



CORONA EFFECT ON FOOD E -SHOPPING DETERMINANTS IN SAUDI ARABIA

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Abstract

The development that the world witnessed in all aspects of life led to emergence the digital economic. This became evident with the emergence of Corona Pandemic. As Corona Pandemic had greatly affected on the purchasing behavior of individuals in general and food commodities in particular in Saudi Arabia especially with the beginning of the curfew hours. This study is one of the studies that monitor the impact of external crises such as Corona Pandemic on food E-shopping. As the study determinates the factors effect on food e-commerce revenue, the most popular apps for food E-shopping and the most important food e-shopping triggers and obstacles during the Corona pandemic in Saudi Arabia. The study relied on the descriptive

method and quantitative statistical analysis to achieve its objectives. It depended on both secondary and the primary data collected through a research sample using an electronic questionnaire. The study showed a positive impact of using ATM and the percentage of Internet users on Saudi food E-commerce revenue. On the other side, the study cleared the respondents' approval the inability to deal in foreign currencies and previous failed experiences as the most important obstacles of food E-shopping were fear of fraud and bank fraud and the lack of credit card. Above that, it returned the reasons of Saudi consumers prefer some of food e- applications than others because of easy payment methods, goods delivery speed, goods packing and sterilization of goods and health safety.

Keywords: Covid-19, Food e-shopping triggers, E-commerce revenue, Likert scale, Chi-square, Food E-applications

INTRODUCTION

The development that the world witnessed in all aspects of life led to emergence the digital economic. The digital economy is as that type of economy that depends on information and communication technology, which allows transferring information, goods and services to all countries (Quinton, 2018). E marketing is one of the digital economy, which define as the process of supplying goods and services using the Internet and digital technologies in order to achieve marketing objectives (BHARADWAJ, 2007). The percentage of online shoppers amounted to about 47.9% in 2017 raised to about 49.9% in 2018. On other hand, females are the most popular online shopping with a rate about 51.7% compared to males, which rated about 48.6% in 2018 In KSA. (Ministry of Communications and Information Technology, 2019). That led to, E- shopping the most important means for the citizens to demand food and goods with safety and health. (Grashuis, 2020). That led to changing in consumer behavior by relying on E-shopping and preference electronic payment methods during the spread of the Covid-19 pandemic. (Hashem, 2020).

The research problem

The spread of the Internet is a fundamental transformer of human behavior to E-shopping especially with the presence of external shocks such as epidemics and disasters. " Covid-19" is one of the important reasons to change shopping towards E-shopping to provide the basic needs of the citizen and achieving food and health security With starting curfew hours in many countries of the world, including Saudi Arabia, resulted confusion in traditional trade so many traditional stores were towards to electronic commerce. E-commerce revenues raised

from about 4930 million dollars in 2019 to about 6328 million dollars in the year 2020 with an increase rate about 28.4% in KSA. Doubtless consumer decisions changes because of shocks and crises that confirmed by the increasing in the revenues of electronic commerce for food and beverages from about \$ 973.7 million in 2019 to about 1338 \$4 million in 2020 with rising rate about 37.5% in KSA. (Statista website, 2021) Therefore, the study aims to study corona effect on food E -shopping determinants in Saudi Arabia. Therefore, the study sub-objectives are:

1. Determinate the most important factors affecting food and the beverage e-commerce revenue in Saudi Arabia during (2014-2025).
2. Determinate the most important food e-shopping triggers and obstacles during the Corona pandemic
3. A comparison between the demand for food e-applications and store websites before and after Corona pandemic.

Research Hypothesis

1. COVID 19 crisis has positive effect on food and the beverage e-commerce revenue
2. Having credit card has positive influences purchase decisions.
3. COVID 19 crisis have positive effect on e- shopping.
4. Food applications towards E- shopping positively influence the customer's purchase decision during COVID 19 crisis.

PREVIOUS STUDIES

Previous studies is one of the important references when initiating scientific research such as books, letters, research and scientific studies to determinate the point from which the scientific research begins.

(Tarek and others, 2022) intended to estimate Food Consumption Behaviors during the COVID-19 in Oman. The study based on the results of online survey. The paper found about 45.5 percentage of the participants increased their consumption of fruits and vegetables. Above that, about 42.4% depended on healthy foods in their meals. The study showed an increase in the consumption of local products, increase in grocery shopping behaviors and reduction of food waste.

(Meike and others; 2021) aimed to study Changes in Food Consumption during the COVID-19 Pandemic. The study conducted a cross-sectional online survey resident of Denmark, Germany, and Slovenia. The results showed that about 15-42% of study participants

changed their consumption during the pandemic. On other hand, the study cleared that the pandemic had different impacts on people's lifestyles and food consumption frequency.

(Sangeeta M., Subburaj A. Vijay S. 2021) aimed to measure the characteristics of customers who did and did not order food through Food Delivery services online food delivery services, during the COVID-19 in India. The used binary logistic regression. The research cleared that respondents' ex-habiting high-threat and less product involvement were less to order food through online food delivery services.

(Sianne. 2021) studied Consumption practices during the COVID-19 crisis. This research drawn consumption practices during COVID-19 pandemic at the British consumers. The study showed three themes consumption practices they are consumers' self-control, store format and type of shopping. The study cleared changing their shopping behavior they had less self-control that led to changes in other consumption practices.

(Lauren and others. 2020) aimed to study Food consumption behavior during COVID-19 using online consumer survey United States. The results found about stock situations so about 50% of participants bought more food than usual. The study cleared Food consumption patterns for major food groups stay the same for 80% of the participants that led to sharp decline in fast food consumption.

RESEARCH METHODS

The study relied on descriptive and quantitative statistical analysis methods such as stepwise linear regression methods to determinate the factors effect on E-commerce revenue. On other hand the study used Chi² test to compared the observed results with the expected results by using the following equation: (UGONI, 1995)

$$\chi^2 = \sum_{\text{for all cells}} \frac{(o - E)^2}{E}$$

Where; O: Viewed values E: Expected values

The study used Wilcoxon to Comparison between two non-independent samples, as Wilcoxon test for two non-independent samples is one of the parametric tests and an alternative to the t-test for two non-independent samples. Where the test requires ordinal data (strongly agree, agree, neutral, disagree, strongly disagree) and the test aims to identify the differences direction between the sample answers before and after the phenomenon (Sheskin, 2000). As the test used in order to understand the respondents' answers and to identify the direction of their effect before the Covid-19 crisis and after it.

On other hand, the study used Likert Scale to rank the problems and factors affecting the consumer's preference in using food E-shopping. (Brown, 2000).

The study relied on secondary data obtained from the Ministry of Communications and Information Technology and some websites of international institutions. The primary data collected through an electronic questionnaire for a random sample of Internet users in Saudi Arabia, according to the Herbert Arkin equation. The sample size was determined In light of the population of Saudi Arabia in 2019 amounted to about 34.218 million people (General Authority for Statistics), and therefore the sample size estimated at 384, accordingly about 391 questionnaires were collected during 1/2021 to 6/2021.

$$n = \frac{P(1 - P)}{(E \div Z) + (P(1 - P) \div N)}$$

Where: N is the size of the population, E is the error rate equal to 0.05, Z is the standard score corresponding to the significance level of 0.95 equal to 1.96, P is the percentage of characteristic availability and neutrality = 0.50 (Bashmani, 2014).

RESEARCH RESULTS

Distribution of electronic commerce revenues to various fields in the Kingdom of Saudi Arabia during the period (2014-2025)

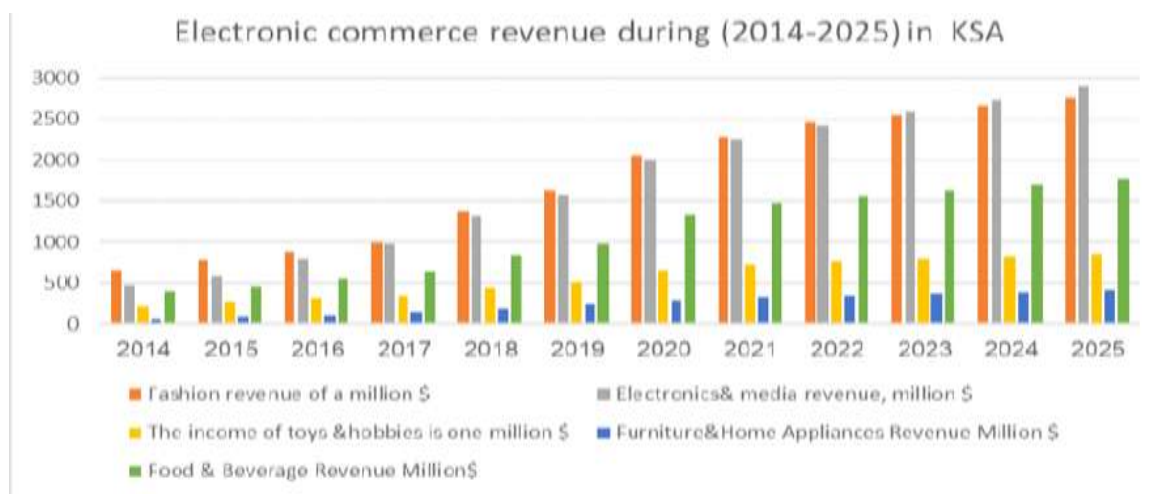


Figure No. (1): The evolution of e-commerce revenue distribution during the period (2014-2025) in KSA. **Source:** Compiled and calculated from Statista website, 2021.

Figure (1) shows the annual growth rate of electronic commerce revenues during the period (2014-2025) increased with statistically significant about 15.2% during the study period. The study showed that the evolution percentage of contribution of e-commerce revenues during

the period (2014-2020) according to the different sectors, that the highest percentage of contribution to fashion revenues was about 33.75% followed by the electronics and food sectors was about 29.96% and 20.83% respectively.

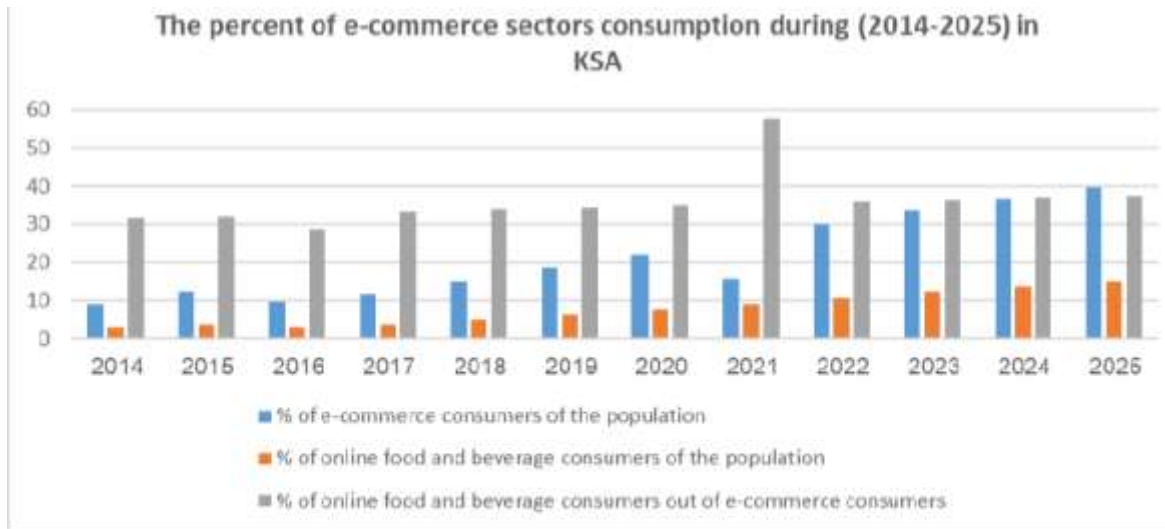


Figure No. (2): Evolution of consumer rates for the e-commerce sector and the online food and beverage sector during the period (2014-2025) in KSA. **Source:** Compiled and calculated from [Statista website, 2021](#).

There for the toys, hobbies sector, furniture, and household appliances sector reached about 11.08% and 4.22% respectively.

The average of electronic commerce food revenue during the period (2014-2025) was about 1109.28 \$ million represented about 20.72% of total e-commerce revenue during the period (2014-2025). Therefore it increased with annual growth rate about 14.8% at a statistically significant.

Figure (2) shows the number of e-commerce consumers increased with a statistically significant annual growth reached about 25.9% during the period (2014-2025). Furthermore, the number of food and beverage sector e-commerce consumers of the increased with a statistically significant annual growth reached about 96.9% during the same period.

Determinate the most important factors affecting food and the beverage e-commerce revenue in Saudi Arabia during (2014-2025)

To determine the most important factors affecting the electronic commerce of food commodities the study used stepwise linear regression function, whereas: (y) equal total electronic commerce of food commodities in million dollars. While the independent variables

are: X1: ATMs per 100,000 people, X2: Percentage of Internet users, X3: Gross domestic product per capita in thousand dollars, X4: The number of mobile phones per hundred people, X5: Bank accounts per thousand people, X6: Number of ATM credit cards for every 100,000 people.

The results concluded that the most important affecting factors that are consistent with economic logic and statistical morality represented in the following equation:

$$Y = -2136.20 + 25.64X_1 + 11.74X_2 \quad (1)$$

$$(-3.67)^* \quad (5.81)^{**} \quad (12.17)^{**}$$

$$F = 220.85^{**} \quad R^2 = 95\% \quad \text{Mahal. Distance Max.} = 6.93$$

Function N0 (1) clears if ATM machines increases by one unit per hundred thousand people will lead to an increase in food commodities e-commerce revenue by about 25.64 million dollars, and if the percentage of Internet users increase by 1% the food commodities e-commerce revenue will increase by about 11.74 million dollars. Furthermore the maximum value of Mahal estimated by about 6.93 that was less than the critical value of chi-squared, which equal to 20.52 at degrees of freedom = 5, therefore there are no outliers as a condition of applying step wise regression statistical.

Table (1): Food e-shopping triggers during the Corona pandemic of the study sample

Online shopping incentives	Strongly agree		agree		neutral		disagree		Strongly disagree		Sig. Chi ²	Likert scale
	No.	%	No.	%	No.	%	No.	%	No.	%		
trust the site	109	27.95	154	39.49	77	19.74	18	4.62	32	8.21	0.00	3.74
The good reputation of the site	103	26.41	230	58.97	45	11.54	6	1.54	6	1.54	0.00	4.07
The general layout & the site design	36	9.23	185	47.44	133	34.1	15	3.85	21	5.38	0.00	3.51
Ease to communicate with customer	124	31.79	161	41.28	77	19.74	15	3.85	13	3.33	0.00	3.94
Maintaining privacy	121	31.03	174	44.62	75	19.23	12	3.08	8	2.05	0.00	3.99
health safety level	142	36.41	153	39.23	63	16.15	27	6.92	5	1.28	0.00	4.03
Availability of premium merchandise	110	28.21	174	44.62	69	17.69	25	6.41	12	3.08	0.00	3.88
Opinions of other consumers	60	15.38	184	47.18	120	30.77	15	3.85	11	2.82	0.00	3.68
Provides information and accurate description of food products	113	28.97	189	48.46	46	11.79	26	6.67	16	4.1	0.00	3.92
Save time, effort and money	115	29.49	183	46.92	76	19.49	10	2.56	6	1.54	0.00	4.0

Promotions	87	22.31	176	45.13	72	18.46	35	8.97	20	5.13	0.00	3.71
The ability to shop at any time	141	36.15	196	50.26	40	10.26	6	1.54	7	1.79	0.00	4.17
Ease of browsing the site	133	34.1	205	52.56	28	7.18	14	3.59	10	2.56	0.00	4.12
The product arrived on time and with the same specifications	129	33.08	168	43.08	52	13.33	29	7.44	12	3.08	0.00	3.96
After sell services	69	17.69	144	36.92	127	32.56	35	8.97	15	3.85	0.00	3.56
Multiple payment methods	148	37.95	178	45.64	48	12.31	10	2.56	6	1.54	0.00	4.16

Table (2): The most important food e-shopping obstacles during the Corona pandemic

Obstacles of online shopping	Strongly disagree		disagree		Neutral		agree		Strongly agree		Sig Chi ² *	Likert scale
	%	No.	%	No.	%	No.	%	No.	%	No.		
The inability to touch the goods before buying	5.38	21.00	7.44	29.00	33.59	131.00	37.69	147.00	15.90	62	0.00	2.0
Lack of personal knowledge of sellers or deliverers	7.18	28.00	19.74	77.00	32.31	126.00	33.85	132.00	6.92	27	0.00	3.00
Previous failed experiments	4.87	19.00	13.08	51.00	27.18	106.00	34.62	135.00	20.26	79	0.00	4.50
Fear of bank scams and fraud	3.33	13.00	8.72	34.00	24.87	97.00	35.13	137.00	27.95	109	0.00	4.0
Credit card not available	14.62	57.00	16.67	65.00	26.92	105.00	28.72	112.00	13.08	51	0.00	3.50
Inability to ensure product quality	4.87	19.00	5.90	23.00	25.13	98.00	46.15	180.00	17.95	70	0.00	4.0
Unable to negotiate price or delivery date	5.90	23.00	11.28	44.00	31.03	121.00	35.64	139.00	16.15	63	0.00	3.0
Inability to exchange or return	8.97	35.00	11.79	46.00	20.51	80.00	38.46	150.00	20.26	79	0.00	2.50
Increased costs due to shipping and delivery costs	7.95	31.00	6.41	25.00	20.26	79.00	37.18	145.00	28.21	110	0.00	3.0
Inability to deal in foreign currencies	11.28	44.00	18.46	72.00	35.90	140.00	23.85	93.00	10.51	41	0.00	4.50
Lack of knowledge of legal institutions to confront bank fraud and fraud	8.72	34.00	11.03	43.00	27.69	108.00	34.62	135.00	17.95	70	0.00	3.50

CONCLUSIONS AND RECOMMENDATIONS

- The study showed that ATM machines and the percentage of Internet users have the positive effect on increasing the e-commerce commodities returns of food and beverage. Therefore, the study recommended for more making promotions for banking services, and spread more ATM and credit cards machines to increase their food and beverage E-shopping. On other hand, the study also recommends making more internet services promotions to attract more customers, which increases the returns of food and beverage e-commerce revenue.
- The study cleared that respondents' approval the inability to deal in foreign currencies, previous failed experiences in using E-shopping, fraud and bank fraud and the unavailability of credit card as the most important Obstacles of food E-shopping. There for the study recommends expansion of dealing with bank cards instead of cash, spread more awareness to consumers on how to avoid bank fraud, and spread more awareness of the consumer legal rights to reduce food e-shopping Obstacles.
- The study cleared that there are some applications need strategy plan to raise their ability to compete other food E-shopping during crises like corona pandemic app by more attentions of Easy Payment Methods, Goods delivery speed and good packing.

Authors' Contribution

R.E had collected and analyses the data, H.M assist in data analysis and all the researchers contributed in manuscript preparation. All authors read and approved the final manuscript.

Conflicts of interest

The authors declare no conflicts of interests

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