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How COVID-19 Has Changed Consumer Purchasing Patterns in the Horticultural Industry

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***Selected Poster prepared for presentation at the 2023 Agricultural & Applied Economics Association
Annual Meeting, Washington DC: July 23- 25, 2023***

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How COVID-19 has changed consumer purchasing patterns in the horticultural industry

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Introduction

- The COVID 19 pandemic has affected people psychologically and adversely influenced their activities including gardening
- The pandemic has also aggravated food insecurity in urban areas and home gardening can be an important strategy to alleviate this concern
- Understanding changes in consumer preferences and shopping patterns for plants and gardening products/services due to COVID-19 is important.
- In this study, we conducted a nationwide online consumer survey to analyze the influence of COVID-19 on consumer behavior from March 2020 to July 2022
- We performed analysis to understand factors that lead to the transformation of consumer behavior in the horticultural industry under the impact of COVID-19.

Objective

- Understand changes in consumer preferences and shopping patterns for plants and gardening products/services due to COVID-19
- Identify factors that lead to this transformation of consumer behavior under the impact of COVID-19.

Methodology

- A monthly consumer survey about consumer demand and their preferences for gardening products was conducted using an online survey platform - Amazon's MTurk from March 2020 to July 2022.
- Approximately 5,000 consumers from all 50 states were surveyed to analyze changes in consumers' preferences and decision-making when shopping for gardening products during the pandemic.
- We asked the consumers questions regarding change in their expenses and time spent on gardening related activities.

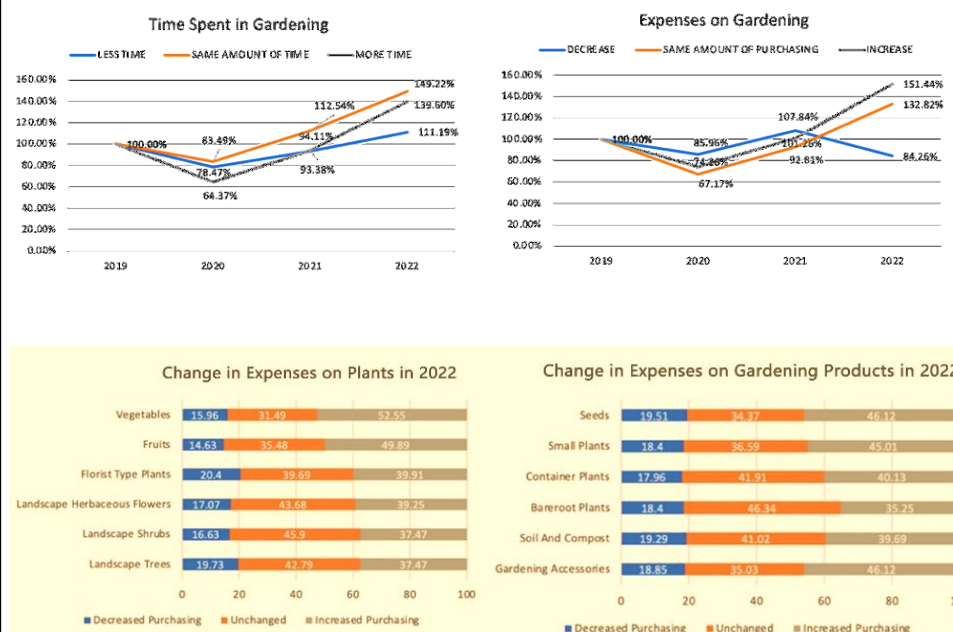
Model

An ordered logit model our analysis

$$\text{logit}(Y) = \alpha_0 + \alpha_1(\text{demographic variables}) + \alpha_2(\text{pandemic related variables}) + \alpha_3(\text{time}) + \alpha_4(\text{time}^2) + \varepsilon$$

Y is the change in time spent on gardening, change in expenses on gardening, as well as different plants and gardening products. α_0 represents an intercept, while the effects of demographic and pandemic-related variables reflected by parameters α_1 and α_2 respectively. α_3 and α_4 are parameters for time and time squared, respectively.

Results



Gardening Time	Odds Ratio	SE	P> z	Gardening Expenses	Odds Ratio	SE	P> z
Gender (Female=1; Male, Others=0)	1.061	0.055	0.260	Gender (Female=1; Male, Others=0)	1.072	0.055	0.173
Marital status (Married=1; Others=0)	1.327***	0.096	0.000	Marital status (Married=1; Others=0)	1.304***	0.093	0.000
Race (White=1; Others=0)	1.262***	0.076	0.000	Race (White=1; Others=0)	1.224***	0.073	0.001
Age	0.999	0.002	0.677	Age	0.994**	0.002	0.017
Household size	1.020	0.018	0.281	Household size	1.020	0.018	0.269
Children (Yes=1; No=0)	1.150*	0.086	0.062	Children (Yes=1; No=0)	0.988	0.073	0.868
Education (base= No schooling/High School/GED/Others)				Education (base= No schooling/High School/GED/Others)			
Some College, Associate's degree, or Bachelor's degree				Some College, Associate's degree, or Bachelor's degree			
	1.288***	0.125	0.009		1.235**	0.120	0.030
Master's degree, Professional degree or Doctorate degree				Master's degree, Professional degree or Doctorate degree			
	1.240**	0.132	0.043		1.219*	0.129	0.061
Income (in \$10,000)	1.012***	0.005	0.009	Income (in \$10,000)	1.016***	0.005	0.001
Employment (Do not work)				Employment (Do not work)			
Part time job	1.317**	0.143	0.011	Part time job	1.306**	0.143	0.015
Full time job	1.221**	0.108	0.024	Full time job	1.353***	0.121	0.001
News (How often watch news on COVID-19; scale of 1 to 5)				News (How often watch news on COVID-19; scale of 1 to 5)			
	1.128***	0.029	0.000		1.051*	0.027	0.053
Infected (Participant or someone they know got COVID=1; otherwise=0)				Infected (Participant or someone they know got COVID=1; otherwise=0)			
	1.142**	0.062	0.015		1.092*	0.058	0.099
Impact of COVID on life (-5=significant negative to +5=significant positive)				Impact of COVID on life (-5=significant negative to +5=significant positive)			
	0.974***	0.009	0.006		1.029***	0.010	0.003
Stimulus (received stimulus check=1; otherwise=0)	0.995	0.055	0.933	Stimulus (received stimulus check=1; otherwise=0)	1.184***	0.064	0.002
Time	1.169*	0.109	0.093	Time	1.211**	0.111	0.037
Time ²	0.991*	0.005	0.093	Time ²	0.990*	0.005	0.060
Seasonality (base=winter)				Seasonality (base=winter)			
Summer	1.165	0.122	0.143	Summer	1.291**	0.133	0.013
Spring	1.413**	0.221	0.027	Spring	1.359**	0.209	0.045
Fall	0.985	0.095	0.878	Fall	1.052	0.100	0.598

Conclusions

- Consumers reported an increase in time spent on gardening, as well as in gardening expenses during the COVID-19 pandemic. The most significant increases in purchases were for vegetable and seeds.
- Increased time/expenses spent on gardening during pandemic was positively associated with higher income, higher education, married people, people with children, people who worked, people who watched more COVID-19 news, and those who were infected with COVID-19 or knew someone who was.