ENHANCING SUSTAINABILITY AND REDUCING CUSTOMER TECHNOSTRESS THROUGH FOOD-ORDERING APPS

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Abstract: To investigate customer technostress antecedents and consequences of the restaurants' food-ordering apps and suggest a coping strategy (i.e., customer orientation). This qualitative study relied on twenty-three semi-structured interviews with Egyptian restaurant customers and managers to understand the customer technostress caused when using food-ordering apps. The study found that restaurant customers experience technostress due to app complexity, security and privacy concerns, frequent app changes, feelings of diminished control, and time constraints. These app-related techno stressors cause customer dissatisfaction and purchasing reluctance. The study also found that not all restaurants adopt a responsive and proactive customer orientation to reduce food-ordering app technostress. However, customers were satisfied with proactive restaurants revealing technostress from food-ordering apps. This study is the first research in the hospitality industry to use Transactional Stress Theory (TST) to investigate the antecedents and consequences and suggest a customer orientation as a coping strategy of customer technostress from food-ordering apps from the perspectives of customers and restaurant managers. As a result, restaurants can be proactive and responsively customer-oriented to overcome customer technostress from food-ordering apps by considering the customers' concerns to satisfy and retain customers and attract new ones.

Key words: sustainability, customer technostress, food-ordering apps, transactional stress theory, customer dissatisfaction customer purchase reluctance, customer orientation

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INTRODUCTION

Food-ordering apps are digital platforms that allow customers to use their mobile devices to browse menus, place orders, and pay for meals from restaurants (Timur et al., 2023). Restaurants use food-ordering apps because they allow customers to order food from any location, saving them time, effort, and money (Sharma et al., 2021). Food-ordering apps reduce paper use by replacing menus, brochures, and receipts with digital platforms, improving sustainability (Sharma et al., 2021). This change saves resources and makes dining greener, benefiting customers and the environment. Previous studies suggested that implementing a food-ordering app can significantly impact restaurants. Specifically, the studies found that restaurants that implemented mobile ordering systems saw an increase in customer e-satisfaction, loyalty, order accuracy, efficiency, convenience, accessibility, customization, customer spending and sales, order frequency, customer engagement, repeat business, customer feedback, trust, and brand loyalty (Alalwan, 2020; Alshreef et al., 2023; Batouei et al., 2023; Brewer and Sebby, 2021; Timur et al., 2023). However, customers may encounter technical issues such as app crashes or slow loading times, difficulty navigating the app's interface, and privacy and security concerns when using food-

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ordering apps (Showkat and Choudhury, 2019; Wu et al., 2022). Thus, customers may experience technostress or compulsive use of mobile apps, resulting in adverse outcomes. Limited studies have explained the antecedents and consequences of customers' technostress from restaurant food-ordering apps and optimal coping strategies. Therefore, to bridge this gap, the study asks three research questions: What are the antecedents of customers' technostress from restaurants' food-ordering apps? What are the consequences of customers' technostress from restaurants' food-ordering apps? What is the optimal coping strategy for customers' technostress from restaurants' food-ordering apps?

Customer technostress is customers' adverse psychological and emotional reactions when using technology-based products or services (Lee et al., 2023). Customer technostress is a type of stress caused by technology, such as frustration, anxiety, confusion, and feeling overwhelmed (Kumar et al., 2022). In the context of restaurant food-ordering apps, there are several potential antecedents of technostress. These include complex interfaces, technical glitches, poor user experience design, and a lack of support (Kang and Namkung, 2019; Sharma et al., 2021). Customer technostress consequences include decreased satisfaction and loyalty, increased negative word-of-mouth, and revenue loss for the restaurant (Christ-Brendemühl and Schaarschmidt, 2020). Additionally, customers who are technologically stressed may switch to a competitor's restaurant or cancel their orders, negatively impacting the restaurant's reputation and revenue (Blut and Wang, 2019). The study uses TST, a stress theory created by Richard Lazarus (1990), to comprehend the antecedents and consequences of customer technostress. The theory states that stress is not caused by a single event but rather by the interaction between an individual and their object (Daniel, 2019).

In this vein, this study recommends a customer orientation as a method to deal with the causes of customer technostress proactively and responsively. Customer orientation is a business strategy prioritizing customer requirements, values, and challenges (Helal, 2022). A customer-oriented restaurant focuses on developing long-term customer relationships by providing great experiences and exceeding their expectations (Daradkeh et al., 2023). The theoretical contribution of this study lies in utilizing the TST to examine the antecedents, consequences, and coping strategies of customer technostress in the context of restaurant food-ordering apps. First, the study uses TST to identify the specific techno stressors customers experience when using food-ordering apps. Second, the study explains how these techno stressors can lead to negative customer consequences. Third, the study suggested a customer orientation strategy that restaurants can use to reduce customer technostress and improve the overall customer experience. In terms of practical implications, this study offers valuable insights for restaurants to improve their food-ordering apps and reduce customer technostress.

LITERATURE REVIEW
1. Theoretical background

Customer technostress is a cognitive concept derived from customers' negative interactions with new-age technologies while interacting with service or product providers (Hassanin et al., 2023; Kumar et al., 2022). Customers may experience challenges when interacting with restaurants' food-ordering apps, such as complexity, technical, and security issues, which cause technostress (Christ-Brendemühl and Schaarschmidt, 2020; Furunes and Mkono, 2019). Hence, customers' technostress can cause them to abandon food-ordering apps without making a purchase. To enhance the customer experience and keep and attract more customers, restaurants need to understand when the perception of technostress arises (Christ-Brendemühl and Schaarschmidt, 2020). Accordingly, this study uses the TST framework to explain customers' technostress antecedents, consequences, and coping strategies of restaurants' food-ordering apps.

The TST defines stress as the result of a three-stage transaction between a customer and a business (i.e., primary appraisal, secondary appraisal, and reappraisal) (Lazarus, 1990). During the preliminary evaluation phase, the customer decides whether or not a situation is stressful (Cohen et al., 2013). This evaluation is founded on the customer's perception and capacity to address the issue. Customers proceed to the subsequent stage if they perceive the situation as distressing. During the second assessment phase, customers evaluate their coping resources and strategies. They evaluate whether they have the resources and strategies to cope with the stressful situation. If they believe they have sufficient resources and coping strategies, they move on to reevaluation (Kupiek, 2021; Lazarus, 1990). Customers assess whether or not their coping strategies allow them to manage the stressor effectively. If their coping strategies had been effective, their stress levels may have decreased. However, if their coping strategies fail, they may experience more stress (Lazarus, 1990).

2. Conceptual development
2.1. Antecedents of customer technostress

The current study employs the TST to identify the technostress antecedents that customers face when utilizing restaurants' food-ordering apps. The antecedents of customer technostress are all the factors that can put a customer in a stressful situation when dealing with technology (Kumar et al., 2022). Customers may experience technostress due to several factors, including perceived complexity, perceived insecurity, perceived novelty, perceived lack of control, and perceived time pressure (Kumar et al., 2022; Peters et al., 2022). First, perceived complexity refers to the degree to which customers perceive technology to be difficult and complex (Kumar et al., 2022). Customers may feel overwhelmed and experience technostress if a transaction takes more than one step or has complicated steps, like verifying a name or processing a payment (Peters et al., 2022). Customers who think technology is challenging to use may experience technostress, leading to adverse outcomes like frustration, worry, and less willingness to purchase (Christ-Brendemühl and Schaarschmidt, 2020). Second, perceived insecurity is the degree to which customers perceive the restaurant food-ordering app to be insecure, resulting in privacy and security concerns (Chopdar and Paul, 2023). Several factors can contribute to insecurity, including the design of security features, the level of encryption used for sensitive information, and the

restaurant's reputation for safeguarding customer data (Ali et al., 2021). Third, perceived novelty refers to customers encountering unfamiliar new technologies, resulting in uncertainty and anxiety (Kumar et al., 2022). Various factors can contribute to the perception of novelty, such as introducing new features or technologies in food ordering applications or modifying the user interface design (Maier et al., 2017). For instance, if a restaurant adds a new payment method or changes the layout of its food ordering app, customers may find it unfamiliar and challenging to use.

Fourth, perceived lack of control refers to how customers perceive an absence of control over the technology used in online food ordering, resulting in helplessness and frustration (Ali et al., 2021). For instance, customers may feel helpless and frustrated if an app for ordering food from a restaurant does not allow them to customize their preferences or provide specific information about their transactions' status (Griesbach et al., 2019). Finally, perceived time pressure refers to how customers perceive a sense of urgency or time constraint when using a food ordering app, resulting in anxiety and stress (Kumar et al., 2022). Transaction processes that require customers to complete tasks rapidly or within a specified timeframe can generate the perception of time pressure (Islam et al., 2021). For instance, if a food ordering app has a limited-time offer or requires customers to complete a transaction quickly, they may feel rushed and anxious.

2.2. Consequences of customer technostress

Customers begin to experience the precursors of technostress as symptoms and then employ their strategies for coping (Christ-Brendemühl and Schaarschmidt, 2020). If these strategies are effective, customers can avoid technostress; however, if they are ineffective, customers will experience technostress, which will have a negative impact on customer experiences and restaurant revenue (Kupiek, 2021; Lazarus, 1990). Therefore, this study focuses on two main consequences of customer technostress in restaurants: customer dissatisfaction and purchase reluctance.

Customer dissatisfaction refers to the negative feelings or emotions customers experience when a product, service, or experience does not meet their expectations (Fan et al., 2019). Inadequate customer service, complexity, and unmet requirements or app insecurity that negatively impact the customer's experience can lead to customer dissatisfaction (Furunes and Mkono, 2019). Moreover, customers may not know the app's novel capabilities and fear making mistakes when placing orders (Peters et al., 2022). In addition, customers' lack of control may be caused by app crashes or the incapacity to modify an order. Customers who believe they lack control over their experience will likely be dissatisfied (Ali et al., 2021). Also, perceived time constraints can lead customers to make mistakes when using an app to order meals (Showkat and Choudhury, 2019). Dissatisfied customers can result in negative reviews, negative WOM, decreased customer loyalty, and revenue loss for the restaurant (Ji et al., 2023). The second consequence of customer technostress is a customer's reluctance, which refers to a customer's hesitation or refusal to make a purchase (Petcharat et al., 2023). The tendency of customers to purchase from a restaurant can drop if they have a negative experience with the restaurant's food-ordering app (Doeim et al., 2022). Customers may become frustrated with food ordering applications that lack a user-friendly interface or are challenging to navigate (Helal, 2023). Similarly, perceived insecurity can lead to discontent and purchase reluctance. Customers concerned about the confidentiality of their personal information may be unwilling to use a food-ordering app, opting instead for alternative ordering methods (Ali et al., 2021). As a result, restaurants can lose sales and revenue due to purchase reluctance. Therefore, restaurants must address customer concerns to overcome customer dissatisfaction and purchase reluctance and increase revenue.

2.3. Customer orientation as a coping strategy for customer technostress

Coping strategies are a variety of methods that restaurants use to deal with difficult situations (Batouei et al., 2023). Coping strategies can be proactive or reactive, involving a range of behaviors, thoughts, and emotions (Helal, 2022). Therefore, the current study suggested that restaurants can use customer orientation to provide a coping strategy for customer technostress. Customer orientation is a strategy that emphasizes understanding and serving customers' wants and preferences (Daradkeh et al., 2023). Customer orientation entails putting customers first by providing high-quality products, services, and experiences that exceed their expectations. Gathering feedback from customers, evaluating customer data, and leveraging insights to customize products and services to match customer demands are all part of customer orientation. Customer orientation is to build long-term customer loyalty and satisfaction by continually providing value to customers (Helal, 2022).

Customer orientation has two dimensions: proactive and responsive (Schulze et al., 2022). Proactive customer orientation is an approach to business that goes beyond meeting customer needs and actively seeks to anticipate and exceed them (Blocker et al., 2010). Proactive customer orientation involves proactively understanding customers' needs, preferences, and behaviors and using this information to create innovative products, services, and experiences anticipating future customer needs (Helal, 2022). Thus, proactive customer orientation will help restaurants collect customer feedback through various channels such as surveys, listening to social media, and customer service interactions about the challenges of food ordering applications and solving these challenges before they cause technostress (Daradkeh et al., 2023).

Responsive customer orientation focuses on quickly and effectively responding to customer needs and challenges, including identifying potential sources of customer technostress and taking swift action to alleviate them (Schweitzer et al., 2016). Responsive customer orientation necessitates the establishment of effective communication channels, allowing customers to report issues with food-ordering apps quickly (Shah et al., 2021). Additionally, responsive customer orientation involves a well-trained customer service team capable of handling inquiries and complaints professionally and efficiently (Daradkeh et al., 2023). Restaurants prioritizing responsive customer orientation are dedicated to speedy issue resolution and delivering satisfactory customer solutions. The ultimate objective of responsive customer orientation is to establish trust with customers by exhibiting the firm's dedication to receiving feedback and providing exceptional service

(Blocker et al., 2010). Hence, by combining proactive and responsive customer orientation, restaurants can better understand their customer's needs and address them in advance or promptly, preventing or eliminating potential sources of customer technostress (Helal, 2022). Therefore, we propose the conceptual model (Figure 1) based on previous literature and discussion.
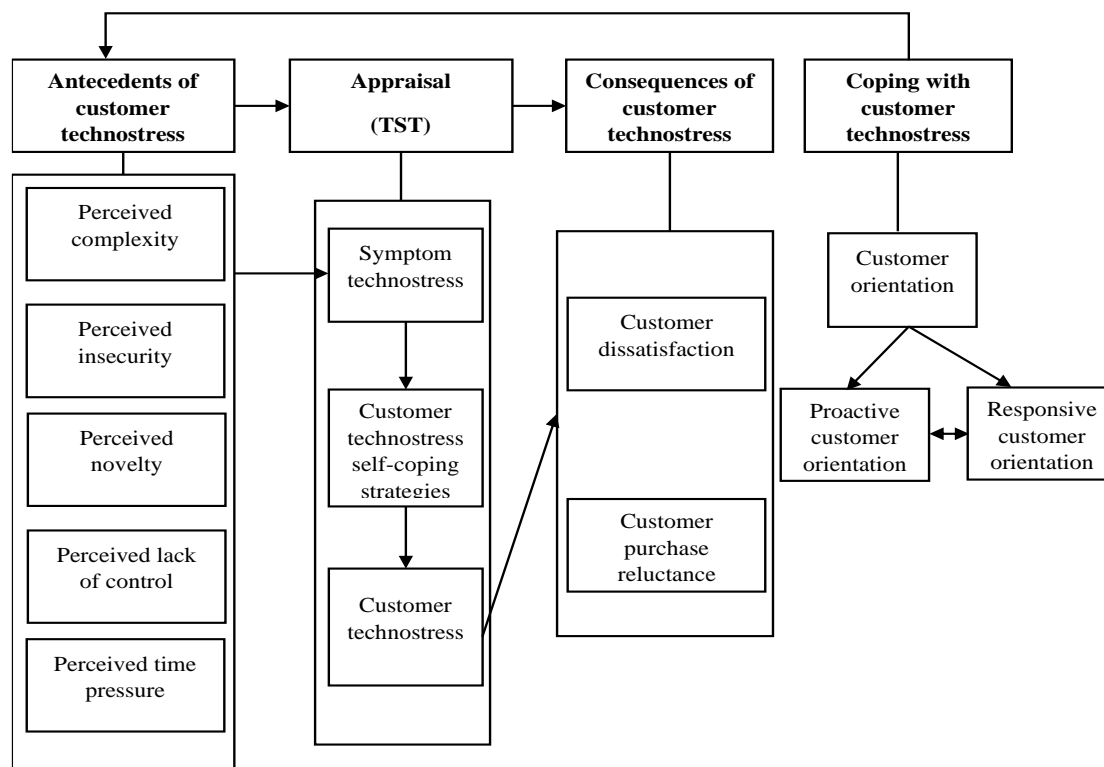

Figure 1. The conceptual framework

MATERIALS AND METHODS

We chose a qualitative approach (i.e., semi-structured interviews) since it allowed us to comprehend the significance of restaurant customers' technostress experiences with food-ordering apps. The semi-structured interviews we adopted blend the benefits of open and directed questions. This approach allowed the participants to convey their thoughts and feelings while ensuring we acquired the necessary information (Adams, 2015). To carry out our research in an organized manner, we followed the stages suggested by previous studies. Firstly, we carefully selected the participants to ensure they represented the study population (Daradkeh et al., 2023; Husband, 2020). Secondly, we developed a set of interview questions and procedures to conduct the interviews. Finally, we analyzed the results of the interviews to identify recurring themes and patterns.

1. Selection interviews

This research seeks to identify the root antecedents and consequences of customer technostress resulting from food-ordering apps and to propose customer orientation as an adaptive strategy to combat customer technostress. The research team determined that the customers to be interviewed must have been exposed to technostress and be users of restaurant food-ordering apps. Therefore, the research team searched for customer evaluations on various Egyptian restaurant food-ordering apps. A team then contacted these customers and inquired whether they would participate in the interview. Twenty-nine customers were contacted, and sixteen responded to the interview request. The researchers then contacted the managers of the same restaurants to conduct interviews with them; 7 of the managers agreed to participate.

2. Interview techniques

Table 1 contains information about the participants' profile data. There were more women than men, and most participants also had bachelor's degrees (15), secondary school diplomas (6), and graduate degrees (2). The data reveals that the participants met with two categories of restaurants: multinational and national, with most interviews taking place with multinational restaurants. Chicken is the most popular type of food among respondents, followed by burgers and pizza. The duration of an interview ranges from 50 to 70 minutes, with an average of 60 minutes. According to the data, restaurant managers who participated in the interview process are increasingly likely to work for multinational restaurants.

3. Interview questions

The research team divided the interview form into two sections to collect data from respondents. The first section includes general information for customers and restaurant management, such as gender, level of education, and restaurant type. The second section of the interview form contains questions based on the study's conceptual model as follows:

Questions to customers: Antecedents:
• What was your experience with a food ordering app being too complex to use?

- Did you feel secure and private while ordering meals from a restaurant using the app?
- How did you react to new features or modifications in food-ordering apps?
- Did you lose control when using a food ordering app due to the many options or features?
- Have you experienced time stress or anxiety while using a food ordering app?

Consequences:
- Have you ever been dissatisfied with a restaurant food-ordering app? Why?
- Have you ever avoided a purchase from a restaurant due to an unacceptable food-ordering app?

Coping:
- Have you reported any difficulties or complaints concerning food-ordering apps to restaurants? How did they respond? Did they solve your issue well?
- Was the restaurant proactively seeking to anticipate your technostress concerning food-ordering apps?

Questions to restaurant managers: Antecedents:
- Did you receive customer feedback or concerns about the complexity of your restaurant's food-ordering app?
- How did you safeguard customer information in your food-ordering app?
- Did your app undergo significant modifications that may have caused customers to endure technostress?
- Did customers feel powerless when using your restaurant's food-ordering app?
- Did customers experience time stress when using your restaurant food-ordering app?

Consequences:
- Have you noticed any differences in customers' satisfaction levels from using the restaurant food-ordering app?
- Have you noticed differences in purchase reluctance or unwillingness to use the restaurant food-ordering app?

Coping:
- Can you describe how your restaurant actively gathers customer feedback regarding their experiences with the food-ordering app?
- Do you prioritize specific channels, such as surveys, social media, or customer service interactions, for this purpose?
- How does your restaurant approach proactively address potential technostress sources for customers using the app?
- Are there instances where you've implemented changes or features based on customer feedback to enhance the overall experience?
- Could you provide insights into your restaurant's responsiveness to customer needs and challenges related to the app?

Table 1. Participants profile

Code	Position	Gender	Education	Restaurant type of food	Type of the business	Interview length
1.	Customer	Male	University degree	Pizza	National	55 minutes
2.	Customer	Male	High school degree	Chicken	Multinational	60 minutes
3.	Restaurant manager	Female	University degree	Pizza	National	65 minutes
4.	Customer	Male	University degree	Burger	National	60 minutes
5.	Customer	Male	High school degree	Chicken	Multinational	65 minutes
6.	Customer	Female	University degree	Burger	Multinational	65 minutes
7.	Restaurant manager	Male	University degree	Chicken	Multinational	55 minutes
8.	Customer	Female	University degree	Pizza	Multinational	60 minutes
9.	Customer	Male	Post-graduate degree	Chicken	Multinational	65 minutes
10.	Restaurant manager	Male	University degree	Chicken	Multinational	60 minutes
11.	Customer	Female	High school degree	Pizza	National	65 minutes
12.	Restaurant manager	Male	University degree	Burger	Multinational	55 minutes
13.	Customer	Female	Post-graduate degree	Burger	Multinational	60 minutes
14.	Restaurant manager	Female	University degree	Chicken	National	70 minutes
15.	Customer	Female	High school degree	Burger	Multinational	55 minutes
16.	Customer	Male	University degree	Burger	Multinational	65 minutes
17.	Customer	Male	Post-graduate degree	Pizza	Multinational	50 minutes
18.	Customer	Female	University degree	Burger	Multinational	65 minutes
19.	Restaurant manager	Male	Post-graduate degree	Chicken	National	55 minutes
20.	Customer	Female	Post-graduate degree	Burger	Multinational	60 minutes
21.	Customer	Female	High school degree	Chicken	Multinational	65 minutes
22.	Restaurant manager	Male	Post-graduate degree	Pizza	National	65 minutes
23.	Customer	Female	University degree	Chicken	Multinational	60 minutes

4. Interview analysis

The present study adopts a thematic analysis approach, a qualitative research method designed to uncover and comprehend patterns or themes within a dataset (Joffe, 2011). This methodological choice is well-suited for the study's aim. The thematic analysis process is a multi-stage endeavor encompassing data familiarization, initial code generation, theme identification, theme review, definition and naming of themes, and the ultimate reporting of results. In conjunction with the chosen methodology, the study framework is utilized as a guiding tool to identify and interpret trends inherent in the dataset. Tables are employed at each stage of the thematic analysis process. These tables aid researchers in structuring and visualizing the evolving codes and themes, enhancing the analysis's clarity and coherence.

The tabular representation facilitates the evaluation of codes and themes, enabling researchers to navigate between different components and grasp the fundamental aspects of each code and theme and their interconnectedness. The outcomes of this meticulous analysis validate the proposed model, which advocates for implementing customer orientation as a coping strategy to address customer technostress in the context of food-ordering apps. The study sheds light on the antecedents and consequences of technostress, drawing attention to the intricate dynamics between customers and technology. The identified themes and patterns underscore the significance of adopting a customer-centric approach to mitigate technostress and enhance the overall customer experience in food-ordering apps.

RESULTS
1. Antecedents of customer technostress from both customers' and restaurant managers' perspectives
This study examined antecedents of customer technostress by analyzing restaurant customers' and managers' food-ordering app perspectives. The study participants' feedback highlighted various dimensions of complexity in restaurant food-ordering apps, which is the first antecedent of customer technostress. Customers reported encountering challenges such as a cluttered user interface with numerous buttons, tabs, and options, leading to overwhelming navigation and frustration (Respondents No. 2, 20). Additionally, the customization process was noted to be intricate, demanding multiple non-intuitive steps, resulting in time-consuming (Respondent No. 8). Technical issues, including slow loading times and freezes, added complexity by prolonging basic tasks (Respondent No. 4). Moreover, the absence of efficient search functionality made locating specific dishes from an extensive menu laborious and irritating (Respondent No. 18). Lastly, using complex jargon and unfamiliar terminology assumed user familiarity with industry-specific terms, compounding the difficulty in comprehending options and navigating the app (Respondent No. 23).

Second, the study results indicated that the restaurants' food-ordering apps have mixed customer reviews regarding security and privacy measures. Some customers express confidence in the app's robust security measures, including encryption of payment information and personal details (Respondents No. 1, 5, 21). However, others have reservations due to occasional glitches or delays in updating personal information, which raise minor security concerns (Respondents No. 6, 8). Some customers also question the app's security due to unrelated permissions requested and lack of clear information about data usage and sharing, making them uneasy (Respondents No. 11, 16). Hence, despite the app's security claims, customers take extra precautions by using separate payment methods to minimize potential risks (Respondents No. 13, 20).

Third, the study findings revealed diverse customer responses to changes in the features of the food-ordering app these restaurants offer. On one side, numerous customer exhibit enthusiasm and inquisitiveness, relishing the opportunity to experiment with novel functionalities and eagerly anticipating how these additions will elevate their ordering encounters (Respondents No. 6, 15, 17, 18). They display a penchant for delving deeper into these fresh attributes by acquainting themselves with their functionalities and operations before making a usage decision. Consequently, customers promptly embrace new attractive features, showcasing an affinity for technological progress and seamless integration into their daily routines. Conversely, there exists a cohort of customers who approach new features with wariness and prudence, harboring concerns that such additions could complicate the app's usability or introduce confusion in the ordering process (Respondents No. 2, 21, 23). Two of these customers mentioned that when encountering a new feature that appears bewildering or superfluous, they take the initiative to offer feedback to the app's support team or draft a review to articulate their perspectives (Respondents No. 2, 21).

Fourth, this study unveiled that many customers experienced diminished control from an overabundance of choices and functionalities within the restaurant's food-ordering app (Respondents No. 1, 2, 11, 21, 23). The extensive array of categories and options within the menu contributed to decision-making challenges, resulting in protracted scrolling and prolonged deliberation. Additionally, features like order tracking, customization, reviews, and an extensive selection of available eateries and dishes compounded the sensation of being inundated. While the customization feature proved advantageous to specific customers, it became a source of stress for those who found its extent overwhelming. The application's interface, brimming with an excess of options and functionalities, transformed placing an order into a labyrinthine journey, needlessly burdening customers with stress.

The ultimate antecedent contributing to customer technostress, as articulated by customers, lies in the sensation of being overwhelmed or technostress due to perceived time constraints. For example, the app freezing when placing time-sensitive orders evoked panic and apprehension concerning punctual order fulfillment (Respondents No. 2, 16). Instances of application crashes coinciding with peak utilization hours exacerbated concerns regarding potential order delivery delays (Respondents No. 20, 23). Complications related to payment, including errors and the necessity for repetitive card input, elicited frustration and apprehension over potential erroneous charges (Respondents No. 13, 15). The ineffectiveness of the app's tracking feature in providing real-time updates left customers in a state of unease regarding the progression of their orders (Respondents No. 18, 20). The coexistence of numerous promotional offerings and uncertainty regarding their applicability to specific orders engendered supplementary anxiousness (Respondents No. 9, 15).

Lastly, instances of timeout occurrences, notably during periods of discount availability, induced anxiety surrounding potential discount forfeiture or payment processing failures (Respondents No. 6, 15). This study also investigated the restaurant managers' perspectives regarding customer technostress from their food-ordering apps. Firstly, several customers provided feedback or complaints about the complexity of the food-ordering app for the restaurant. As restaurant managers said, they were actively addressing the issue by collaborating with app developers to streamline the interface and make it more user-friendly (Respondents No. 14, 19). Some managers mentioned that while app complexity was not widespread, they took customer feedback seriously and explored ways to simplify the app,

including creating user guides or tutorials (Respondents No. 12, 22). They also acknowledged that a minority of customers, particularly older or less tech-savvy, found the app overwhelming and considered making it more intuitive.

Secondly, restaurant managers said that restaurants take several measures to ensure the security of customer data when using the food-ordering app. These measures include implementing robust data encryption protocols to protect sensitive information, conducting regular security audits and engaging third-party cybersecurity experts for assessments, enforcing strict access controls and data minimization practices, and regularly updating the app with security patches. They prioritize user authentication, provide employee training on data security, and integrate with secure payment gateways (Respondents No. 3, 10, 12). Thirdly, while changes in the restaurants' food-ordering apps aimed to enhance the app's functionality and user experience, less tech-savvy customers experienced technostress through facing challenges in adapting to the new layout, understanding loyalty program complexities, navigating through a broader range of menu options, trusting new payment methods, managing constant order tracking notifications, and sharing orders on social media (Respondents No. 7, 10, 14, 19). Thus, restaurant managers understand the importance of implementing and supporting updates during transition periods.

Fourthly, restaurant managers have noticed specific patterns and trends in how customers interact with the food ordering app, which may contribute to technostress. These include customers feeling a lack of control over the abundance of customization options and facing challenges in finding necessary information (Respondents No. 3, 10). Finally, restaurant managers have noticed that customers often feel rushed or anxious when using the food ordering app during peak hours, when they make quick selections without exploring all options when they have time-sensitive orders and want to complete the process swiftly when encountering technical issues like slow loading times or errors, and during limited-time promotions to place orders before they expire (Respondents No. 7, 12, 14).

2. Consequences of customer technostress from both customers' and restaurant managers' perspectives

The previous antecedents of customer technostress led to customer dissatisfaction consequence, as customers highlighted. Customers encountering challenges such as cluttered user interfaces, intricate customization processes, and technical issues will likely experience frustration and overwhelm, ultimately resulting in dissatisfaction with the app's complexity (e.g., respondents No. 1, 4). Additionally, the absence of efficient search functionality and complex jargon can lead to difficulty finding items and confusion, further contributing to customer dissatisfaction (e.g., respondents No. 5, 6, 11). Moreover, customers who have reservations about the app's security due to glitches, unclear data usage policies, or unrelated permissions may feel uneasy, ultimately impacting their overall experience and satisfaction (e.g., respondents No. 5, 8, 16).

The consequences of customer technostress also extend to purchase reluctance behavior. Customers who question the app's security may use alternative payment methods to minimize potential risks, which could lead to a reluctance to purchase from the restaurant food-ordering app (e.g., respondents No. 9, 13, 15). Furthermore, customers who approach new features cautiously, fearing that they might complicate the app's usability, may be reluctant to adopt these features, potentially affecting their willingness to use the app for ordering (e.g., respondents No. 2, 11, 17). The sensation of being overwhelmed by an abundance of choices and functionalities within the app can lead to a reluctance to place orders, as the complexity of the menu and decision-making process may deter customers (e.g., respondents No. 15, 18, 21). Operational disruptions, crashes, payment errors, and ineffective tracking features can create a stressful ordering experience, causing customers to hesitate before making future orders (e.g., respondents No. 13, 20, 21). Lastly, uncertainty about discounts and challenges adapting to app updates may further contribute to purchase reluctance, as customers may fear missing out on promotions or navigating the app's changes. These consequences impact the customer's overall experience and willingness to engage with the restaurant's food-ordering app.

The observed consequences of antecedents related to customer technostress, as reported by restaurant managers, encompass both dissatisfaction and reluctance behaviors. Customers may express dissatisfaction when faced with complexities in the food-ordering app's interface and customization processes, app functionality changes, understanding loyalty programs, navigating extensive menus, and feeling overwhelmed by numerous delivery options and constant order tracking notifications (Respondents No. 12, 14, 22). Additionally, purchase reluctance behavior may arise, particularly among older or less tech-savvy customers, who may hesitate to trust new payment methods or make quick selections during peak hours (Respondents No. 19, 23). Restaurant food-ordering app technical issues, such as slow loading times or errors, can also contribute to purchase reluctance, especially during time-sensitive promotions (Respondents No. 10, 12).

3. Perceptions of restaurant customer orientation in mitigating technostress from food-ordering apps

Customers' perceptions of restaurants' proactive and responsive customer orientation techniques to lessen the technological stress caused by food-ordering apps were divided. Several customers have reported that the restaurants they interacted with tended to only address their concerns and issues regarding technostress from food-ordering apps once a complaint had been made (e.g., respondents No. 2, 11, 17). However, some participants provided insights into the proactive methods employed by restaurants to collect feedback and improve user experiences on their mobile applications. For instance, participants numbered 4, 8, and 9 said that restaurants employ a variety of methods, including surveys, social media platforms, and direct customer care interactions, in order to comprehend the difficulties encountered by customers and actively solicit their feedback to enhance the operation and usability of the application.

The study revealed restaurant managers' responsive and proactive customer orientation techniques to reduce food-ordering app-related technostress. The restaurant managers said feedback collection is vital to these initiatives (e.g., respondents No. 10, 19, 22). Many different channels are used in order to seek customer input actively. Some examples of these channels include in-app surveys that accompany orders, involvement with customers on social media platforms,

and the construction of dedicated feedback sections on the website. This comprehensive feedback collection reflects the essence of responsive customer orientation, as restaurants prioritize open channels for customers to express their experiences and challenges, nurturing a customer-centric culture. Furthermore, the management of restaurants delineated proactive strategies for the prevention of technostress. The monitoring of app analytics is conducted with meticulous attention to identify patterns that may potentially induce stress (Respondents No. 3, 10, 12). Additionally, it has been stated that customer feedback frequently catalyzes tangible enhancements, such as optimizing payment processes in response to identifying customer issues (Respondents No. 14, 22).

DISCUSSIONS

This study presents a thorough assessment of the customer technostress in the context of restaurant food-ordering apps, yielding several noteworthy findings. The research identifies the inherent complexity of these applications as the primary driver of customer technostress, leading to navigation and usability challenges (Kumar et al., 2022). Notably, the study uncovers a divergence in customer perceptions regarding app security and privacy protections (Ali et al., 2021), with some expressing confidence and others voicing concerns about technical issues and data policies (Helal, 2023). Additionally, the study highlights the diversity of customer reactions to app feature changes and underscores the impact of information overload on user control and decision-making (Ali et al., 2021). Furthermore, the perceived time constraints emerge as a crucial factor in customer technostress, as various app-related issues evoke panic, frustration, and apprehension among customers (Islam et al., 2021; Kumar et al., 2022). Moreover, including restaurant managers' perspectives adds depth to the understanding of technostress, emphasizing the importance of collaboration, data security, user support, responsive design, and customer engagement strategies in optimizing the food-ordering app experience. Therefore, these findings contribute to a holistic approach to addressing technostress in restaurant apps, benefiting customers and the industry.

The antecedents of technostress give rise to inadequate coping mechanisms, which can harm customer experiences and restaurants' financial performance. The presence of inadequate coping mechanisms might result in the emergence of technostress symptoms, which in turn directly influence customer satisfaction levels and their tendency to engage in purchasing behaviors. Factors contributing to dissatisfaction include complexity, security concerns, and unmet app requirements (Fan et al., 2019; Furunes and Mkono, 2019). Purchase reluctance is driven by, for example, technical issues, customer control, security issues, and perceived time pressure, deterring customers from using the app and affecting restaurant sales (Timur et al., 2023). Hence, restaurants must enhance app usability, ensure data security, and provide a seamless experience, ultimately mitigating technostress-related dissatisfaction and reluctance.

The study reveals a divergence in customer perceptions regarding restaurants' customer orientation techniques aimed at mitigating technostress related to food-ordering apps. While some customers reported that restaurants primarily addressed technostress issues after receiving complaints, others provided insights into proactive methods employed by certain restaurants to gather feedback and enhance user experiences. As highlighted by respondents, these proactive approaches involve diverse feedback collection methods such as surveys, social media engagement, and direct customer care interactions, indicating a commitment to comprehending customer challenges and actively soliciting input for app improvement (Daradkeh et al., 2023). Similarly, restaurant managers underscored the significance of feedback collection, utilizing various channels to foster a customer-centric culture indicative of responsive customer orientation. Furthermore, proactive strategies were noted, with app analytics monitoring to identify stress-inducing patterns and tangible enhancements driven by customer feedback (Helal, 2022). However, fewer restaurants use proactive customer orientation to identify antecedents of customer orientation; instead, the restaurants wait until the customer makes the complaint. Hence, restaurant managers need to use both dimensions of customer orientation to reduce customer technostress from food-ordering apps.

1. Theoretical implications

The theoretical implications of the study elucidate the antecedents, consequences, and coping strategies associated with customer technostress in restaurant food-ordering apps. First, the study extends the TST by identifying specific techno stressors customers encounter when using food-ordering apps. Examining these technostress antecedents, namely perceived complexity, insecurity, novelty, lack of control, and time pressure, enhances the theoretical comprehension of the effects of technology-related stressors on customer experiences (Christ-Brendemühl and Schaarschmidt, 2020; Kumar et al., 2022; Peters et al., 2022). Hence, the study provides detail to the TST framework by examining how various stressors combine in restaurant food-ordering apps to cause negative results.

This theoretical contribution facilitates the comprehension of customer technostress for researchers and practitioners, enabling them to devise customized solutions to alleviate stress and enhance customer satisfaction. Second, the study explicates how these identified techno stressors can negatively affect customers. The study expands the TST framework to shed light on the knock-on consequences of technostress by investigating the connection between technostress and its outcomes, like customer dissatisfaction and purchase reluctance. Therefore, the study shows how technostress reduces customer satisfaction through frustrating digital interactions and makes online purchases hesitant, emphasizing the importance of managing technostress for individual well-being, positive customer experiences, and business success (Helal, 2023; Showkat and Choudhury, 2019). This theoretical insight adds to the knowledge of technostress's cascade consequences in food-ordering apps, reinforcing the need for confrontation strategies.

Finally, the study proposed a customer orientation strategy that restaurants can adopt to alleviate customer technostress and enhance the overall customer experience. Integrating responsive and proactive customer orientation strategies offers a novel approach to addressing techno stressors and their consequences. The study underscores the importance of responsive

customer orientation by highlighting the establishment of dedicated customer service teams and efficient communication channels. This contribution aligns with the existing literature on the significance of responsive strategies in resolving customers' concerns and enhancing their experience (Helal, 2022; Schweitzer et al., 2016). Additionally, the study introduces the concept of proactive customer orientation to anticipate and address techno stressors, thus offering insights into how restaurants can actively enhance their app features and functionalities to mitigate stressors pre-emptively.

2. Managerial implications

The study provides valuable insights for restaurant managers regarding customer technostress in food-ordering apps. The findings highlighted various antecedents contributing to customer technostress, such as complexity, security and privacy concerns, frequent app changes, diminished control, and time constraints. To address these issues, restaurant managers should improve their apps' user-friendly design and navigation (Helal, 2023). These improvements can be achieved through conducting usability tests and responsively and proactively gathering customer feedback to identify improvement areas. Addressing technical glitches and enhancing search functionalities are crucial to mitigating perceived complexity (Showkat and Choudhury, 2019; Wu et al., 2022). Second, restaurant managers must prioritize data security by implementing robust encryption, conducting regular security audits, and transparently communicating data policies and protections to address customer perceptions regarding app security and privacy (Ali et al., 2021; Furunes and Mkono, 2019).

Third, restaurant managers should proactively educate customers about new features and functionalities introduced in the food-ordering app. This practice can be done through clear communication channels, tutorials, and guides explaining these additions' benefits and usage (Shah et al., 2021). By providing customers with comprehensive information, managers can encourage them to explore and utilize new features effectively (Griesbach et al., 2019). Fourth, managers should carefully curate the menu options to avoid information overload for customers by categorizing items, providing clear descriptions, and highlighting popular or recommended choices (Yoon and Yu, 2022). By presenting a manageable selection, customers can make decisions more efficiently, reducing stress and frustration. Finally, restaurant managers should prioritize enhancing the app's performance and stability, particularly during peak utilization hours, by investing in robust servers and conducting regular maintenance and updates to prevent crashes and freezing (Wahyudin et al., 2023). By ensuring a smooth and reliable app experience, managers can alleviate customer panic and apprehension related to time-sensitive orders. Hence, implementing these practices can increase customer satisfaction and repurchase by addressing factors contributing to technostress in food-ordering apps. Further, the study highlighted the significance of proactive and responsive customer orientation strategies.

The practices of improving user-friendly design and navigation, addressing technical glitches, enhancing search functionalities, and focusing on data security are examples of responsive customer orientation. In addition, restaurants should establish dedicated customer service teams accessible through various channels (Daradkeh et al., 2023). Swift response times and innovative features such as in-app chat functionality demonstrate a commitment to addressing customer concerns and minimizing technostress (Yoon and Yu, 2022). These practices are reactive and aim to address the issues and concerns that customers are already experiencing.

On the other hand, proactive customer orientation practices include proactively educating customers about new features and functionalities, carefully curating the menu options, and enhancing app performance and stability. Also, restaurants can proactively anticipate and prevent potential sources of technostress. These practices anticipate customer needs and preferences and aim to provide an enhanced experience before customers realize or express their specific requirements (Blocker et al., 2010; Helal, 2022). This dual approach fosters an environment of trust, satisfaction, and customer well-being, ultimately enhancing their overall app experiences and creating the purchase.

CONCLUSION, LIMITATION AND FURTHER RESEARCH

In conclusion, this study employed TST to evaluate customer technostress in restaurant food-ordering apps, including antecedents, consequences, and coping strategies. In semi-structured interviews with Egyptian restaurant customers and managers, the study identified techno stressors, including app complexity, security worries, frequent changes, limited control, and time restrictions. These techno stressors would increase customer dissatisfaction and purchase hesitancy, highlighting the need for appropriate coping mechanisms. Therefore, the study suggests restaurants use a customer orientation strategy to reduce customer technostress. However, not all restaurants use this strategy, indicating an industry gap. Hence, the study recommends improving app usability, data security, and proactive customer orientation to reduce customer technostress in restaurant apps.

Moreover, there are several limitations to consider. First, the study was conducted within the context of Egyptian restaurants, so the results may not apply to other cultural contexts. Future research could examine customer technostress in diverse cultural contexts to avoid this limitation. Second, the investigation depended on self-reported data, which may have been influenced by social desirability bias. Future research could use alternative data collection methods to mitigate this bias, such as mixed methods, which will also help to gain a comprehensive understanding of a research topic (Taherdoost, 2022). Third, the study did not investigate the influence of customer technostress on other critical outcomes such as customer loyalty, repeat purchase intentions, and word-of-mouth recommendations.

Future research could investigate the impact of customer technostress on these outcomes to address this limitation. Fourth, because the study used a qualitative method, the results may not be generalizable to a larger group. Consequently, future research should employ a quantitative method to acquire information from a larger sample size (Paoletti et al., 2021). Finally, the study only looked at customer technostress from restaurant food-ordering apps, so the

findings may not apply to other types of technology. Consequently, future research should investigate the efficacy of the proposed model with various restaurant customer-based technologies, such as self-service kiosks.

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