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https://ornamentalhorticulture.com.br/rbho/article/view/2575	54	-
http://www.mdpi.com/2311-7524/8/3/234	50	-
https://www.mdpi.com/2311-7524/8/3/234	47	-
https://www.agrojournal.org/25/05-13.pdf	36	-
https://www.ornamentalhorticulture.com.br/rbho/article/download/2575/1934	34	-
https://journal.umy.ac.id/index.php/ag/article/view/12342	31	-

Texto analisado

The impact of Covid-19 pandemic on Aglaonema farming income: [a comparison between the height and the post trend](#)

Abstract

The expansion of the COVID-19 pandemic from 2019 to 2021 has weakened the performance of critical industries in Indonesia. Aglaonema as one of the ornamental plants had a surge in demand as part of the farming industry until its height in 2020. Currently, the response to the demand for ornamental plants has declined considerably. This study discussed the revenue and income of Aglaonema farming during two periods, at height and the post of the COVID-19 pandemic, and analyzed the distribution of inputs data as information related to the allocation of production. The respondents comprised 32 active farmers from the Aglaonema community (ASA) in Depok City, who produced 10 varieties of premium Aglaonema, namely Super Pink, Suksom Jaipong, Khanza, Lotus Delight, Audrey, Tiara, Widuri, Adelia, Bidadari, and Pride of Sumatra. The data was collected from June to November 2022 using the recall method to tabulate data in 2020 (the year of the height of COVID-19 pandemic) and 2022 (the year of the post COVID-19 pandemic). The R/C ratio was used as a profit indicator by considering the implicit and explicit costs. The findings revealed that Aglaonema farming in Depok City was highly profitable at the height of the COVID-19 pandemic, evidenced by an R/C ratio of 7.50. The R/C ratio has changed in 2022 value to 1.79, indicating a decline in farming profitability. Suppose the farmers pay the implicit costs in the current situation, the farming becomes less profitable as shown by the return value which is just slightly above the break-even point.

Keywords: [Aglaonema](#), [comparison](#), [COVID-19](#), [income](#), [ornamental plants](#).

Resumo

[O impacto da pandemia de Covid-19 na renda agrícola de uma propriedade de Aglaonema: comparação entre o ganho e pós-tendência](#)

A expansão da pandemia de COVID-19 de 2019 a 2021 enfraqueceu o desempenho de indústrias críticas na Indonésia. Aglaonema como uma das plantas ornamentais teve um aumento na demanda e parte da indústria agrícola até seu auge em 2020. Atualmente, a resposta à demanda por plantas ornamentais diminuiu consideravelmente. Este estudo discutiu a receita e a renda da agricultura de Aglaonema durante dois períodos, no auge e pós-pandemia do COVID-19, e a distribuição analisada de dados de insumos como informações relacionadas à alocação da produção. Os entrevistados incluíram 32 agricultores ativos da comunidade Aglaonema (ASA) em Depok City, que produz 10 variedades de Aglaonema premium, ou seja, Super Pink, Suksom Jaipong, Khanza, Lotus Delight, Audrey, Tiara, Widuri, Adelia, Bidadari e Pride of Sumatra. Os dados foram coletados de junho a novembro de 2022 usando o método recordatório para tabular os dados em 2020 (o ano do auge da pandemia de COVID-19) e 2022 (o ano da pós-pandemia de COVID-19). A relação R/C foi utilizada como indicador de lucro considerando os custos implícitos e explícitos. As descobertas revelaram que o cultivo de Aglaonema em Depok City era altamente lucrativo no auge da pandemia de COVID-19, evidenciado por relação R/C de 7.50. A relação R/C mudou no valor de 2022 para 1.79, indicando queda na rentabilidade da lavoura. Supondo que os produtores paguem os custos implícitos na situação atual, as fazendas se tornam menos lucrativa, conforme mostrado pelo valor de retorno que está um pouco acima do ponto de equilíbrio.

Palavras-chave: Aglaonema, comparação, COVID-19, plantas ornamentais, renda.

Introduction

The propagation of the COVID-19 virus has a global effect on communities, and it impacts not only health but also economic, social, environmental, and political aspects. Affected sectors include commerce, agriculture, fisheries, and other sectoral or non-sectoral investment sectors. Due to the COVID-19 pandemic, the industrial sector, which underpins the Indonesian economy, has also experienced instability, impacting agriculture, forestry, and fisheries to be the mainstay for other sectors. According to ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"author":{"dropping-particle":"","family":"BPS","given":"Central Statistics Agency","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Subdirektorat Statistik Hortikultura","id":"ITEM-1","issue":"December","issued":{"date-parts":["2020"]},"number-of-pages":"1-132","publisher-place":"Jakarta","title":"Statistik Perusahaan Hortikultura dan Usaha Hortikultura Lainnya","type":"report","volume":"1","uris":["http://www.mendeley.com/documents/?uuid=382a2629-3654-46db-a7e0-fcfa2bf5e9ea"]},"mendeley":{"formattedCitation":"(BPS, 2020)","manualFormatting":"Central Statistics Agency (2020)","plainTextFormattedCitation":"(BPS, 2020)","previouslyFormattedCitation":"(BPS, 2020)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} } Central Statistics Agency (2020) statistics, agriculture, forestry, and fisheries were the third-largest contributors to the Gross Domestic Product (GDP) in 2019. Their combined contribution was 12.27%. Significantly, as many as 34.5 million persons of productive age are employed in this area.

Ornamental plants are horticultural subsector plants whose crown shape, leaves, color, scent, and flowers have aesthetic value. An expanding production trend in ornamental plant cultivation characterizes the development of ornamental plant agribusiness ADDIN CSL_CITATION

{"citationItems":{"id":"ITEM-1","itemData":{"DOI":"10.3390/horticulturae7060124","ISSN":"23117524","abstract":"The COVID-19 pandemic is causing many victims worldwide and has generated a serious economic crisis. Substantial changes have occurred in the food and ornamental production chains. The aim of the present review has been to summarize some of the main effects that the pandemic is having on horticulture and on the new habits of people. Infections and quarantine measures have prevented the regular flow of certain goods and of connected services. Cases of shortages and/or surpluses, a lack of the availability of labor, and a reduction in demand for some food products and flowers have occurred. New food production approaches have emerged and a reconnection between farmers and consumers has been spreading, thereby facilitating product distribution. Moreover, during the forced isolation, people have had to face periods of stress. The benefits that can be derived from leisure activities related to flowers and ornamental plants, and from access to nature and urban green spaces are increasingly being recognized as relevant. The seriousness of the pandemic will inevitably lead to lasting changes. Therefore, the vulnerability of the pre-COVID-19 distribution chains should be considered and a new food production chain should be drawn up, to increase the resilience of such systems."},"author":{"dropping-particle":"","family":"Bulgari","given":"Roberta","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Petrini","given":"Alice","non-dropping-

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A new flower and ornamental plant market scenario is developing; remarkable opportunities are emerging, but more efforts are required by both public and private stakeholders to seize them and assure a high-value positioning. Our paper aims at filling the gap in the availability of integrated data sources and structured theoretically sound studies on new consumption trends, marketing strategies, and governance settings. Specific objectives are: identifying an innovative ornamental horticulture market data framework; evidencing evolving dynamics of competition in Europe and necessary adaptations of public and private action; defining a new action-research agenda, capable of stimulating the interest of businesses, researchers, and institutions. In terms of methodology, we carry out an innovative integrative review analysis of the wide and most reliable grey literature and statistics, using a comprehensive approach. Results show the emerging consumption dynamics and high-value consumer profiles characterizing the European market, expected to significantly expand and transform, according to the impact of globalization, climate change, urbanization, digitalization, and the affirmation of neo-luxury and sustainability-oriented consumption patterns. The evolution of marketing strategies and governance settings is also highlighted, together with the necessity of developing and integrating public and private initiatives for realizing high-value sustainable and transparent production systems and supply chains. Accordingly, relevant action-research directions are described. These findings are expected to improve the current debate on the competitiveness of the European ornamental industry and contribute to taking a step towards a synergic combination of new differential advantages and wider sustainability goals.", "author": [{"dropping-particle": "", "family": "Gabellini", "given": "Sara", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Scaramuzzi", "given": "Silvia", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Horticulturae", "id": "ITEM-1", "issue": "234", "issued": {"date-parts": [{"2022}], "page": "1-28", "title": "Evolving Consumption Trends, Marketing Strategies, and Governance Settings in Ornamental Horticulture: A Grey Literature Review", "type": "article-journal", "volume": "8", "uris": ["http://www.mendeley.com/documents/?uuiid=a9b13981-a3d8-4b07-9b82-89e25981b3ed"]}, "mendeley": {"formattedCitation": "(Gabellini & Scaramuzzi, 2022)", "plainTextFormattedCitation": "(Gabellini & Scaramuzzi, 2022)", "previouslyFormattedCitation": "(Gabellini & Scaramuzzi, 2022)", "properties": {"noteIndex": 0}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}, (Gabellini and Scaramuzzi, 2022). **Principal consumers of ornamental plants include the United States and Europe, which import them on average from Southeast Asia** ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.26679/pleione.12.2.2018.309-314", "ISSN": "0973-9467", "author": [{"dropping-particle": "", "family": "Tag", "given": "Hui", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Nangkar", "given": "Atek", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Pleione", "id": "ITEM-1", "issue": "2", "issued": {"date-parts": [{"2018}], "page": "309-314", "title": "Aglaoonema tassai (Araceae; Tribe: Areae) sp. nov. from Arunachal Pradesh, Northeast India", "type": "article-journal", "volume": "12", "uris": ["http://www.mendeley.com/documents/?uuiid=b294cb5e-31c6-4433-a8e3-6ad70671540e"]}, "mendeley": {"formattedCitation": "(Tag & Nangkar, 2018)", "plainTextFormattedCitation": "(Tag & Nangkar, 2018)", "properties": {"noteIndex": 0}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}, (Tag and Nangkar, 2018). **Aglaoonema from Southeast Asia is favored due to its relatively lower price and greater species diversity, including the hybrids** ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.18196/agraris.v8i1.12342", "ISSN": "25279238", "abstract": "The imbalance between supply and demand of ornamental plants in the market cause fluctuations that lead to price volatility. This study aimed to analyze the price volatility of ornamental plants with high economic value, such as orchids, adenium, aglaonema, anthurium, and palm. This study also analyzed the long-term and

short-term relationship between the production and prices of these ornamental plants. The data used were the productions and prices of orchid, adenium, aglaonema, anthurium, and palm at the producer level from 2012 to 2020 obtained from the Agriculture Office of Batu Municipality. Volatility analysis was carried out using the ARCH/GARCH method, the long-term relationship was analyzed using the Johansen cointegration test, and the short-term relationship was carried out using the Error Correction model. The results of volatility analysis showed that all the ornamental plants studied had low price volatility. In addition, the productions and prices of the ornamental plants were cointegrated in the long run, but only the orchid had a short-term relationship with an adjustment period of 2.6 months.

Indonesia, whose 27,500 ornamental plant species represent 10% of the world's total ornamental plant variety, might capitalize on this opportunity as a country with a rich biodiversity. Along with the growth of technology and social media, ornamental plant production has become more lucrative. Decoration, landscaping, parties, and other ceremonial activities have utilized ornamental plants. Aglaonema, an ornamental pot plant pioneer in Indonesia, has become an essential source of farmer revenue. The aesthetic desires that arose from hobbyists' to become a commercial enterprise. Aglaonema production has considerably grown and decreased

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.18196/agraris.v8i1.12342","ISSN":"25279238","abstract":"The imbalance between supply and demand of ornamental plants in the market cause fluctuations that lead to price volatility. This study aimed to analyze the price volatility of ornamental plants with high economic value, such as orchids, adenium, aglaonema, anthurium, and palm. This study also analyzed the long-term and short-term relationship between the production and prices of these ornamental plants. The data used were the productions and prices of orchid, adenium, aglaonema, anthurium, and palm at the producer level from 2012 to 2020 obtained from the Agriculture Office of Batu Municipality. Volatility analysis was carried out using the ARCH/GARCH method, the long-term relationship was analyzed using the Johansen cointegration test, and the short-term relationship was carried out using the Error Correction model. The results of volatility analysis showed that all the ornamental plants studied had low price volatility. In addition, the productions and prices of the ornamental plants were cointegrated in the long run, but only the orchid had a short-term relationship with an adjustment period of 2.6 months."},"format":"text","language":"en"}]}

From 2015 to 2020, short-term volatility occurred, followed by a fall in output in January and June and an increase in production in September and December. The Price of Aglaonema tends to rise during those years. The phenomenon of the highest price of Aglaonema occurred at the end of 2020, at the height of the COVID-19 pandemic.

Aglaonema production frequently falls short of market requirements. It is relatively difficult to estimate the demand trend for ornamental plants, particularly concerning the desire for hobbyists and decoration service providers

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.18196/agraris.v8i1.12342","ISSN":"25279238","abstract":"The imbalance between supply and demand of ornamental plants in the market cause fluctuations that lead to price volatility. This study aimed to analyze the price volatility of ornamental plants with high economic value, such as orchids, adenium, aglaonema, anthurium, and palm. This study also analyzed the long-term and short-term relationship between the production and prices of these ornamental plants. The data used were the productions and prices of orchid, adenium, aglaonema, anthurium, and palm at the producer level from 2012 to 2020 obtained from the Agriculture Office of Batu Municipality. Volatility analysis was carried out using the ARCH/GARCH method, the long-term relationship was analyzed using

[the Johansen cointegration test, and the short-term relationship was](#) carried out using the Error Correction model. The results of volatility analysis showed that all the ornamental plants studied had low price volatility. In addition, the productions and prices of the ornamental plants were cointegrated in the long run, but only the orchid had a short-term relationship with an adjustment period of 2.6 months. **author**: [{"dropping-particle":"","family":"Khofifah","given":"Hamidatul","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Nugroho","given":"Tri Wahyu","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Sujarwo","given":"","non-dropping-particle":"","parse-names":false,"suffix":""}], **container-title**:"Agraris", **id**:"ITEM-1", **issue**:"1", **issued**:{"date-parts":[["2022"]]}, **page**:"106-122", **title**:"[Price Volatility of Ornamental Plants in Batu Muncipality](#)", **type**:"article-journal", **volume**:"8", **uris**:["http://www.mendeley.com/documents/?uuid=bf1c435f-eddb-4f19-81d0-e4c64f93bdb4"], **mendeley**:{"formattedCitation":"(Khofifah et al., 2022)", "plainTextFormattedCitation":"(Khofifah et al., 2022)", "previouslyFormattedCitation":"(Khofifah et al., 2022)"}, **properties**:{"noteIndex":0}, **schema**:"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"(Khofifah et al., 2022). **Farmers must also carefully and efficiently handle their products.** The term efficient' denotes that the utilization of these resources must yield outputs with fewer inputs.

Utilizing resources efficiently is typically the primary issue challenge in the Aglaonema business. A case study in ornamental farming demonstrated a failure that was caused by a limitation of land for cultivation, low labor productivity, [a high incidence of disease attacks, and an inability to utilize inputs efficiently](#) **ADDIN CSL_CITATION** {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.1590/2447-536X.V27I4.2352","ISSN":"2447536X","abstract":"**This study aims to analyze the sustainability index of each dimension of ecology, economy, social, and technology as well as identify sensitive attributes that determine the sustainability of ornamental plant farming in Makassar.** The rapid appraisal for program modified from rapid appraisal for fisheries program using the multidimensional scaling (MDS) method was used as the analytical instrument. **MDS ordination analysis results showed the sustainability index value of each dimension, namely ecology (37.30), economic (40.90), social (31.74), and technology (34.33) were categorized as less sustainable with an average index value of all dimensions was 36.07.** The leverage analysis visualizes that 9 out of 17 attributes has shown to be sensitive attributes that affect the business sustainability of ornamental plant in Makassar, namely frequency of crop waste management, water sources, utilization of plant waste, market scale, profitability, business land status, company registration certificate, use of modern technology, and frequency of environmentally friendly technology usage. Government [should provide special business zones for ornamental plant](#) so that all ornamental plant farmer in Makassar can be grouped into one zone. **Furthermore, it can increase gross regional domestic product, employment opportunities, and opening up opportunities of other industrial sectors growth.** **author**:" [{"dropping-particle":"","family":"Tiasmalomo","given":"Riska","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Rukmana","given":"Didi","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Mahyuddin","given":"","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Putra","given":"Ridha Anugerah","non-dropping-particle":"","parse-names":false,"suffix":""}], **container-title**:"Ornamental Horticulture", **id**:"ITEM-1", **issue**:"4", **issued**:{"date-parts":[["2021"]]}, **page**:"589-598", **title**:"**Sustainability Analysis of Ornamental Plants Farming in Makassar**", **type**:"article-journal", **volume**:"27", **uris**:["http://www.mendeley.com/documents/?uuid=6db93940-8eb5-4a57-af4f-3d5b18459cc8"], **mendeley**:{"formattedCitation":"(Tiasmalomo et al., 2021)", "plainTextFormattedCitation":"(Tiasmalomo et al., 2021)", "previouslyFormattedCitation":"(Tiasmalomo et al., 2021)"}, **properties**: {"noteIndex":0}, **schema**:"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"(Tiasmalomo et al., 2021). **Farmers with low management abilities typically send the offer to the customer for varieties with excellent resistance, such as Red Lipstick, Donacarmen, and Big Roy, but provide very low prices.** Farmers only handle high-end varieties (namely Aglaonema collections) if they have better experience and understanding of nursing management. [This type of farmer also benefited from the](#) high value of price during the rising of sales for those varieties.

Not much research has been conducted concerning the subject of farmer income for Aglaonema, whether in Indonesia or the rest of the world. The scarcity and diversity of Aglaonema which is only available in a few regions gain complexity for researchers to conduct the socio-economics study. Very few researchers consider its dependence on the level of the demand's trend, which would allow us to assess the further income disparate in two different periods of plant production. This study examined a group of farmers who have capitalized on the dynamism of the Aglaonema trend to obtain high profits. The analysis of Aglaonema farming discussed the source of income data to measure whether the farming operation is profitable or detrimental and learning allocation data of manufacturing inputs in terms of quantity and expenditure. Analysis of Aglaonema farming was developed by presenting calculations at a single occurrence point, namely the

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COVID-19 pandemic. The accounting outcomes for these two events were subsequently explicitly analyzed and interpreted. This discussion focused on the performance and dynamic changes in [Aglaonema farming in Depok City when the Covid-19 pandemic heightened in 2020 and diminished in 2022.](#)

Material and Method

The study was carried out in Depok city-one of the ornamental plant source in major cities in Indonesia. This study's population consists of farmers who are members of a community called Aglaonema Nusantara Association (ASA) Depok City. The [research objects to 10 \(ten\) superior types of Aglaonema that demonstrated a rising trend at the height of COVID-19 pandemic, including Super Pink, Suksom Jaipong, Khanza, Lotus Delight, Audrey, Tiara, Widuri, Adelia, Bidadari, and Pride of Sumatra.](#) Figure 1 shows the two types of Aglaonema that [are most wanted during the COVID-19 pandemic, namely Suksom Jaipong which generates high sales at relatively affordable prices, and Lotus Delight which promotes the highest prices due to its scarcity.](#)

Figure 1. L: Suksom Jaipong, R: Lotus Delight

Primary data is the main source of data since no secondary data is provided for farming cost structure. The questionnaires were used to collect relevant information including farmers' backgrounds, farm performance, production variables, cost structure, and plant production. A detailed in-depth survey was conducted on 53 representative farms in the two biggest Aglaonema producers throughout the region (Sawangan and Bojongsari districts). A sample adjustment was performed, eliminating the observations for samples that did [not cover all 10 varieties studied.](#) The primary data from farmers were collected and classified into 2 periods: 1) [the trend of the high demand for Aglaonema](#) which correspondence with the peak of the Covid-19 pandemic, accounted for December - the month of the highest extreme sales in 2020, and 2) [the trend of decreasing demand for Aglaonema which correspondence with the post Covid-19 pandemic, accounted for June - the month of the lowest extreme sales in 2022.](#)

The data selection criteria are based on in-depth interviews with [the heads of farmers before the data collection.](#) The main techniques employed in period classifications are based on the recall method where farmers were asked to recollect the data in each period. The data derived from the survey were processed in Microsoft Excel following farm business analysis developed by ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"author":{"dropping-particle":"","family":"Soekartawi","given":"","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Penerbit Universitas Indonesia","id":"ITEM-1","issued":{"date-parts":["2016"]},"publisher":"UI Press","publisher-place":"Jakarta","title":"Ilmu Usahatan"},"type":"book","volume":"110"},"uris":["http://www.mendeley.com/documents/?uid=1b772466-75d4-42d5-97eb-caac528710e0"]},"mendeley":{"formattedCitation":"(Soekartawi, 2016)","manualFormatting":"Soekartawi (2016)","plainTextFormattedCitation":"(Soekartawi, 2016)","previouslyFormattedCitation":"(Soekartawi, 2016)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Soekartawi (2016). Secondary data was also used from various literature from books, scientific works, research reports, and data from the Central Statistics Agency (BPS), the Department of Food Crops, Horticulture and Plantation of Depok City, and else. It is utilized to enlarge the descriptive analysis to support [the primary data.](#)

Data Analysis

This study's data were descriptively and quantitatively analyzed. Age, background, farming experience, occupation, et cetera, are discovered by descriptive analysis. The [quantitative analysis of Aglaonema farming included costs, revenues, and profits.](#) A month-mean average has been calculated in the average land area since large calculations are not required. The currency used in the research area is the Indonesian rupiah (IDR). However, it has been adjusted into the U.S. dollar, as the world's dominant reserve currency, to make this [article more comprehensible.](#) The values are converted based on the Bank Indonesia foreign exchange rate on 24 February 2023, which is IDR15,186 per US\$.

Revenue is calculated using the following formula by ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"author":{"dropping-particle":"","family":"Soekartawi","given":"","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Penerbit Universitas Indonesia","id":"ITEM-1","issued":{"date-parts":["2016"]},"publisher":"UI Press","publisher-place":"Jakarta","title":"Ilmu Usahatan"},"type":"book","volume":"110"},"uris":["http://www.mendeley.com/documents/?uid=1b772466-75d4-42d5-97eb-caac528710e0"]},"mendeley":{"formattedCitation":"(Soekartawi, 2016)","manualFormatting":"Soekartawi (2016)","plainTextFormattedCitation":"(Soekartawi, 2016)","previouslyFormattedCitation":"(Soekartawi, 2016)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Soekartawi (2016): $TR = i=1nY.Py$

Description: TR = Total Revenue (US\$); Q = Quantity of sales (US\$); P = Price per variety (US\$/pot)

Farming costs are calculated using the following formula: $TC = FC + VC$

Description: TC = Total Cost (US\$); FC = Fixed Costs (including the amount of explicit and implicit fixed costs) (US\$); VC = Variable costs (including the amount of explicit and implicit variable costs) (US\$)

The Total Cost (TC) is the amount of all production inputs costs, including fertilizers, insecticides, planting media, labor, depreciation, et cetera. The requirement is accomplished by multiplying the number of uses by its price, whereas the analysis focuses on certain variables. Certain variables, like labor and depreciation, were analyzed first using a specific formula obtained from ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"author":{"dropping-particle":"","family":"Suratiyah","given":"Ken","non-dropping-particle":"","parse-names":false,"suffix":""},"edition":"1","id":"ITEM-1","issued":{"date-parts":["2006"]},"number-of-pages":"124","publisher":"Penebar Swadaya","publisher-place":"Jakarta","title":"Ilmu Usahatan","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=abf469d3-1228-4be5-9bb7-ab52ae43ac85"]},"mendeley":{"formattedCitation":"(Suratiyah, 2006)","manualFormatting":"Suratiyah (2006)","plainTextFormattedCitation":"(Suratiyah, 2006)","previouslyFormattedCitation":"(Suratiyah, 2006)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Suratiyah (2006). The labor is measured in man-day units before being multiplied by the prevailing wages in the study area.

Man-day=i=1nL.Wh. Wd8

Description: L = Labor (the variable for man is 1 and woman is 0.8); Wh = Working Hours (hour); Wd = Working Days (day)

The calculation of depreciation of equipment and buildings uses the straight-line depreciation model. The yearly value is then converted into a month.

$D = (C - RV) / UL$

Description: D = Depreciation per annum (US\$); C = Cost of an asset (US\$); RV = Residual Value (US\$); UL = Useful Life (year)

The total value of revenue will be divided by the total cost of farming to achieve the revenue-to-cost ratio, abbreviated as R/C. The R/C ratio is utilized as a benchmark for farming profits based on three criteria

ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"author":{"dropping-particle":"","family":"Soekartawi","given":"","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Penerbit Universitas Indonesia","id":"ITEM-1","issued":{"date-parts":["2016"]},"publisher":"UI Press","publisher-place":"Jakarta","title":"Ilmu Usahatan","type":"book","volume":"110"},"uris":["http://www.mendeley.com/documents/?uuid=1b772466-75d4-42d5-97eb-caac528710e0"]},"mendeley":{"formattedCitation":"(Soekartawi, 2016)","plainTextFormattedCitation":"(Soekartawi, 2016)","previouslyFormattedCitation":"(Soekartawi, 2016)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Soekartawi, 2016). These three criteria serve as justifications for analyzing study data: R/C > 1 indicates that farming is profitable; R/C = 1 indicates the farm is at the break-even point; R/C < 1 indicates that farming is unprofitable

Overview of Research Locations and Objects

Depok City has a strategic location to cultivate Aglaonema due to the adjacency to the market and consumers. Furthermore, this city provides suitable agronomic conditions for Aglaonema by temperatures of 23-25 °C, humidity levels of 85% - 90%, wind speeds of 0-20 km per hour, and rainfall of 1,106 mm to 4,579 mm/year. It brings purposeful benefits that have a direct impact on plant growth.

The Aglaonema Nusantara Association (ASA) Depok is responsible for Aglaonema farming in Depok City. ASA comprises Aglaonema cultivators from numerous backgrounds, including farmers, employees, sellers, and community households. This organization is divided into three levels: Central, Provincial, and City. This organization is spread throughout major cities around Indonesia, including Depok, Jakarta, and Yogyakarta.

ASA was created in response to the changes in the value of Aglaonema sales during the Covid-19 pandemic. Farmers required an organization as a place for exchanging ideas and affiliating with others due to the sharp rise in demand. Furthermore, this organization is anticipated to reduce fraud, theft, and counterfeiting of Aglaonema. The ASA aims to develop, promote, and improve the regeneration of farmers. This organization comprises some departments such as marketing, research and development, law, and public relations.

Results and Discussion

Characteristics of Respondents

The respondents of the study were classified based on age, education levels, farming experience, number of dependents, number of lands, and status of land ownership. Following is an explanation of the characteristics of the respondents.

Farmer Age

The Central Statistics Agency determines the productive age of the labor, which ranges from 15 to 64 years. This period was crucial in agriculture since it affects physical strength at labor and cognitive abilities, particularly in adopting new technologies.

{\"citationItems\": [{\"id\": \"ITEM-1\", \"itemData\": {\"URL\": \"https://sepakat.bappenas.go.id/wiki/Kelompok_Usia#:~:text=35-44 tahun%3A Kelompok usia,ke atas%3A Kelompok usia lanjut\", \"accessed\": {\"date-parts\": [\"2022\", \"11\", \"30\"]}, \"author\": [\"dropping-particle\": \"\", \"family\": \"Bappenas\", \"given\": \"The Minister for National Development Planning\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"}], \"container-title\": \"The Ministry for National Development Planning\", \"id\": \"ITEM-1\", \"issued\": {\"date-parts\": [\"2022\"]}, \"title\": \"Kelompok Usia (Age Classification)\", \"type\": \"webpage\", \"uris\": [\"http://www.mendeley.com/documents/?uuiid=ce7b2e04-40ad-4382-87e2-e42c2502caa5\"]}, \"mendeley\": {\"formattedCitation\": \"(Bappenas, 2022)\", \"manualFormatting\": \"The Minister for National Development Planning (2022)\", \"plainTextFormattedCitation\": \"(Bappenas, 2022)\", \"previouslyFormattedCitation\": \"(Bappenas, 2022)\", \"properties\": {\"noteIndex\": 0, \"schema\": \"https://github.com/citation-style-language/schema/raw/master/csl-citation.json\"}} The Minister for National Development Planning (2022) categorizes age into 7 groups that called child (less than 15 years old), young (15-24 years old), early working (25-34 years old), middle age (35-44 years old), pre-retirement (45-54 years old), retirement (55-64 years old), and elderly (more than 64 years old). Farmers [who grow Aglaonema are mostly classified as young' age](#) and early working' age. The labor in the young' group provides a technological acceptability edge, as seen by their expertise in promoting Aglaonema through social media. Younger laborers are not only more creative and innovative than their elders but also gain more power in any sales transactions. This supports other research which found that Aglaonema production is mainly [in the hands of youth which gain more effective marketing channels](#) ADDIN CSL_CITATION {\"citationItems\": [{\"id\": \"ITEM-1\", \"itemData\": {\"DOI\": \"https://doi.org/10.35326/agribisnis.v5i1.1350\", \"author\": [\"dropping-particle\": \"A\", \"family\": \"Zarliani\", \"given\": \"Wa Ode\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"], [\"dropping-particle\": \"\", \"family\": \"Purnamasari\", \"given\": \"Wa Ode Dian\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"], [\"dropping-particle\": \"\", \"family\": \"Gafur\", \"given\": \"Nabila\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"}], \"container-title\": \"Media Agribisnis\", \"id\": \"ITEM-1\", \"issue\": \"1\", \"issued\": {\"date-parts\": [\"2021\"]}, \"page\": \"1-8\", \"title\": \"The Behavior and Market Efficiency of Aglaonema Ornamental Plants in Baubau, Indonesia\", \"type\": \"article-journal\", \"volume\": \"5\", \"uris\": [\"http://www.mendeley.com/documents/?uuiid=b285a288-94f4-43d1-8c8a-6e30b7280ec9\"]}, \"mendeley\": {\"formattedCitation\": \"(Zarliani et al., 2021)\", \"plainTextFormattedCitation\": \"(Zarliani et al., 2021)\", \"previouslyFormattedCitation\": \"(Zarliani et al., 2021)\", \"properties\": {\"noteIndex\": 0, \"schema\": \"https://github.com/citation-style-language/schema/raw/master/csl-citation.json\"}} (Zarliani et al., 2021).

Education Level

Education level affects the mental state, attitude, and behavior of farmers. Cultivation knowledge is part of the natural sciences gained during schooling. The greater the level of education, the better their knowledge and critical thinking ability. According to the findings, no farmer had a low level of education. The percentage of farmers with a Senior High School diploma is 68.75%; while the remainder has a higher level of education. This elaborates the similar studies stating that floricultural producers are well-educated ADDIN CSL_CITATION {\"citationItems\": [{\"id\": \"ITEM-1\", \"itemData\": {\"DOI\": \"10.4314/gaep.v5i2.53738\", \"author\": [\"dropping-particle\": \"\", \"family\": \"Muhammad-Lawal\", \"given\": \"A\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"], [\"dropping-particle\": \"\", \"family\": \"Adenuga\", \"given\": \"A. H.\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"], [\"dropping-particle\": \"\", \"family\": \"Olatinwo\", \"given\": \"K. B.\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"], [\"dropping-particle\": \"\", \"family\": \"Saadu\", \"given\": \"T. A.\", \"non-dropping-particle\": \"\", \"parse-names\": false, \"suffix\": \"\"}], \"container-title\": \"Asian Journal of Agriculture and Rural Development\", \"id\": \"ITEM-1\", \"issue\": \"3\", \"issued\": {\"date-parts\": [\"2012\"]}, \"page\": \"373-380\", \"title\": \"Economic Analysis of Floricultural Plants Production in Kwara State, North Central Nigeria\", \"type\": \"article-journal\", \"volume\": \"2\", \"uris\": [\"http://www.mendeley.com/documents/?uuiid=3aec98a7-d8db-4007-a39a-ee3539d9703d\"]}, {\"id\": \"ITEM-2\", \"itemData\": {\"DOI\": \"10.1590/2447-536X.V27I4.2352\", \"ISSN\": \"2447536X\", \"abstract\": \"This study aims to analyze the sustainability index of each dimension of ecology, economy, social, and technology as well as identify sensitive attributes that determine the sustainability of ornamental plant farming in Makassar. The rapid appraisal for program modified from rapid appraisal for fisheries program using the multidimensional scaling (MDS) method was used as the analytical instrument. MDS ordination analysis results showed the sustainability index value of each dimension, namely ecology (37.30), economic (40.90), social (31.74), and technology (34.33) were categorized as less sustainable with an average index value of all dimensions was 36.07. The leverage analysis visualizes that 9 out of 17 attributes has shown to be sensitive attributes that affect the business sustainability of ornamental plant in Makassar, namely frequency of crop waste management, water sources, utilization of plant waste, market scale, profitability, business land status, company registration certificate, use of modern technology, and frequency of environmentally friendly technology usage. Government should provide special business zones for ornamental plant so that all ornamental plant farmer in Makassar can be grouped into one zone. Furthermore, it can increase gross regional domestic product, employment

opportunities, and opening up opportunities of other industrial sectors growth" "author": [{"dropping-particle": "", "family": "Tiasmalomo", "given": "Riska", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Rukmana", "given": "Didi", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Mahyuddin", "given": "", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Putra", "given": "Ridha Anugerah", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-2", "issue": "4", "issued": {"date-parts": [{"2021}], "page": "589-598", "title": "Sustainability Analysis of Ornamental Plants Farming in Makassar", "type": "article-journal", "volume": "27", "uris": [{"http://www.mendeley.com/documents/?uuid=6db93940-8eb5-4a57-af4f-3d5b18459cc8"}]}, "mendeley": {"formattedCitation": "(Muhammad-Lawal et al., 2012; Tiasmalomo et al., 2021)", "plainTextFormattedCitation": "(Muhammad-Lawal et al., 2012; Tiasmalomo et al., 2021)", "previouslyFormattedCitation": "(Muhammad-Lawal et al., 2012; Tiasmalomo et al., 2021)"}, "properties": {"noteIndex": 0}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} (Muhammad-Lawal et al., 2012; Tiasmalomo et al., 2021). This also distinguishes the character of farming in [Aglaonema fields from non-floriculture commodities](#), whose farmers typically come from a low education level.

Occupation

Farming is considered the be the main job if it can provide most of a farmer's daily needs. [Aglaonema cultivation can be relied upon as the main job for some farmers \(60%\)](#). This refutes other studies which stated that cultivating ornamental plants is a non-primary job, besides engaging in traditional activities **ADDIN CSL_CITATION** {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-536X.V26I3.2152", "ISSN": "2447536X", "abstract": "Floriculture is very lucrative to small producers as it requires small land areas, with usually short production cycles. The region of Santa Catarina West in Brazil has growth potential in the cultivation of ornamental plants, although it is not practically observed, as the productive chain of this sector has little or no organization, making it imperative to study the causes of this problem. Therefore, the aim of this study was to characterize the productive chain, market, and commercialization of ornamental plants in Chapecó-SC. The proposed study was carried out in an integrated manner in Chapecó-SC, through structured interviews with farmers, traders, and consumers of flowers and ornamental plants. The study sample consisted of 45 consumers, 24 producers, and 18 commercial establishments. Only three producers of ornamental plants in Chapecó were identified among the participants interviewed, although 84% believed that the municipality has demand for floriculture products, and only 21% of the interviewees have thought about cultivating ornamental plants. The market and commercialization of flowers and ornamental plants in Chapecó are dependent highly on the supply of products from the state of São Paulo, especially form the region of Holambra. The commercialization is predominantly in supermarket chains, for ease of access to consumers. The primary factor affecting the commercialization of ornamental plants is the price, because a dearth of producers in the region leads to an increase in the price, especially due to the long transportation." "author": [{"dropping-particle": "", "family": "Spier", "given": "Juliane", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Silva", "given": "Vanessa Neumann", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Leite", "given": "João Guilherme Dal Belo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-1", "issue": "3", "issued": {"date-parts": [{"2020}], "page": "346-355", "title": "Ornamental Plants in Chapecó: Market Characteristics and Opportunities for Family Farms", "type": "article-journal", "volume": "26", "uris": [{"http://www.mendeley.com/documents/?uuid=b1d47b2d-7a9c-4dc4-aec0-07ea779fb13f"}]}, "mendeley": {"formattedCitation": "(Spier et al., 2020)", "plainTextFormattedCitation": "(Spier et al., 2020)", "previouslyFormattedCitation": "(Spier et al., 2020)"}, "properties": {"noteIndex": 0}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} (Spier et al., 2020). Few respondents privately view this farming only as a pastime and a side business. The average size of these farmers' plots of land was 197 m2, yet their cultivation experience was relatively fair (an average of 7 years working on [Aglaonema](#)).

Farming Experience

[Aglaonema is not the first commodity that farmers cultivate](#), indeed they have prior expertise in producing a wide range of ornamental plants. The experience in farming also affects the level of success in agriculture, as seen by its output results. Farmers that have long experience in growing [Aglaonema](#) typically possess [a high level of knowledge, experience, and skills for addressing any farming issues](#). There are three categories of farming experience, i.e: less experienced (less than 5 years), moderately experienced (5 to 10 years), and experienced (more than 10 years). According to the survey data, most farmers got moderate experience, with an average [number of 9 years in plant farming and about 7 years](#) of experience in specialty growing [Aglaonema](#). The findings support others who state ornamental farming is held by the mid-experienced farmer **ADDIN CSL_CITATION** {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.4314/gaep.v5i2.53738", "author": [{"dropping-particle": "", "family": "Muhammad-Lawal", "given": "A", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-

particle": "", "family": "Adenuga", "given": "A. H.", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Olatinwo", "given": "K. B.", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Saadu", "given": "T. A.", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Asian Journal of Agriculture and Rural Development", "id": "ITEM-1", "issue": "3", "issued": {"date-parts": [{"2012}]}, "page": "373-380", "title": "Economic Analysis of Floricultural Plants Production in Kwara State, North Central Nigeria", "type": "article-journal", "volume": "2", "uris": [{"http://www.mendeley.com/documents/?uuid=3aec98a7-d8db-4007-a39a-ee3539d9703d"}], "mendeley": {"formattedCitation": "(Muhammad-Lawal et al., 2012)", "plainTextFormattedCitation": "(Muhammad-Lawal et al., 2012)", "previouslyFormattedCitation": "(Muhammad-Lawal et al., 2012)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} (Muhammad-Lawal et al., 2012).

Number of Dependent Family Members

The word dependent family' represents the large number of family members who still live in the same house with the patriarch. There are two categories of family based on their composition, i.e a big family and a small family. Regarding the cost structure of farming, numerous family members can be profitable because they can be employed as unpaid labor called Family labor (TKDK).

According to data, Aglaonema farmers in Depok City are classified as a big family where most households have 4 to 5 family members. The total number of dependents in the family, including parents and children, was determined. Typically, the family patriarch solicits assistance from family members to care for the existing Aglaonema plants. In addition, family members were regarded to be better and more conscientious when it comes to obeying the instructions of the patriarch. The finding is supported by other research that also highlighted a relatively high family labor availability in ornamental farming ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-536X.V26I3.2152", "ISSN": "2447536X", "abstract": "Floriculture is very lucrative to small producers as it requires small land areas, with usually short production cycles. The region of Santa Catarina West in Brazil has growth potential in the cultivation of ornamental plants, although it is not practically observed, as the productive chain of this sector has little or no organization, making it imperative to study the causes of this problem. Therefore, the aim of this study was to characterize the productive chain, market, and commercialization of ornamental plants in Chapecó-SC. The proposed study was carried out in an integrated manner in Chapecó-SC, through structured interviews with farmers, traders, and consumers of flowers and ornamental plants. The study sample consisted of 45 consumers, 24 producers, and 18 commercial establishments. Only three producers of ornamental plants in Chapecó were identified among the participants interviewed, although 84% believed that the municipality has demand for floriculture products, and only 21% of the interviewees have thought about cultivating ornamental plants. The market and commercialization of flowers and ornamental plants in Chapecó are dependent highly on the supply of products from the state of São Paulo, especially from the region of Holambra. The commercialization is predominantly in supermarket chains, for ease of access to consumers. The primary factor affecting the commercialization of ornamental plants is the price, because a dearth of producers in the region leads to an increase in the price, especially due to the long transportation."}, "author": [{"dropping-particle": "", "family": "Spier", "given": "Juliane", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Silva", "given": "Vanessa Neumann", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Leite", "given": "João Guilherme Dal Belo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-1", "issue": "3", "issued": {"date-parts": [{"2020}]}, "page": "346-355", "title": "Ornamental Plants in Chapecó: Market Characteristics and Opportunities for Family Farms", "type": "article-journal", "volume": "26", "uris": [{"http://www.mendeley.com/documents/?uuid=b1d47b2d-7a9c-4dc4-aec0-07ea779fb13f"}], "mendeley": {"formattedCitation": "(Spier et al., 2020)", "plainTextFormattedCitation": "(Spier et al., 2020)", "previouslyFormattedCitation": "(Spier et al., 2020)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} (Spier et al., 2020).

Land area

Land area is one of the essential aspects of growing Aglaonema. The wider the managed land area, the greater the potential for producing results and the opportunity to create more significant revenue. Aglaonema was cultivated utilizing pots arranged in a greenhouse. The land area referred to in this study was the production house's size. The land area of Aglaonema farmers was highly varied, ranging from 10 m2 to 1,200 m2, with an average of 197.53 m2. The land area category is divided into three groups: small farms (0.05 ha), medium farms (0.5-2.0 ha), and large farms (more than 2.0 ha). Farmers grow Aglaonema in a small farming area, which is less than 0.5 ha. This is in line with other research showing that ornamental plant farmers are commonly categorized as small-scale producers ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-

536X.V26I3.2152", "ISSN": "2447536X", "abstract": "Floriculture is very lucrative to small producers as it requires small land areas, with usually short production cycles. The region of Santa Catarina West in Brazil has growth potential in the cultivation of ornamental plants, although it is not practically observed, as the productive chain of this sector has little or no organization, making it imperative to study the causes of this problem. Therefore, the aim of this study was to characterize the productive chain, market, and commercialization of ornamental plants in Chapecó-SC. The proposed study was carried out in an integrated manner in Chapecó-SC, through structured interviews with farmers, traders, and consumers of flowers and ornamental plants. The study sample consisted of 45 consumers, 24 producers, and 18 commercial establishments. Only three producers of ornamental plants in Chapecó were identified among the participants interviewed, although 84% believed that the municipality has demand for floriculture products, and only 21% of the interviewees have thought about cultivating ornamental plants. The market and commercialization of flowers and ornamental plants in Chapecó are dependent highly on the supply of products from the state of São Paulo, especially from the region of Holambra. The commercialization is predominantly in supermarket chains, for ease of access to consumers. The primary factor affecting the commercialization of ornamental plants is the price, because a dearth of producers in the region leads to an increase in the price, especially due to the long transportation. ", "author": [{"dropping-particle": "", "family": "Spier", "given": "Juliane", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Silva", "given": "Vanessa Neumann", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Leite", "given": "João Guilherme Dal Belo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-1", "issue": "3", "issued": {"date-parts": [{"2020}], "page": "346-355", "title": "Ornamental Plants in Chapecó: Market Characteristics and Opportunities for Family Farms", "type": "article-journal", "volume": "26"}, "uris": [{"http://www.mendeley.com/documents/?uuid=b1d47b2d-7a9c-4dc4-aec0-07ea779fb13f"}], "mendeley": {"formattedCitation": "(Spier et al., 2020)", "plainTextFormattedCitation": "(Spier et al., 2020)", "previouslyFormattedCitation": "(Spier et al., 2020)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}}, {"Spier et al., 2020). However, growing Aglaonema does not require a large size of land like other commodities (such as crops and plantations). Because of its high adaptability in all regions, Aglaonema may suitable be a business product in urban areas since its consumers mostly come from middle-high income levels.

Land Ownership Status

There are two types of land ownership: private ownership and rental. Land ownership is tied to a farmer's income, affecting costs, revenues, and incomes. Farmers with land rental status have a lower income than farmers with owned status ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"abstract": "The Impacts of Land Ownership Status on Small Scale Farmers' Income in Indramayu and Purwakarta Districts. The conversion of agricultural land in West Java in 2012-2015 amounted to 1.24% has caused a decrease in the number of farmer households, a decrease in the area of land under cultivation and a change of land tenure status. These changes have impacted on the farmers' income. The government program, namely the Special Efforts of Soybean Corn Rice (Upsus Pajale) was expected to increase production yields which will impact the increased farmers' income. Most of the farmers who received aids of Upsus Pajale were groups of small scale farmers. This study aimed to analyze the impact of land ownership status, land area and production on the income of small scale farmers in Indramayu and Purwakarta Districts. The data collection method used a questionnaire with a total of 50 respondents in Indramayu and Purwakarta, West Java using purposive sampling. Data were analyzed quantitatively through income analysis, respondent distribution and linear regression. The results showed that the land ownership status (ownership, rent, and profit sharing) was proven to significantly affect the income of smallholder farmers in Indramayu and Purwakarta, West Java. Farmers with rental status have a lower income than farmers with owned status. This condition was caused by the additional obligation for rental farmers in the form of rent or profit sharing. Farmers showed a positive response to solutions to improve the welfare of small scale farmers through the government program UPSUS Pajale. However, farmer respondents considered this discourse less appropriate due to the reasons for fear of losing their land and jobs. The government needs to design policies and programs that are more directed at optimizing technology and knowledge-based production and strengthening land tenure in order to improve the welfare of farmers.", "author": [{"dropping-particle": "", "family": "Pasaribu", "given": "Morina", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Istriningsih", "given": "", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Pengkajian dan Pengembangan Teknologi Pertanian", "id": "ITEM-1", "issue": "2", "issued": {"date-parts": [{"2020}], "page": "187-198", "title": "Pengaruh Status Kepemilikan Lahan terhadap Pendapatan Petani Berlahan Sempit di Kabupaten Indramayu dan Purwakarta", "type": "article-journal", "volume": "23"}, "uris": [{"http://www.mendeley.com/documents/?uuid=45c95dd8-539b-4e66-a2dd-d6ce58c14cc9"}], "mendeley": {"formattedCitation": "(Pasaribu & Istriningsih, 2020)", "plainTextFormattedCitation": "(Pasaribu & Istriningsih, 2020)", "previouslyFormattedCitation": "(Pasaribu & Istriningsih, 2020)", "properties":

{\"noteIndex\":0},\"schema\":\"https://github.com/citation-style-language/schema/raw/master/csl-citation.json\"}(Pasaribu and Istringasih, 2020). **The existence of payment obligations has increased farming expenses, hence decreasing the potential revenue.** The land rental status is commonly given to large-scale commodity farming, like crops or plantations. Aglaonema cultivation in Depok City was performed by farmers who owned privately the land.

Cost Analysis

Cost analysis is performed on all components that reduce the value of farm income. Cost is divided into fixed cost and variable cost. The nominal value of fixed costs is the same for each production cycle and is unaffected by production volume, like depreciation and tax expenses. Variable costs are frequently referred to as an expense that changes in proportion to how much a farm produces. Seeds, fertilizers, insecticides, and labor are examples of variable costs. The cost analysis of farming is presented in Table 1.

Table 1. **Cost Structure in Growing Aglaonema in Average Farm Size in a Month**

Component

The Height of Pandemic (US\$)

Post Pandemic (US\$)

Percentage to total cost at Height of Pandemic (%)

Percentage to the total cost at Post Pandemic (%)

Explicit Fixed Costs

Land tax

3.45

0.15

0.20

Seeds

1,382.85

897.75

58.54

52.49

Planting media

131.17

67.71

5.55

3.96

External labor

22.85

0.97

1.34

Pots and ingredients

86.20

16.08

3.65

0.94

Fertilizer

9.56

8.00

0.40

0.47

Pesticide

5.77

4.80

0.24

0.28

Total Explicit Cost

1,641.85

1,020.64

69.50

59.68

Implicit Fixed Cost

Depreciation

507.18
 21.47
 29.65
 Implicit Variable Costs

Seeds (vegetative propagation)

137.19
 106.46
 5.81
 6.22
 Family labor
 76.13
 3.22
 4.45
 Total Implicit Cost
 720.50
 689.77
 30.50
 40.32
Total Explicit Cost and Implicit Cost
 2,362.35
 1,710.43
 100.00

Source: Primary Data (processed), 2022.

Variable cost forms based on production capacity, productivity, crop variety, and farmer technology. Both fixed costs and variable costs can be classified more as explicit and implicit costs. Explicit cost refers to the component which is purchased in cash, whereas, the implicit cost is any cost that has already occurred without payment but is reported as a separate expense. The components of Aglaonema farming in Table 1 are described as follows:

Land tax

The farmer is exempt from paying land taxes since he owns his land privately. The tax value is a kind of explicit cost and is computed under Tax Object Sales Value (NJOP). The NJOP is determined by comparing the costs of similar objects or new acquisition values. The value deemed by the state to be the property tax base. Farmers have to pay an annual land tax of US\$ 41.45 per year for an average farm size (197 m²), in other words, the tax expense per month is US\$ 3.45.

Seeds

There are two strategies to receive seeds from Aglaonema farmers in the city of Depok: by vegetative propagation (cutting of basal shoots and separating from its mother plant) or purchasing them. Seeds obtained through purchase are categorized as an explicit cost since farmers pay directly for them, while vegetative propagation seeds are factored into the implicit cost. During the height of the pandemic, the total cost of seeds purchased was US\$ 1,520.04. The difference was quite significant between post pandemic and the height of pandemic, to wit US\$ 515.83. At the height of the COVID-19 pandemic, there was a shortage of seeds due to high demand from new hobbyists, which drove up the cost of Aglaonema seeds. The finding suggests farmers improve their knowledge of micropropagation since it is way better to produce the Aglaonema seed in a short time ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.33089/jthort.v3i2.58","abstract":"Nowadays, Aglaonema sp. becomes very famous in Indonesia. especially during the pandemic covid-19. Many people tend to stay home to stop the spreading of the virus. One of the activities that can be done during staying home is growing the plants as well as ornamental plants. Aglaonema sp. is one of the important and well-known foliage ornamental plants in Indonesia, commonly called Sri Rezeki. The generative or sexual reproduction of Aglaonema sp. is difficult, and it contains some endogenous pathogen. The common propagation techniques are by cutting and seed, which risky in the spreading of the pathogen. Micropropagation is an advanced technique to produce a large number of plants in a short time and pathogen-free transplant. This manuscript endeavor to include some important investigations and studies on the use of the Plant Growth Regulators (PGRs) on the Aglaonema sp. micropropagation.","author":[{"dropping-particle":"","family":"Zahara","given":"Meutia","non-dropping-particle":"","parse-names":false,"suffix":""},{dropping-particle":"","family":"Win","given":"Cho Cho","non-dropping-particle":"","parse-names":false,"suffix":""}],container-title:"Journal of Tropical Horticulture","id":"ITEM-1","issue":"2","issued":{"date-parts":["2020"]},"page":"96-100","title":"A Review: The Effect of Plant Growth Regulators on Micropropagation of Aglaonema sp.","type":"article-journal","volume":"3"},"uris":

[{"http://www.mendeley.com/documents/?uuid=3cc4dd40-3676-4676-8569-f0c848932687"}], "mendeley": {"formattedCitation": "(Zahara & Win, 2020)", "plainTextFormattedCitation": "(Zahara & Win, 2020)", "previouslyFormattedCitation": "(Zahara & Win, 2020)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}}, {"Zahara and Win, 2020) so that farmers do not struggle for the seeds supply.

Planting Media

Aglaonema has a fair vitality, which refers to the capacity to live or grow in any media. The optimal growing media for Aglaonema are often formulated from a blend of such raw materials which contains high porosity. Farmers can purchase pre-mixed planting media or compose the ingredients on their own. Farmers in this study utilize a mixed planting material. The growing medium consists of toasted husks, cocopeat, and fern roots. The planting media is included in the explicit cost since farmers purchase all growing media components monthly. At the height of the pandemic, the total buy value was US\$131.17, however, after the pandemic, the purchase value of growth media declined since the purchase of seeds also decreased.

Labor

The labor employed in Aglaonema farming consists of Family labor and External labor. Family labor refers to the family members who help with any activities in farming but do not have significant wages. External labor is compensated based on the prevalent pay in the research region. Labor duties include preparing seeds, manufacturing planting media, planting or transplanting (repotting), applying fertilizers, vitamins, and pesticides, maintaining the greenhouses, packing and delivering plants to customers. The cost of labor is gained by multiplying the absolute number of man-days with a certain amount of wages. The labor structure for growing Aglaonema differs from the labor structure for other horticultural products. The cost of external labor is generally more expensive than family labor for other farming types; however, the opposite happens for Aglaonema farming. The characteristic of growing Aglaonema is comparable to the types of growing flower plants, such as Chrysanthemum farming (Selfiana, 2020) and other ornamental plants like Orchid Jasmin or Anthurium ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"ISSN":"2621-9921","abstract":"Perkembangan usaha tanaman hias di berbagai daerah di Indonesia telah menjadi sumber pendapatan pelaku usaha tanaman hias, sehingga turut berkontribusi terhadap pertumbuhan ekonomi Bangsa. Penelitian ini bertujuan untuk mengetahui tingkat pendapatan pada usaha tanaman hias UD. Rahma Nurseri di Kabupaten Muna. Penelitian ini dilaksanakan pada bulan Januari 2019 sampai bulan Maret 2019. Lokasi penelitian ini ditentukan secara purposive (sengaja) dengan pertimbangan satu-satunya usaha tanaman hias yang berkembang di Kota Kabupaten Muna. Analisis data yang digunakan dalam penelitian ini menggunakan analisis pendapatan. Hasil penelitian menunjukkan pendapatan usaha tanaman hias UD. Rahma Nurseri memberikan keuntungan sebesar Rp. 3.250.000 perbulan dengan biaya operasional usaha sebesar Rp. 7.680.000 perbulan. Tingkat keleyakan usaha ini yaitu sebesar (1,9) yang berarti setiap pengeluaran sebesar Rp 1 akan memberikan pendapatan sebesar Rp 0,9","author":{"dropping-particle":"","family":"Supiani","given":"","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Sinaini","given":"La","non-dropping-particle":"","parse-names":false,"suffix":""}, {"container-title":"Paradigma Agribisnis","id":"ITEM-1","issue":"1","issued":{"date-parts":["2020"]},"page":"1-6","title":"Analisis Pendapatan Usaha Tanaman Hias (Studi Kasus UD. Rahma Nurseri di Desa Bangunsari Kabupaten Muna)","type":"article-journal","volume":"3"},"uris":

[{"http://www.mendeley.com/documents/?uuid=05575999-d47d-4efe-8f04-a75c2ab29004"}], "mendeley": {"formattedCitation": "(Supiani & Sinaini, 2020)", "plainTextFormattedCitation": "(Supiani & Sinaini, 2020)", "previouslyFormattedCitation": "(Supiani & Sinaini, 2020)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}}, {"Supiani and Sinaini, 2020). Family members are considered more tender in caring activities and flexible in working hours.

The unit of labor is measured by man-day (HOK). HOK is a unit used to calculate labor costs: its value for men is 1 and 0.8 for women. The labor is compensated on a daily and monthly basis. The wages paid per day to employees range between US\$ 3.29 and US\$ 9.88, depending on the activity of their employment. Table 2 represents the labor utilization for Aglaonema cultivation in Depok City.

Table 2. Labor Allocation in Average Farm Size in a Month

Component

The height of COVID-19 Pandemic

Post COVID-19 Pandemic

Man-day

Wage Expense (US\$)

Man-day

Wage Expense (US\$)

External

Workers

Family

Workers

External

Workers

Family

Workers

External

Workers

Family

Workers

External

Workers

Family

Workers

Preparing Seed

1.5

0.7

12.13

5.66

1.4

0.6

10.87

4.98

Composing planting Media

1.3

0.3

12.08

3.13

1.2

0.3

11.00

2.78

Planting

1.6

0.6

12.49

4.69

1.4

0.5

11.00

3.92

Fertilizing

0.7

0.1

4.40

0.94

0.7

0.1

4.40

0.94

Applying pesticides

0.5

0.1

3.44

0.72

0.5

0.1

3.44

0.61

Taking care of the greenhouse

1.0

0.2

3.09

0.67

1.0

0.2

3.02

0.67

Packaging

2.9

0.8

21.96

6.72

2.4

0.7

6.54

5.43

Delivery

2.1

0.1

6.54

0.32

2.1

0.1

4.98

0.32

Total

11.6

2.9

76.13

22.85

10.7

2.6

55.25

19.65

Source: Primary Data, (processed) 2022.

Table 2 reveals that packaging activities are the most time-consuming. Farmers must ensure that their product is not harmed in the way to customers; thus, packaging activities are critical. Applying fertilizers or vitamins requires the least amount of time. This demonstrates that this plant does not require much nutrition levels. Pesticides are only used for prevention since specific illnesses that target *Aglaonema* are challenging to treat and can only be avoided.

Fertilizer/vitamins

It is essential to ensure that plants obtain enough sufficient nutrition to grow optimally. Dekastar and osmocot are the brands of fertilizers used by farmers. Since both fertilizers are kind of slow-release types, nutrients are gradually delivered into the growth media. This fertilizer is applied once every six months. There is a slight price difference between purchasing fertilizers at the height of the COVID-19 pandemic and post COVID-19 pandemic. At the height of the pandemic, the cost of fertilizer procurement is higher than post pandemics, deliberately US\$ 9.56 and US\$ 8.00. The slight difference between the two periods was caused by the relatively stable price and low intensity of fertilizer usage. Under the conditions of the COVID-19 pandemic, the acceleration of plant sales significantly reduces the expenses of this activity.

Pest and disease control

Control of plant disease organisms (OPT) in *Aglaonema* is also essential since the disturbance of organisms affects the plant's growth. Disturbances that usually occur are not only diseases and pest attacks, but also physiological disorders. The spread of bacterial stem rot caused by the bacteria *Erwinia carotovora* was controlled by spraying a fungicide containing Propineb 70% WP. Mealybugs were eliminated using insecticide containing Profenofos 500 g L-1 at a dose of 0.7 ml per liter of water. The cost of disease control during peak season was still affordable, even more, the high turnover of product stock causes the cost of pesticides to be reduced. At the peak of the COVID-19 pandemic, the cost of applying pesticides was US\$ 5.77, a bit higher than in the post-pandemic which was US\$ 4.80.

Depreciation

Depreciation is the diminution in the utility or value of assets and is categorized as a non-cash expense. Depreciation is calculated for production facilities such as watering cans, machines, greenhouses, and buildings; except land. Land investment has no depreciation since its value rises yearly ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"abstract":"The Impacts of Land Ownership Status on Small Scale Farmers' Income in Indramayu and Purwakarta Districts. The conversion of agricultural land in West Java in 2012-2015 amounted to 1.24% has caused a decrease in the number of farmer households, a decrease in the area of land under cultivation and a change of land tenure status. These changes have impacted on the farmers' income. The government program, namely the Special Efforts of Soybean Corn Rice (Upsus Pajale) was expected to increase production yields which will impact the increased farmers' income. Most of the farmers who received aids of Upsus Pajale were groups of small scale farmers. This study aimed to analyze the impact of land ownership status, land area and production on the income of small scale farmers in Indramayu and Purwakarta Districts. The data collection method used a questionnaire with a total of 50 respondents in Indramayu and Purwakarta, West Java using purposive sampling. Data were analyzed quantitatively through income analysis, respondent distribution and linear regression. The results showed that the land ownership status (ownership, rent, and profit sharing) was proven to significantly affect the income of smallholder farmers in Indramayu and Purwakarta, West Java. Farmers with rental status have a lower income than farmers with owned status. This condition was caused by the additional obligation for rental farmers in the form of rent or profit sharing. Farmers showed a positive response to solutions to improve the welfare of small scale farmers through the government program UPSUS Pajale. However, farmer respondents considered this discourse less appropriate due to the reasons for fear of losing their land and jobs. The government needs to design policies and programs that are more directed at optimizing technology and knowledge-based production and strengthening land tenure in order to improve the welfare of farmers." "author": [{"dropping-particle":"","family":"Pasaribu","given":"Morina","non-dropping-particle":"","parse-names":false,"suffix":""},{dropping-particle":"","family":"Istriningsih","given":"","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Pengkajian dan Pengembangan Teknologi Pertanian","id":"ITEM-1","issue":"2","issued":{"date-parts":["2020"]},"page":"187-198","title":"Pengaruh Status Kepemilikan Lahan terhadap Pendapatan Petani Berlahan Sempit di Kabupaten Indramayu

dan Purwakarta", "type": "article-journal", "volume": "23", "uris": ["http://www.mendeley.com/documents/?uid=45c95dd8-539b-4e66-a2dd-d6ce58c14cc9"]], "mendeley": {"formattedCitation": "(Pasaribu & Istringasih, 2020)", "plainTextFormattedCitation": "(Pasaribu & Istringasih, 2020)", "previouslyFormattedCitation": "(Pasaribu & Istringasih, 2020)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Pasaribu and Istringasih, 2020). **Depreciation is classified as a fixed cost with a value of US\$ 507.18 for both time usage.**

Pots and packing materials

Pot is a variable expense whose amount varies depending on the amount of output. Direct purchases by customers have caused the consumption of packaging materials to be minimized. Cardboard boxes were only arranged for indirect purchases. Long-distance delivery required additional protection to protect the leaves during shipping. At the height of the pandemic, the price of pots and packaging materials was higher than its need in post COVID-19 pandemic. Farmers spent US\$ 86.20 for materials at the height of the pandemic and US\$ 16.08 in post-pandemic period.

Revenue Analysis

Farming revenue is the total sale of the ten Aglaonema varieties. The amount of sold quantity and prices varied at the period of height and post COVID-19 pandemic. Note that the high value occurred at the peak of the Covid 19 pandemic and not at the beginning of the pandemic, as other studies have found it has ever decreased revenue at the beginning of the pandemic

ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"DOI":"10.1590/2447-536X.v27i1.2232","author":{"dropping-particle":"","family":"Anacleto","given":"Adilson","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Paula","given":"Anna","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Bornancin","given":"De Araújo","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Ornamental Horticulture","id":"ITEM-1","issue":"1","issued":{"date-parts":["2021"]},"page":"26-32","title":"Between Flowers and Fears : the New Coronavirus Pandemic (COVID-19) and The Flower Retail Trade","type":"article-journal","volume":"27","uris":["http://www.mendeley.com/documents/?uid=6f31d322-512f-456c-929a-74c7fc0d77c4"]], "mendeley": {"formattedCitation": "(Anacleto et al., 2021)", "plainTextFormattedCitation": "(Anacleto et al., 2021)", "previouslyFormattedCitation": "(Anacleto et al., 2021)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Anacleto et al., 2021). **The following figure demonstrates the revenue for each variety. The farmers' revenue during the height of the COVID-19 pandemic was six times greater than those after the pandemic, as illustrated in Figure 2. During the height of the pandemic, the farmers earned US\$ 12,317.90 in a month. It was much more than they earned during post pandemic which only reached US\$ 1,828.01 in a month. This was followed by differences in sales volume and plant pricing. Aglaonema cultivation is so widespread during the pandemic, along with the growth of mental health awareness and time availability to care the plants**

ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"DOI":"10.29303/jbt.v22i1.3245","ISSN":"1411-9587","abstract":"The Covid-19 pandemic has drastically changed the social and environmental conditions. People should stay at home for self-isolation and social distancing to avoid the spread of Covid-19. People tend to have more plants at home associated with psychological impact during self-isolation. This study aimed to describe having more plants during the Covid-19 pandemic in Indonesia. A nationwide cross-sectional survey involving an online survey was carried out of an Indonesian population-based sample of 412 respondents from 26 provinces, considered demographic, social, and behavioral variables. The variable affecting the having plants during the Covid-19 pandemic was analyzed using non-parametric analysis of the Kruskal Wallis test. The result showed that people preferred having more plants during the Covid-19 pandemic to reduce negative emotions and feelings. The majority of the respondents tend to have 1-10 plants and spend around <100 K (IDR) monthly to maintain and buy plants. They think that efforts to maintain were the most challenging in gardening activities. The majority of the respondents had potted plants at home to make their homes greener. The Kruskal Wallis test showed the p-value (>0.05) for all characteristic respondents. Thus, it can be concluded that there was no significant difference regarding the motivation to have planted during the Covid-19 pandemic from characteristic respondents,"author":{"dropping-particle":"","family":"Afrianto","given":"Whisnu Febry","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Diannita","given":"Rindang","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Jurnal Biologi Tropis","id":"ITEM-1","issue":"1","issued":{"date-parts":["2022"]},"page":"200-211","title":"Having More Plants at Home During the Covid-19 Pandemic: Is It Just Following A Trend?"","type":"article-journal","volume":"22","uris":["http://www.mendeley.com/documents/?uid=27a4c581-9cd3-453f-881f-1a6b5b94476c"]], "mendeley": {"formattedCitation": "(Afrianto & Diannita, 2022)", "plainTextFormattedCitation": "(Afrianto & Diannita, 2022)", "previouslyFormattedCitation": "(Afrianto & Diannita, 2022)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Afrianto and Diannita, 2022). **Because of the rose in price, hobbyists were encouraged to care for and sell these plants.**

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Figure 2. The Output Difference for Selling during the Height of Covid 19 and Post Covid 19 Pandemic, L: sold product (pot) for each variety, R: price difference for each variety

Figure 2 also displays sales trends for each *Aglaonema* variety. Suksom Jaipong was the most popular variety. It had affordable prices and vibrant hues. The sales were fairly constant throughout the year. Small quantities of specialty items such as Khanza, Audrey, and Lotus Delight were marketed. Lotus Delight was the most popular of the three sorts at the height of the COVID-19 pandemic. This variety sold 24 pots per month despite being sold at an exceptional price. Their behavior and preferences affect consumers' propensity to purchase. According to the findings of ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"ISSN":"2534983X","abstract":"The importance of ornamental plants in human life is increasing along with the growth of industrialisation and urbanisation as well as the enrichment of societies. The consumption of these plants is increasing and accompanied by the systematic development of their production worldwide. In Poland, after political transformation and upon entering the path of economic development after 1990, there was also an increase in demand for ornamental plants. In light of further development of the floriculture sector, it is important to identify the changes in the level of demand for such floricultural products in Poland in the long term. Central Statistical Office (CSO) data was applied so that the dynamics of both spending on gardening products for the home and garden (2006-2013), including floriculture products (2013-2015) and the disposable income of Polish households could thus be analysed. Later on, the dependence of these expenditures upon income was studied with linear and power functions. The analyses demonstrated that a high and strong income level determined the demand for such gardening products, including ornamental plants. Demand is unmet, and ornamental plants belong to the luxury goods sector, even within the group of people with a very high income (elasticity factor > 1).","author":{"dropping-particle":"","family":"Olewnicki","given":"Dawid","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Jaboska","given":"Lilianna","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Dudek","given":"Hanna","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Bulgarian Journal of Agricultural Science","id":"ITEM-1","issue":"5","issued":{"date-parts":[[2019]]},"page":"932-943","title":"The Demand for Ornamental Plants in Poland after Its Integration Into the EU: A Quantitative Approach","type":"article-journal","volume":"25"},"uris":["http://www.mendeley.com/documents/?uuid=1b2df6ef-92cb-4e61-ba99-1d257e25bd8b"]},"mendeley":{"formattedCitation":"(Olewnicki et al., 2019)","manualFormatting":"Olewnicki et al. (2019)","plainTextFormattedCitation":"(Olewnicki et al., 2019)","previouslyFormattedCitation":"(Olewnicki et al., 2019)"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Olewnicki et al. (2019) customers with low incomes prefer to acquire ornamental plants variety at more affordable costs; on the other hand, consumers with high incomes prefer to purchase ornamental plants of the collection or specialty type, despite its fantastic price. The Covid-19 pandemic has stimulated consumer interest in various ornamental plant varieties, which cause an increase in total sales volume. ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.3390/horticulturae8030234","ISSN":"23117524","abstract":"Ornamentals are the most diversified products and fast-changing industry of horticulture. A new flower and ornamental plant market scenario is developing: remarkable opportunities are emerging, but more efforts are required by both public and private stakeholders to seize them and assure a high-value positioning. Our paper aims at filling the gap in the availability of integrated data sources and structured theoretically sound studies on new consumption trends, marketing strategies, and governance settings. Specific objectives are: identifying an innovative ornamental horticulture market data framework; evidencing evolving dynamics of competition in Europe and necessary adaptations of public and private action; defining a new action-research agenda, capable of stimulating the interest of businesses, researchers, and institutions. In terms of methodology, we carry out an innovative integrative review analysis of the wide and most reliable grey literature and statistics, using a comprehensive approach. Results show the emerging consumption dynamics and high-value consumer profiles characterizing the European market, expected to significantly expand and transform, according to the impact of globalization, climate change, urbanization, digitalization, and the affirmation of neo-luxury and sustainability-oriented consumption patterns. The evolution of marketing strategies and governance settings is also highlighted, together with the necessity of developing and integrating public and private initiatives for realizing high-value sustainable and transparent production systems and supply chains. Accordingly, relevant action-research directions are described. These findings are expected to improve the current debate on the competitiveness of the European ornamental industry and contribute to taking a step towards a synergic combination of new differential advantages and wider sustainability goals."},"author":{"dropping-particle":"","family":"Gabellini","given":"Sara","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Scaramuzzi","given":"Silvia","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Horticulturae","id":"ITEM-1","issue":"234","issued":{"date-parts":[[2022]]},"page":"1-28","title":"Evolving Consumption Trends, Marketing Strategies, and Governance

Settings in Ornamental Horticulture: A Grey Literature Review, "type": "article-journal", "volume": "8", "uris": ["http://www.mendeley.com/documents/?uuid=a9b13981-a3d8-4b07-9b82-89e25981b3ed"], "mendeley": {"formattedCitation": "(Gabellini & Scaramuzzi, 2022)", "manualFormatting": "Gabellini & Scaramuzzi, (2022)", "plainTextFormattedCitation": "(Gabellini & Scaramuzzi, 2022)", "previouslyFormattedCitation": "(Gabellini & Scaramuzzi, 2022)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} **Gabellini and Scaramuzzi, (2022) explained that the influencing factors could be 1) consumers' willingness to buy luxury products, under the assurance of quality and scarcity values, 2) consumers' awareness of the socio-ecological benefits and emotional therapy of ornamental plants** ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.3390/horticulturae7060124", "ISSN": "23117524", "abstract": "[The COVID-19 pandemic is causing many victims worldwide and has generated a serious economic crisis. Substantial changes have occurred in the food and ornamental production chains. The aim of the present review has been to summarize some of the main effects that the pandemic is having on horticulture and on the new habits of people. Infections and quarantine measures have prevented the regular flow of certain goods and of connected services. Cases of shortages and/or surpluses, a lack of the availability of labor, and a reduction in demand for some food products and flowers have occurred. New food production approaches have emerged and a reconnection between farmers and consumers has been spreading, thereby facilitating product distribution. Moreover, during the forced isolation, people have had to face periods of stress. The benefits that can be derived from leisure activities related to flowers and ornamental plants, and from access to nature and urban green spaces are increasingly being recognized as relevant. The seriousness of the pandemic will inevitably lead to lasting changes. Therefore, the vulnerability of the pre-COVID-19 distribution chains should be considered and a new food production chain should be drawn up, to increase the resilience of such systems.](#)", "author": [{"dropping-particle": "", "family": "Bulgari", "given": "Roberta", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Petrini", "given": "Alice", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Cocetta", "given": "Giacomo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Nicoletto", "given": "Carlo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Ertani", "given": "Andrea", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Sambo", "given": "Paolo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Ferrante", "given": "Antonio", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Nicola", "given": "Silvana", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "MDPI Horticulturae", "id": "ITEM-1", "issue": "124", "issued": {"date-parts": [{"2021}], "page": "1-17", "title": "[The Impact of Covid-19 on horticulture: Critical Issues and Opportunities Derived from an Unexpected Occurrence](#)", "type": "article-journal", "volume": "7", "uris": ["http://www.mendeley.com/documents/?uuid=ee04c5d2-2f4e-4274-ab1f-752707f00566"], "mendeley": {"formattedCitation": "(Bulgari et al., 2021)", "plainTextFormattedCitation": "(Bulgari et al., 2021)", "previouslyFormattedCitation": "(Bulgari et al., 2021)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} **(Bulgari et al., 2021), 3) consumers' optimistic assessment of the development of local ornamental plants, and 4) consumers' access to social media and online sales platforms have made it easier to purchase ornamental plants** ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-536X.v27i1.2232", "author": [{"dropping-particle": "", "family": "Anacleto", "given": "Adilson", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Paula", "given": "Anna", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Bornancin", "given": "De Araújo", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-1", "issue": "1", "issued": {"date-parts": [{"2021}], "page": "26-32", "title": "[Between Flowers and Fears : the New Coronavirus Pandemic \(COVID-19\) and The Flower Retail Trade](#)", "type": "article-journal", "volume": "27", "uris": ["http://www.mendeley.com/documents/?uuid=6f31d322-512f-456c-929a-74c7fc0d77c4"], "mendeley": {"formattedCitation": "(Anacleto et al., 2021)", "plainTextFormattedCitation": "(Anacleto et al., 2021)", "previouslyFormattedCitation": "(Anacleto et al., 2021)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} **(Anacleto et al., 2021). Due to the lack of outdoor activities, the allocation of household expenditure during the pandemic Covid-19 tended to be low. Under these conditions, the saving of households became substantial. It is evident from** ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"ISSN": "2534983X", "abstract": "[The importance of ornamental plants in human life is increasing along with the growth of industrialisation and urbanisation as well as the enrichment of societies. The consumption of these plants is increasing and accompanied by the systematic development of their production worldwide. In Poland, after political transformation and upon entering the path of economic development after 1990, there was also an increase in demand for ornamental plants. In light of further development of the floriculture sector, it is important to identify the changes in the level of demand for such](#)"

floricultural products in Poland in the long term. Central Statistical Office (CSO) data was applied so that the dynamics of both spending on gardening products for the home and garden (2006-2013), including floriculture products (2013-2015) and the disposable income of Polish households could thus be analysed. Later on, the dependence of these expenditures upon income was studied with linear and power functions. The analyses demonstrated that a high and strong income level determined the demand for such gardening products, including ornamental plants. Demand is unmet, and ornamental plants belong to the luxury goods sector, even within the group of people with a very high income (elasticity factor > 1).

"author":{"dropping-particle":"","family":"Olewnicki","given":"Dawid","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Jaboska","given":"Lilianna","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Dudek","given":"Hanna","non-dropping-particle":"","parse-names":false,"suffix":""}, "container-title":"Bulgarian Journal of Agricultural Science", "id":"ITEM-1", "issue":"5", "issued":{"date-parts":["2019"]}, "page":"932-943", "title":"The Demand for Ornamental Plants in Poland after Its Integration Into the EU: A Quantitative

Approach", "type":"article-journal", "volume":"25", "uris":["http://www.mendeley.com/documents/?uid=1b2df6ef-92cb-4e61-ba99-1d257e25bd8b"], "mendeley":{"formattedCitation":"(Olewnicki et al., 2019)", "manualFormatting":"(Olewnicki et al., (2019)", "plainTextFormattedCitation":"(Olewnicki et al., 2019)", "previouslyFormattedCitation":"(Olewnicki et al., 2019)", "properties":{"notelIndex":0}, "schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Olewnicki et al., (2019) that when household expenditures increase, purchasers prefer to acquire less essential things, including ornamental plants.

Aglaonema has an elastic demand for consumer income, which indicates the number of plants demanded was directly proportional to the increase in customer income ADDIN CSL_CITATION {"citationItems":{"id":"ITEM-1","itemData":{"ISSN":"2534983X","abstract":"The importance of ornamental plants in human life is increasing along with the growth of industrialisation and urbanisation as well as the enrichment of societies. The consumption of these plants is increasing and accompanied by the systematic development of their production worldwide. In Poland, after political transformation and upon entering the path of economic development after 1990, there was also an increase in demand for ornamental plants. In light of further development of the floriculture sector, it is important to identify the changes in the level of demand for such floricultural products in Poland in the long term. Central Statistical Office (CSO) data was applied so that the dynamics of both spending on gardening products for the home and garden (2006-2013), including floriculture products (2013-2015) and the disposable income of Polish households could thus be analysed. Later on, the dependence of these expenditures upon income was studied with linear and power functions. The analyses demonstrated that a high and strong income level determined the demand for such gardening products, including ornamental plants. Demand is unmet, and ornamental plants belong to the luxury goods sector, even within the group of people with a very high income (elasticity factor > 1)."

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parts":{"2022"},"page":"200-211","title":"**Having More Plants at Home During the Covid-19 Pandemic: Is It Just Following A Trend?**","type":"article-journal","volume":"22"},"uris":["http://www.mendeley.com/documents/?uuid=27a4c581-9cd3-453f-881f-1a6b5b94476c"],"mendeley":{"formattedCitation":"(Afrianto & Diannita, 2022; Olewnicki et al., 2019)","plainTextFormattedCitation":"(Afrianto & Diannita, 2022; Olewnicki et al., 2019)","previouslyFormattedCitation":"(Afrianto & Diannita, 2022; Olewnicki et al., 2019)"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Afrianto and Diannita, 2022; Olewnicki et al., 2019). **At the beginning of 2022, outdoor activities, such as work and school resumed back to normal. The necessity for food, clothing, communication, and transportation has reduced household urges to buy other less necessary products, including ornamental plants. It noted that ornamental plants require cultivators' care and attention** ADDIN CSL CITATION {"citationItems":{"id":"ITEM-1","itemData":{"DOI":"10.29303/jbt.v22i1.3245","ISSN":"1411-9587","abstract":"**The Covid-19 pandemic has drastically changed the social and environmental conditions. People should stay at home for self-isolation and social distancing to avoid the spread of Covid-19. People tend to have more plants at home associated with psychological impact during self-isolation. This study aimed to describe having more plants during the Covid-19 pandemic in Indonesia. A nationwide cross-sectional survey involving an online survey was carried out of an Indonesian population-based sample of 412 respondents from 26 provinces, considered demographic, social, and behavioral variables. The variable affecting the having plants during the Covid-19 pandemic was analyzed using non-parametric analysis of the Kruskal Wallis test. The result showed that people preferred having more plants during the Covid-19 pandemic to reduce negative emotions and feelings. The majority of the respondents tend to have 1-10 plants and spend around <100 K (IDR) monthly to maintain and buy plants. They think that efforts to maintain were the most challenging in gardening activities. The majority of the respondents had potted plants at home to make their homes greener. The Kruskal Wallis test showed the p-value (>0.05) for all characteristic respondents. Thus, it can be concluded that there was no significant difference regarding the motivation to have planted during the Covid-19 pandemic from characteristic respondents.**","author":{"dropping-particle":"","family":"Afrianto","given":"Whisnu Febry","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Diannita","given":"Rindang","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Jurnal Biologi Tropis","id":"ITEM-1","issue":"1","issued":{"date-parts":["2022"]},"page":"200-211","title":"**Having More Plants at Home During the Covid-19 Pandemic: Is It Just Following A Trend?**","type":"article-journal","volume":"22"},"uris":["http://www.mendeley.com/documents/?uuid=27a4c581-9cd3-453f-881f-1a6b5b94476c"],"mendeley":{"formattedCitation":"(Afrianto & Diannita, 2022)","plainTextFormattedCitation":"(Afrianto & Diannita, 2022)","previouslyFormattedCitation":"(Afrianto & Diannita, 2022)"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Afrianto and Diannita, 2022). **The lack of time allocated for caring for plants has caused consumers to limit their purchases, either for personal collection or for resale use.**

Income Analysis

Farm income is the amount earned from a farming business which shows the difference between revenue and cost. Income is divided into two categories explicit income and implicit income. Explicit incomes refer to income generated after actual payments, while implicit incomes are generated from both actual payments and non-cash expenses. The income from explicit cost was US\$ 10,676.05 at the height of the pandemic Covid-19, and US\$ 810.54 during post pandemic Covid-19, collected from a land area of 197 m². It is supported by another research stating that the potential income of Aglaonema farming is enormous ADDIN CSL CITATION {"citationItems":{"id":"ITEM-1","itemData":{"DOI":"https://doi.org/10.35326/agribisnis.v5i1.1350","author":{"dropping-particle":"A","family":"Zarliani","given":"Wa Ode","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Purnamasari","given":"Wa Ode Dian","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Gafur","given":"Nabila","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Media Agribisnis","id":"ITEM-1","issue":"1","issued":{"date-parts":["2021"]},"page":"1-8","title":"**The Behavior and Market Efficiency of Aglaonema Ornamental Plants in Baubau, Indonesia**","type":"article-journal","volume":"5"},"uris":["http://www.mendeley.com/documents/?uuid=b285a288-94f4-43d1-8c8a-6e30b7280ec9"],"mendeley":{"formattedCitation":"(Zarliani et al., 2021)","plainTextFormattedCitation":"(Zarliani et al., 2021)","previouslyFormattedCitation":"(Zarliani et al., 2021)"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Zarliani et al., 2021).

R/C Ratio

The R/C ratio formula is used to justify farm profits. The R/C ratio is the ratio between revenue and production costs. The R/C ratio is divided into two categories: the R/C ratio on explicit cost and the R/C ratio on the total cost. The R/C ratio on explicit costs attempts to identify the relationship

between revenue and explicit costs. This one shows the real condition of how growing Aglaonema in Depok city could generate profits. Because the implicit costs are disregarded from its ratio, the discounted cost is more significant than the R/C ratio of the total costs.

The R/C ratio for explicit cost was higher at the height of COVID-19 pandemic, compared to post COVID-19 pandemic. This result is in line with another research stating that the ornamental plant business is feasible throughout the Covid 19 pandemic

ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.33557/mbia.v20i2.1415", "ISSN": "2086-5090", "abstract": "The ornamental plant business is a very profitable and promising venture, made even more so by the fact that there is an ornamental plant trend at the start of 2019. Certain types of ornamental plants can be quite expensive, and some customers are willing to pay a premium for them to add to their ornamental plant collection. As a result, the number of florists has increased, particularly in Baturaja City. During the Covid-19 pandemic, numerous businesses, including ornamental plant businesses, suffered financial losses. Some businesses have been unable to survive due to losses as a result of people's limited purchasing power for ornamental plants. The goal of this research is to determine the viability of the ornamental plant business in Baturaja, especially in the event of a pandemic. In this study, the census method was used, and the saturated sampling method was used for sampling. The analysis was carried out using a feasibility analysis with R/C ratio analysis. In Baturaja, data was gathered from 15 ornamental plant business actors. With an R/C of 1.65, the study's findings indicated that the ornamental plant business in the city of Baturaja would be viable in the event of a pandemic. Keywords: Feasibility study, ornamental plant business, pandemic Covid

Abstrak Bisnis tanaman hias merupakan bisnis yang sangat menjanjikan dan menguntungkan, apalagi setelah terjadi trend tanaman hias di awal tahun 2019. Beberapa jenis tanaman hias dapat dijual dengan harga yang tinggi dan konsumen mau membeli dengan harga tinggi tersebut, untuk menambah koleksi. Fenomena ini juga terjadi di kota Baturaja. Selama pandemi Covid-19, banyak bisnis yang merugi, termasuk bisnis tanaman hias. Turun nya daya beli masyarakat juga berpengaruh terhadap bisnis tanaman hias. Membuat para pelaku usaha bisnis ini tidak mampu bertahan karena merugi.

Penelitian ini bertujuan untuk menganalisis kelayakan usaha tanaman hias di kota Baturaja khususnya pada masa pandemi Covid-19. Metode yang digunakan dalam penelitian ini adalah metode sensus dan metode penarikan contoh yang digunakan adalah metode acak jenuh. Metode analisis yang digunakan dalam pengolahan data penelitian adalah analisis kelayakan menggunakan R/C ratio. Sedangkan data yang dikumpulkan berasal dari 15 pelaku usaha tanaman hias di kota Baturaja.

Hasil penelitian menunjukkan bahwa usaha tanaman hias di kota Baturaja di masa pandemic Covid masih layak untuk terus diusahakan dengan nilai R/C sebesar 1.65. Kata kunci: Analisis, author:

["dropping-particle": "", "family": "Munajat", "given": "Munajat", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Sari", "given": "Fifian Permata", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Journal Management, Business, and Accounting", "id": "ITEM-1", "issue": "2", "issued": {"date-parts": [{"2021"}]}, "page": "186-192", "title": "Feasibility Study of Ornamental Plant Business in Covid Pandemic at Baturaja Oku South Sumatera", "type": "article-journal", "volume": "20", "uris": [{"http://www.mendeley.com/documents/?uuid=b1bc811d-a36d-4dd8-bd43-238d1b25c6c4"}], "mendeley": {"formattedCitation": "(Munajat & Sari, 2021)", "plainTextFormattedCitation": "(Munajat & Sari, 2021)", "previouslyFormattedCitation": "(Munajat & Sari, 2021)", "properties": {"noteIndex": 0}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Munajat and Sari, 2021).

This demonstrates that growing Aglaonema during the height of the COVID-19 pandemic was significantly more profitable than the conditions afterward. Every US\$ of the explicit cost incurred for Aglaonema cultivation yielded US\$ 7.50 in return. However, the return farmers gained nowadays was only US\$ 1.79 for every dollar expended. This number describes the real-time cost-receipt structure of Aglaonema farmers in Depok City, given that the R/C ratio of explicit cost did not calculate the non-cash expenses. Table 3 demonstrates the income of Aglaonema farming.

Table 3. Aglaonema Farming Income in Depok City in Average Farm Size in a Month

Component

Height of the COVID-19 pandemic (US\$)

Post COVID-19 pandemic (US\$)

Total Revenue

12,317.90

1,828.01

Explicit Cost

1,641.85

1,020.64

Implicit Cost

720.50

689.77

Total cost

2,362.35

1,710.43

R/C on explicit cost

7.50

1.79

R/C on the total cost

5.21

1.07

Source: Primary Data, (processed) 2022.

Table 3 shows a big difference in farming revenue at the height of the COVID-19 and post-pandemic, respectively US\$ 12,317 to US\$ 1,828. The [high value of revenue compared to costs causes the R/C ratio to be immense](#). At the height of COVID-19 pandemic, the R/C ratio for total costs was 5.21, and during the post pandemic period, it was 1.07. The R/C percentage in both periods was less than [the R/C ratio on explicit cost](#). The R/C ratio on total costs has been adjusted to consider implicit cost, consequently increasing the cost of expenditures for production factors and decreasing the ratio of revenues to expenses. This ratio analysis is used to demonstrate the benefit of Aglaonema farming if the farmers or investors are willing to pay for all production factors.

Based on this analysis, it can be inferred that Aglaonema farming in Depok City is profitable. Even though the profit value has decreased nowadays, farmers are advised to wait for the trends to leverage profits. Aglaonema farmers in Depok might increase their product range by expanding their sales through online outlets. Direct visits to flower shops still dominated ornamental plant sales; thus, online sales would be a viable marketing option (Bulgari, 2021; Paiva et al., 2020). The [community of Depok Aglaonema Nusantara Association \(ASA\) is recommended to organize the use of this online technology](#). Farmers need to strengthen their links with other farmers, producers, and distributors to improve their innovative capabilities **ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-536X.v27i4.2296", "ISSN": "2447536X", "abstract": "Retail florist activities are essential elements in the rose (Rosa spp.) market since they generate significant income and employment. In these jobs, florists gain recognition by their designs that captivate consumers. At the same time, they are key entrepreneurs in the commercialization of roses. Then, the objective of the research was to know the entrepreneurial role of florists in the commercialization of roses (Rosa spp.) in southern Veracruz, Mexico. An exploratory research was conducted in flower shops, five in Coatzacoalcos, nine in Minatitlán and six in Acayucan. Interviews were conducted with florists (n = 20). The categories of analysis used were the demographic, psychosocial and sociocultural profile of the florists as innovative entrepreneurs. In regards to the demographic profile, these economic agents have the experience and knowledge necessary to develop their activity. In short, florists are identified as family micro-enterprises with establishments that are 20 years old. In the psychosocial profile, florists present low innovative capacity with respect to the composition of their floral arrangements; however, they are characterized as risk takers with the ability to solve problems. Finally, the sociocultural profile demonstrates the florists-intermediary-producers collaboration; such entrepreneurial activity generates economic incentives with local-regional influence. Therefore, florists need to strengthen their links with other florists, producers and distributors to improve their innovative capabilities that will benefit both themselves and consumers."}, "author": [{"dropping-particle": "", "family": "Orozco", "given": "Nereida Rodríguez", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Anastasio", "given": "Emmanuel Vázquez", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Gabriel", "given": "Ariadna Linares", "non-dropping-particle": "", "parse-names": false, "suffix": ""}, {"dropping-particle": "", "family": "Chontal", "given": "Mario Alejandro Hernández", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Ornamental Horticulture", "id": "ITEM-1", "issue": "4", "issued": {"date-parts": [{"2021}]}, "page": "526-534", "title": "Active Role of Flower Shops in the Commercialization of Roses", "type": "article-journal", "volume": "27", "uris": [{"http://www.mendeley.com/documents/?uuid=778aa449-f2dd-47cc-be19-b95c2c2ffe3d"}]}, "mendeley": {"formattedCitation": "(Orozco et al., 2021)", "plainTextFormattedCitation": "(Orozco et al., 2021)", "previouslyFormattedCitation": "(Orozco et al., 2021)", "properties": {"noteIndex": 0, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}}, (Orozco et al., 2021), hence the community of ASA Depok will be very beneficial to help farmers. Furthermore, government support is also required to provide special business zones so that farming will be able to increase the opportunity to grow **ADDIN CSL_CITATION {"citationItems": [{"id": "ITEM-1", "itemData": {"DOI": "10.1590/2447-536X.V27I4.2352", "ISSN": "2447536X", "abstract": "This study aims to analyze the sustainability index of each dimension of ecology, economy, social, and technology as well as identify sensitive attributes that determine the sustainability of ornamental plant farming in Makassar. The rapid appraisal for program modified from rapid appraisal for fisheries program using the multidimensional scaling (MDS) method was used as the analytical instrument. MDS ordination analysis results showed the sustainability index value of each dimension, namely ecology (37.30), economic (40.90), social (31.74), and technology (34.33) were categorized as less sustainable with an average index value of****

all dimensions was 36.07. The leverage analysis visualizes that 9 out of 17 attributes has shown to be sensitive attributes that affect the business sustainability of ornamental plant in Makassar, namely frequency of crop waste management, water sources, utilization of plant waste, market scale, profitability, business land status, company registration certificate, use of modern technology, and frequency of environmentally friendly technology usage. Government should provide special business zones for ornamental plant so that all ornamental plant farmer in Makassar can be grouped into one zone.

Furthermore, it can increase gross regional domestic product, employment opportunities, and opening up opportunities of other industrial sectors growth." "author":{"dropping-particle":"","family":"Tiasmalomo","given":"Riska","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Rukmana","given":"Didi","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Mahyuddin","given":"","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Putra","given":"Ridha Anugerah","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Ornamental Horticulture","id":"ITEM-1","issue":"4","issued":{"date-parts":[["2021"]],"page":"589-598","title":"Sustainability Analysis of Ornamental Plants Farming in Makassar","type":"article-journal","volume":"27"},"uris":["http://www.mendeley.com/documents/?uuid=6db93940-8eb5-4a57-af4f-3d5b18459cc8"]},"mendeley":{"formattedCitation":"(Tiasmalomo et al., 2021)","plainTextFormattedCitation":"(Tiasmalomo et al., 2021)","previouslyFormattedCitation":"(Tiasmalomo et al., 2021)"},"properties":{"noteIndex":0,"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Tiasmalomo et al., 2021).

This study also discovered that Aglaonema is ideal to cultivate in urban areas. Aglaonema has reasonable commercial worth as well as long-term ecological benefits. This industry attracts many middle- to upper-class customers, most of whom live in cities. Customers are willing to pay extra money since this beautiful plant is classified as a specialty good, which implies that the rarer the variety introduced, the more desired and the higher the selling price is

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.3390/horticulturae8030234","ISSN":"23117524","abstract":"Ornamentals are the most diversified products and fast-changing industry of horticulture. A new flower and ornamental plant market scenario is developing; remarkable opportunities are emerging, but more efforts are required by both public and private stakeholders to seize them and assure a high-value positioning. Our paper aims at filling the gap in the availability of integrated data sources and structured theoretically sound studies on new consumption trends, marketing strategies, and governance settings. Specific objectives are: identifying an innovative ornamental horticulture market data framework; evidencing evolving dynamics of competition in Europe and necessary adaptations of public and private action; defining a new action-research agenda, capable of stimulating the interest of businesses, researchers, and institutions. In terms of methodology, we carry out an innovative integrative review analysis of the wide and most reliable grey literature and statistics, using a comprehensive approach. Results show the emerging consumption dynamics and high-value consumer profiles characterizing the European market, expected to significantly expand and transform, according to the impact of globalization, climate change, urbanization, digitalization, and the affirmation of neo-luxury and sustainability-oriented consumption patterns. The evolution of marketing strategies and governance settings is also highlighted, together with the necessity of developing and integrating public and private initiatives for realizing high-value sustainable and transparent production systems and supply chains. Accordingly, relevant action-research directions are described. These findings are expected to improve the current debate on the competitiveness of the European ornamental industry and contribute to taking a step towards a synergic combination of new differential advantages and wider sustainability goals."},"container-title":"Ornamentals are the most diversified products and fast-changing industry of horticulture. A new flower and ornamental plant market scenario is developing; remarkable opportunities are emerging, but more efforts are required by both public and private stakeholders to seize them and assure a high-value positioning. Our paper aims at filling the gap in the availability of integrated data sources and structured theoretically sound studies on new consumption trends, marketing strategies, and governance settings. Specific objectives are: identifying an innovative ornamental horticulture market data framework; evidencing evolving dynamics of competition in Europe and necessary adaptations of public and private action; defining a new action-research agenda, capable of stimulating the interest of businesses, researchers, and institutions. In terms of methodology, we carry out an innovative integrative review analysis of the wide and most reliable grey literature and statistics, using a comprehensive approach. Results show the emerging consumption dynamics and high-value consumer profiles characterizing the European market, expected to significantly expand and transform, according to the impact of globalization, climate change, urbanization, digitalization, and the affirmation of neo-luxury and sustainability-oriented consumption patterns. 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These findings are expected to improve the current debate on the competitiveness of the European ornamental industry and contribute to taking a step towards a synergic combination of new differential advantages and wider sustainability goals."},"dropping-particle":"","family":"Gabellini","given":"Sara","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Scaramuzzi","given":"Silvia","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Horticulturae","id":"ITEM-1","issue":"234","issued":{"date-parts":[["2022"]],"page":"1-28"},"title":"Evolving Consumption Trends, Marketing Strategies, and Governance Settings in Ornamental Horticulture: A Grey Literature Review","type":"article-journal","volume":"8"},"uris":["http://www.mendeley.com/documents/?uuid=a9b13981-a3d8-4b07-9b82-89e25981b3ed"]},"mendeley":{"formattedCitation":"(Gabellini & Scaramuzzi, 2022)","plainTextFormattedCitation":"(Gabellini & Scaramuzzi, 2022)","previouslyFormattedCitation":"(Gabellini & Scaramuzzi, 2022)"},"properties":{"noteIndex":0,"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}(Gabellini and Scaramuzzi, 2022). Environmental sustainability is also significant because this plant affects physical and mental health benefits, particularly in urban regions plagued by numerous pollution disturbances

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"ISSN":"2534983X","abstract":"The importance of ornamental plants in human life is increasing along with the growth of industrialisation and urbanisation as well as the enrichment of societies. The consumption of these plants is increasing and accompanied by the systematic development of their production worldwide. In Poland, after political transformation and upon entering the path of economic development after 1990, there was also an increase in demand for

ornamental plants. In light of further development of the floriculture sector, it is [important to identify the changes in the level of demand for](#) such floricultural products in Poland in the long term. Central Statistical Office (CSO) data was applied so that the dynamics of both spending on gardening products for the home and garden (2006-2013), including floriculture products (2013-2015) and the disposable income of Polish households could thus be analysed. Later on, the dependence of these expenditures upon income was studied with linear and power functions. The analyses demonstrated that a high and strong income level determined the demand for such gardening products, including ornamental plants. Demand is unmet, and ornamental plants belong to the luxury goods sector, even within the group of people with a very high income (elasticity factor > 1).

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"DOI":"10.18196/agraris.v8i1.12342","ISSN":"25279238","abstract":"The imbalance between supply and demand of ornamental plants in the market cause fluctuations that lead to price volatility. This study aimed to analyze the price volatility of ornamental plants with high economic value, such as orchids, adenium, aglaonema, anthurium, and palm. This study also analyzed the long-term and short-term relationship between the production and prices of these ornamental plants. The data used were the productions and prices of orchid, adenium, aglaonema, anthurium, and palm at the producer level from 2012 to 2020 obtained from the Agriculture Office of Batu Municipality. Volatility analysis was carried out using the ARCH/GARCH method, the long-term relationship was analyzed using the Johansen cointegration test, and the short-term relationship was carried out using the Error Correction model. The results of volatility analysis showed that all the ornamental plants studied had low price volatility. In addition, the productions and prices of the ornamental plants were cointegrated in the long run, but only the orchid had a short-term relationship with an adjustment period of 2.6 months."},"author":{"dropping-particle":"","family":"Khofifah","given":"Hamidatul","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Nugroho","given":"Tri Wahyu","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Sujarwo","given":"","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Agraris","id":"ITEM-1","issue":"1","issued":{"date-parts":["2022"]},"page":"106-122","title":"Price Volatility of Ornamental Plants in Batu Municipality","type":"article-journal","volume":"8"},"uris":["http://www.mendeley.com/documents/?uid=bf1c435f-eddb-4f19-81d0-e4c64f93bdb4"]},"mendeley":{"formattedCitation":"(Khofifah et al., 2022)","manualFormatting":"Khofifah et al., (2022)","plainTextFormattedCitation":"(Khofifah et al., 2022)","previouslyFormattedCitation":"(Khofifah et al., 2022)"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Khofifah et al., (2022), on the other hand, believe that the changing prices of ornamental plants have a negligible effect on the producer market, implying that these plants will be available throughout the year despite their variable output. This viewpoint is shared by

ADDIN CSL_CITATION {"citationItems":[{"id":"ITEM-1","itemData":{"ISSN":"2534983X","abstract":"The importance of ornamental plants in human life is increasing along with the growth of industrialisation and urbanisation as well as the enrichment of societies. The consumption of these plants is increasing and accompanied by the systematic development of their production worldwide. In Poland, after political transformation and upon entering the path of economic development after 1990, there was also an increase in demand for ornamental plants. In light of further development of the floriculture sector, it is important to identify the changes in the level of demand for such floricultural products in Poland in the long term. Central Statistical Office (CSO) data was applied so that the dynamics of both spending on gardening products for the home and garden (2006-2013), including floriculture products (2013-2015) and the disposable income of Polish households could thus be analysed. Later on, the dependence of these expenditures upon income was studied with linear and power functions. The analyses demonstrated that a high and strong income level determined the demand for such gardening products, including ornamental plants. Demand is unmet, and ornamental plants belong to the luxury goods sector, even within the group of people with a very high income (elasticity factor > 1)."},"author":{"dropping-particle":"","family":"Olewnicki","given":"Dawid","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Jaboska","given":"Lilianna","non-dropping-particle":"","parse-

names":false,"suffix":"","{"dropping-particle":"","family":"Dudek","given":"Hanna","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Bulgarian Journal of Agricultural Science","id":"ITEM-1","issue":"5","issued":{"date-parts":["2019"]},"page":"932-943","title":"**The Demand for Ornamental Plants in Poland after Its Integration Into the EU: A Quantitative Approach**","type":"article-journal","volume":"25"},"uris":["http://www.mendeley.com/documents/?uid=1b2df6ef-92cb-4e61-ba99-1d257e25bd8b"],"{"id":"ITEM-2","itemData":{"DOI":"10.3390/agronomy10101570","ISSN":"20734395","abstract":"[Ornamental production worldwide has changed dramatically in the past 20 years. A globalized scene has shifted production to new countries from Africa, Asia, and South America. Sustainability is the major challenge for ornamental production, and the life cycle assessment \(LCA\) provides insights on environmental contributions from production to handling and transportation and highlights the problematic issues that need improvement. For example, greenhouse gas \(GHG\) emissions and the production costs of roses in different parts of the world may vary](#) dramatically between different production processes (e.g., heated or non-heated greenhouses, with or without air transportation, etc.). On the other hand, the production of landscape plants has the lowest [environmental impact of all floricultural products](#). Their long production period offers carbon sequestrations that reduce the total GHG emissions. Sustainability is achieved via critical adjustments on cultivation by minimizing fuel and electricity use, adopting integrated nutrient management (INM) and integrated pest and disease management (IPDM), and using recyclable materials and peat-alternative growing compounds. In this review, two possible scenarios were proposed for ornamental production. Scenario I suggests conventional, protected cultivation under controlled environments (i.e., greenhouses), which can be sustainable after implementing appropriate adjustments to reduce environmental outputs. Scenario II suggests the cultivation of native and specialty ornamental crops, which may serve as eco-friendly alternatives. Combinations between the two scenarios are also possible in view to implement sustainable practices and meet future consumer needs."},"author":{"dropping-particle":"","family":"Darras","given":"Anastasios I.","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Agronomy","id":"ITEM-2","issue":"1570","issued":{"date-parts":["2020"]},"page":"1-20","title":"**Implementation of Sustainable Practices to Ornamental plant Cultivation Worldwide: A Critical Review**","type":"article-journal","volume":"10"},"uris":["http://www.mendeley.com/documents/?uid=48625644-2de1-464e-88c6-8091aec6c1b4"],"{"id":"ITEM-3","itemData":{"DOI":"10.1590/2447-536X.v26i3.2158","abstract":"[The discovery of commercial transgenic varieties of orange petunias sold in Europe and the United States although they had never reached the approved status, and the consequent recommendation to destroy them, was the trigger to discuss about biotechnological improvement of ornamental plants. Inside the restricted world of 26 vegetal transgenic species, according to the ISAAA's reports \(<http://www.isaaa.org>\), there are three ornamental species: carnation, rose and the Beijing University developed petunia; all of them with the same trait, a change in their colour. On the other hand, in 2014, the whole-genome sequence of carnation appeared which was the first and until now the only one among ornamental species. In this context, we review the publications from the last five years in petunia, rose, chrysanthemum and carnation. In these papers there are detailed descriptions of modification of the cascade of genes and transcription factors involved in stress situations, in different developmental stages and their regulation through different plant hormones. This knowledge will allow breeding for better and new varieties with changes in their abiotic or biotic stress tolerance, altered growth or yield and modified product quality as colour or fragrance.](#)"},"author":{"dropping-particle":"","family":"Paiva","given":"Patrícia Duarte de Oliveira","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Michele","given":"Valquíria dos Reis","non-dropping-particle":"","parse-names":false,"suffix":""},"dropping-particle":"","family":"Sant'Ana","given":"Gabriela Silva","non-dropping-particle":"","parse-names":false,"suffix":""},"container-title":"Ornamental Horticulture","id":"ITEM-3","issue":"3","issued":{"date-parts":["2020"]},"page":"333-345","title":"**Flower and Ornamental Plant Consumers Profile and Behaviour**","type":"article-journal","volume":"26"},"uris":["http://www.mendeley.com/documents/?uid=589b8874-7de3-4716-b341-be387433c888"],"mendeley":{"formattedCitation":"(Darras, 2020; Olewnicki et al., 2019; Paiva et al., 2020)","manualFormatting":"Darras (2020), Olewnicki et al., (2019), and Paiva et al., 2020","plainTextFormattedCitation":"(Darras, 2020; Olewnicki et al., 2019; Paiva et al., 2020)","previouslyFormattedCitation":"(Darras, 2020; Olewnicki et al., 2019; Paiva et al., 2020)","properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}Darras (2020), Olewnicki et al., (2019), and Paiva et al., 2020 who believe that increased interest in ornamental plants will occur in spurts throughout the decline.

Conclusions

The fluctuating revenue of Aglaonema farming is dictated by a trend that indicates an increase in production during the height of the COVID-19 pandemic in 2020 and vice versa at post Covid-19 since 2022. Although there were considerable disparities in both periods, Aglaonema farming activities in Depok city were profitable. The R/C ratio analysis reveals that Aglaonema farming during the height of the COVID-19 pandemic produced significant profits, both in terms of explicit

costs and total costs. At the height of the COVID-19 pandemic, the R/C ratio reached 7.50, suggesting that the revenue value was seven times greater than the break-even point. As the COVID-19 pandemic subsided, sales value declined, and farming became less profitable. The changes in revenue resulted from the increase in price and number of sales for the ten varieties studied. There were only slight changes in some production factors in both periods. The cost structure with the highest expense is the seed, which increases significantly following the trends. This study finds some distinction between the characteristics of Aglaonema farming and other commodities. First, the characteristics of labor composition, where the employment of family labor was higher than those of external labor. Second, the attributes of using caring facilities, pesticides, and low fertilizers imply that this commodity had a relatively quick turnover, good adaptability, and durability, thereby supporting farmers in reducing costs. This study revealed that growing Aglaonema in the urban area is worth to be developed, according to its high economic value, extensive stock turnover, and low land use.

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