Vol. 19(9), pp. 879-890, September, 2023
DOI: 10.5897/AJAR2022.16284
Article Number: 02E326271179
ISSN: 1991-637X

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African Journal of Agricultural Research

Full Length Research Paper

Porter's diamond model and Zimbabwe's national competitiveness in the cut flower industry

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Received 22 November, 2022; Accepted 28 April, 2023

Zimbabwe's cut flower industry has declined over the past years. We determined the national competitiveness of Zimbabwe's cut flower industry using Porter's diamond model of competitive advantage in 2018 using a descriptive and exploratory design that made use of qualitative and quantitative research methods. Low numbers of key players in the industry forced researchers to administer questionnaires to only 20 respondents comprising growers, marketers, florists, and associations. There was a relationship between factor conditions and national competitiveness (Chi-square 47.9728; df = 25; and p <0.0029). There was no significant relationship between strategy and national competitiveness (Chi-square 21.3916; DF 15; p-value > 0.1248). There was a relationship between government and national competitiveness (Chi-square 20.6350; DF 10; p-value 0.0238). There was no relationship between chance and national competitiveness (Chi-square 6.8190; df 5; p-value =0.2344). Strategy, structure, rivalry, demand conditions, related and supporting industries, and chance had no statistically significant relationship with the national competitiveness of the industry. Centralised decision making and lack of government intervention make the industry fail to be competitive. To revive the industry, the availability and utilization of factor conditions, particularly skilled marketing personnel, should be increased. Government policies should support the industry so that it is competitive.

Key words: Cut flower, government policies, land reform, competitiveness, Porter's model.

INTRODUCTION

Cut flowers refer to flowers that have been cut from plants (Mali et al., 2020). They are often used as decorations indoors, being placed in vases, garlands, and wreaths (Tomashevska, 2019). There are various types of cut flowers that are produced in the world (Darras, 2021) but the most common ones are roses, carnations, chrysanthemums and asters (De, 2022). Cut flowers are used for many different reasons. Most are popular

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choices as gifts on special occasions, either as a single cut flower or as a bunch or a bouquet (De, 2020). They can be used for funerals, home and office decorations and for weddings (Park and Oh, 2019; Scoggins, 2019; Ernst, 2021; Mir, 2023). There is a vast international market for cut flowers, which includes both production and export (Darras, 2021).

The cut flower industry in Zimbabwe dates back so many decades ago (Davies, 2000). The industry began to take off in the mid-1980s, following independence and the re-introduction of Zimbabwe into the international trading community.

Between the mid-1980s and late 1990s, it became one of Zimbabwe's fastest-growing export industries. In 1995 Zimbabwe was the third largest supplier of roses to the European Union. In the late 1990 up to 2002, Zimbabwe was ranked as the second largest exporter of cut-flowers in Africa, after Kenya (Heri, 2000), and the third largest in the world, and exported about US$60 million worth of cut flowers globally (Davies, 2000; ZimTrade, 2018).

In recent years, flower production has seen a downward trend, with output plummeting from 142 000 tonnes in 1999 to about 40 000 tonnes by 2010. The decline of Zimbabwe cut flower exports can be attributed to a number of factors, chief among which are fast-track land reform programme and strict export policies. Unlike the land redistribution of the early 1980s, which had positive but modest economic returns (Deininger et al., 2004), the fast-track land reform programme affected agriculture in many different ways (Scoones et al., 2012; Tibugari et al., 2012; Tibugari and Jowah, 2014; Ngarava 2020). According to ZimTrade (2018), the 95% decline in cut flower exports from about US$60 million to $3.1 million in 2015 was caused by stringent export requirements set by the government. The other factor was weak prices on international markets, which caused a reduction in production by farmers. Additionally, to some extent, the threat of poor image of flowers from LDC countries also remains a formidable concern for the future growth of the industry (Kubwalo, 2006).

Types of flowers produced and markets for Zimbabwean flowers

Historically, about 70% of Zimbabwe's flower exports came from Banket, Concession, Glendale, Bindura, Harare, Goromonzi, Trelawney, and Kwekwe, mostly growing roses (ZimTrade, 2018). Now especially with the help of greenhouses and irrigation systems, the production of cut flowers is now possible countrywide. Roses constituted approximately 70% of cut-flower exports from Zimbabwe. Roses, proteas, asters, and chrysanthemums were predominantly the most produced cut flowers in Zimbabwe. Carnations are also produced. Annual varieties produced in large volumes included Ammi majus and bupleurum. Smaller volumes of Delphinium, Carthamus, Craspedia, Euphorbia, Callistephus, and Molucella were also produced. Volumes of perennial flowers, of which there are over 30 varieties, were also available. The Netherlands was Zimbabwe's largest export destination for cut flowers, importing an average of 69% of the country's flowers in the last 15 years.

Porter's diamond factors in relation to the Zimbabwean cut flower competitiveness

The purposes of this study were to find out the latest and accurate relationship between Zimbabwe cut flower industry and its national competitiveness in the industry. There is some information already on the cut flower industry in Zimbabwe relating to Porter's model (Figure 1).

Factor conditions

Zimbabwe has ideal natural conditions for the growing of cut flowers. However, the country lacks on other areas like transport and input costs. In East-Africa, and presumably in Zimbabwe, the infrastructure is not yet developed well enough to boost these countries' cut flower transportation over sea (Rabobank, 2016). Transport costs are high and the cargo volumes are low. However, if the cargo volumes increase, the transport costs will decrease.

Strategy, structure, and rivalry

ZimTrade encouraged local flower growers to keep abreast with state-of-the-art production practices, as well as marketing techniques. Cut flower growers are encouraged to interact with the Zimbabwe Trade Information Portal (smart tools and trade map) in order to obtain information on the latest trends. The above could indicate that most of the growers had not structured their businesses enough to keep abreast with the latest trends.

Demand conditions

Most of the articles available on Zimbabwe cut flower industry mainly indicate the demand for the flowers on the international market and unfortunately much is not mentioned about the local Zimbabwean demand for cut flowers. Zimbabwe grows many summer flowers, and a good market for them could be established. It has also been noted that the demand for horticulture products is there but the supply is poor.

Related and supporting industries

The industry used to have the strong backing of associations such as the Horticultural Promotion Council

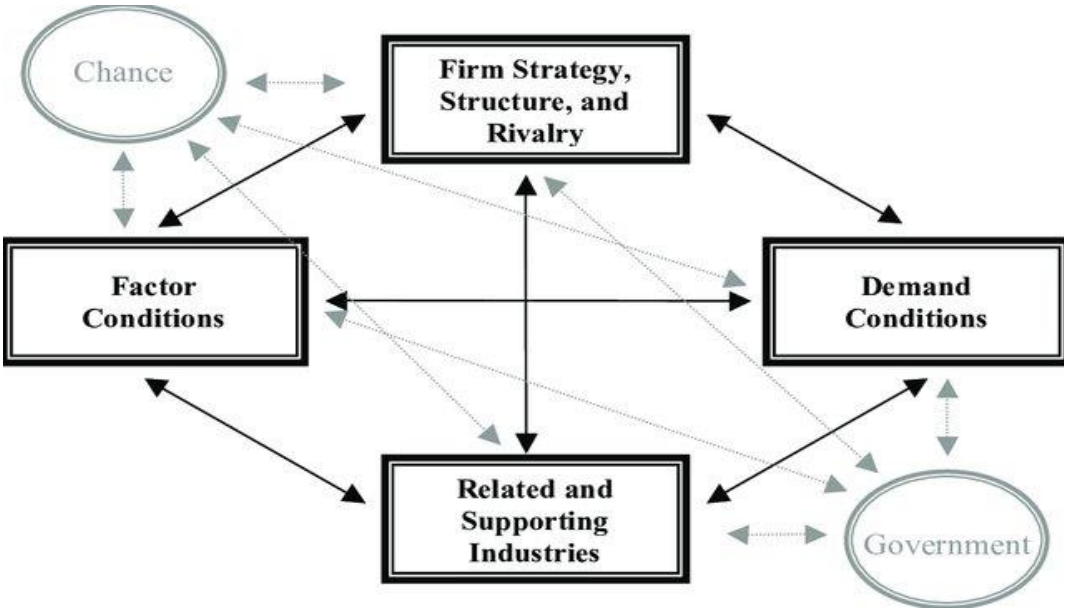

Figure 1. Porter's diamond of national competitive advantage.
Source: Porter (1998).

which provided an interface between the industry, government, and the international community (HortiFlor, 2018). There was also the Export Flower Growers Association of Zimbabwe (EFGAZ) which was made up of growers, marketing agents, refrigeration, packaging, and consultancy services, and the Zimbabwe Horticultural Association. These included service providers (marketing, exporting, freight, consultancy, forwarding, financial) as well as input suppliers (agrochemical, greenhouses, packaging, coverings, fans, uniforms, irrigation, refrigerated trucks, timber, and electrical instruments). The most important of these are the agencies which deal with marketing, many of which have been established specifically to deal with cut-flower exports. The above-mentioned associations closed. Efforts are being made to revive the Zimbabwe Horticultural Association and the EFGAZ. Zimbabwe is struggling to boost its exports due to low production and stringent export requirements. The related and supporting industry such as input suppliers and associations to govern the industry are not easily available. Some of the products needed in the industry are mostly not available in the market or they are available at high prices or are available at cash-only basics of which Zimbabwe is going through cash shortages.

Government

Several government Ministries used to be and some still are involved in activities that affect the industry: The Ministry of Lands, Agriculture and Water Development; Ministry of Finance; Ministry of Transport and Energy; and the Ministry of Industry and Commerce. The parastatal Agricultural Development Authority (ADA) and ZimTrade also provide support to the industry. Through these institutions, the government provides research and development, extension services, and irrigation infrastructure (HortiFlor, 2018).

Chance

Zimbabwe cut flower industry can achieve a competitive status within five to ten years as Zimbabwe does not have to start all over. The know-how about cut flowers is still there. Additionally, there are also people who are ready to invest in the industry.

Zimbabwe's exports of cut flowers have declined significantly. The country used to be the second largest exporter of cut flowers in Africa (Heri, 2000). There has been a continued decline despite having ideal natural conditions for the growing of cut flowers. Zimbabwe's cut flower industry is highly export oriented (Davies, 2000). There have been many efforts made to revive the industry but they are taking long and there seem to be insignificant changes yet. Most producers have closed down and there are mostly small-scale farmers left in the industry. Some organizations which used to support and see to the smooth running of the industry have since stopped functioning and it looks like Zimbabwe may not have as much national competitiveness as it used to in the cut flower industry. The research sought to identify and recommend factors to improve Zimbabwe's national

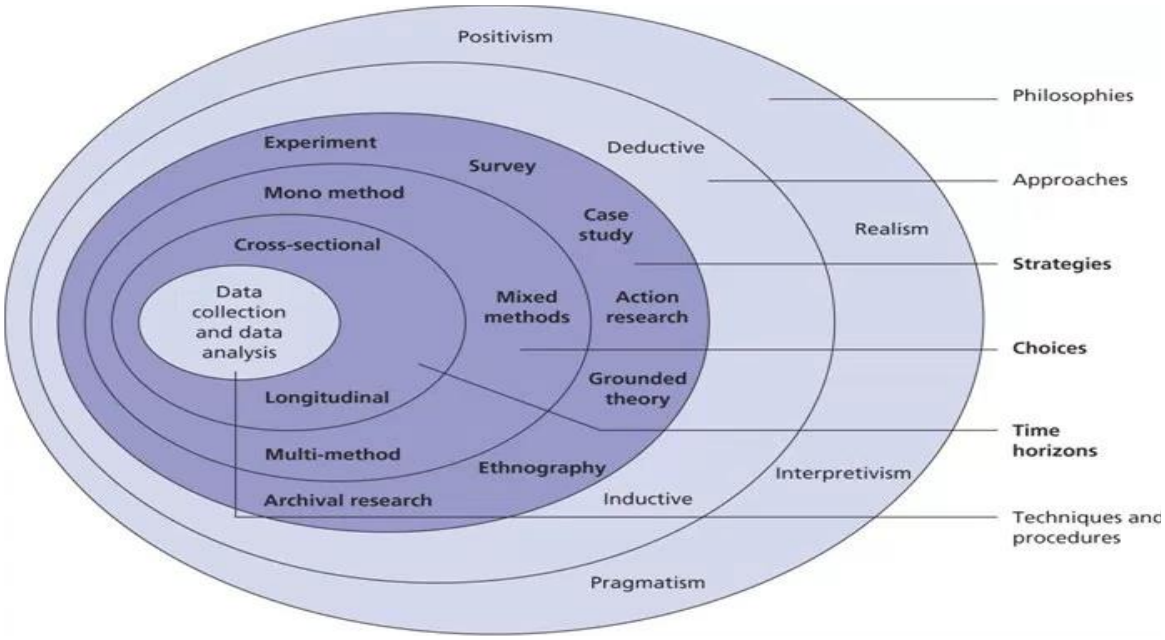

Figure 2. Research onion
Source: Smith (2017).

competitiveness in the cut flower industry, restoring its former glory. The general objective of the research was to determine the national competitiveness of Zimbabwe in the cut flower industry against Porter's Diamond model.

Research limitations

The research was not funded, and therefore researchers had to contribute their own limited resources towards the study. This resulted in the researchers using limited methods of data collection.

Research implications

The study allowed for an extensive look at the factors that can be implemented in the Zimbabwean cut flower industry for it to be competitive. The study could help in restoring the country's legacy of being one of the best cut flower producer and exporter and a serious contender in the international market. The specific factors that were studied could lead to the increase in cut flower production and export, which could subsequently lead to increased Gross Domestic Product (GDP) and and an increase in the much-needed foreign currency.

RESEARCH METHODOLOGY

Research design

The Onion Model as shown in Figure 2, made it easier for the research to be carried out. The philosophy adopted by the research was the Epistemology philosophy which according to Smith (2017) '…. tries to find the acceptable knowledge and addresses the facts according to that.' In this adopted philosophy researcher chose the positivist philosophical position. According to Hejase and Hejase (2013), "Positivism is when the researcher assumes the role of an objective analyst, is independent, and neither affects nor is affected by the subject of the research" (77). Positivism comes up with research questions and hypotheses that a researcher can test. It allows one to find explanations that measure the accepted knowledge of the world. According to this study, the accepted knowledge of the world is Porter's Diamond of national competitiveness and the researcher was looking for ways to measure this in the Zimbabwean cut flower industry.

The second layer of the research onion in this study looked at the deductive approach which entailed finding answers to the research questions which had been set out at the beginning of the research. It allowed the researcher to scan Porter's diamond of National competitiveness, gather data, and in the end be able to either confirm or reject the model.

The third layer of the research onion is the research style or strategy. For this research, the researcher made use of a survey as it is the one that goes with the deductive approach. The survey allows for the collection of rich and reliable data (Smith, 2017).

Research method

The study made use of the mixed methods design, using descriptive and exploratory research designs. The research method applied was the mixed methods embedded design, where the data collection is done in the same data collection instrument. The embedded design collects both quantitative and qualitative data (Timans et al., 2019; Sharma et al., 2023). This study used structured questionnaires. The questionnaire was designed following the steps recommended by Roopa and Rani (2012). Questions addressing the research topic were drafted, and revised.

The questionnaire was structured into sections. Section A was made up of questions asking general questions. Section B asked respondents about Factor Conditions. Section C asked questions on Strategy, Structure and Rivalry. Other sections asked respondents about Demand Conditions, related and supporting industries, government and chance. Double-barreled questions and biased wording were avoided during questionnaire design (Tibugari et al., 2020a). Prior to the administration of the questionnaire, a pre-test survey involving five respondents was conducted to check proper phrasing of questions and their understanding and interpretation (Hilton, 2017) and to check how long it took to interview one respondent (Tibugari et al., 2020b). After the pre-test, the questionnaire was revised before conducting the main survey.

Target population

The Zimtrade trade directory of 2018 listed five companies under the export product listing that export cut flowers. The HortiFlor (Horti-Floricultural) exhibition held in Harare from the 9th to the 11th of October 2018, had only four Zimbabwean cut flower producing organizations exhibiting amongst many other international and other companies in the horticulture industry. The ministry of Lands listed eleven official cut flower-producing farms countrywide, including the four mentioned above. For this study, the study population was 30 including growers, florists, and associations. This was so because many of the cut flower growers in Zimbabwe were forced by the economy and the country's reforms to stop production or diversify to other industries. The study population could almost make up the entire population of cut flower industry players. The target population was constituted of Zimbabwean cut flower producers and companies in the industry. It also involved other cut flower marketers who are not necessarily growers.

Sampling method

This study employed the purposive sampling technique for the selection of respondents. Purposive sampling involves handpicking the cases to be involved in the sample based on their judgment of the typicality of the certain characteristics being required Campbell et al. 2020). It was additionally indicated that in a lot of cases, purposive sampling assists to contact people who have an in-depth understanding of certain subjects. According to Tongco (2007) purposive sampling is a type of non-probability sampling that is effective when studying a certain cultural domain with knowledgeable experts within. Palinkas et al. (2015) also argue that purposive sampling is mostly used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest. Therefore, since the researchers specifically targeted cut flower growers and cut flower distributors, purposive sampling was considered to be the most suitable.

Sample size

A sample is a restricted part of a statistical population whose properties are studied to gain information about the whole population (Bhandari, 2022). As argued by Vasileiou et al. (2018) and Mocănașu (2020) choosing a suitable sample size in qualitative research is an area of conceptual debate and practical uncertainty.

In the current study, due to limited time, expense, and accessibility a sample size of 20 was necessary. Using Cochran's (1963) formula for sample size [Z=1.96, p=q=5%, and e =10%] results in a sample size of 96 persons; however, when corrected for a population of 30, the sample size needed is 23. This study had access to choose 20 persons, making this size representative of the whole population under study.

Sources of data

Sources of data included both primary and secondary data. Secondary data as historical data that was collected by other researchers for purposes other than the problem at hand (Johnston, 2014; Sindin, 2017; Pederson et al., 2020).

Sources such as the Ministry of Lands Resettlement and Agriculture, magazines, newspapers, the internet, journals, and other publications were used to obtain secondary data.

Primary data are data specifically collected for the problem at hand and originated by the researcher in line with the area of study (Taherdoost, 2021; Schneider et al., 2023). Primary data were collected through questionnaires from ZimTrade, EFGAZ, HORTIFLOR, and cut flower growers. Primary data helped in providing first-hand information that has not been tampered with.

Research instrument

A questionnaire with both closed and open-ended questions was used. The questionnaires were self-administered. Closed-ended options gave respondents a category to respond to and this helped in the quick collection of data. Open-ended questions enabled the respondents to express themselves freely without limits or interference. Open-ended questions complemented questions from closed-ended questions.

Ethical considerations

The interviews were done after the authorisation was granted from relevant organisations and farms where the data were collected. Research participants were given time to fully understand the aim and methods employed in the study. The respondents were made to comprehend that they had the right to withdraw from the study at any given moment. The respondents were also assured that their responses would be treated with the strictest confidence and that the information obtained from them was for academic purposes only.

Data analysis

The Statistical Product and Service Solutions (Hejase and Hejase, 2013) (IBM SPSS) was used to analyse data. According to Hejase and Hejase (2013), "descriptive statistics deals with describing a collection of data by condensing the amounts of data into simple representative numerical quantities or plots that can provide a better understanding of the collected data" (272). Qualitative variables were coded with numbers. Therefore, the data were presented in charts, tables, and graphs for better visualisation of the results. Qualitative data were analysed through narrations, which helped complement quantitative data.

RESULTS

Profile of respondents

The study targeted 20 companies in the cut flower industry and a total of 18 questionnaires were returned, giving a response rate 90%. The high response rate enabled generalisation of the data. Babbie (1990) suggested a response rate of at least 70% is very good for the generalisation of data. Respondents constituted individuals in different positions of the value chain in the

Table 1. Respondents' profile.

Position in value chain	Frequency	Percentage
Small scale farmers	4	22.2
Commercial farmers	1	5.6
Intermediator marketer	3	16.6
Association	1	5.6
Florist	8	44.4
Flower Designer	1	5.6

Source: Survey data from current study

Table 2. Factor conditions.

Factor condition	Pearson Chi-Square value	Df	P Value
Zimbabwe has ideal conditions for the production of cut flowers	0.847[a]	1	0.357
Sufficient skilled marketing personnel in the industry	6.120[a]	2	0.047[*]
Raw materials for cut flower production available	1.406[a]	2	0.495
Marketing information about the industry easily accessible	3.580[a]	2	0.167
Industry Capital intensive	.064[a]	1	0.800
Infrastructure in the area supporting industry	1.406[a]	2	0.495

*Denotes a significant relationship.
Source: Survey data from current study

cut flower industry (Table 1).

Flower types

Respondents were asked about the types of cut flowers they supplied in the various stages of the value chain. Only 6% of the respondents specialised in one type of flowers while 39% specialised in at least 5 types of flowers. 56% of the respondents specialised in at least 3 to 4 types of flowers. Of these types of cut flowers, Asters were the most supplied (78%) (Table 2). All other types which included Roses, Chrysanthemums and Proteas all followed closely with the Proteas being the least being provided by 61% of the respondents while roses and chrysanthemums were being provided by 67% of the respondents. Additionally, 67% of the respondents indicated supplying other flowers not indicated on the questionnaires, which included Streritzia, Carnations, Yarrow, Gerbera, Orchids, Alstromeria, and Kangaroo paw. The results show that the players in the cut flower industry specialised in variety of cut flowers. This was important in the study since it enabled to generalise the results on the level of competitiveness of the flowers.

History of growing cut flowers

Most of the respondents (56%) had been involved in the industry for more than 10 years, while 44% had been involved in the industry for 10 years or less. This result shows that a large number of respondents had a lot of experience in the cut flower industry. This was important since it enabled the players to get an in-depth understanding of the competitiveness through the players who have been in the industry for a long time.

Where respondents supply cut flowers

Most of the respondents (61%) indicated that their supply was only confined to the local market, while 17% supplied the international market only. The rest (22%) supplied both the local and international markets. Respondents involved in international trade export the cut flowers to South Africa, Germany, the United Kingdom, the Netherlands, Australia, and Japan. Most flowers are being sold locally (Figure 1), possibly indicating a lack of competitiveness of the cut flowers on the international market. Most representatives for cut flower traders indicated that their flowers are failing to penetrate the international market because the flowers were of poor quality and thus failed to compete internationally. Hoe and Mansori (2018) also argue that product quality can affect market acceptance of products on the market.

Industry growth

Respondents' perceptions of industry growth were also

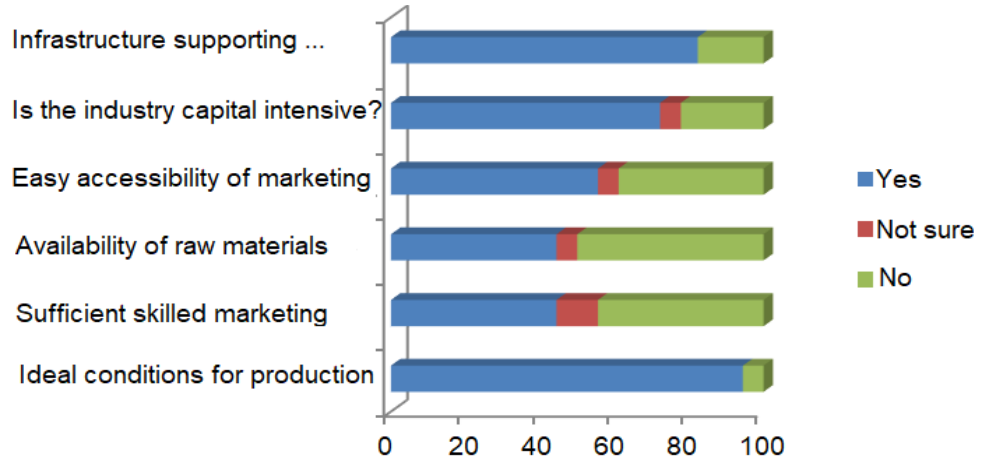

Figure 3. Factor conditions.
Source: Survey data from current study

sought through the questionnaire. 55% of the respondents stated that the cut flower industry is growing while 28% indicated that the industry is declining. The rest of the respondents (17%) were not sure whether the industry was growing or declining.

Factor conditions

Respondents were asked about factor conditions that determine the production of cut flowers and their level of being competitive on the international market. Six factor conditions were focused on to ascertain the competitiveness of Zimbabwe in the cut flower industry (Figure 3).

The majority of respondents (94%) reported that Zimbabwe has the ideal conditions for the production of cut flowers.

Additionally, 82% of the respondents were in agreement that Zimbabwe has the infrastructure in their respective areas to support the industry. Another factor condition highly regarded by respondents was the industry being capital intensive with 72% of respondents being in agreement. 56% of the respondents indicated that market information about the industry is easily accessible. In terms of sufficient skilled marketing personnel in the industry and the availability of raw materials locally, fewer respondents were in agreement with this.

A Chi-square test was conducted to ascertain if there is a relationship between the various factor conditions and the national competitiveness of Zimbabwe's cut flower industry based on the responses from the questionnaire (Table 2).

It was established that there is a relationship between factor conditions and national competitiveness (Chi-square 47.9728; df = 25; and p <0.0029). The *p*-value was less than 0.05 hence the null hypothesis was rejected meaning there is a relationship between factor conditions and national competitiveness. The factor of sufficient skilled marketing personnel in the industry available in Zimbabwe is the one that showed a significant relationship with competitiveness as compared to all the other factors.

Strategy, structure, and rivalry

Marketing strategy

A number of marketing strategies are adopted by firms in the cut flower industry in a bid to be competitive in the market both nationally and internationally (Figure 4). Relationship marketing (28%) and the use of the Internet (28%) were the main marketing strategies used by companies. Promotional tools help in stimulating demand and increasing market share (Alexandrescu and Milandru 2018).

A chi-square test was also conducted to test the hypothesis that there is no relationship between strategy and national competitiveness. From the Chi-square results (Chi-square 21. 3916; DF 15; p-value > 0.1248), the null hypotheses cannot be rejected as the p-value is greater than 0.05. This means that for this study, there is no relationship between strategy and national competitiveness.

Structure

Most (89%) of the decisions made in the cut flower industry are done centrally. Six percent of the respondents did not indicate the structure of decision-making. From the results, it is clear that a lot of marketing decisions were centrally decided. The motive behind

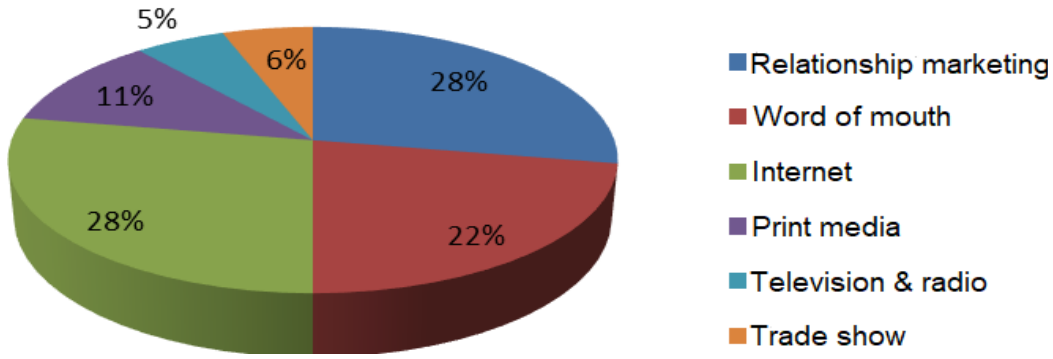

Figure 4. Marketing strategy.
Source: Survey data from current study

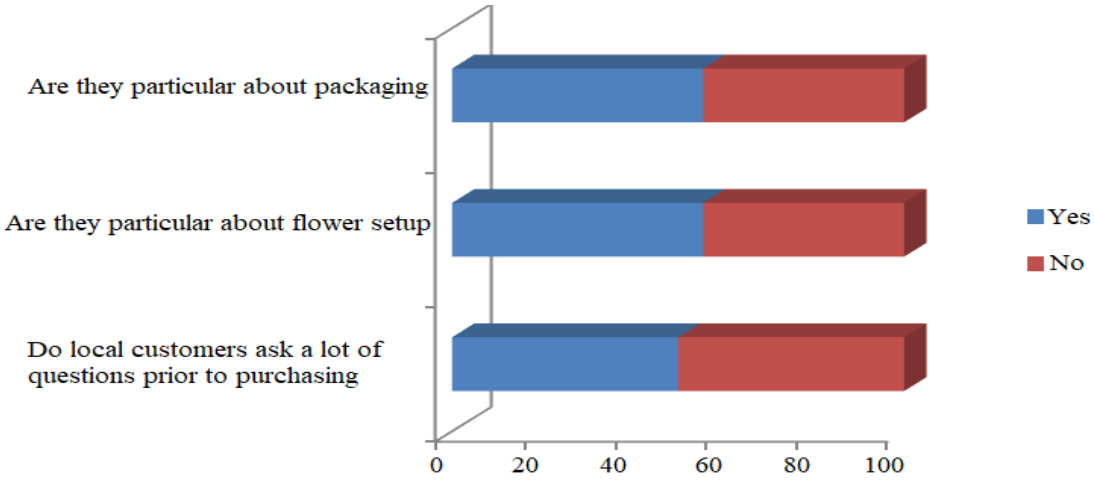

Figure 5. Demand conditions.
Source: Survey data from current study

centralisation was to have uniformity in how organisations operate. This is in contradiction with the argument by Away et al. (2021) who indicated that decentralisation of decisions leads to quick and quality decisions being made in an organisation. Organisations that decentralise decisions are very competitive in the market (Jurado and León 2021; Rodríguez-Pose and Muštra, 2022).

Rivalry

On ascertaining the level of competition in the industry, responses were varied with no clear indication of where the level of competition in the industry is. A small percentage (17%) of the respondents indicated that there is less competition and 11% indicated more competition while the rest were distributed in between. There appears to be no intense competition in the cut flower industry in Zimbabwe's local market. However, on the international market, most respondents reported that there is intense competition. One of the organisations indicated that ethnocentrism is one of the reasons cut flower flowers are failing on the international market.

Demand conditions

Respondents were asked about demand within Zimbabwe, and (67%) of them indicated that the demand was good. A small percentage (11%) reported that the demand was extremely good while 5 % considered the demand to be bad. The rest (17%) were not sure.
To assess the demand conditions, three main questions were asked. These focused on assessing whether customers asked a lot of questions prior to purchase, whether they were particular about the cut flower set up and whether they were particular about packaging. Perceptions of these three aspects were fairly similar with an almost similar number of respondents either agreeing or disagreeing with the questions (Figure 5). A chi-square

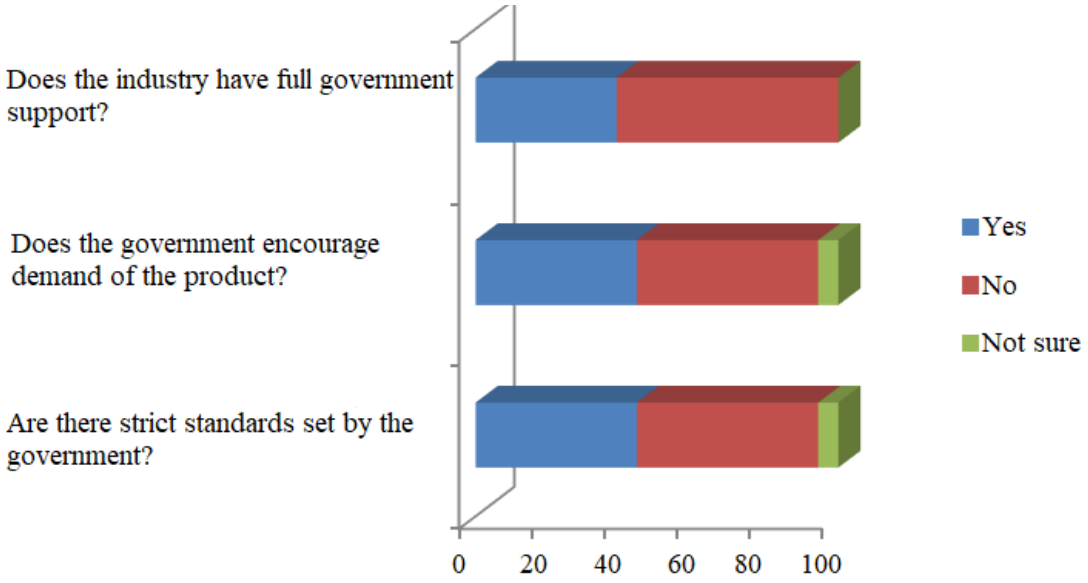

Figure 6. Government involvement.
Source: Survey data from current study

test was conducted to test the hypothesis that there is no relationship between demand conditions and national competitiveness. Results from the Chi-square (Chi-square 4.4096; DF 6, p-value 0.6214) show a p-value greater than 0.05 hence the null hypothesis cannot be rejected.

Related and supporting industries

A fairly large percentage of the respondents (67%) reported that they had good relationships with related industries and 17% indicated that the relationship was very good. Only a small percentage indicated that the relationship with related industries was bad. Hejazi (2022) observed that a good relationship with members of the supply chain will help improve operational performance. A large percentage of the respondents (60%) reported that most of their Zimbabwean suppliers delivered on time while the other 40% were in disagreement with this.

Government

Figure 6 shows the response of the firms in the cut flower industry on their perception of the government involvement in the cut flower industry.

Respondents were asked whether the government encourages demand of the product and whether the industry has full support from the government. A small percentage of the respondents (44%) reported that the government set strict product standards, 50% disagreed while 6% were not sure. This was the same trend with government encouraging demand of the products. On whether the industry has full government support, only 39% agreed and 61% of the respondents disagreed that there is full support of the industry by the government. Da Silva and Dias (2022) argue that government is critical for the success of a firm on the international market. A Chi-square test was conducted to test the hypothesis that there is no relationship between government of Zimbabwe and national competitiveness. From the results (Chi-square 20.6350; DF 10; p-value 0.0238), the p value obtained was less than 0.05 hence the null hypotheses were rejected. Therefore, there is a relationship between government of Zimbabwe and national competitiveness. This was in contradiction with assertion by Songling et al. (2019) who reported that there is a positive relationship between government support and a firm's competitiveness in the international market.

Chance

A large majority of the respondents (89%) had the view that Zimbabwe could improve the industry while only 11% disagreed. On innovation, only 56% of the respondents agreed that Zimbabwe companies are innovators while 44% disagreed. A Chi-square test was conducted to test the hypotheses that there is a relationship between chance and national competitiveness. From the results (Chi-square 6.8190; df 5; p value =0.2344), the p-value obtained is greater than 0.05 hence the null hypotheses is accepted.

DISCUSSION

The results from this study showed national competitiveness to have a relationship with factor conditions and government while there was no relationship established between national competitiveness and demand conditions; chance, strategy, structure, and rivalry. In relation to factor conditions, Porter (1990) states that factors such as the abundance, quality, accessibility, and cost of resources like land, water, soil, and climatic conditions have major influence on the competitiveness of an industry. However, these factors need to be related to the availability of human resources as well, in the case of this study's questionnaire it was the availability of skilled marketing personnel in the industry. Results from this study showed that when each factor is tested independently, all other factors do not show a relationship with competitiveness except for the human capital factor. Smit's (2010) research is also in line with this, and states that the competitive advantage of a nation combines both basic factors and advanced factors such as specialised labour and know-how in a particular industry. Looking at the cut flower industry, it is not enough to have the physical resources, raw materials, and infrastructure to support growing of cut flowers. There is a need for rigorous marketing to be competitive as well as having personnel who are able to adapt to the needs of the international market as well.

National competitiveness seems not to be related to marketing strategy. This is probably because most of the respondents focus on the local markets hence their marketing strategy is not really intensely targeted at national competitiveness. The use of the Internet, which is an avenue ideal for attracting international clientele, is quite low. From the responses, most do not get involved in a rigorous search for clients, probably related to a limited supply that is just sufficient for their customer base. A firm's resources can influence the achievement and maintenance of sustainable and competitive advantage (Lee and Yoo, 2021; Wang, 2021). For most firms, marketing strategy didn't seem to have much importance with most factors depending on word of mouth and very few going to the extent of trade shows which are also an important strategy in increasing visibility for being more competitive.

In terms of structure, most of the companies seem to operate on a small scale. This can be inferred from the responses where most respondents were making decisions unilaterally as they are the only branch with no other branches in other towns. Most of the respondents said decisions were made centrally and most respondents are fairly new in the industry, supplying at a fairly small scale with a specific targeted niche. According to Porter (1998), the pattern of rivalry at home has a profound role to play in the process of innovation and the ultimate prospects for international success.

These results exhibited mixed perceptions from the respondents on the level of rivalry. The mixed response can also be attributed to the various level of involvement of the respondents. Some seem to be fairly new in the industry and because of the varied specialisation, the industry is currently not being explored to full capacity hence it is difficult to determine other related aspects such as national competitiveness. For most, exploring the national market has not yet been implemented.

In relation to demand conditions, Porter (1998) states that the home market of a nation impacts the firm's ability to perceive and interpret buyers' needs. The results from this study showed no relationship between demand conditions and national competitiveness. This is probably because most of the respondents' focus is on supplying the local market which is generally not fussy about specifications for the product supplied. Van Rooyen (2001) highlighted how supplying the local market is a hindrance to competitiveness in relation to demand conditions. Local buyers do not put pressure on local players in the cut flower industry to be innovative and grow fast and be competitive on the global market.

Porter (1990) states that the nation's presence or absence of supplier industries and related industries that are internationally competitive has a major influence on an industry's competitiveness. The supporting industries for cut flowers from these results seem to be assisting to a greater extent, with the international industries augmenting to a lesser extent. However, from the perceptions of the respondents, their suppliers are not as competitive in the international market. It is very important in issues of national competitiveness for a country to have a competitive supplier industry. In line with this, Wahogo (2006) states that the presence of competitive supply industries in a nation creates advantages in downstream industries in several ways. This can also be linked to the limited competitiveness that is exhibited in this study by the companies in the cut flower industry as it shows that their suppliers as well are not as competitive.

According to Porter (1998), competitive advantage from factors depends on how efficiently and effectively they are deployed and according to Wahogo (2006), the government plays a role in influencing how these factors are deployed. Standards set by the government play a role in a country being competitive as cited by the respondents and there has been a growing increase in the government encouraging demand for the product and to a certain extent the government is supporting the industry. With the current economic situation in Zimbabwe (Munangagwa, 2009; Masiyandima and Edwards, 2018; Gudhlanga and Madongonda, 2019), a lot of industries have been affected including the cut flower industry and a lot of optimism exists on that if the situation changes, there will be improvements which is probably why most respondents think there is a chance for Zimbabwe to get a lucky break. Innovation is also said to have been affected by the lack of some raw materials

as well as the current economic situation which affects morale. Generally, in relation to all factors, respondents' perceptions show that the industry has potential for growth, the potential for national competitiveness but the current economic situation is negatively affecting the industry. Additionally, if the government was to support the industry by prescribing standards, companies may be more innovative and improve quality as well.

CONCLUSIONS AND RECOMMENDATIONS

Most firms in the cut flower industry centralise their decision-making process when it comes to the marketing of cut flowers. There is high competition in the cut flower industry. There are many small players and there is no dominant firm in the industry and this makes rivalry intense. Most of the players offer a variety of flowers, and this increases the extent of competition in the industry. The factor conditions were centered on physical conditions appropriate for the production of cut flowers, skilled marketing personnel, availability of raw materials, easy accessibility of marketing information, capital intensity of the industry, and adequate infrastructure availability to support the industry. There is a positive relationship between factor conditions and national cut flower competitiveness. The firms see an opportunity for national competitiveness in the cut flower industry. It was concluded that the firms lack government support for them to be competitive internationally. It is recommended that cut flower firms should decentralise decision-making so as to have quality decisions in the cut flower industry. Channels of distribution must also be short so that firms have a close touch with the customers. Cut flower firms must also hire skilled marketing personnel so that they can effectively penetrate their markets. The government of Zimbabwe and municipalities must build sufficient infrastructure which supports the industry.

DIRECTIONS FOR FUTURE RESEARCH

More research should be carried out in this industry. Future studies can focus on international market entry strategies for cut flower producers and distributors. This will assist cut flower traders with strategies on the best way to enter the international market.

CONFLICT OF INTERESTS

The authors have not declared any conflicts of interests.

REFERENCES

Alexandrescu M-B, Milandru M (2018). Promotion as a form of communication of the marketing strategy. Land Forces Academy Review 23(4):268-274.. https://doi.org/10.2478/raft-2018-0033

Away FAN, Simamora B, Nadeak SI, Nugraha MS, Prasetia I, Hendriarto P (2021). Decentralization, centralization and quality of organizational performance of human resources. Academy of Strategic Management Journal 20(3):1-12.

Babbie E (1990). Survey research methods 2nd Ed. Belmont, CA, Wadsworth.

Bhandari P (2022). Population vs. sample. Definitions, differences and examples. https://www.scribbr.com/methodology/population-vs-sample/

Campbell S, Greenwood M, Prior S, Shearer T, Walkem K, Young S, Bywaters D, Kim Walker K (2020). Purposive sampling: complex or simple? Research case examples. Journal of Research in Nursing 25(8):652-661. https:doi.org/10.1177/1744987120927206

Cochran WG (1963). Sampling Technique. 2nd Edition, John Wiley and Sons Inc., New York.

Da Silva GBP, Dias MDO (2022). How do the governments promote the internationalization of companies? A multiple case study. International Journal of Social Science Humanities Research 5(4):1-10. https://doi.org/10.5281/zenodo.6844949

Darras A (2021). Overview of the Dynamic Role of Specialty Cut Flowers in the International Cut Flower Market. Horticulturae 7:51. https://doi.org/10.3390/horticulturae7030051

Davies R (2000). The impact of globalization on local communities: a case study of the cut-flower industry in Zimbabwe. International Labor Organization *ILO/SAMAT* Discussion Paper No. 13. Geneva.

De LC (2020). Value Addition in Flowers. Vigyan Varta 1(3):10-15.

De LC (2022). Skill and entrepreneurship development through orchids. Conference on Entrepreneurship Development through Floriculture and landscaping. 14-19 November 2022 at MPUAT, Udaipur.

Deininger K, Hoogeveen H, Kinsey BH (2004). Economic benefits and costs of land redistribution in Zimbabwe in the Early 1980s. The World Bank, Washington, DC, USA. World Development 32(10):1697-1709. https://doi.org/10.1016/j.worlddev.2004.06.006

Ernst M (2021). Cut Flower Production in Tennessee. CCD-CPA-CP-3. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. https://cpa.tennessee.edu/wp-content/uploads/sites/106/2021/1/TNcutflowers.pdf

Gudhlanga ES, Madongonda AM (2019). Surviving a Rabid Economy: The Current Cash Crisis and its Threat to Security and Governance in the Monetary Sector in Zimbabwe. Africa Development 44(3):87-105.

Hejase AJ, Hejase HJ (2013) Research methods: A practical approach for business students (2nd Ed.). Philadelphia, PA, USA: Masadir Inc.

Hejazi MT (2022). The association between organizational performance and supply chain management practices. Uncertain Supply Chain Management 10(4):1219-1232. https://doi.org/10.5267/j.uscm.2022.8.006

Heri S (2000). The Growth and Development of the Horticultural Sector in Zimbabwe Prepared for the UNCTAD Conference, October 2000.

Hilton CE (2017). The importance of pretesting questionnaires: a field research example of cognitive pretesting the Exercise referral Quality of Life Scale (ER-QLS). International Journal of Social Research Methodology 20(1):21-34.

Hoe LC, Mansori S (2018). The Effects of Product Quality on Customer Satisfaction and Loyalty: Evidence from Malaysian Engineering Industry. International Journal of Industrial Marketing 3(1):20-35. https://doi.org/10.5296/ijim.v3i1.13959

HortiFlor (2018). Zimbabwe to boost horticulture production. http://www.hppexhibitions.com/hfz/2018/10/03/zimbabwe-to-boost-horticulture-production/

Johnston MP (2014). Secondary data analysis: A method of which the time has come. Qualitative and Quantitative Methods in Libraries 3(3):619-626.

Jurado I, León S (2021). Economic globalization and decentralization: A centrifugal or centripetal relationship? Governance 34(3):665-686. https://doi.org/10.1111/gove.12496

Kubwalo M (2006). Factors affecting the development of non-traditional export: A case study of the cut flower industry in Malawi. MSc thesis, Department of Management, University of the Western Cape.

Lee S, Yoo J (2021). Determinants of a Firm's Sustainable Competitive Advantages: Focused on Korean Small Enterprises. Sustainability

13:346. https://doi.org/10.3390/su13010346
Mali RR, Chavan RV, Bhosale PS, Talek VS (2020). Economic analysis of cut flowers under protected condition in Sangli District of Maharashtra. International Journal of Current Microbiology and Applied Sciences Special Issue 11:817-824.
Masiyandima N, Edwards L (2018). Shaking Out or Shaking In: The Impact of Zimbabwe's Economic Crisis on the Country's Manufacturing Sector Allocative Efficiency. ERSA Working Paper 749 June 2018
Mir SR (2023). Dry flowers. Report and Opinion 15(1):28-46. https://doi.org/10.7537/marsroj150123.05
Mocănașu DR (2020). Determining the sample size in qualitative research. International Multidisciplinary Scientific Conference on the Dialogue between Sciences and Arts, Religion and Education MCDSARE 4(1):181-187. https://doi.org/10.26520/mcdsare
Munangagwa C (2009). The Economic Decline of Zimbabwe. Gettysburg Economic Review 3:9. Available at: https://cupola.gettysburg.edu/ger/vol3/iss1/9
Ngarava S (2020). Impact of the fast Track Land Reform Programme (FTLRP) on agricultural production: A tobacco success story in Zimbabwe? Land Use Policy 99:105000. https://doi,org/10.1016/j.landusepol.2020.105000
Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Kimberly Hoagwood K (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research Adm Policy Mental Health 42(5):533-544. https://doi.org/10.1007/s10488-013-0528-y
Park SY, Oh W (2019). A Trend Analysis of Floral Products and Services Using Big Data ofSocial Networking Services. Journal of People, Plants and Environment 22(5):455-466. https://doi.org/10.11628/ksppe.2019.22.5.455
Pederson LL, Vingilis E, Wickens CM, Koval J, Mann RE (2020). Use of secondary data analyses in research: Pros and Cons. Journal of Addiction Medicine and Therapeutic Science 6(1):058-060. https://dx.doi.org/10.17352/2455-3484.000039
Porter ME (1990). The competitive advantage of nations. London: The Macmillan Press Ltd.
Porter M (1998). The Competitive Advantage of Nations, New York. The Free Press.
Rabobank (2016). World Floriculture Map 2016: Equator Countries Gathering Speed. Food and Agribusiness Research https://research.rabobank.com/far/en/sectors/regional-food-agri/world_floriculture_map_2016.html
Rodríguez-Pose A, Muštra V (2022). The economic returns of decentralisation: Government quality and the role of space. Economy and Space 54(8):1604-1622. https://doi.org/10.1177/0308518X221118913
Roopa S, Rani MS (2012). Questionnaire Designing for a Survey. Journal of Indian Orthodontic Society 46(4):273-277.
Schneider A, Wagenknecht A, Sydow H, Riedlinger D, Holzinger F, Figura A, Deutschbein J, Reinhold T, Pigorsch M, Stasun U, Schenk L, Möckel M (2023). Primary and secondary data in emergency medicine health services research - a comparative analysis in a regional research network on multimorbid patients. BMC Medical Research Methodology 23:34. https://doi.org/10.1186/s12874-023-01855-2
Scoggins H.L (2019). Getting Started in the Production of Field-Grown, Specialty Cut Flowers. Virginia Cooperative Extension, Virginia Tech, pp. 1-10.
Scoones I, Marongwe N, Mavedzenge B, Murimbarimba F, Mahenehene J, Sukume C (2012). Livelihoods after Land Reform in Zimbabwe: Understanding processes of rural differentiation. Journal of Agrarian Change 12(4):503-527.
Sharma LR, Bidari S, Bidari D, Neupane S, Rambabu Sapkota R (2023). Exploring the mixed methods research design: types, purposes, strengths, challenges, and criticisms. Global Academic Journal of Linguistics and Literature 5(1):3-12.
Sindin XP (2017). Secondary Data. *In:* Allen M. (ed) The SAGE Encyclopedia of Communication Research Methods pp. 1578-1579. http://dx.doi.org/10.4135/9781483381411.n557
Smit AJ (2010). The competitive advantage of nations: is Porter's Diamond Framework a new theory that explains the international competitiveness of countries? Southern African Business Review 14(1):105-130.
Smith W (2017). Research onion- made easy to understand and follow. https://www.allassignmenthelp.co.uk/blog/research-onion-made-easy-to-understand-and-follow/
Songling Y, Ishtiaq M, Anwar M, Ahmed H (2019). The role of government support in sustainable competitive position and firm performance. Sustainability 10:3495. https://doi.org/10.3390/su10103495
Taherdoost H (2021). Data collection methods and tools for research: A step-by-step guide to choose data collection techniques for academic and business research projects. International Journal of Academic Research in Management 10(1):10-38.
Tibugari H, Mafere G, Dube S, Chakavarika M, Mandumbu R, Musara JP, Mapuranga R, Gumbo T, Banda A, Mathema N, Goche T, Zvigumbu BM, Mpofu N (2020a). Worrying cadmium and lead levels in a commonly cultivated vegetable irrigated with river water in Zimbabwe, Cogent Biology 6:1 https://doi.org/10.1080/23312025.2020.1802814
Tibugari H**,** Chiduza C, Mashingaidze AB (2020b). Farmer knowledge, attitude and practices on sorghum allelopathy in five sorghum producing districts of Zimbabwe. South African Journal of Plant and Soil 37(2):152-159 https://doi.org/10.1080/02571862.2019.1706003
Tibugari H, Mandumbu R, Jowah P, Karavina C (2012). Farmer knowledge, attitude and practice on cotton (*Gossypium hirsutum* L.) pest resistance management strategies in Zimbabwe. Archives of Phytopathology and Plant Protection 45(20)2395-2405. https://doi.org/10.1080/03235408.2012.727327
Tibugari H, Jowah P (2014). Are *Helicoverpa armigera* and *Tetranychus* spp. populations still susceptible to pesticides? A Zimbabwean study. Archives of Phytopathology and Plant Protection 47(10):1146-1157. https://doi.org/10.1080/03235408.2013.832866
Timans R, Wouters P, Heilbron J (2019). Mixed methods research: what it is and what it could be. Theory and Society 48:193-216. https://doi.org/10.1007/s11186-019- 09345-5
Tomashevska M (2019). Sacred floral garlands and collars from the new kingdom period and early third intermediate period in ancient Egypt. 1550 B.C. – 943 B.C. Master Thesis Classics and Ancient Civilizations
Tongco MDC (2007). Purposive Sampling as a Tool for Informant Selection. Ethnobotany Research and Applications 5:147-158.
Van Rooyen IM (2001). The competitiveness of the South African and Australian flower industries. An application of three methodologies. University of Pretoria, South Africa.
Vasileiou K, Barnett J, Thorpe S, Young T (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. BMC Medical Research Methodology 18:148. https://doi.org/10.1186/s12874-018-0594-7
Wahogo JK (2006). An application of Porter's diamond model to analyse competitiveness of Kenya's tourism industry. MSc thesis. University of Nairobi.
Wang Z (2021). Business Analysis on Sustainable Competitive Advantages. E3S Web of Conferences 235:03009, https://doi.org/10.1051/e3sconf/202123503009
ZimTrade (2018). Zimtrade trade directory. P 79. http://www.tradezimbabwe.com/how-we-can-help/trade-directory/