2022/5/31 , hour8:14

6.4 View and Analyze Data

6.4.1 Test of Certainty and Reliability

Table 5: Test of Certainty and Reliability

Certainty	90%
Reliability	94%

The certainty and reliability in the statistical analysis is one of the most important tools that help the researcher to confirm the validity of the results he reached through doing the analysis, and thus the possibility of generalizing the results to the study population or the inability to generalize them. The tools are used to measure the meanings and the information obtained through that. It is clear that the alpha value is equal to (90%), which is high and positive. The results shown in the table indicate that the alpha coefficient value for the scale used in the whole study is greater than 60%, which is the minimum required for the alpha coefficient.

We find that the coefficient value of the Alpha Cronbach stability coefficient is close to the value of one, which indicates that it is high.

We note that Cronbach's alpha coefficient also helps to calculate the validity coefficient by setting a measurement and equal to the square root of Cronbach's alpha coefficient equal to 94%.

6.4.2 Personal Data

The researcher used the program (SPSS).

The respondents were asked about the gender and their answers were as follows:

Table 5.1: Gender

Gender	Number	Percentage
Male	77	51.30%
Female	73	43.70%

Source: From the survey data 2022.

We note from Table 5.1 that the number of males is (77), at a rate of (51.3%), and the number of females is (73), at a rate of (43.7%). It is clear that, males are higher than females.

The respondents were asked about the age, and their answers were as follows:

Table 5.2: Age

Age	Number	Percentage
less than 20	0	0%
20 and less than 30	20	20%
30 and less than 40	42	28%
40 and less than 50	5	3.3%
50 and less than 60	51	34%
60 years and over	22	14.7%

Source: From the survey data 2022.

Based on the Table 5.2 it is clear that, the number of those whose age is less than 20 year old is (0) and at a rate of (0%), 20 year old and less than 30 their number is (20) at a rate of (20%), from 30 years old and less than 40 their number is (42) at a rate of (28%) and that from 40 year old and less than 50 their number is (5) with a percentage of (3.3), from 50 years old and less than 60 their number is (51) with a rate of (34%), and from 60 years and over their number is (22) with a percentage of (14.7).

The respondents were asked about the educational qualification, and their answers were as follows:

Table 5.3: Academic qualification

Academic Qualification	Number	Percentage
High School	1	0.7%
Diploma	1	0.7%
Community College	1	0.7%
BA	55	36.7%
Master's	50	33.3%
PhD	42	28%

Source: From the survey data 2022.

Table 5.3 showed that the secondary school number is (1) at a rate of (0.7%), the diploma number is (1) at a rate of (0.7%), the community college number is (1) at a rate of (0.7%), and the number of bachelor's degrees is (55) with a percentage of (36.7), the master's number is (50) with a percentage of (33.3), and the number of doctorates is (42) with a percentage of (28).

The respondents were asked about the years of experience, and their answers were as follows:

Table 5.4: Years of experience

Years of Experience	Number	Percentage
5 years and under	27	18%
From 5 and less than 10 years	10	6.7%
From 10 and less than 15 years old	24	16%
From 15 and less than 20 years old	25	16.7%
From 20 years and over	64	42.7%

Source: From the survey data 2022.

Table 5.4 showed that, number of employees whose experience ranging from five years and less is (27) at a rate of (18%), from 5 and less than 10 years is (10) at a rate of (6.7%), from 10 years and less than 15 years their number is (24, at a rate of (16%), and from 15 years and under 20 years, their number is (25), at a rate of (16.70%), and from 20 years and over, their number is (64), at a rate of (42.7%).

The respondents were asked about the job title, and their answers were as follows:

Table 5.5: Job title

Job Title	Number	Percentage
5 years and under	27	18%
From 5 and less than 10 years	10	6.7%
10 and less than 15 years old	24	16%
15 and less than 20 years old	25	16.7%
20 years and over	64	42.7%

Source: From the survey data 2022.

Table 5.5 showed that number of general managers are (8) at a rate of (5.3%), deputy general managers are (20) at a rate of (13.3%), and, assistant general managers are 9 at a rate of (6%), number of directors is (34), at a rate of (22.7%), and the other number is (79), with at a rate of (52.7%).

6.4.3 Basic Data

This part is considered a basic rule on which scientific studies in general, and the current study in particular, are based. From this part, the researcher will be able to obtain the study final results. the hypotheses on which the study is based can be proven or denied.

A. The First Axis: Functional Creativity

The respondents were asked about career creativity, and their answers were as follows:

Table 5.6: Career creativity

Options	Number	Percentage
I strongly agree	91	60.7%
I agree	52	34.7%
Neutral	2	1.3%
I do not agree	0	0%
Strongly Disagree	5	3.3%

Source: From the survey data 2022.

Table 5.6 showed that number of respondents whose answers, were, I strongly agree is (91) by (60.7%), I agree is (52) by (34.7%), neutral is (2) by (1.3%), I disagree is (0) by (0%), strongly disagree is (5), a rate of (3.3%).

The respondents were asked about the ability to analyze tasks and operational details, and their answers were as follows.

Table 5.7: The ability to analyze tasks and operational details

Options	Number	Percentage
I strongly agree	64	42.7%
I agree	83	55.3%
Neutral	2	1.3%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.7 showed that number of respondents whose answers were, I strongly agree is (64) at a rate of (42.7%), I agree is (83) at a rate of (55.3%), neutral is (2) at a rate of (1.3%), and I disagree is (0) at a rate of (0%), strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about provision of high-quality products and services, and their answers were as follows:

Table 5.8: Provision of high-quality products and services

Options	Number	Percentage
I strongly agree	63	42.7%
I agree	80	53.3%
Neutral	6	4%
I do not agree	0	0%
Strongly Disagree	1	0.7%

Source: From the survey data 2022.

Table 5.8 showed that number of respondents whose answers were, I strongly agree is (63) at a rate of (42%), I agree is (80) at a rate of (53.3%), neutral is (6) at a rate of (4%), I disagree is (0) at a rate of (0%), I do not agree is (1) at a rate of (0.7%).

The respondents were asked about the ability to design products at the lowest cost, and their answers were as follows:

Table 5.9: The ability to design products at the lowest cost

Options	Number	Percentage
I totally agree	41	27.3%
I agree	98	65.3%
Neutral	9	6%
I do not agree	0	0%
Strongly disagree	2	1.3%

Source: From the survey data 2022.

Table 5.9 showed that that total number of respondents who ticked the option I strongly agree is (41) at a rate of (27.3%), I agree is (98) at a rate of (65.3%), neutral is (9) at a rate of (6%), I disagree is (0) at a rate of (0%), and I strongly disagree is (2) at a rate of (1.3%).

The respondents were asked about the organization moving its job descriptions effectively, and their answers were as follows:

Table 5.10: The organization moves its job descriptions effectively

Options	Number	Percentage
I totally agree	42	28%
I agree	102	68%
Neutral	5	3.3%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.10 showed that, number of respondents whose answers were, I strongly agree is (42) at a rate of (28%), I agree is (102) at a rate of (68%), neutral is (5) at a rate of (3.3%), I disagree is (0) at a rate of (0%) and I strongly disagree is (1) at a rate of (0.7%).

B. The Second Axis

The respondents were asked about entering the final variants of the product specifications, and their answers were as follows:

Table 5.11: Introducing the final variations of the product specifications

Options	Number	Percentage
I totally agree	42	28%
I agree	102	68%
Neutral	5	3.3%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data.

Table 5.11 showed that number of respondents whose answers were, I strongly agree is (75) at a rate of (50%), I agree is (68) at a rate of (45.3%), neutral is (56) at a rate of (4%), I disagree is (0) at a rate of (0%), I strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the use of advanced technologies, and their answers were as follows:

Table 5.12: Use of advanced technologies

Options	Number	Percentage
I totally agree	78	52%
I agree	70	46.7%
Neutral	1	0.7%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data.

Table 5.12 showed that number of respondents whose answers were, I strongly agree is (78) at a rate of (52%), I agree is (70) at a rate of (46.7%), neutral is (1) at a rate of (0.7%), I disagree is (1) at a rate of (0.7%), I strongly disagree is (0) at a rate of (0%).

The respondents were asked about creativity in the products and services provided by the institutions, and their answers were as follow:

Table 5.13: Creativity in the products and services provided by the institutions

Options	Number	Percentage
I totally agree	68	45.3%
I agree	78	52%
Neutral	3	2%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.13 showed that number of respondents whose answers were, I strongly agree is (68) at a rate of (45.3%), I agree is (78) at a rate of (52%), neutral is (3) at a rate of (2%), I disagree is (1) at a rate of (0.7%) and that I do not agree is (0) at a rate of (0%).

The respondents were asked about the rapid transformations of the technological environment, and their answers were as follows:

Table 5.14: Rapid transformations of the technological environment

Options	Number	Percentage
I totally agree	38	25.3%
I agree	98	65.3%
Neutral	13	8.7%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.14 showed that number of respondents whose answers were, I strongly agree is (38) at a rate of (25.3%), I agree is (98) at a rate of (65.3%), neutral is (13) at a rate of (8.7%), I disagree is (1) at a rate of (0.7%) I strongly disagree is (0) at a rate of (0%).

The respondents were asked about organizational competencies, and their answers were as follows:

Table 5.15: Organizational competencies

Options	Number	Percentage
I strongly agree	32	21.3%
I agree	107	71.3%
Neutral	9	6%
I do not agree	1	0.7%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.15 showed that, number of respondents whose answers were, I strongly agree is (32) at a rate of (21.3), I agree is (107) at a rate of (71.3%), neutral is (9) at a rate of (6%), I disagree is (1) at a rate of (0.7%) I strongly disagree is (1) at a rate of (0.7%).

C. The Third Axis

The respondents were asked about protection of the assets and reputation of the institution, and their answers were as follows:

Table 5.16: Institution assets and reputation protection

Options	Number	Percentage
I totally agree	106	70.7%
I agree	43	28.7%
Neutral	0	0%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.16 showed number of respondents whose answers were, I strongly agree is (106) by (70.7%), I agree is (43) by (28.7%), neutral is (0), at a rate of (0%), and I disagree is (0) at a rate of (0). 0% and I strongly disagree is (1) at a rate of (0.7).

The respondents were asked about providing a framework in the organization in order to support the implementation of activities in a coordinated and controlled manner, and their answers were as follows:

Table 5.17: Providing a framework in the organization to support the implementation of activities in a coordinated and controlled manner

Options	Number	Percentage
I strongly agree	63	42%
I agree	83	55%
Neutral	4	2.7%
I do not agree	0	0%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.17 showed that number of respondents whose answers were, I strongly agree is (63) at a rate of (42%), I agree is (83) at a rate of (55%), a neutral is 4 at a rate of (2.7%), I don't agree is (0) and (0) strongly disagree is (0) at a rate of (0%).

The respondents were asked about developing and supporting the purchasing power and the organization's information base, and their answers were as follows:

Table 5.18: Developing and supporting the purchasing power and the organization's information base

Options	Number	Percentage
I totally agree	66	44%
I agree	83	55.3%
Neutral	0	0%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.18 showed that number of respondents whose answers were, I strongly agree is (66) at a rate of (44%), I agree is (83) at a rate of (55.3%), neutral is (0) at a rate of (0%), and I disagree is (0) a rate of (0). (0%) I strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about contributing to the effective use of capital and available resources, and their answers were as follows:

Table 5.19: Contribution to the effective use of capital allocation and available resources

Options	Number	Percentage
I totally agree	47	31.3%
I agree	101	67.3%
Neutral	0	0%
I do not agree	0	0%
Strongly disagree	2	1.3%

Source: From the survey data 2022.

Table 5.19 showed that number of respondents whose answers were, I strongly agree is (47) by (31.3%), I agree is (101) at a rate of (67.3%), neutral is (0) at a rate of (0%), and I disagree is (0) at a rate of (0%) strongly disagree is (2), at a rate of (1.3%).

The respondents were asked about reducing fluctuations in non-basic activity, and their answers were as follows:

Table 5.20: Reducing fluctuations in non-basic activity

Options	Number	Percentage
I totally agree	29	19%
I agree	105	70%
Neutral	15	10%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.20 showed that number of respondents whose answers were, I strongly agree is (29) at a rate of (19%), I agree is (105) at a rate of (70%), neutral is (15) by (10%), and I disagree is (0) at a rate of (0%) and strongly disagree is (1) at a rate of (0.7%).

D. Fourth Axis: Initiation

The respondents were asked about whether the institution compares between real attempts and creativity and development progress, and their answers were as follows:

Table 5.21: The institution compares between real attempts and creativity and development progress

Options	Number	Percentage
I totally agree	89	59.3%
I agree	55	36.7%
Neutral	5	3.3%
I do not agree	0	0%

Strongly disagree	1	0.7%
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Source: From the survey data 2022.

Table 5.21 showed that number of respondents whose answers were, I strongly agree is (89) at rate of (59.3%), I agree is (55) at rate of (36.7%), neutral is (5) by (3.3%), I disagree is (0) at a rate of (0%), and that I do not agree is (1) by (0.7%).

The respondents were asked about the institution's endeavor to provide new products, technology and modern managerial techniques, and their answers were as follows:

Table 5.22: The corporation seeks to introduce new products, technology and modern managerial techniques

Options	Number	Percentage
I totally agree	78	52%
I agree	70	46.7%
Neutral	2	1.3%
I do not agree	0	0%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table (5-22) showed that number of respondents whose answers were, I strongly agree is (78) at a rate of (52%), I agree is (70) at a rate of (46.7%), neutral is (2) at a rate of (1.3%), I don't agree is (0) with at rate of (0%), I strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution 's endeavor to carry out leadership work, and their answers were as follows:

Table 5.23: The institution is striving to implement a leadership work

Options	Number	Percentage
I strongly agree	61	40.7%
I agree	86	57.3%
Neutral	3	2%
I do not agree	0	0%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.23 showed that number of respondents whose answers were, I strongly agree is (61) at a rate of (40.7%), I agree is (86) at a rate of (57.3%), neutral is (3) at a rate of (2%), I disagree is (0) at a rate of (0%), and strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution cooperation with competitors in order to contain them, and their answers were as follows:

Table 5.24: The institution cooperates with competitors in order to contain them

Options	Number	Percentage
I totally agree	33	22%
I agree	108	72%
Neutral	6	4%
I do not agree	0	0%
Strongly disagree	3	2%

Source: From the survey data 2022.

Table 5.24 showed that number of respondents whose answers were I strongly agree is (33) at a rate of (22%), I agree is (108) at a rate of (72%), neutral is (6) at a rate of (4%), I disagree is (0) at a rate of (0%), I strongly disagree is (3) at a rate of (2%).

The respondents were asked about their interest in competition toward creativity, and their answers were as follows:

Table 5.25: Employment of Competition in Creativity

Options	Number	Percentage
I totally agree	37	24.7%
I agree	111	74%
Neutral	2	1.2%
I do not agree	0	0%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.25 showed that number of respondents whose answers were, I strongly agree is (37) at a rate of (24.7), I agree is (111) at a rate of (74%), neutral is (2) at a rate of (1.2%), I disagree is (0) at a rate of (0%) And I strongly agree is (0) at a rate of (0%).

E. Fifth Axis: Excellence

Table 5.26 the institution is distinguished in the use of technological equipment in the field of services and business:

The respondents were asked about the organization's excellence in using technological equipment in the field of services and business, and their answers were as follows:

Table 5.26: Organization's excellence in using technological equipment in the field of services and business

Options	Number	Percentage
I strongly agree	103	68.7%
I agree	40	26.7%
Neutral	3	2%
I do not agree	4	2.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.26 showed that, number of respondents whose answers were, I strongly agree is (103) at a rate of (68.7%), I agree is (40) at a rate of (26.7%), neutral is (3) at a rate of (2%), I don't agree is (4) at a rate of (2.7%) and strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution's endeavor to attract specialized scientific and technical experts, and their answers were as follows:

Table 5.27: The institution seeks to attract specialized scientific and technical experts

Options	Number	Percentage
I totally agree	72	48%
I agree	74	49%
Neutral	1	0.7%
I do not agree	2	1.3%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.27 showed that number of respondents whose answers were, I strongly agree is (72) at a rate of (48%), I agree is (74) at a rate of (49%), neutral is (1) at a rate of (7%), I disagree is (2) at a rate of (1.3%), I strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the institution's interest in recruiting the right person, and their answers were as follows:

Table 5.28: The institution is interested in recruiting the right person

Options	Number	Percentage
I totally agree	70	46.7%
I agree	74	49.3%
Neutral	2	1.3%
I do not agree	3	2%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.28 showed that number of respondents whose answers were, I strongly agree is (70) at a rate of (46.7%), I agree is (74) at a rate of (49.3%), neutral is (2) at a rate of (1.3%), I disagree is (3) at a rate of (2%), and strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the institution's efforts to develop the human resources of the institution, and their answers were as follows:

Table 5.29: The institution seeks to develop the human resources of the institution

Options	Number	Percentage
I totally agree	57	38%
I agree	87	58%
Neutral	5	3.3%
I do not agree	0	0%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.29 showed that number of respondents whose answers were I strongly agree is (57) at a rate of (38%), I agree is (87) at a rate of (58%), neutral is (5) at a rate of (3.3%), I don't agree is (0) at a rate of (0%) and strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the excellence of the institution in choosing the commodity produced based on local and international demand, and their answers were as follows:

Table 5.30: The excellence of institution in choosing the commodity produced based on local and international demand

Options	Number	Percentage
I strongly agree	33	22%
I agree	110	73%
Neutral	3	2%
I do not agree	2	1.3%
Strongly disagree	2	1.3%

Source: From the survey data 2022.

Table 30.5 showed that, number of respondents whose answers were I strongly agree is (33) at a rate of (22%), I agree is (110) at a rate of (73%), neutral is (3) at a rate of (2%), I disagree is (2) at a rate of (1.3%) And I strongly disagree is (2) at a rate of (1.3%).

F. The Sixth Axis: Flexibility

The respondents were asked about the institution's efforts to respond quickly to dynamic environmental conditions, and their answers were as follows:

Table 5.31: The institution seeks to respond quickly to dynamic environmental conditions

Options	Number	Percentage
I totally agree	78	52%
I agree	61	40.7%
Neutral	9	6%
I do not agree	1	0.7%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.31 showed that number of respondents whose answers were I strongly agree is (78) at a rate of (52%), I agree is (61) at a rate of (40.7%), neutral is (9) at a rate of (6%), I don't agree is (1) at a rate of (0.7%) and I strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the institution's response to emergency changes, and their answers were as follows:

Table 5.32: The institution responds to emergency changes

Options	Number	Percentage
I totally agree	65	43.3%
I agree	78	52%
Neutral	4	2.7%
I do not agree	2	1.3%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.32 showed that, number of respondents whose answers were I strongly agree is (65) at a rate of (43.3%), I agree is (78) at a rate of (52%), neutral is (4) at a rate of (2.7%), I don't agree is (2) at a rate of (1.3%) and strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the institution 's interest in depending on strategic flexibility in marketing plans, and their answers were as follows:

Table 5.33: The institution depends on strategic flexibility in marketing plans

Options	Number	Percentage
I strongly agree	62	41.3%
I agree	81	54%
Neutral	5	3.3%
I do not agree	2	1.3%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.33 showed that number of respondents whose answers were I strongly agree is (62) at a rate of (41.3%), I agree is (81) at a rate of (54%), neutral is (5) at a rate of (3.3%), I don't agree is (2) at a rate of (1.3%) I strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution's interest in promoting continuous analysis of the external environment, and their answers were as follows:

Table 5.34: The institution is interested in enhancing
continuous analysis for external environment

Options	Number	Percentage
I strongly agree	35	23.3%
I agree	105	70%
Neutral	6	4%
I do not agree	3	2%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.34 showed that, number of respondents whose answers were I strongly agree is (35) at a rate of (23.3%), I agree is (105) at a rate of (70%), neutral is (6) at a rate of (4%), and disagree is (3) at a rate of (2%) And I strongly disagree is (1) at a rate of (0.7%).

The respondents were asked about the institution's interest in holding training sessions for employees to enhance their skills in relation to technological development, and their answers were as follows:

Table 5.35: The institution is interested in holding training session for employees to enhance their skills in relation to technological development

Options	Number	Percentage
I strongly agree	35	23.3%
I agree	109	72.7%
Neutral	5	3.3%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.35 showed that number of respondents whose answers were I strongly agree is (35) at a rate of (23.3%), I agree is (109) at a rate of (72.7%), neutral is (5) at a rate of (3.3%), I do not agree is (1) at a rate of (7%), and I do not agree is (0), at a rate of (0%).

G. The Seventh Axis: the Ability to Fulfill the Needs of the Consumer

The respondents were asked about the ability to fulfill the consumer's needs and the value he gets from that product, and their answers were as follows:

Table 5.36: The ability to fulfill the consumer's needs and the value he gets from that product

Options	Number	Percentage
I strongly agree	68	45.3%
I agree	72	48%
Neutral	10	6.7%
I do not agree	0	0%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.36 showed that number of respondents whose answers were I strongly agree is (68) at a rate of (45.3%), I agree is (72) at a rate of (48) neutral is (10) at a rate of (6.7%), I do not agree is (0) at a rate of (0%) and I strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution 's interest in satisfying customers' needs and their answers were as follows:

Table 5.37: The institution is interested in satisfying customer's needs

Options	Number	Percentage
I totally agree	46	30.7%
I agree	90	60%
Neutral	13	8.7%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.37 showed that number of respondents whose answers were I strongly agree is (46) at a rate of (30.7%), I agree is (90) at a rate of (60%), neutral is (13) at a rate of (8.7%), and I don't agree is (1) at a rate of (0.7%) And I strongly disagree is (0) at a rate of (0%).

The respondents were asked about the institution's efforts identify the situation and compare the local demand with the global demand, and their answers were as follows:

Table 5.38: The institution identifies the situation and compare the local demand with the global demand

Options	Number	Percentage
I strongly agree	51	34%
I agree	89	59.3%
Neutral	8	5.3%
I do not agree	2	1.3%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.38 showed that, number of respondents whose answers were I strongly agree is (51) at a rate of (34%), I agree is (89) at a rate of (59.3%), neutral is (8) at a rate of (5.3%), I don't agree is (2) at a rate of (1.3%) I strongly disagree is (0) at a rate of (0%).

The respondents were asked about how the institution is interested in developing strategies for competition through internal analysis of the surrounding environment, and their answers were as follows:

Table 5.39: The institution is interested in developing strategies for competition through internal analysis of the surrounding environment

Options	Number	Percentage
I totally agree	36	24%
I agree	101	67.3%
Neutral	11	7.3%
I do not agree	1	0.7%
Strongly disagree	1	0.7%

Source: From the survey data 2022.

Table 5.39 showed that number of respondents whose answers were I strongly agree is (36) at a rate of (24%), I agree is (101) at a rate of (67.3%), neutral is (11) at a rate of (7.3%), and I don't agree is (1) at a rate of (0.7%) And I strongly disagree with is (1) at a rate of (0.7%).

The respondents were asked about the institution is interested in achieving a market share to survive in the market, and their answers were as follows:

Table 5.40: The institution is interested in achieving a market share for survival in the market

Options	Number	Percentage
I strongly agree	49	32.7%
I agree	92	61.3%
Neutral	8	5.3%
I do not agree	1	0.7%
Strongly disagree	0	0%

Source: From the survey data 2022.

Table 5.40 showed that, number of respondents whose answers were I strongly agree is (49) at a rate of (32.7%), I agree is (92) at a rate of (61.3%), neutral is (8) at a rate of (5.3%), I don't agree is (1) at a rate of (0.7%) and I strongly disagree is (0) at a rate of (0%).

a. First Hypothesis Test

There is a relationship between job creativity and competitive advantage in the horticultural sector in Khartoum state.

Table 5.41: Relationship between job creativity and competitive

No.	Items	Degree of approval					Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree	Strongly Disagree			
1	Use strategies with management and leadership capabilities	91	52	2	0	2	0.00	1.51	0.825
2	Ability to analyze tasks and operational details	64	83	2	0	1	0.02	1.61	0.590
3	Provide high quality products and services	63	80	6	0	1	0.00	1.64	0.627
4	The ability to design products at the lowest cost	41	98	9	0	2	0.00	1.83	0.653
5	The organization moves its job descriptions effectively	42	102	5	0	1	0.00	1.77	0.569

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the items of job creativity, where the numbers in the table indicate a high percentage of those who agree, and the arithmetic average of the interviewees was about this item and a large homogeneity of the standard deviation. There is a positive statistically significant relationship between creativity and competitive advantage in the horticultural sector in Khartoum State.

b. Second Hypothesis Test

There is a relationship between innovation and competitive advantage in the horticultural sector in Khartoum state.

Table 5.42: Relationship between innovation and competitive

No.	Items	Degree of approval					Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree	Strongly Disagree			
1	Introducing infinite variations in product specifications	75	68	6	0	1	0.00	1.56	0.640
2	Use of advanced technologies	78	70	1	1	0	0.00	1.50	0.553
3	Creativity in the products and services provided by the institutions	68	78	3	1	0	0.00	1.58	0.511
4	Rapid transformations of the technological environment	38	98	13	1	0	0.00	1.85	0.588
5	Organizational competencies	32	107	9	1	1	0.00	1.88	0.581

Source: The results of the statistical analysis of the research data

The table shows the extent to which the respondents agree with the innovation items, where the numbers in the table indicate a high percentage of those who agree. Concerning this item, the arithmetic mean of the axes was (6.876). There is a great homogeneity of the standard deviation. There is a positive statistically significant relationship between innovation and competitive advantage in the horticultural sector in Khartoum state.

c. Third Hypothesis Test

There is a relationship between risk and competitive advantage in the horticultural sector in Khartoum state.

Table 5.43: Relationship between risk and competitive

No.	Items	Degree of approval					Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree	Strongly Disagree			
1	Protect the development of the assets and reputation of the institution	106	43	0	0	1	0.00	1.31	0.545
2	Provide a framework in the organization for the purpose	63	83	4	0	0	0.02	1.61	0.542

Rehib Hag Ahmed Sirageldin Hag Ahmed
 THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE
 OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

	of supporting the implementation of activities in a coordinated and controlled manner								
3	Develop and support purchasing power and enterprise information base	66	83	0	0	83	0.00	1.58	0.592
4	Contribute to the effective use of capital allocation and available resources	47	101	0	0	2	0.00	1.73	0.601
5	Reducing fluctuations in non-core areas of activity	29	105	15	0	1	0.00	1.93	0.592

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the risk-taking items, where the numbers in the table indicate a high percentage of those who agree. Concerning this item, the arithmetic mean of the axes was (1.632), there is a large homogeneity of the standard deviation, and is a positive statistically significant relationship between risk and competitive advantage in the horticultural sector in Khartoum state.

d. Fourth Hypothesis Test

There is a relationship between initiative and competitive advantage in the horticultural sector in Khartoum state.

Table 5.44: Relationship between initiative and competitive

No.	Items	Degree of approval					Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree	Strongly Disagree			
1	The institution works on making a trade-off between real attempts at growth, creativity and development	89	55	5	0	1	0.00	1.46	0.631
2	The institution provides new products,	78	70	2	0	0	0.02	1.49	0.528

Rehib Hag Ahmed Sirageldin Hag Ahmed
 THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE
 OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

	technology and modern management techniques								
3	The institution cooperates with competitors in the implementation of pioneering business	61	86	3	0	0	0.00	1.61	0.528
4	The organization cooperates with competitors in order to contain them	33	108	6	0	3	0.00	1.88	0.655
5	The institution is Interested in competition toward creativity	37	111	2	0	0	0.00	1.77	0.455

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the items of the initiative, where the numbers in the table indicate a high percentage of those who agree. Concerning this item, the arithmetic mean of the axes was (1.642), there is a great homogeneity of the standard deviation. And there is a positive statistically significant relationship between initiative and competitive advantage in the horticultural sector in Khartoum state.

e. Fifth Hypothesis Test

There is a relationship between excellence and competitive advantage in the horticultural sector in Khartoum state.

Table 5.45: Relationship between excellence and competitive

No.	Items	Degree of approval				Strongly Disagree	Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree				
1	The excellence of the enterprise in the use of technological equipment in the field of services and business	103	40	3	4	0	0.00	1.39	0.663
2	The institution seeks to attract	72	74	1	2	1	0.02	1.57	0.649

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 THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE
 OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

	specialized scientific and technical experts								
3	The organization is interested in recruiting the right person.	70	74	2	3	1	0.00	1.61	0.684
4	The institution seeks to develop the human resources of the institution	57	87	52	0	1	0.00	1.67	0.575
5	The excellence of the institution in selecting the commodity produced based on local and international demand	34	109	3	2	1	0.00	1.93	1.041

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the items of excellence, where the numbers in the table indicate a high percentage of those who agree. Concerning this item, the arithmetic mean of the axes was (1.634) and there is a large homogeneity of the standard deviation, and there is a positive statistically significant relationship between excellence and competitive advantage in the horticultural sector in the state of Khartoum.

f. Sixth Hypothesis Test

There is a relationship between flexibility and competitive advantage in the horticultural sector in Khartoum state.

Table 5.45: Relationship between flexibility and competitive

No.	Items	Degree of approval				Strongly Disagree	Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree				
1	The institution seeks to respond quickly to environmental conditions	78	61	9	1	1	0.00	1.57	0.698
2	The institution responds to	65	78	4	2	1	0.02	1.64	0.668

Rehib Hag Ahmed Sirageldin Hag Ahmed
 THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE
 OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

	emergency changes								
3	The organization seeks to rely on strategic flexibility in marketing plans	62	81	5	2	0	0.00	1.65	0.615
4	The institution is concerned with promoting continuous analysis of the external environment	35	105	6	3	1	0.00	1.87	0.631
5	The institution is interested in holding training session for employees to enhance their skills toward technological development	35	109	5	1	0	0.00	1.81	0.551

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the items of flexibility, where the numbers in the table indicate a high percentage of those who agree. Concerning this item, the arithmetic mean of was (1.708) and there is a large homogeneity of the standard deviation, and there is a positive statistically significant relationship between flexibility and competitive advantage in the horticultural sector in Khartoum State

g. The Seventh Hypothesis Test

Table 5.46: The extent to which the respondents agree with the items of competitive advantage

No.	Items	Degree of approval					Chi Square	Arithmetic average	Standard deviation
		I totally agree	I agree	Neutral	I do not agree	Strongly Disagree			
1	The ability to fulfill the consumer's needs and the value he gets from that product	68	72	10	0	0	0.00	1.61	0.611
2	The institution is interested in satisfying	46	90	13	1	0	0.02	1.79	0.616

Rehib Hag Ahmed Sirageldin Hag Ahmed
 THE IMPACT OF ENTREPRENEURSHIP IN ACHIEVING THE COMPETITIVE ADVANTAGE
 OF THE HORTICULTURAL SECTOR: A CASE STUDY OF KHARTOUM STAT (2011-2021)

	customers' needs								
3	The institution seeks to identify the situation and compare the local demand with the global demand	62	81	5	2	0	0.00	1.74	0.618
4	The institution is also interested in developing strategies to compete through internal analysis of the surrounding environment	36	101	11	1	1	0.00	1.87	0.620
5	The enterprise is interested in achieving market share for the organization as the price of staying in the market	49	92	8	1	0	0.00	1.74	0.584

Source: The results of the statistical analysis of the research data.

The table shows the extent to which the respondents agree with the items of competitive advantage, where the numbers in the table indicate a high percentage of those who agree. Concerning, this item, the arithmetic mean of was (1.75) and there is a large homogeneity of the standard deviation. The value of Ka^2 indicates that it is statistically significant at the level of 0.05%.

7. Conclusion

7.1 Research Results

- 1) The study found that, there is a positive impact of strategic leadership in achieving the competitive advantage in the horticultural sector in the state of Khartoum, at a rate of 93.3% of those who agree among the respondents.
- 2) The study found that, there is a positive impact of administrative creativity on the competitive advantage in the horticultural sector in Khartoum state, at a rate of 95.4% of those who agree among the respondents.
- 3) The study found that, there is a positive impact of innovation on the competitive advantage in the horticultural sector in Khartoum State, at a rate of 95.3% of those who agree.

- 4) The study found that, there is a positive effect of risk on the competitive advantage in the horticultural sector in Khartoum state, at a rate of 99.4%, which is the sum of the percentage of those who strongly agree and those who agree.
- 5) The study found that, there is a positive effect of the initiative on the competitive advantage in the horticultural sector in the state of Khartoum, at a rate of 96%, which is the sum of the percentage of those who strongly agree and those who agree.
- 6) The study found that, there is a positive effect of exclusivity on the competitive advantage in the horticultural sector in Khartoum State, at a rate of 95.4%, which is the sum of the percentage of those who strongly agree and those who agree.
- 7) The study found that, there is a positive effect of flexibility on the competitive advantage in the horticultural sector in Khartoum state, at a rate of 92.7%, which is the sum of the percentage of those who strongly agree and those who agree.
- 8) Some general conclusions can be deducted regarding the issue of the agricultural sector in general and the pioneering role in advancing this sector and getting rid of the crises achieved in it:
 - Entrepreneurship is considered a source and a permanent helper to enhance the competitive advantage among organizations, especially those operating in the agricultural sector.
 - Taking care of leadership and entrepreneurs has become an urgent necessity to keep pace with the rapid development in various sciences, especially agricultural sciences.

7.2 Recommendations

- 1) Attention should be given to infrastructures that assist in exports, such as transportation, communication, storage, cooling, packaging, and display, which had a significant impact on Sudanese exports.
- 2) Facilitating the import of improved seeds, and establish a local seed industry, and exempt horticultural crops from all fees and taxes.
- 3) Importing fertilizers and pesticides for horticultural crops and exempting them from customs duties.
- 4) producing horticultural crops that compete in the markets, by paying attention to fighting pests that hinder the growth of crops, distort their shape, and put them out of competition in global markets.
- 5) Establishing an integrated marketing information center to be linked with embassies and economic and commercial attachés, and encourage participation in foreign exhibitions, and creating partnerships with foreign investors to market horticultural exports to create opportunities in global markets.
- 6) Orienting horticultural research programs and emphasis applied topics in the fields of production, harvesting, preparation and marketing.
- 7) Promote the sector to a public authority and support it with it with competent cadres to lead the agricultural renaissance in the horticultural field, and establish

the Horticultural Exports Development Council to coordinate among all participants in the production process.

- 8) Educating all workers in the horticultural sector and raising their sense of security to protect the sector and enable it to play its role in supporting the national economy.
- 9) Creating effective lines of defense that can detect threats to horticultural crops before entering the country (mealybug in palm offshoots, banana weevil, fruit fly).

Conflict of Interest Statement

Dr. Rihab Sirag Eldin declares that there are no conflicts of interest associated with the present research. The opinions and findings reported in this paper reflect the authors' independent work and do not reflect the views or endorsement of any organization or entity with which the authors may be affiliated.

About the Author

Dr. Rihab Sirag Eldin holds a PhD in Business Administration (Entrepreneurship) from Omdurman Islamic University, Department of Management. Her research interests include entrepreneurship and risk management, and her work has been published in several academic journals, including the Holy Qur'an University journal, the Imam Al-Hadi University journal, and the University of Sharjah journal. As a highly respected scholar and dedicated researcher, Dr. Sirag Eldin continues to make valuable contributions to the field of business administration.

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