



Who said there's no such thing as a free lunch? Customers' dark triad traits predict abuse of food refund policies

Mehmet A. Orhan^{a,*}, Brian Collisson^b

^a EM Normandie Business School, Metis Lab, France

^b Department of Psychology, Azusa Pacific University, Azusa, CA, USA

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ABSTRACT

Customers may abuse the refund policies of online food delivery services. Given restrictions on returning online food orders and high levels of consumer power, customers who falsely claim an order was missing, damaged, or incorrect may receive both their original food order and a full refund. In an online study, we surveyed 197 food-delivery service customers regarding their refund fraud behavior and Dark Triad personality traits (i.e., narcissism, Machiavellianism, psychopathy). The Dark Triad predicted fraudulent refund claims, the frequency of previously placed false refund claims, its perceived acceptability, and the likelihood of placing one in the future. Moreover, we also found evidence that individuals with high Dark Triad traits were more likely to engage in refund fraud when the perceived cost to the food delivery company was high.

There is no such thing as a free lunch – that is, unless you are a savvy online shopper willing to engage in refund policy fraud. Many people admit to scamming, or defrauding, online food retailers and delivery services, such as U.S. companies GrubHub, DoorDash, or PostMates, to receive free or discounted food (Bhuiyan, 2020). For instance, after ordering food online, some customers deceptively claim their order was missing, damaged, or incorrect so they may receive a full refund or substantial discount (UberPeople.net, 2019). Unlike refund policies for material products, food often cannot be returned and resold. Customers' claims about delivered food are often believed, especially claims that are highly subjective or difficult to corroborate (Engler et al., 2015; Kim & Baker, 2020; Kucuk & Krishnamurthy, 2007; Peng et al., 2019). When customers request a food refund, they often receive both a refund and the food that was allegedly missing, damaged, or incorrect (Bhuiyan, 2020). People who deceptively lie by claiming their online food order was missing, damaged, or incorrect with the intent to receive a free or discounted meal are likely committing theft. In the current research, we define refund policy fraud behavior as a customer admitting to intentionally claiming that food received from an online food delivery service was missing, damaged, or incorrect, whilst admitting the food order was actually fine.

Refund fraud is a timely and concerning issue for at least two reasons. First, refund fraud may be prevalent. Although no scholarly studies have assessed how frequently consumers abuse food refund policies,

anecdotal evidence reveals it does occur frequently enough for a market to emerge on how to successfully defraud companies. For example, several online platforms publicly provide hints and tips on how to deceive companies and find alternative ways to unfairly gain from refund policies (McKenna, 2020; Wenkert, 2020). Second, workers who deliver food via food delivery services bemoan the rate of fraud they suspect, the impact of fraud accusations on their worker evaluation, future delivery opportunities, and income (Bhuiyan, 2020). The cost of fraud is inevitably paid by food delivery services and restaurants, which may lead to higher costs for food and services.

1. The Dark Triad: defrauders of food delivery services?

Drawing from personality psychology, people who score high in the Dark Triad - a constellation of three subclinical, antisocial personality traits, known as Machiavellianism, narcissism, and psychopathy - may be especially likely to defraud refund policies to receive free food (Paulhus & Williams, 2002). Machiavellianism is the tendency to manipulate and deceive others for self-benefit (Miller et al., 2017). Narcissism refers to an overly positive self-view and tendency to be vain, self-focused, socially adept, and entitled (Campbell & Foster, 2007). Psychopathy is the tendency to act impulsively and lack remorse, empathy, and perspective taking (Paulhus & Williams, 2002).

People who score high in the Dark Triad tend to focus on immediate

* Corresponding author at: EM Normandie Business School, Metis Lab, France.
E-mail address: morhan@em-normandie.fr (M.A. Orhan).

rewards and instant gratification (Paulhus & Williams, 2002). They often engage in risky behaviors, deceptively manipulate others for personal gain, and act impulsively and callously. As a result, they are typically disagreeable and described as emotionally cold, dishonest, and pragmatic (Book et al., 2015; Jonason et al., 2012). In fact, many studies have linked individual traits within the Dark Triad (i.e., Machiavellianism, psychopathy, narcissism) and the latent Dark Triad factor (e.g., Collisson et al., 2020, 2021; Jonason et al., 2017) to a range of unethical behaviors (Collisson et al., 2021; Harrison et al., 2018; Lyons & Jonason, 2015; Modic et al., 2018).

We suspect people who score high in the Dark Triad may be especially drawn to the allure of a free meal at someone else's expense. In an online survey of heterosexual women, those who scored high in the Dark Triad were most likely to admit to engaging in a "foodie call" (Collisson et al., 2020). That is, they dated someone for a free meal, despite not being romantically attracted to them. Foodie calls present relevant evidence that people who score high in the Dark Triad may deceive and manipulate others for personal gain - in this case, free food. Although the majority of women believe foodie calls are socially unacceptable (Collisson et al., 2020), women's scores on Machiavellianism, narcissism, and psychopathy were positively related to the degree to which they believed foodie calls were acceptable. People who score high in the Dark Triad may truly believe their behavior is ethical or they may rationalize their unethical behavior by perceiving it as less unethical than it appears to others. Although this distinction is not the primary aim of our study, we assess consumers' Dark Triad traits and the perceived social acceptability of food refund fraud to replicate and extend research linking the Dark Triad to perceived social acceptability of what many might believe is unethical behaviors.

Given the links between the Dark Triad and unethical, impulsive, and callous behaviors, including previous studies which link the Dark Triad to the deception of others for a free meal (Collisson et al., 2020), we suspect people who score high on the Dark Triad may similarly engage in refund fraud for a free meal. Our predictions about the links between the Dark Triad and refund fraud are threefold.

First, customers who score high in Machiavellianism may be especially likely to defraud food delivery services' refund policies because they tend to be cunning, deceitful, and willing to manipulate others for personal benefit (Miller et al., 2017). Within online settings, people who score high in Machiavellianism have been shown to manipulate technology to their advantage (Kircaburun et al., 2019). Within the hospitality industry, Machiavellianism predicted both previous and future behavior of abusing exchange policies (Daunt & Harris, 2011, 2012). Thus, we suspect Machiavellianism will be positively related to defrauding food delivery services' food refund policies.

Second, customers who score high in narcissism may be likely to defraud food delivery services' refund policies. People high in narcissism have grandiose, inflated self-views, and strong feelings of entitlement (Campbell & Foster, 2007). In general, narcissists strive to present themselves and close others as perfect (Casale et al., 2016; Zeigler-Hill & Trombly, 2018). In regard to food, narcissists may possess similarly high expectations for their online orders (Shin & Youn, 2020). Narcissists are also socially adept and coercive (Campbell & Foster, 2007). Thus, they may be especially likely to complain, and believe that their complaints are acceptable, when an online food order is fine but not to their lofty, and potentially unrealistic, expectations for delivered food. It is also important to note that although narcissism is a multi-faceted construct (see Gebauer et al., 2012; Sedikides, 2021), we chose to focus on grandiose narcissism as assessed by the Dirty Dozen measure (Jonason & Webster, 2012).

Third, customers who score high in psychopathy may be likely to defraud food delivery services' refund policies. People who score high in psychopathy tend to lack remorse, empathy, and fail to take the perspective of others (Paulhus & Williams, 2002). In regard to defrauding food delivery services, people who score high in psychopathy may be unconcerned about how their actions affect the delivery driver,

the local restaurant, or food delivery services business model. Indeed, people who score high in psychopathy are known to defraud others, such as lying to insurance companies by misrepresenting property value (Modic et al., 2018). Within corporations, psychopathy has been linked to a variety of other-directed negative behaviors (see Walker & Jackson, 2017). Thus, we suspect people who score high in psychopathy may be likely to defraud food delivery services, and believe their actions are acceptable, because they are unconcerned with the potentially harmful impact on others.

Further, customers high in Dark Triad traits - who tend to be self-focused, manipulative, and generally unremorseful (Paulhus & Williams, 2002) - may rationalize their refund fraud behavior by perceiving it as more acceptable than others might (Harrison et al., 2018). Much like the aforementioned heterosexual women who engaged in foodie calls by dating men - to whom they were not attracted - in order to receive a free meal, the extent to which women evidenced Dark Triad traits predicted the degree to which they perceived foodie calls as socially acceptable (Collisson et al., 2020).

Although people who score high in the Dark Triad, particularly subclinical psychopathy, tend to act impulsively, lack remorse and empathy (Paulhus & Williams, 2002), the extent of their Dark Triad traits may similarly be related to the extent to which they rationalize, or perceive their actions as more morally acceptable than others might. It is possible people who score high in the Dark Triad may simply perceive their actions as ethical. Or, in a motivated fashion to maintain a positive view of themselves (Kunda, 1990), they may rationalize their behavior by perceiving it as less unethical than others might. Disentangling whether people with Dark Triad traits simply perceive their behavior as ethical or are motivated to rationalize their unethical behavior is not the primary aim of the current study. Nevertheless, we include the extent to which the Dark Triad is linked to perceived acceptability of refund fraud to add to a growing literature on moral disengagement or rationalization. In either case, we predict that people's scores on the Dark Triad will be positively related to the degree to which they perceive their actions as ethical, thus replicating and extending previous findings (e.g., Collisson et al., 2020; Harrison et al., 2018).

In general, unethical behavior triggers moral disengagement, or rationalization that moral expectations do not apply to oneself, which is linked to rationalization of unethical behavior (Barsky, 2007; Graf et al., 2019). The more people engage in unethical behavior, the more they may rationalize their behavior by perceiving it as acceptable (Albrecht et al., 2012; Murphy & Dacin, 2011). In a hypothetical scenario, customers' Dark Triad traits predicted their likelihood of engaging in fraud by misrepresenting the value of a product to sell (Harrison et al., 2018). In the current study, we include measures of fraud rationalization, as indicated by general acceptability of submitting a refund request for food that is fine, and perceived acceptability of specific instances of refund fraud (e.g., lying about food being missing, damaged). Our study is the first to link the Dark Triad to the timely and important issue of fraud via food delivery services. It also includes measures of rationalization and perceived acceptability, thus conceptually replicating and extending links previous work linking the Dark Triad with rationalization and perceived acceptability of what others likely perceive as unethical behaviors (Collisson et al., 2020; Harrison et al., 2018).

2. Current research

The aims of our study are threefold. First, we assessed how often people make false claims online to receive free food and how acceptable they perceived this behavior to be. Second, we assessed whether people's willingness to make false claims to receive free food were related to their Dark Triad traits. We hypothesize Machiavellianism, psychopathy, and narcissism will be positively associated with customers' likelihood of committing refund fraud (H1a, H2a, H3a), and the degree to which they perceive it as acceptable (H1b, H2b, H3b). Third, we extend previous work on fraud rationalization (Harrison et al., 2018), such as whether

people's scores on the Dark Triad relate to perceiving their unethical behaviors are more socially acceptable than others might (e.g., Collisson et al., 2020). Thus, we hypothesize customers' likeliness and perceived acceptability of committing refund fraud will be positively associated with fraud rationalization (H4 & H5) and self-reported fraud behavior (H6; see Fig. 1).

In an exploratory capacity, we also examine whether customers' Dark Triad traits are related to their perceived cost of refund fraud. Previous studies show that people who score high in the Dark Triad are less concerned about the morality of their actions (Paulhus & Williams, 2002); but it is less clear how Dark Triad traits relate to the perceived cost of their actions on others. Perhaps inferring a high cost for food delivery companies, workers, or restaurants may discourage most people from fraud, but potentially not for people who score high in the Dark Triad. Therefore, we explore the relation between the Dark Triad and perceived cost of refund fraud.

3. Method

3.1. Participants

Online participants within the United States were recruited from Amazon's Mechanical Turk and received US\$0.25 as remuneration. Only participants who had used an online food delivery service before were permitted to participate. We conducted an aprior power analysis to determine a sample size of at least 116 participants using G*Power 11, assuming the same effect size between the Dark Triad and deceptive behavior for free food as Collisson et al. ($r = 0.32$; 2020). As stated in our pre-registered materials, we aimed for a sample size of approximately 200 people to better power our mediational analyses.

We recruited 197 adults (108 men, 88 women, 1 unspecified), ranging in age from 19 to 69 years old ($M_{age} = 38.49$ years, $SD = 10.74$). The ethnicities of participants were White (77.7%), followed by Black or African American (9.1%), Asian (6.6%), Hispanic (5.6%), and multiracial (1%). The relationship status of participants was mostly married (64.5%), followed by single (25.4%), and currently in a committed relationship (but not married; 10.2%). The clear majority of respondents were employed/self-employed (97.9%), in addition to those who are currently looking for work (1%), homemakers (0.5%), and students (0.5%).

3.2. Materials

3.2.1. Fraudulent refund items

3.2.1.1. Frequency of fraudulent refund requests. Participants were first asked whether they had ever requested a refund from a food delivery service for any reason, via a yes or no response scale. Then, they were asked if they had ever requested a refund from a food delivery service, even though their order was fine, via a yes or no response scale (Self-Reported Fraud Behavior). If participants admitted to defrauding a refund policy to receive free food, they were asked how often they did so, using a 1 (Very rarely) to 5 (Very frequently) response scale. For participants reporting no previous false refund claims, the refund frequency is coded with 0 (Never).

3.2.1.2. Fraud rationalization. Rationalization of refund fraud in general, as was assessed by a single item. Participants rated, using a 7-point scale, ranging from 1 (Extremely unacceptable) to 7 (Extremely acceptable), how acceptable they think it is to request a refund from a food delivery service, even though the order was fine.

3.2.1.3. Perceived acceptability of refund fraud. We assessed more specific types of fraud acceptability by asking participants to rate how acceptable it would be to say the following lies to gain a full refund, using the same response scale: (1) say the food was missing when it was not, (2) say the food was damaged when it was not, (3) say the food was incorrectly food when it was not, (4) say the food did not meet dietary requirements when it did, and (5) say the order was incorrect when it was not.

3.2.1.4. Likelihood of engaging in refund fraud. Using a 7-point scale, ranging from 1 (Not at all likely) to 7 (Extremely likely), participants rated how likely they were to request a refund from a food delivery service, even though the order was fine. Then, they rated how likely they were to say the following lies for a refund: (1) say the food was missing when it was not, (2) say the food was damaged when it was not, (3) say the food was incorrectly food when it was not, (4) say the food did not meet dietary requirements when it did, and (5) say the order was incorrect when it was not.

3.2.1.5. Perceived cost of fraudulent refunds. Three items were used to assess rationalization of fraud, as determined by a low cost of fraud on others. Using a 1 (No cost at all) to 7 (An extremely large cost), participants were asked to rate the cost to the restaurant, the food delivery workers, and the food delivery service, respectively, if everyone's

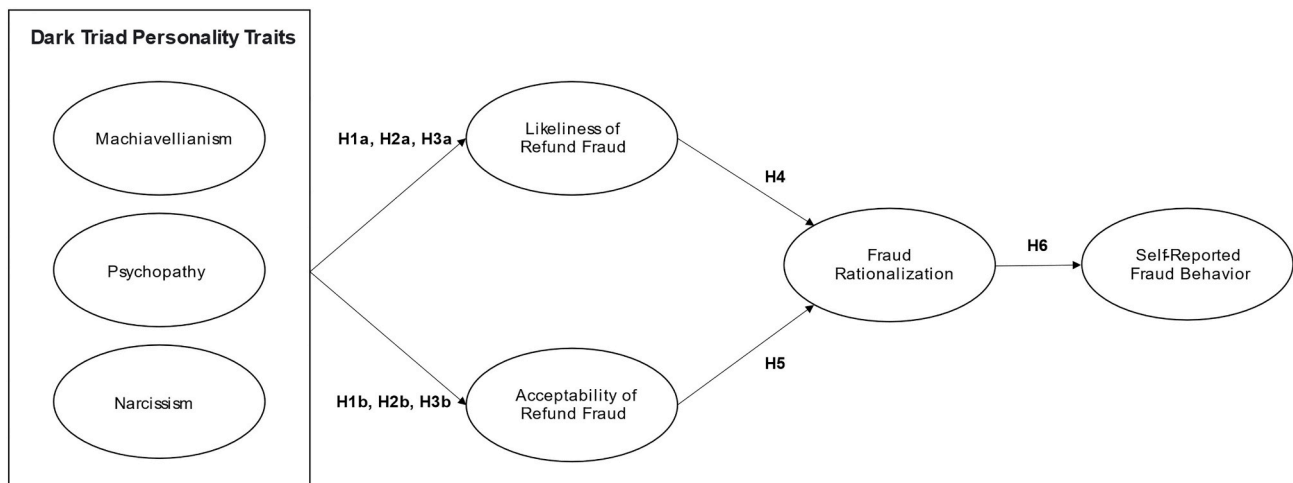


Fig. 1. Conceptual model.

request for full refunds were granted (including instances when the food order was fine). Afterward, participants also rated how concerned they would be regarding the cost to the restaurant, food delivery workers, and food delivery service, respectively, using a 1 (Not at all concerned) to 7 (Extremely concerned) response scale.

3.2.2. Dark Triad

We assessed participants' Dark Triad traits using the Dirty Dozen (Jonason & Webster, 2010), a brief measure of subclinical Machiavellianism, psychopathy, and narcissism. In randomized order, participants rated the degree to which they agreed or disagreed with 12 statements, using a 1 (disagree strongly) to 7 (agree strongly) scale. Example items of Machiavellianism, psychopathy, and narcissism subscales, respectively, are: "I tend to manipulate others to get my way," "I tend to be unconcerned with the morality of my actions," and "I tend to expect special favors from others." The Cronbach's alpha scores for each construct were found over 0.90 (see Table 1).

3.3. Procedure

Participants were presented with a "Food Delivery Service Survey." All participants were presented with an Informed Consent Form detailing their rights. Next within the survey, participants completed the fraudulent refund frequency, likeliness, acceptability, and perceived cost of fraud items. Then, they completed the Dirty Dozen measure, followed by demographic items. At the end, participants were thoroughly debriefed.

4. Results

4.1. Analyses

We conducted descriptive and inferential statistical analyses using IBM SPSS v.26 and open source, free statistical software jamovi v.1.2.2. To test our structural model, we relied on IBM SPSS Amos v.26. Pre-registered hypotheses, sample size, study materials, and analyses can be found online via the Center for Open Science at: https://osf.io/2a5kw/files/?view_only=23a00a5733fa4e79b4652f81b78c4cfe.

4.2. How prevalent is refund fraud?

First, we assess how often people make false claims online to receive free food and how acceptable they perceive this behavior to be. Of participants, 46% ($n = 90$) indicated that they had previously requested a refund from a food delivery service, even though the order was fine, against 54% ($n = 107$) who had not. Results also indicate that refund fraud is rationalized when engaged. Participants who engaged in a previous false claim perceived significantly more acceptable to request a refund ($M = 4.67$, $SD = 1.53$), than those who stated had never engaged in such fraud before ($M = 2.33$, $SD = 1.82$), $t(195) = 9.66$, $p < .001$, $d = 1.38$ (Fig. 2).

Table 1

Descriptive statistics and correlation matrix.

Variables	α	M	SD	2	3	4	5	6	7	8
1. Machiavellianism	0.94	4.30	1.94	0.93*	0.79*	0.83*	0.83*	0.66*	0.62*	0.57*
2. Psychopathy	0.95	4.14	1.99	–	0.73*	0.85*	0.83*	0.69*	0.63*	0.59*
3. Narcissism	0.92	4.63	1.69	–	–	0.74*	0.72*	0.58*	0.52*	0.47*
4. Likelihood of engaging in fraud	0.97	3.86	2.12	–	–	–	0.94*	0.78*	0.69*	0.65*
5. Perceived acceptability of fraud	0.97	3.42	1.82	–	–	–	–	0.78*	0.64*	0.61*
6. Refund fraud rationalization	–	3.40	2.05	–	–	–	–	–	0.57*	0.59*
7. Previous refund fraud (No = 0, Yes = 1)	–	0.46	0.50	–	–	–	–	–	–	0.89*
8. Refund fraud frequency	–	1.39	1.72	–	–	–	–	–	–	–

Note: $N = 197$.

* $p < .001$.

4.3. Does the Dark Triad predict refund fraud?

Second, we assessed whether people's willingness to make false claims to receive free food related to their Dark Triad traits. Specifically, we predicted people who score high in Machiavellianism, narcissism, and psychopathy, respectively, would be more likely to defraud food delivery services' refund policies and perceive such behavior as acceptable.

Table 1 presents the correlations between previous refund fraud (no = 0, yes = 1), refund fraud frequency, refund fraud rationalization, perceived acceptability, likeliness of fraud, and measures of the Dark Triad traits as well as descriptive statistics for each. All correlations were significant at the $p < .001$ level. The results show previous fraud behavior, frequency, and acceptability are associated significantly with Machiavellianism, psychopathy, and narcissism.

Furthermore, we investigated the impact of the Dark Triad traits on customers' self-reported history of fraud behavior (Table 2). We tested the relations using the structural equation modeling to assess the estimates of the Dark Triad traits. First, we evaluated the overall fit of the structural model. The initial model yielded satisfactory results with acceptable goodness of fit measures ($\chi^2 = 252.4$, $\chi^2/df = 2.657$, RMSEA = 0.092, 90% C.I. = [0.078, 0.106], CFI = 0.959, TLI = 0.941). However, with this model, we did not find any support that Machiavellianism predicts fraud acceptability and the likelihood of placing a new fraudulent claim. Thus, we tested a new model without any path estimates from Machiavellianism to acceptability and likelihood. The result of the new model has the following fit measures: $\chi^2 = 255.1$, $\chi^2/df = 2.630$, RMSEA = 0.091, 90% C.I. = [0.078, 0.106], CFI = 0.958, TLI = 0.942. As the fit indicators of this structural model implied that the hypothesized model had a satisfactory fit to the data and approximated the population reasonably, the study hypotheses could be tested among latent variables (Fig. 3).

4.4. Exploratory analyses

For people who already made a fraudulent claim, we explored whether a lack of concern regarding the perceived cost of fraudulent refunds influenced the relation between people's Dark Triad traits and their likelihood of making false claims to receive free food in the future. To test this relation, we conducted a moderation analysis to understand the interaction effect of the perceived cost to food delivery platforms on the relationship between each trait of Dark Triad personality and the likelihood of making a fraudulent claim. Table 3 shows the moderating effects of perceived cost to food delivery platforms relations between fraudsters' Dark Triad personality and their likelihood of placing fraudulent claims. We found that perceived cost to delivery platforms moderates the relationship between likeliness of placing a fraudulent claim and Machiavellianism, psychopathy, and narcissism. The interaction effects of all Dark personality traits are found to be significant. Fig. 4 illustrates the results implying that a fraudster is even more inclined to place another faulty claim if they perceive the cost of false claim to the food delivery company to be high and when they exhibit

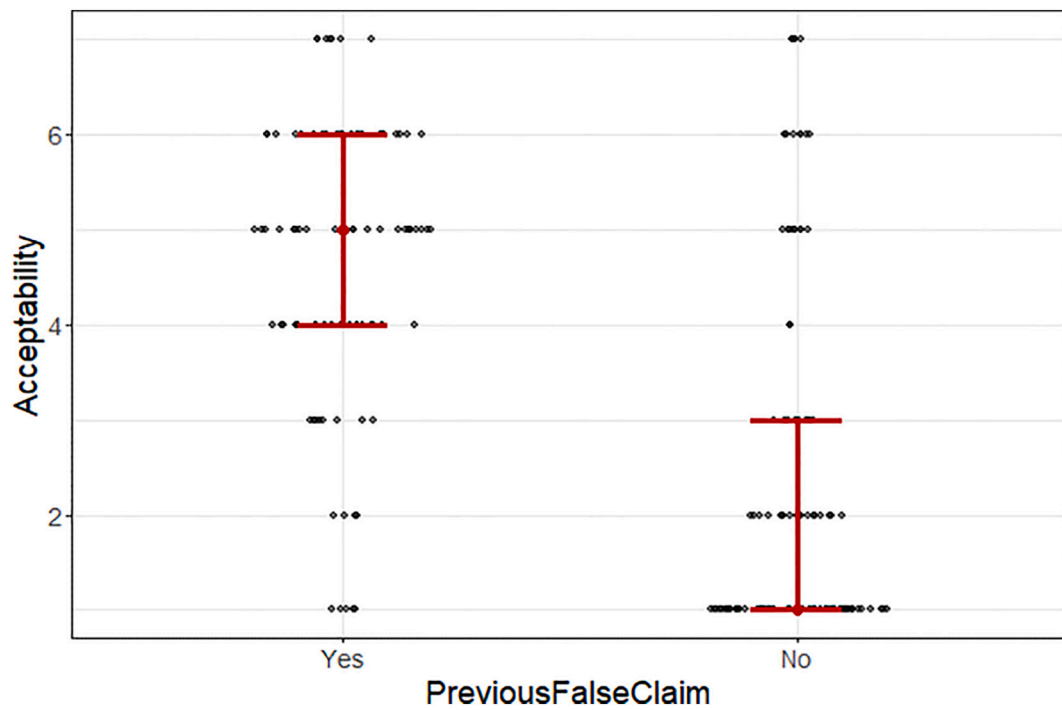
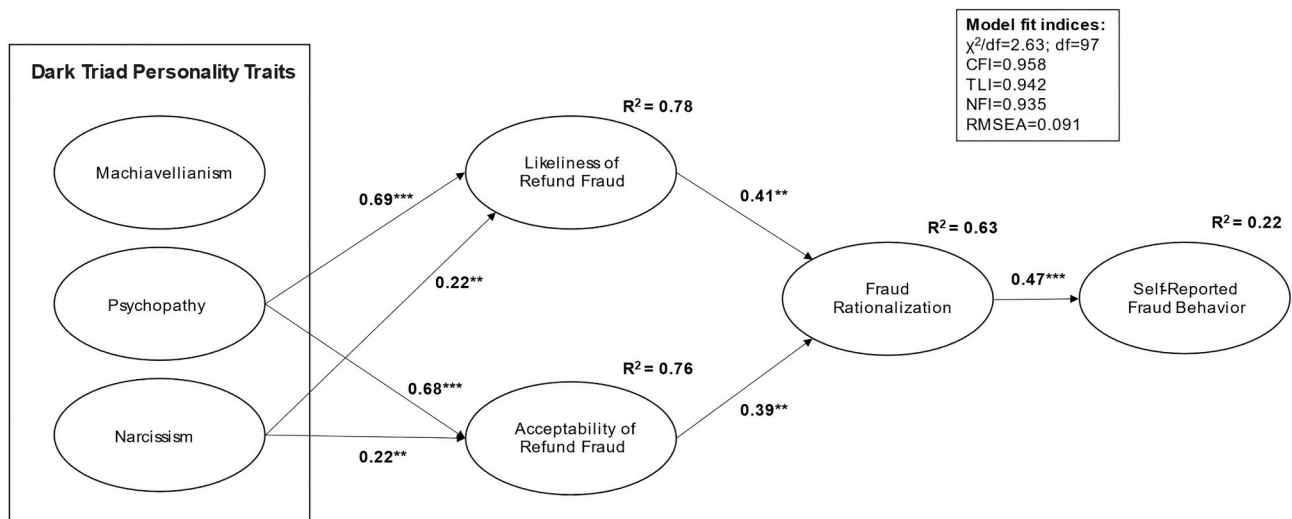


Fig. 2. Percentage distribution of fraudulent refund frequency ($n = 90$).

Table 2
Main effects.

Supported hypothesis	Predictor		Dependent variable	Standardized beta	t-Score	p-Value
H2a	Psychopathy	→	Likelihood	0.693	9.369	<0.001
H3a	Narcissism	→	Likelihood	0.222	3.186	0.001
H3b	Narcissism	→	Acceptability	0.222	3.077	0.002
H2b	Psychopathy	→	Acceptability	0.680	8.939	<0.001
H4	Likelihood	→	Fraud Rationalization	0.416	3.232	0.001
H5	Acceptability	→	Fraud Rationalization	0.388	3.013	0.003
H6	Fraud Rationalization	→	Self-Reported Fraud Behavior	0.688	6.317	<0.001



***<0.001; **<0.005

Fig. 3. Estimation of the final model and main effects.

Table 3

Results of moderating effects of perceived cost to food delivery platforms.

DV: likeliness of fraud				
	Estimate	SE	Z-score	p-Value
Machiavellianism	0.537	0.087	6.19	<.001
Perceived cost to food delivery platforms	−0.002	0.069	−0.28	0.783
Interaction	0.254	0.075	3.40	<.001

DV: likeliness of fraud				
	Estimate	SE	Z-score	p-Value
Psychopathy	0.482	0.081	5.93	<.001
Perceived cost to food delivery platforms	−0.015	0.065	−0.23	0.816
Interaction	0.303	0.074	4.17	<.001

DV: likeliness of fraud				
	Estimate	SE	Z-score	p-Value
Narcissism	0.848	0.090	9.42	<.001
Perceived cost to food delivery platforms	−0.075	0.061	−1.22	0.955
Interaction	0.187	0.066	2.84	<.001

high levels of Dark Triad personality traits.

5. Discussion

In an online survey, we found consumers of food delivery services who score high in the Dark Triad were more likely to engage in refund fraud by submitting false claims. In alignment with previous studies on fraudulent behavior and its perceived acceptability within consumer contexts (e.g., [Albrecht et al., 2012](#); [Harrison et al., 2018](#); [Utami et al., 2019](#)), we also found consumers who score high in the Dark Triad - particularly narcissism and psychopathy - were most likely to have engaged in refund fraud, likely to do so in the future, and likely to perceive their behavior as more socially acceptable. Moreover, in an exploratory context, we found customers who committed refund fraud were more inclined to do so again if they scored high in the Dark Triad and perceived the cost to the food delivery service as high.

All together, these findings show willingness to engage in fraud is related to the Dark Triad. The inherent challenges of handling complaints which involve restaurants, food delivery services, customers, as well as the difficulty of proving subjective complaints from customers make food delivery a ripe area for customers with dark personality traits to exploit. For instance, we operationally defined refund fraud as a customer admitting to intentionally claiming that food received from an online food delivery service was missing, damaged, or incorrect, whilst simultaneously admitting the food order was actually fine. When narcissists use their social adaptiveness to their advantage by reporting food as missing, damaged, or incorrect, when it is truly fine, they are engaging in fraud. But when narcissists' lofty expectations are not fully met, their complaints regarding food that is only "fine" may be inadvertently recorded as refund fraud. Given the popularity of food delivery systems ([Yeo et al., 2017](#)), the availability of instructions on how to best defraud food delivery services ([DarkOwl, 2021](#); [McKenna, 2020](#)), and the difficulty of operationalizing food refund fraud in light of exploitative personality traits, future research is needed, particularly in regard to narcissism and food expectations.

In an exploratory context, we also examined the characteristics of consumers who admitted to engaging in refund fraud. Specifically, we explored whether their concern regarding the perceived cost of fraudulent refunds may be related to the Dark Triad as well as their likelihood

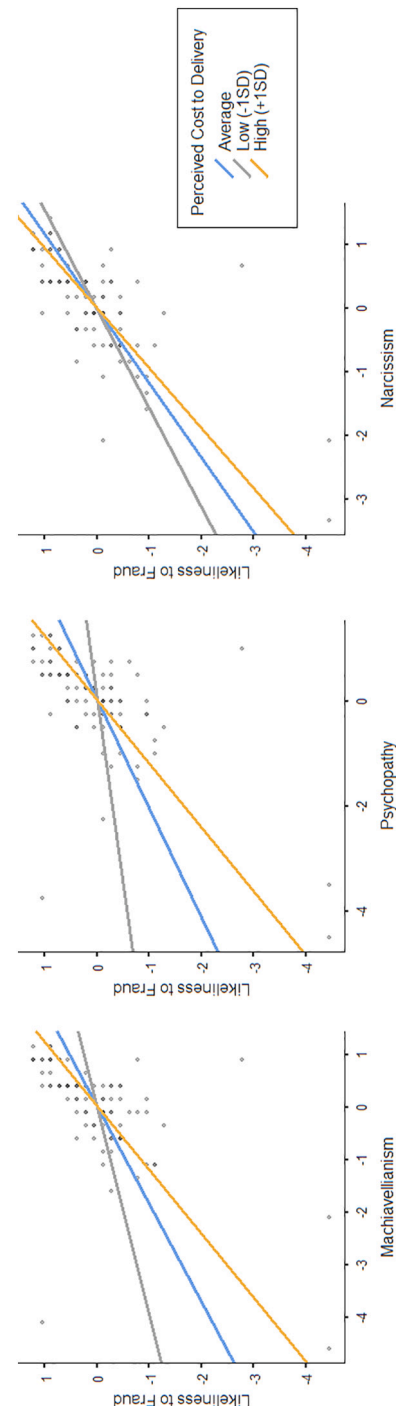


Fig. 4. Interaction effects of dark personality and perceived cost to food delivery platforms.

of making false claims to receive free food in the future. We found people who admitted to refund fraud were inclined to do so again, especially if they score high on the Dark Triad and perceive the cost to the food delivery company as high. This finding should be interpreted cautiously because it was not predicted. Nevertheless, the Dark Triad or other antisocial traits, such as sadism (Buckels et al., 2013) or spite (Marcus et al., 2014) which involve purposefully harming others, may explain why some people engage in refund fraud when they think it has a high cost to others.

Additionally, our findings advance personality psychologists' understanding of the Dark Triad. Harrison et al. (2018) have shown that each trait within the Dark Triad is theoretically related to people's decisions to engage in unethical behavior. Presumably, narcissism motivates people to seek personal benefits, including actions that may be unscrupulous. Machiavellianism may motivate people to find and exploit opportunities to manipulate others. Whereas psychopathy may prevent people from perspective taking or feeling remorse for their potentially impulsive and unethical behaviors. Within the context of food delivery services, we replicate and extend this pattern of results by surveying consumers regarding their abuse of food refund policies. All three Dark Triad traits were related to both consumers' previous refund fraud behavior, likelihood of committing fraud again in the future, and perceiving their behavior as acceptable.

Notably, we assessed each Dark Triad trait using the Dirty Dozen measure (Jonason & Webster, 2010). Each trait is assessed as a singular construct, which together comprise the Dark Triad. However, recent studies show that narcissism, for instance, is a multifaceted construct (see Miller et al., 2021). The four-item narcissism subscale used in the Dirty Dozen measure (Jonason & Webster, 2010) is based on the longer Narcissistic Personality Inventory (Raskin & Terry, 1988), which conceptualizes narcissism as grandiosity and inflated attitudes of one's self-worth. Importantly, recent studies have delineated distinct dimensions of narcissism, such as vulnerable narcissism which refers to defensiveness and an easily threatened self-worth (see Miller et al., 2011) or communal narcissism which refers to pursuing self-motives in communal, rather than individual contexts (Gebauer et al., 2012). Future studies which explore the relations between fraudulent behavior and additional, nuanced measures which better parse out multifaceted constructs of narcissism, such as grandiose versus vulnerable narcissism or agentic versus communal narcissism, may be worthwhile (Sedikides, 2021). In addition to scheming online food delivery services for free food, perhaps other measures of the Dark Triad may reveal additional benefits which come at others' expense.

5.1. Implications for businesses and food delivery services

There are several practical implications for online food delivery platforms and for businesses utilizing these services. Our study provided evidence that customer complaints and dissatisfaction in online food delivery services may not be sourced from actual negative experiences in the hands of users with Dark Triad personality traits. Even though past research documented that online customer misbehavior is rising (Fomelle et al., 2020), and customers are becoming increasingly creative to find subversive techniques to maximize their own utilities and gain unfair advantages (Kim & Baker, 2020), the link between Dark personality traits and fraudulent behavior particularly in these platforms is unveiled by our research.

To minimize the risks of fraudulent claims, restaurant and delivery businesses can consider the following actions. First of all, it is essential that claims need to get closely monitored, and restaurants could ask for more stringent evidence for fraudulent claims. Even though measuring consumers' dark personality traits is not practically feasible, online platforms can warn about the consequences of fraudulent claims with strong, negatively framed messages whenever an online claim is placed. Otterbring et al. (2021) found that narcissists respond to negatively framed messages to avoid costly consequences. A similar approach could

also be potentially used in delivery platforms. From the practical perspective, our study highlights the link between dark personality and false claims on a micro level, but the industry rather needs to focus on the overall trend for the sustainability of delivery businesses.

5.2. Limitations and future directions

Our study had some limitations which warrant discussion and offer insights for future research. First, our study was the first to extend the Dark Triad to online food delivery services domains. We asked consumers to self-report their abuse of food refund policies. Although our study was an anonymous survey, consumers may underreport their fraudulent behavior to preserve a desired self-view. The limits of self-report methods may be especially noteworthy when studying the Dark Triad; people who score high on the Dark Triad tend to dishonest (Jones & Paulhus, 2017) and may lie to present themselves in a desired manner (Hart et al., 2019). Nevertheless, we found 46% of consumers admitted to refund fraud. It is important to note that our sample was not fully representative of the population and participants were self-selected. That is, users of online food delivery services chose to participate in our study about food delivery services. Therefore, the large percentage of consumers who admitted fraud should be interpreted cautiously. The high rate of fraud may reflect the subtlety of asking whether customers had ever requested a refund for an online food order because it was allegedly missing, damaged, or incorrect, whilst simultaneously admitting that the order was truly fine. Perhaps asking participants directly about their lying behavior, rather than using euphemistic language may lower reports of fraud. Nevertheless, future studies which explore the prevalence of fraud behavior, especially using fully representative samples, seems worthwhile.

Moreover, future studies are needed to replicate our findings, employ other measures of fraud, and explore implications for food delivery services, such as the effect of Dark Triad traits among food delivery workers. Future research may explore other dark personality traits and rationales for why some food delivery workers steal food or lie about its delivery. Previous research has applied the Dark Triad to consumers' unethical decision making processes (e.g., Harrison et al., 2018) but not necessarily employees' decision making.

Furthermore, we introduce customers' perceived cost of fraud as a moderating variable to better understand why customers with dark personality traits will defraud refund policies, despite the costs to restaurants, food delivery workers, and other parties involved. Yet, it is unclear whether knowing the cost of fraud is an effective fraud deterrent. Perhaps campaigns which highlight the real costs to food delivery workers and family-owned restaurants may humanize the costs of lying, and thus reduce refund fraud, even among customers who score high in the Dark Triad. Future studies to humanize the costs of customer fraud, or tailor messages to particularly customers most likely to engage and rationalize fraud, may be worthwhile.

Future research which connects personality psychology to various aspects of food delivery apps is also needed because food delivery is becoming increasingly popular (Yeo et al., 2017) and expected to reach a projected market value of over 400B worldwide by 2025 (Statista, 2021). During the COVID-19 pandemic, food delivery services became an essential mechanism to help restaurants remain in business, given stay-at-home orders and contagion risks associated with dining in-person (Zhao & Bacao, 2020). Our study documents the prevalence of refund fraud among online food delivery services, characteristics of fraudsters, and rationalization and perceived costs as variables of interest to food delivery services, restaurant owners, and researchers in personality and organizational psychology. Future studies are needed to link other, potentially more positive, personality traits to use of food delivery services, such as openness to new experiences or an interpersonal orientation of support of local restaurants.

Additionally, our online participants were likely not fully representative of online food delivery service customers. Nor did we observe

their actual fraud behavior; instead, we relied on self-report measures. If participants most likely to engage in fraud were also more prevalent online or were more willing to participate, the rate of refund fraud reported among our participants may be overestimated. Or if participants were motivated to view themselves positively and ethically, they may underreport their previous fraud behavior or misremember their previous fraudulent refund requests. Future studies which replicate our study using larger and more representative samples and utilize other, more direct observations of refund fraud, and include additional personality traits are needed.

Finally, we acknowledge debates and criticisms against the Dirty Dozen measure (cf. Jones & Paulhus, 2014; Miller et al., 2012). In this study, we utilized the 12-item short measure for practical reasons that is consistent with the large body of research on dark personality traits (Vize et al., 2018). Besides being one of the most frequently used scales in detecting the dark personality (Watts et al., 2017), the most recent evidence from a large-scale, global survey provided evidence for the three-factor, distinct structure of the Dark Triad Dirty Dozen measure (Rogoza et al., 2021). Moreover, in line with the previous studies unpacking the relationship between deceitfulness and dark personality, Dirty Dozen subscales performed in the ways that were aligned with theory (Jones & Paulhus, 2017). Nevertheless, future studies can benefit from using other alternative measures of the Dark Triad to identify whether our findings withstand further empirical scrutiny.

6. Conclusion

Although food delivery services are popular (Yeo et al., 2017), convenient (Alnaggar et al., 2021), and a useful industry to allow restaurants survive diminished dine-in business during COVID-19 (Zhao & Bacao, 2020), customers may subvert refund policies. In fact, limitations on returning online food orders (Bhuiyan, 2020) and high levels of consumer power (Engler et al., 2015; Kim & Baker, 2020; Kucuk & Krishnamurthy, 2007; Peng et al., 2019) may empower some customers to falsely claim their food order was missing, damaged, or incorrect and thus receive both their original food order and a full refund (UberPeople.net, 2019).

In an online survey of food delivery service customers, we found 46% of online food delivery service customers committed refund fraud, most admitting to doing so frequently. Moreover, customers who engaged in refund fraud perceived their behavior as more acceptable than those who had never committed refund fraud. We also linked abuse of food refund policies to customers' Dark Triad traits. Perceived cost of fraud also moderated the relation between dark personality traits and willingness to commit fraud. These findings contribute to a timely and important area of research regarding the personalities of consumer subversion.

CRedit authorship contribution statement

Mehmet A. Orhan: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing.
Brian Collisson: Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare no conflicts of interest.

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