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Research article

COVID-19 lockdown and the satisfaction with online food delivery providers

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Abstract

The objectives of this research are to qualitatively explore the attitudes towards online food delivery providers (ODP) during the COVID-19 lockdown in Ecuador, and to quantitatively analyse whether there are changes in e-satisfaction with ODPs and three determinants (e-service quality, delivery workers personal aspects, and food quality). Qualitative analysis results of 104 customer opinions showed positive attitudes towards ODPs and a new motivation for using this service: risk exposure reduction. However, concerns about the application of biosafety guidelines by restaurants and delivery workers were also evident. A structural equations model (n=483) revealed that personal aspects lost significance as a determinant for e-satisfaction during the lockdown, most likely due to personal contact reduction during delivery.

Keywords: online food delivery providers; e-satisfaction; e-service quality; perceived food quality; delivery workers.

El confinamiento por COVID-19 y la satisfacción respecto a las empresas de pedidos de comida a domicilio

Resumen

Los objetivos de esta investigación son explorar cualitativamente las actitudes hacia los proveedores de comida a domicilio (ODP por sus siglas en inglés) durante el confinamiento por COVID-19 en Ecuador y analizar cuantitativamente si hay cambios en la satisfacción digital respecto a los ODPs y tres determinantes (calidad del servicio digital, aspectos personales de los repartidores y calidad de la comida) en dicho periodo. Los resultados del análisis cualitativo a 104 opiniones de clientes mostraron actitudes positivas hacia los ODPs y una nueva motivación para su uso: reducción de la exposición al riesgo. La preocupación sobre la aplicación de medidas de bioseguridad por restaurantes y repartidores también fue evidente. Un modelo de ecuaciones estructurales (n=483) mostró que la variable aspectos personales perdió significancia como determinante de la satisfacción digital durante el confinamiento; resultado atribuible a la reducción del contacto personal durante la entrega de comida.

Palabras clave: empresas de pedidos de comida a domicilio; satisfacción digital; calidad del servicio digital; calidad percibida de la comida; repartidores.

O confinamento por COVID-19 e a satisfação com as empresas de entrega de comida em domicílio

Resumo

Os objetivos desta pesquisa são explorar qualitativamente as atitudes em relação às empresas de entrega de comida em domicílio (ODP pela sigla em inglês) durante o confinamento por COVID-19 no Equador e analisar quantitativamente se há mudanças na satisfação digital em relação aos ODPs e três fatores determinantes (qualidade do serviço digital, aspectos pessoais dos entregadores e qualidade da comida) no referido período. Os resultados da análise qualitativa de 104 opiniões de clientes evidenciam atitudes positivas em relação aos ODPs e uma nova motivação para a sua utilização: redução da exposição ao risco. A preocupação com a aplicação de medidas de biossegurança por restaurantes e entregadores também foi evidente. Um modelo de equação estrutural (n = 483) mostrou que a variável aspectos pessoais perdeu significância como determinante da satisfação digital durante o confinamento; resultado atribuível à redução do contato pessoal durante a entrega de alimentos.

Palavras-chave: empresas de entrega de comida em domicílio; satisfação digital; qualidade do serviço digital; qualidade percebida dos alimentos; concessionários.

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1. Introduction

The online food delivery sector has been growing at high rates worldwide in the last years. Its revenues have risen from US$76,193 million in 2017 to US$122,739 million in 2020 (17.2% average annual growth), with an expectation to reach US$164,002 million for 2025 (Statista, 2020). Moreover, during the COVID-19 lockdown, more online delivery providers have emerged and more restaurants have turned to the delivery format (Dishman, 2020). Even restaurants offering their products only through delivery have emerged; a practice that provides the opportunity to new entrants with low fixed costs. Therefore, nowadays this activity has gained relevance not only for established but also for new businesses.

Since March 17, 2020, the Ecuadorian government decreed mobility restrictions within the country, closed borders to all foreign travellers due to the spread of the coronavirus, and suspended face-to-face work in the government and private sectors; however, prioritized sectors (e.g., utilities, security, health) and delivery services were allowed to operate with specific guidelines (Comité de Operaciones de Emergencia Nacional - COE, 2020). By July 27, 2020, Ecuador was one of the most affected countries by COVID-19 in the world (#17), and the fourth most affected in South America with 313 deaths and 4,596 cases per million people (5,532 total deaths and 81,161 total cases reported) (Worldometer, 2020). However, non-official estimations suggested that the number of deaths was significantly higher than the figures reported by the government (León & Kurmanaev, 2020).

Due to the lockdown, the entertainment, hospitality and restaurant sectors are the most affected in Ecuador. Most restaurant and cafe owners projected a fall in sales of 30% or more during 2020 (Castillo & Zhangallymbay, 2020). During this crisis, delivery providers emerged as an alternative to mitigate the drop in sales. Thus, 46% of restaurants and cafes had a delivery service before the lockdown, but 92% expected to offer the service during the confinement (Castillo & Zhangallymbay, 2020). A similar scenario was evident worldwide during the COVID-19 lockdown, as reported above.

Preserving customer satisfaction is crucial for service firms to influence trust and loyalty in crisis times (Monferrer-Tirado, Estrada-Guillén, Fandos-Roig, Moliner-Tena & García, 2016). In the digital world, it has been demonstrated that e-satisfaction is positively associated with consumer spending (Nisara & Prabhakar, 2017). Thus, firms must be aware of what drives customer satisfaction within their specific industries, particularly when they are facing economic difficulties. Since COVID-19 crisis has brought several changes in doing business and customer perceptions, attitudes and behaviour (Deloitte, 2020), it becomes pertinent to study eventual changes in attitudes, customer satisfaction and its antecedents. The literature on online services has evidenced that e-service quality and food quality impact e-satisfaction (Suhartanto, Helmi, Tan, Sjahroeddin & Kusdibyo, 2019). We suggest that the

customer interaction with the delivery worker is another source of satisfaction or dissatisfaction with online food delivery providers (ODP), according to a vast literature in the service industry (e.g., Alhelalat, Habiballah & Twaissi, 2017; Jang & Namkung, 2009; Macias, Rodriguez & Barriga, 2020; Wall & Berry, 2007). The most obvious way of estimating changes in the proposed variables is comparing its levels and relationships before versus during the COVID-19 lockdown. According to the literature review carried out here, to date there is no academic publication addressing the study of determinants of satisfaction with ODPs during the lockdown in Ecuador. A couple of studies are limited to reporting the emergence of a greater number of businesses of this type during the pandemic (Játiva & Cabezas, 2020) and the fact that biosafety measures are being taken for food delivery (Bernal-Álava, Solórzano-Solórzano, Burgos-Salazar & Cantos-Figueroa, 2020).

Given the growing importance of the food delivery sector within service industries worldwide, this study has two purposes: (i) to qualitatively explore the main attitudes towards online food delivery providers in Ecuador in times of COVID-19, and (ii) to quantitatively investigate whether there is a change in customer satisfaction with this service and three antecedents: e-service quality, personal aspects of the delivery workers, and perceived food quality.

The following section presents the theoretical foundations of the proposed model, the third and fourth sections describe the methodology and results of the qualitative and quantitative phases of this research, respectively. Finally, discussion and conclusions are provided.

2. Theoretical background and conceptual model

Service literature has turned its attention into the e-world, mainly in the last two decades. The works of Zeithaml, Parasuraman and Malhotra (2002), and Parasuraman, Zeithaml and Malhotra (2005) define e-service quality and a summary of its main dimensions. E-service quality is understood as "the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services" (Zeithaml et al., 2002, p. 363). This construct comprises (i) efficiency, as the ease and speed of accessing and using the website; (ii) fulfilment, as the extent to which the delivery promises and item availability of the site are accomplished; (iii) system availability, referring to the correct technical functioning of the website; and (iv) privacy, as the degree to which the site is safe and protects customer information (Parasuraman et al., 2005).

Nevertheless, studies about online food delivery providers are recent and scarce in marketing literature. Researchers have focused on the attitudes towards it (Cho, Bonn & Li, 2019; Yeo, Goh & Rezaei, 2017), intention to use (Alagoz & Hekimoglu, 2012; Okumus, Ali, Bilgihan & Ozturk, 2018; Yeo et al., 2017), adoption of ODPs (Okumus & Bilgihan, 2014), and final conversion (i.e., placing an online order) (Kapoor & Vij, 2018). All these

studies analyse the pre-consumption stage. Instead, this work investigates customers who have already adopted the use of ODPs, have placed orders and have eaten the food, and analyses their satisfaction with the ODP. In this regard, Wang, Tseng, Wang, Shih and Chan (2019) studied satisfaction only with restaurant-owned apps, and the authors included mainly information systems (IS) variables as determinants. Alalwan (2020) included detailed functional aspects as precursors of ODP satisfaction. Suhartanto et al. (2019) proposed e-service quality and food quality as determinants of e-satisfaction. Macias et al. (2020) added personal aspects of delivery workers in the ODP context and explored spillover effects over restaurant brands. The present work differs from Macias et al. (2020) since this study analyses changes in the evaluation of e-satisfaction and its determinants, and changes in the structural relationship due to the COVID-19 lockdown, using a larger sample to capture the effect of the health emergency period. In addition, we provide a qualitative analysis of customer perceptions about the service of ODPs in times of COVID-19, which could bring new insights for further research on this topic.

Based on Oliver's (1999) definition of satisfaction, we define ODP satisfaction as a subjective assessment of experience with an ODP regarding the degree of fulfilment of prior expectations. The customer service encounter in the ODP context includes interaction with the platform/app (launching, searching, ordering, payment, waiting/tracking), interaction with the delivery worker, and food consumption. Concerning the platform, the variable that best describes its performance is e-service quality. The platform's adequate functioning in its several dimensions (efficiency, fulfilment, system availability, and privacy) should contribute to e-satisfaction; prior works in lodging websites (Jeon & Jeong, 2017) and ODPs (Macías et al., 2020; Suhartanto et al., 2019) showed this relationship. Therefore, we proposed the following hypothesis:

- H1: e-service quality is positively associated with ODP satisfaction.

Furthermore, delivery workers may interact with the customer through text messaging or phone calls for delivery details, and during the personal delivery of products. Several studies have explained that the employees' appearance and behaviour influenced brand image formation in the' minds of customers (Pounders, Babin & Close, 2015; Warhurst & Nickson, 2007a, 2007b). In many industries, managers establish clothing, speech, and behaviour parameters to reflect brand image and values (Witz, Warhurst & Nickson, 2003). We define personal aspects of delivery workers (hereafter, personal aspects) as the combination of physical appearance, clothing, and manners when interacting with ODP customers. There is evidence that personal aspects influence how customers evaluate the service (Kim, 2014), restaurant experience

(Wall & Berry, 2007), and satisfaction (Alhelalat et al., 2017; Macías et al., 2020). Hence, the second hypothesis is:

- H2: personal aspects are positively related to ODP satisfaction.

After platform and delivery worker interaction, customers eat food as a part of their experience from a process perspective. The degree of perceived food quality in the variety of menu, presentation, size, healthiness, taste, freshness, and food temperature, contribute to customer experience in restaurants (Han & Hyun, 2017; Liu & Jang, 2009; Namin, 2017; Namkung & Jang, 2007). Although the restaurant has prepared the food, the ODP controls the delivery time affecting its freshness; it has been shown that perceived food quality is positively associated to satisfaction with delivery service providers (Macías et al., 2020; Suhartanto et al., 2009). Based on these arguments and evidence, the following hypothesis has been drawn:

- H3: perceived food quality is positively associated with ODP satisfaction.

Finally, although restaurants prepare food orders, Spillover Theory (Sirgy, Efraty, Siegel & Lee, 2001) posits that some parts of a process influence the perception of another part of this process. Evidence of the referred theory is provided in several fields, for example, in the case of brand alliances, negative behaviour of one brand is likely to spill over to the other brand if consumers believe that the latter knew and overlooked the misbehaviour (Votolato & Unnava, 2006). Within coalition loyalty programs, one program partner service failure harms customer loyalty towards the whole program (Schumann, Wünderlich & Evanschitzky, 2014). In the ODP context, e-service quality influences the way customers perceive food quality (Macías et al., 2020; Suhartanto et al., 2019); it can also be said that the good or bad experience with the previous food consumption phase (i.e., delivery worker interaction) could influence the way customers assess food quality. Therefore, we proposed:

- H4: e-service quality is positively related to perceived food quality.
- H5: personal aspects are positively related to perceived food quality.

The relationships proposed above are depicted in figure 1.
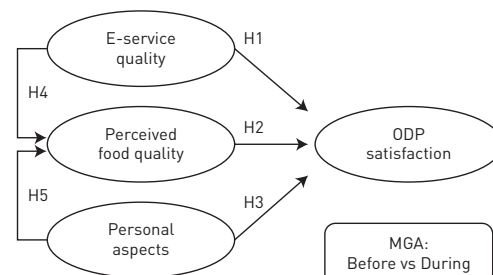
Figure 1. Conceptual model
Source: own elaboration.

3. Qualitative study

3.1 Methodology

An open-ended question was distributed to a sample of 104 users of ODPs in Ecuador. The objective was to know the opinion of users about the food delivery service during the lockdown: *What is your opinion about having the food delivery service available during COVID-19 mobility restrictions in the country?*

Qualitative data analysis involves making sense of the text. To analyse the responses text, researchers followed a three-stage coding process; open coding identified basic categories and axial coding related categories to subcategories, finally, key themes were identified.

3.2 Results

After qualitatively analysing the text of 104 responses (164 codes), key themes were identified and summarized below (Table 1).

- Attitudes toward the service: Attitudes are overall evaluations of a brand, object, or in this case, the service provided by ODPs. Attitudes have some properties as valence (negative or positive), extremity (low to high), and emotionality (cognitive versus emotional) (Rocklage & Fazio, 2015). There was a large number of favourable responses about having the ODP service during the lockdown. Some of them qualified this possibility from "okay" to "excellent" or "useful" to "indispensable", where "excellent" and "indispensable" denoted high extremity. Adjectives like "good", "very good", "positive", "wonderful" or "excellent" are mainly emotional; while "useful", "helpful", "necessary", or "indispensable" are more cognitive, i.e., beliefs about the service and its properties. Most of the responses included emotional adjectives.
  "Excellent option."
  "It is the best we have."
  "It is a good option."
  "Well, it is necessary."
  There were few negative responses expressing it was a "risky", "unsafe", or "expensive" service:
  "I find it dangerous, high risk, and at the moment I am not consuming anything prepared."
- Reasons for positive attitudes: The respondents indicated why they expressed a favourable opinion about the ODP service during the lockdown. The most cited cause was convenience, which includes time-saving and staying at home. In some cases, staying at home was imperative when the consumer had mobility problems or belonged to the most vulnerable population. The second cause was the reduction of risk exposure: less probability of overcrowding and contagion.

Table 1. Summary of qualitative analysis

Attitudes				%
Valence	Emotionality	Extremity	Examples of codes	
Positive	Emotional	Low to medium	Okay, good, positive, very good	23.2%
		High	Excellent, wonderful	18.9%
	Cognitive	Low to medium	Useful, helpful	11.0%
Negative		High	Necessary, indispensable	6.1%
	Cognitive	Low to medium	Risky, unsafe, expensive	3.6%
Reasons for positive attitudes				
Convenience:	Time-saving			2.4%
	Stay at home			7.9%
Less risk exposure				9.2%
Preserves financial situation (firms & employees)				3.1%
Concerns and demands				
To increase offer and geographical coverage				7.3%
To adopt biosafety norms				6.1%
Unintelligible				1.2%
Total				100.0%

Source: own elaboration.

"It is valuable to have this service available in times of restricted mobility, especially for people who may be experiencing the disease and, because they are isolated, cannot go out or have anyone to give them food."

"It is an excellent option; it exposes the consumer less to the threat of the virus and offers you an advantage by taking that time doing other things such as teleworking."

"It helps us to have the necessary products without risk of leaving home."

Finally, a smaller group of respondents considered the situation of businesses and workers since the delivery option allows preserving the financial stability of restaurants, ODPs, and delivery workers.

"An excellent option. It maintains sales in the restaurants found in the app and keeps its delivery workers employed."

- Concerns and demands: Another relevant theme that emerged from customer responses was the concern about restaurants and delivery workers biosafety guidelines when preparing and delivering the food, respectively.

"It seems very opportune to me, as long as the appropriate sanitary and safety measures are taken."

"Food service is considered a necessary service, so it is very positive that people can buy prepared food from the comfort of their home. It is clear that delivery workers must comply with established guidelines to avoid contagion or food mishandling."

Several customers also demanded that more restaurants, apps, and workers incorporate into the collaborative system to increase food options, improve geographic coverage, and reduce waiting times.

"It is a wise decision, and more restaurants should be added to have more available options."

Predominantly, this analysis reveals positive attitudes towards the service, the leading reported causes are convenience and risk reduction. According to existing literature, convenience is a widely accepted motivation for using ODPs (Euromonitor, 2019; Furunes & Mkono, 2019; Yeo et al., 2017). Thus, risk reduction emerges as a new motivation in this study. In addition, there are concerns about adopting biosafety guidelines by restaurants and delivery workers. Several publications (Deloitte, 2020; Diebner, Silliman, Ungerman & Vancauwenberghe, 2020; Dore, Ehrlich, Malfara & Ungerman, 2020) report that new delivery methods are being offered to minimize physical contact between customers and delivery workers in response to consumer concerns. For example, Domino's Pizza customers can indicate where they would prefer their order to be left (a safe and clean surface) by the delivery worker. Also, customers can select pre-payment and pre-tipping options (Fantozzi, 2020). Meituan Dianping launched a contactless delivery initiative across China using autonomous vehicles to send grocery orders (Hu, 2020).

These findings suggest the necessity of studying whether there are changes in the relationship between customer satisfaction with ODPs and its determinants, according to the proposed conceptual model.

4. Quantitative study

A quantitative study was designed to investigate whether there is a change in customer satisfaction with the ODP service and three antecedents: e-service quality, personal aspects of the delivery workers, and perceived food quality (figure 1).

4.1 Measures and methods

Items for the study constructs were adapted from previous studies and measured in 5-points Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). ODP satisfaction (e-SAT) was measured with three items from Möhlmann (2015). E-service quality (e-SQ) was measured with a summarized scale that resembles the conceptualization made by Parasuraman and Zeithaml (2005) (Harris & Goode, 2004; Ryu, Lee & Kim, 2012; Suhartanto et al., 2019). Perceived food quality (PFQ) was measured with six items (Ryu et al., 2012; Namkung & Jang, 2007), and personal aspects (PASP) was adapted from the scale proposed by Alhelalat et al. (2017). Table 2 shows the items for all the primary constructs; all items were translated from English into Spanish, slightly adjusted after a pilot study (n=18), and back-translated. There was a high level of coincidence between the original and back-translated versions of the items.

Unrestricted self-administered survey on the Internet (Fricker, 2008) is a convenience sample technique, which can be justified by the lack of access to ODPs customer databases and the context for studying ODP customers. An online questionnaire was distributed on social media (Linkedin, Facebook, Twitter, WhatsApp) in two periods; the first one during February 2020 (before COVID-19 lockdown), and the second one from April 1 to May 4, 2020 (during the lockdown). A categorical variable was created to register the two periods (PERIOD=1 during lockdown). Food apps use frequency (FREQ) (Newman, Wachter & White, 2018) and demographic variables were also measured: age (AGE), gender (GEN), income (INCO), and education (EDU).

4.2 Analysis

Confirmatory factor analysis (CFA) was performed to test several validity criteria for measuring the study constructs: construct reliability, convergent validity, and discriminant validity. An analysis of covariance (ANCOVA) was performed to determine differences in three proposed determinants and e-satisfaction evaluation. The analysis included summed dependent variables, a categorical variable describing the evaluation period as the main factor (before or during the lockdown) and control variables: age, income, education, and ODP use frequency.

The structural model in figure 1 was tested with the Partial Least Squares (PLS) technique in SmartPLS (Ringle, Wende & Becker, 2015). PLS is a suitable technique for structural equation models (SEM) when the researcher explores a new theory, rather than confirming established theoretical models. Moreover, PLS is used when complex models with many indicators and relationships are tested, with non-normal data or small sample sizes (Hair, Hult, Ringle & Sarstedt, 2017). A multi-group analysis (MGA) was performed to check if these relationships changed during the lockdown.

4.3 Results

A total sample of 483 respondents was obtained ($N_{Before}=332$; $N_{During}=151$), and descriptive data for each group is shown in table 2. There are significant differences regarding age, income, and education. There is no significant difference in ODPs use frequency between the two subsamples. Demographic variables were used as control variables in further analyses, given its differences in the subsamples.

Table 2. Descriptive data by group and tests for differences

	Before	During	
N	332	151	
Means			p-value (t)
Age (years)	29.62	32.50	0.002
Frequency (1-5)	3.48	3.42	0.578
Percentages			p-value (x²)
Gender			0.265
Female	54.2%	61.6%	
Male	45.5%	38.4%	
Other	0.3%	0.0%	
Income (household, monthly)			0.015
$400 or less	7.8%	4.0%	
$401-$700	12.3%	8.6%	
$701-$1200	23.2%	16.6%	
$1201-$2500	26.2%	35.1%	
$2501-$4800	18.7%	27.8%	
more than $4800	11.7%	7.9%	
Education			0.000
Secondary education	34.3%	16.6%	
Bachelor's degree	37.3%	33.1%	
Graduate	28.3%	50.3%	

Source: own elaboration.

4.3.1 Confirmatory factor analysis

Construct reliability was assessed with Cronbach's Alpha and Composite Reliability (CR). Both criteria showed values above the recommended threshold of 0.7 (Bagozzi & Yi, 1988; Nunnally & Bernstein, 1994), the average variance extracted (AVE) for all constructs reached values above 0.5 (Fornell & Larcker, 1981), but some items were removed from e-service quality without affecting the content validity. The Heterotrait-Monotrait ratio (HTMT) was calculated for discriminant validity, which is considered a more efficient criterion than Fornell and Larcker's (Henseler, Ringle & Sarstedt, 2015). Values for HTMT were all below 0.85 as recommended by Hair et al. (2017). Factor loadings were greater than the minimum suggested level of 0.5 (Hair et al., 2017). Taken together, these results indicate that the measurement model was satisfactory (Tables 3 and 4).

4.3.2 Analysis of covariance

ANCOVA results (Table 5) for each determinant and e-satisfaction evidenced that PASP is the only determinant that changed during the lockdown (the main effect of PERIOD was significant), showing a significant increase (M_{Before}= 4.16; M_{During}= 4.39). Among control variables, FREQ was significant for all the determinants and e-satisfaction.

Table 3. Items and measurement model results

Constructs and items	Factor loading	Cronbach's Alpha	CR	AVE
e-Service Quality (e-SQ)		0.877	0.903	0.538
esq1 In the app, I can easily find what I need	0.760			
esq2 The app makes it easy to get anything	0.745			
esq3 The app is easy to use	0.773			
esq4 Whenever I need, I can access the app	0.750			
esq5 The app launches straight away	0.744			
esq6 The app accurately informs the delivery time and conditions	0.721			
esq7 The payment information is safe in this app	0.704			
esq8 The ordered products were delivered within the estimated time	0.668			
Personal aspects (PASP)		0.915	0.934	0.701
pas1 The delivery worker had a clean and well-kept physical appearance	0.796			
pas2 The delivery worker's clothes looked clean and tidy	0.784			
pas3 The delivery worker showed friendly facial expressions	0.840			
pas4 The delivery worker expressed himself in a friendly and warm way	0.881			
pas5 The delivery worker expressed himself courteously and respectfully	0.841			
pas6 Overall, the attitude of the delivery worker was cordial	0.878			
Perceived food quality (PFQ)		0.888	0.914	0.641
pfq1 The food was delicious	0.839			
pfq2 [Brand] offered a variety of menu items	0.734			
pfq3 [Brand] offered freshly prepared food	0.820			
pfq4 The food was properly packed	0.800			
pfq5 I received the food at the appropriate temperature	0.783			
pfq6 The smell of the food was tempting	0.823			
ODP satisfaction (e-SAT)		0.875	0.923	0.800
Constructs and items	Factor loading	Cronbach's Alpha	CR	AVE
esat1 Overall, I am satisfied with the app	0.916			
esat2 The last time I used the app it met my expectations	0.892			
esat3 The app used represents the ideal version of an app to order food online	0.874			
Frequency (FREQ)				
freq How often do you use apps for ordering food online?				

Source: own elaboration.

Table 4. Heterotrait-Monotrait Ratio (HTMT)

	e-SQ	PASP	PFQ	e-SAT
e-SQ				
PASP	0.471			
PFQ	0.550	0.502		
e-SAT	0.700	0.494	0.624	

Source: own elaboration.

Table 5. ANCOVA results

	e-SQ	PASP	PFQ	e-SAT
Estimated means[a]				
Before	4.349	4.157	4.409	4.642
During	4.393	4.388	4.495	4.697
Main effect of PERIOD[b]: F (p-value)				
Period	0.45 (0.503)	8.89 (0.003)	1.75 (0.187)	0.52 (0.471)
R²	0.056	0.059	0.052	0.091

a. Covariates in the model were evaluated at the following values: AGE = 30.52, FREQ = 3.47.
b. Control variables not shown in the table: GEN, INCO, EDU, AGE, FREQ
Source: own elaboration.

Table 6. Structural model and multi-group analysis

	Structural relation	Total sample		Before		During		Multi-group analysis	
		Path coefficient	p-value[a]	Path coefficient	p-value[a]	Path coefficient	p-value[a]	Path coefficient difference Before-During	p-value[a]
H1	e-SQ→e-SAT	0.395	0.000	0.356	0.000	0.430	0.000	-0.074	0.481
H2	PFQ→e-SAT	0.275	0.000	0.291	0.000	0.292	0.005	-0.001	0.990
H3	PASP→e-SAT	0.145	0.002	0.171	0.001	0.090	0.295	0.081	0.418
H4	e-SQ→PFQ	0.358	0.000	0.358	0.000	0.359	0.000	-0.001	0.995
H5	PASP→PFQ	0.305	0.000	0.343	0.000	0.233	0.003	0.110	0.265
Control	FREQ→e-SAT	0.118	0.001	0.158	0.000	0.063	0.266	0.095	0.183
	AGE→e-SAT	0.019	0.641	0.047	0.290	-0.012	0.876	0.059	0.500
	GEN→e-SAT	-0.030	0.341	-0.052	0.167	-0.001	0.992	-0.051	0.495
	EDU_cat2→e-SAT	-0.045	0.277	-0.056	0.230	0.004	0.963	-0.060	0.581
	EDU_cat3→e-SAT	-0.048	0.332	-0.056	0.273	-0.013	0.907	-0.043	0.737
	INCO_cat2→e-SAT	-0.055	0.317	-0.103	0.108	0.047	0.714	-0.150	0.282
	INCO_cat3→e-SAT	-0.061	0.251	-0.069	0.234	-0.043	0.787	-0.026	0.865
	INCO_cat4→e-SAT	0.017	0.768	-0.023	0.707	0.090	0.631	-0.112	0.531
	INCO_cat5→e-SAT	0.010	0.857	-0.011	0.845	0.065	0.717	-0.077	0.655
	INCO_cat6→e-SAT	0.016	0.748	0.015	0.789	0.001	0.996	0.014	0.915

a. From Bootstrap t-test
Source: own elaboration.

4.3.3 Structural model

The complete sample analysis showed significant and positive relations between e-satisfaction and the three determinants concerning the structural model and supporting H1, H2, and H3. The relationship between e-SQ and PFQ as well as PASP and PFQ was positive and significant, supporting H4 and H5 (Table 6). All control variables, except frequency, were non-significant. Structural models estimated with PLS should be evaluated based on their predictive power measured by the coefficient of determination (R^2). Hence, R^2 for PFQ and e-SAT were 0.314 and 0.499, considered moderate values (Hair et al., 2017). Moreover, size effects (f^2) were estimated for all endogenous variables in the model.

The results show that e-service quality is the main factor when evaluating customer satisfaction with ODPs, with a medium effect ($0.15 \leqslant f^2 < 0.35$). Furthermore, PASP and PFQ showed small ($f^2 \geqslant 0.02$) size effects (table 7).

Finally, the MGA showed no significant changes in any of the path coefficients when comparing the two temporal samples, although the impact of PASP lost significance during the lockdown. The path coefficient for PASP to e-SAT is not significant for the 'during' subsample, and at the same time is not significantly different from the 'before' path coefficient (Table 6). Further analysis of total indirect effects showed a significant effect of PASP over e-SAT (mediated by PFQ) in both subsamples.

Table 7. Model evaluation

	PFQ	e-SAT
R²	0.314	0.499
R² adj.	0.311	0.485
f²		
e-SQ	0.152	0.215
PASP	0.111	0.030
PFQ		0.102

Source: own elaboration.

5. Discussion and conclusions

We tested three determinants of satisfaction with online food delivery providers: e-service quality, personal aspects of delivery workers, and food quality, before and during the COVID-19 lockdown in Ecuador in order to observe whether the impact of the determinants had changed. An individual analysis of means of determinants showed that only personal aspects experienced a significant increase. A plausible explanation for such increase could be deeper customer empathy towards workers during this crisis; according to existing research, delivery workers are mostly young people with no stable jobs (Goods, Veen & Barratt, 2019; Prakash, Behera, Sharma, Relan, Harshula & Kaul, n.d.). Recently, various press reports revealed that customers valued that delivery workers expose themselves to contagion to earn a living during the lockdown, as a demonstration of gratitude, many ODP customers ordered food and gave it to delivery workers (Expansion, 2020). Thus, we infer that concerns about personal appearance and verbal interaction during the lockdown stage took a secondary role, and favourable evaluations prevailed.

Nevertheless, this positive evaluation of delivery workers might not mean a greater satisfaction with ODPs. Despite our findings with the total sample revealed that the three determinants positively influenced e-satisfaction, when the subsamples were analysed separately there was a statistical significance loss for the direct relationship between personal aspects and e-satisfaction during the lockdown. However, the indirect effect of personal aspects over e-satisfaction (mediated by perceived food quality) prevailed in both periods. Consumer concerns about biosafety guidelines compliance by restaurants and delivery workers have minimized personal interaction during delivery (Deloitte, 2020; Diebner et al., 2020; Dore et al., 2020). For example, a higher caution of consumers plus delivery practices with minimal personal contact designed by firms (Fantozzi, 2020; Hu, 2020). The loss of significance of delivery workers' personal aspects, as a determinant of e-satisfaction can be attributed to this minimized personal interaction in times of the pandemic. Future research should analyse eventual changes in the structural relationship tested in the present, once the economic activity returns to normal or to "new normal" conditions in which some mobility restrictions and social distance guidelines would still apply.

The e-service quality is still the main factor to ensure customer satisfaction with ODPs, this result coincides with previous research (Macías et al., 2020; Suhartanto et al., 2019). Moreover, the coefficient for e-service quality was higher (0.430 vs. 0.356) during COVID-19 lockdown than before. However, food quality and personal aspects are also factors that should not

be neglected – due to observed direct and indirect effects, respectively – and must evolve under current circumstances. The qualitative analysis revealed that risk exposure reduction is a strong reason for customers to hold a positive attitude towards ODPs. This finding represents a contribution to the academic literature and has managerial implications. Hence, firms involved in this collaboration (restaurants and ODPs) should follow strict biosafety guidelines in preparation, packaging, and delivery stages to trigger customers favourable perceptions. In addition, companies must communicate their efforts and practices to meet safety requirements to raise consumer awareness. Regarding methodological implications for service evaluation in this context, future measurement scales could incorporate customer safety perception about food preparation and manipulation of food packages by delivery workers.

Furthermore, convenience is a widely accepted motivation for using ODPs (Euromonitor, 2019; Furunes & Mkono, 2019; Yeo et al., 2017), also found in our qualitative analysis. Thus, we think that COVID-19 mobility restrictions add value to ODP service. Since customers were mostly positive about counting on the service during the lockdown, we anticipate a favourable predisposition in the future. Companies and new ventures must take advantage of the market opportunities to gain a share in locations where ODPs coverage is insufficient or null. In addition, new entrants in the ODP context should adopt the best practices in all the stages of the service process to fulfil customers' expectations and offer the most pleasing experience.

Conflict of interest

The authors declare no conflict of interest.

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