

When Tech Goes Sour: A Directed Qualitative Content Analysis of Negative User Experiences in Food and Beverage Mobile Apps

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ABSTRACT

In the past decades, there have been a growing number of food and beverage brand marketers who have extended their offerings via mobile apps. However, despite the increasing interest and investment in the mobile app market, there is still room for improvement in food and beverage mobile app retention. This study aims to explore why customers are disappointed with their food and beverage mobile apps. Specific attention is given to the role of customers' negative food and beverage mobile app usage experiences. Based on the directed qualitative content analysis method, 3,866 valid user reviews from the top 5 Malaysian food and beverage mobile apps in the Google Play Store were collected and analyzed using NVivo version 12. Drawing from Delone and McLean information system success model and expectancy-disconfirmation model, the study found that customers' negative food and beverage mobile app usage experience is complex and multidimensional. They can be categorized as performance expectancy disconfirmation and effort expectancy disconfirmation. Theoretically, the study extends the current understanding of mobile app usage retention mechanisms. In terms of practical implications, the study could provide valuable insights into improving consumers' emotional experiences with food and beverage mobile apps, thereby enhancing user retention strategies. Researchers should consider the limitations of the study as opportunities for future research.

Keywords: Mobile app, food and beverage, negative experience, expectancy-disconfirmation

INTRODUCTION

In recent decades, the advancement of smartphones in global culture has enabled brand marketers to use mobile apps for company objectives. The worldwide mobile app market has experienced significant growth in recent years. According to a new market analysis report by Statista (2021a), global mobile app revenues rose from \$97.7 billion in 2014 to \$581.9 billion in 2020. With the continuous expansion of the mobile app market, an increasing number of food and beverage brand marketers are embracing the trend and advertising their mobile apps on major smartphone platforms, such as the App Store for iOS-based smartphones and the Google Play Store for Android-based smartphones. Mobile apps, enabled by the internet, have given food and beverage brand marketers a new platform to enhance service, support, and engagement for their current customers. Gao et al. (2021) suggested that brand marketers can cultivate long-lasting relationships with customers, leading to improved customer interaction, positive brand attitudes, and increased revenue growth using mobile apps. Integrating mobile apps into traditional business models has enabled many food and

beverage firms to attract a large number of new markets, particularly from the millennial generation.

Despite the fact that there is a growing interest in the mobile app industry, numerous market intelligence surveys have suggested that customers all over the world are using fewer mobile apps related to food and beverages. According to Statista (2021b), the retention rate for mobile applications related to food and beverages is 3.9%. This is a lower percentage when compared to other categories such as financial (13.4%), news (13.3%), sports (9.9%), and retail (8.7%). According to the findings of a survey conducted by Liftoff (2019), the percentage of people who retained mobile applications has dropped by more than 77% in Southeast Asian nations such as Indonesia, Myanmar, Malaysia, Singapore, and Thailand. Only 1% higher than Thailand's 4% retention rate, Malaysia had a retention rate of 5%, making it the second lowest of the countries in the South-east Asian region. As the market for food and beverage mobile apps continues to grow in importance, it is essential to conduct a comprehensive study that investigates the ways in which the features of food and beverage mobile apps may influence the emotional experience of users and their ability to continue using the mobile apps.

The emotional experience of users significantly influences their behavior and intention to continue using mobile apps (Suh & Li, 2021). An in-depth comprehension of user emotions can yield useful insights about user behavior, preferences, and overall satisfaction levels while engaging with mobile applications (Haas et al., 2022). Through the examination of emotional reactions, creators of mobile applications can customize their programs to elicit favorable emotions, resulting in heightened user involvement and loyalty (Vayghan et al., 2022). Incorporating emotional considerations can contribute to the development of user-friendly and empathic products, hence improving the overall user experience (Hossain & Rahman, 2023). Sorbo et al. (2020) highlighted the importance of comprehending customer discontent and frustrations to gain useful insights into areas for enhancement inside the mobile application. An assessment of user adverse encounters can aid in identifying crucial concerns that could influence app ratings and user perspectives. Through analyzing the causes of unfavorable attitudes conveyed in customer evaluations, mobile app developers can prioritize enhancements that have the greatest impact on improving app quality and user satisfaction. Moreover, it is imperative to comprehend user's adverse encounters to uphold the mobile app's pertinence and competitiveness in the industry (Saleh et al., 2021). Resolving usability difficulties and addressing features that fail to meet user expectations can result in higher levels of user satisfaction, retention, and loyalty (Lin et al., 2023).

A review of the relevant body of knowledge revealed that most studies about mobile apps have focused on health (e.g., Lee et al., 2018; Izahar et al., 2017; Park et al., 2019) and diet management (e.g., Zaidan & Roehrer, 2016; Subramanian, 2015). Although several studies are related to food and beverage mobile apps, most of them have instead concentrated on food delivery companies' mobile apps (e.g., Abed, 2024; Lin et al., 2024; Madinga et al., 2023; Yeo et al., 2021; Alalwan, 2020; Troise et al., 2020; Belanche, 2020), whose attributes might differ from brand-oriented food and beverage mobile apps. Moreover, studies on food and beverage mobile apps in Eastern countries, particularly in the Southeast Asian region, are scarce, as most existing studies have been conducted in Western countries, namely in the USA (e.g., Li et al., 2024; Rivera & Gregory, 2015; Belanche et al., 2020). Among the few studies, Nay and Yuthnea (2024) used quantitative approach to investigate food and beverage mobile app continued usage intention in Phnom Penh, Cambodia, while Bagaskara et al. (2021) developed smart food and beverage mobile app centered on seamless ordering and reservation system to optimize restaurant operation in Indonesia. In terms of research approach, most studies have employed a quantitative research design that emphasizes a predetermined set of variables from a particular theory (e.g., Fong et al., 2017; Chao, 2019; Kang & Namkung, 2019; Alalwan, 2020; Yeao et al., 2021). This limits the current understanding of mobile app attributes to a set of delineated variables within a specific theoretical framework.

Addressing the gaps in the literature, the study's primary purpose is to explore the attributes affecting food

and beverage mobile app negative usage experiences. The study focuses on attributes related to food and beverage mobile app system quality pertaining to performance and effort expectancy disconfirmation. This is aligned with Mai et al. (2024), who identified that system quality and user emotional experience are instrumental towards food mobile app continuous usage. The examination of user negative experiences of food mobile apps is crucial for app developers to identify areas of improvement and ensure long-term success in a competitive app market. By addressing user negative emotions, app developers can create more appealing and user-centric mobile apps that resonate with users on an emotional level. This can lead to enhanced user experiences and improved satisfaction through increased mobile app quality. The study embarks on a qualitative research inquiry using unbiased consumer reviews to achieve the stated research objective. Specifically, the study employs a qualitative theory-directed content analysis approach focusing on reviews of food and beverage mobile app users in Malaysia.

LITERATURE REVIEW

Mobile App and the Food service Industry

A mobile app, or “mobile application,” is a software program designed to offer information on various subjects on a portable digital device like a smartphone or tablet (Subramanian, 2015). This includes information about general productivity and availability of tools such as email, calendar, contact management, stock market updates, and weather forecasts. Most smartphones are equipped with standard mobile applications that are already installed; however, users can customize their devices by installing supplementary mobile applications, which can be either free or paid, from the App Stores offered by their service providers. Statista’s analysis (2021c) indicates that the mobile app market has experienced significant growth in quantity and earnings, with Google Play and Apple App Stores emerging as the dominant players. The total number of mobile app downloads in 2020 was 28.3 billion from Google Play and 8.2 billion from the Apple App Store. The Google Play Store offers a diverse selection of product categories and many apps spanning several categories, such as entertainment, lifestyle, education, personalization, and tools. Subramanian (2015) stated that around 57% of mobile applications in the Google Play Store can be obtained without charge, while just 28% of apps in the Apple App Store are free.

Mobile applications play a vital role in the food service industry, as food and beverage are a highly desirable area for online transactions. According to Dirsehan and Cankat (2021), food and beverage applications were ranked ninth in popularity among all apps in the app store in August 2020. In a study by Kim et al. (2015), the researchers investigated if the spending behavior of individuals who adopt a brand’s mobile application will change. It was found that using the app and continuing to use the branded application resulted in increased future spending. Customers develop trust in a branded application and become more dedicated and frequent users when they find that the app provides a unique brand experience or meets their informational and entertainment demands. If consumers view the mobile app as futile or insignificant, they are more inclined to harbor resentment towards the firm for not comprehending their expectations (Kim et al., 2015). Insufficient customer satisfaction with mobile apps can result in user abandonment, which may lead to unfavorable brand views and potentially reduce future sales.

Emotion and Mobile App Usage Experience

Increasing evidence suggests that emotion plays a crucial role in predicting the acceptance and utilization of technologies. According to Yang et al. (2012), an individual is more inclined to use technology if they find it engaging. Several studies, including Sarkar (2011) and Xiang et al. (2015), suggest that subjective emotions, both physiological and psychological, are important in hedonic consumption. Xiang et al. (2015) also indicate that personal pleasure is a stronger factor in using a hedonic mobile app compared to a functional one. Ho and Amin (2019) found that the inclination to use a smart travel mobile application for

pleasure is predominantly driven by internal motivations. Hedonic-oriented value is anticipated to enhance the effectiveness of travel apps as users typically seek increased enjoyment and fun when using mobile applications. Consumers interact with the technology, develop good emotions towards it, and finally form a strong bond over an extended period (Xiaofei et al., 2020) and vice versa. The study investigates the factors contributing to bad experiences related to the usage of food and beverage mobile apps, emphasizing the significance of customers' emotions in app retention.

Delone and McLean's Information System Success Model and Expectancy-Disconfirmation Framework

When evaluating mobile app performance, it is crucial to examine the technical aspects of the app, such as system quality and effort of using the system. The study integrates Delone and McLean's (2003) information system success model and expectancy-disconfirmation model to explain consumers' negative experience with food and beverage mobile app systems. System quality pertains to the technical functionality and reliability of the app, while information quality focuses on the accuracy and relevance of the information provided within the app (Vahteristo & Jylhä, 2020). Demian et al. (2017) described system quality as information system usability, adequate response times, ease of use, and an appropriate level of integration. Assessing these dimensions aids in determining the overall quality of the mobile app. On the other hand, the expectancy-disconfirmation model, first proposed by Oliver (1980), holds that people compare a service's performance to their expectations of that service. Negative disconfirmation happens when the performance is regarded as falling short of expectations. It typically results in angry or dissatisfied customers. Ding (2018) has shown the expectancy-disconfirmation model to help explain the link between emotion and the continuous use of mobile apps. It highlights how emotions are a necessary component of perseverance. As negative disconfirmation usually results in switching behavior and reduces customers' inclinations to repurchase, which would reduce a company's profitability (Mazhar et al., 2022), food and beverage brand marketers must understand the causes of consumers' negative usage experiences attributed to mobile app system's quality and effort performance.

RESEARCH METHODOLOGY

Research Design

A directed qualitative content analysis method was considered the most suitable research approach to realize the research objective. As suggested by Assarroudi et al. (2018), this study employed a three-stage directed qualitative content analysis process for analyzing the user reviews that involved preparation (stage 1), organization (stage 2), and reporting (stage 3). The systematic three-stage analytical process ensures the directed qualitative content analysis's reliability, validity, transparency, and completeness. This enhances the precision and robustness of the directed qualitative content analysis method, making it possible to compare the current study's findings with similar studies from previous studies. Faria-Schützer et al. (2021) further asserted that the systematization of the directed qualitative content analysis practices would make it more transparent and more manageable for researchers to articulate their knowledge and apply techniques that safeguard the quality of the content analysis findings. As an emerging content analysis approach, the directed qualitative content analysis method is gaining recognition and being widely adopted in health-based research domains such as healthcare (e.g., Sabzmakan et al., 2020; Sullivan et al., 2021; Mokarami et al., 2021); wellbeing (e.g., Pate et al., 2021); and nursing (e.g., Loh et al., 2021; Xiao & Loke, 2021). Grounded on the Expectancy-Disconfirmation framework, this study could be among the few that have adapted directed qualitative content analysis to explore customer negative review content related to food and beverage mobile apps.

Sampling Design

To identify the negative user reviews, the researchers used the user review ratings of the selected 5

Malaysian food and beverage mobile apps, which are available in the Google Play Store. Each food and beverage mobile app product description has a section for user rating and review in which users can rate their experience with the food and beverage mobile app from 1 (terrible) to 5 (excellent). As users' negative usage experiences generally translate to poor mobile app ratings, the researchers decided that a user review rated three stars or below is considered a negative user review in the sample for the study. This method of using user review ratings to identify a sample unit of analysis is similar to the work of Nicholas et al. (2017).

For the sampling approach, the researchers adopted a non-random sampling method, which is typical for qualitative content analysis research (Ward, 2012). The decision was made because the primary goal of the sampling strategy in a qualitative study is not a generalization of findings (Creswell & Creswell, 2018). The researchers chose purposive sampling, a type of non-random sampling suitable for qualitative content analysis. Purposive sampling, also known as judgment sampling, involves intentionally selecting a sample based on specific relevant characteristics. As Creswell and Creswell (2018) suggested, the researchers made several criteria for what to sample, what form the sampling should take, and how many should be sampled. The sampling criteria set (inclusion and exclusion criteria) for the user review are as follows:

1. It originated from the top 5 most popular food and mobile apps in the Google Play Store in Malaysia.
2. The rating is three stars and below.
3. The language is either English or Malay.
4. From January 1, 2020, to December 31, 2020.
5. The content is related to a negative experience using a specific food and beverage mobile app.
6. The length is more than three meaningful words.

Vasileiou et al. (2018) stated that there is a lack of agreement on the standard method for selecting an appropriate sample size in qualitative research, and most qualitative studies typically need to offer a valid rationale for their chosen sample size. Saturation is the generally used principle for determining sample size and evaluating its sufficiency. Data saturation arises from the qualitative methodological approach of grounded theory (Glaser & Strauss, 1967). Lincoln and Guba (1985) suggested that determining sample size should rely on the notion of informational redundancy. The sampling procedure can terminate when no new information is generated by sampling more units.

In a qualitative study, the sampling approach primarily focuses on aspects other than generalizing findings. The researchers used a pragmatic method to determine the sample size for the study, as it was only possible to sample a portion of negative user evaluations. The researchers established a sample size limit of 12 months according to the time frame parameter. The researchers analyzed all unfavorable user reviews made between January 1, 2020, and December 31, 2020, in five chosen food and mobile apps on the Google Play Store, deeming it a sufficient sample size. A total of 3,866 valid samples were obtained using a pragmatic method over a five-week data collection period spanning from early March 2021 to mid-April 2021. This study's sample size was similar to, if not somewhat larger than, prior similar research. Nicholas et al. (2017) analyzed 2,173 reviews to assess the adoption of health-based mobile apps by mental health consumers. Daradkeh and Sabbahein (2019) examined 1,200 online reviews to study the factors influencing the adoption of mobile app development platforms.

Data Collection Procedure

To locate the target sample, the researchers used the SimilarWeb website (www.similarweb.com, 2020) to determine Malaysia's most popular food and beverage mobile apps. The ranking is based on the number of

“current installs” and “active users” of food and beverage mobile apps in Malaysia for 2021. The food and beverage mobile apps listed in the top five are Brand A, followed by Brand B, Brand C, Brand D, and Brand E. Because it is not feasible to collect data from all food and beverage mobile apps, this study decided to include only the top five Malaysian food and beverage mobile apps found in the Google Play Store. Rationally, they were selected because of their large number of user reviews (more than 3,000), which is usually required for a reasonable data analysis in a qualitative content analysis study (Thelwall, 2021). Also, the decision to collect data from only the top 5 food and beverage mobile apps made the data collection and analysis process more manageable, translating to more accurate results. Using Excel software, 9,894 user reviews dated from January 1, 2020, to December 31, 2020, and rated 3 stars or below were collected in a five-week period. All user reviews were gathered from the top five most popular free Malaysian food and beverage mobile apps in the Google Play Store in 2021. The 9,894 user reviews were screened using the predetermined sampling criteria (inclusion and exclusion criteria); thus, not all the collected user reviews were analyzed. For example, by applying the exclusion criteria, the study omitted user reviews that contained three words or less, did not focus on food and beverage mobile app usage experiences, and were not in English or Malay. By having inclusion and exclusion criteria, the study improves the credibility of the research findings by ensuring that no relevant or irrelevant data were systematically omitted or included (Graneheim & Lundman, 2004). As a result of the screening process, 6,028 user reviews were excluded from the study, while the remaining 3,866 user reviews were processed for further analysis.

Ethical Consideration

Drisko and Maschi (2016) stated that when data is collected from a readily available source in the public domain, such as consumer reviews on websites and social media postings, this can represent a dilemma in terms of informed consent and ethical review. In this study, it is not feasible to obtain informed consent from all individuals who posted the user reviews because: 1) there was no contact information attached to the user reviews, and 2) the number of user reviews was too enormous, making reaching every single one of them difficult and time-consuming. However, the researchers have taken preemptive steps to avoid emerging ethical issues. Much care has been taken to protect the identities of the individuals who posted the user reviews and the food and beverage brand names. Throughout the data analysis, the researchers used a code name instead of the real individual's profile name to hide their true identities. This ensures the confidentiality and anonymity of the individuals who posted the reviews from being discovered by others. As the study focused on negative customer reviews, code names were also applied to the food and beverage mobile app brand in reporting the findings to protect their reputation.

DATA ANALYSIS AND RESULTS

In qualitative content analysis, the term “unit of analysis” usually refers to the coding unit, such as words, characters, statements, phrases, or paragraphs, which can be physical, temporal, or conceptual (Ward, 2012). In this study, the unit of analysis is the negative content of user reviews about Malaysian food and beverage usage experiences. Specifically, it is a physical form of a unit of analysis that constitutes negative textual statements written in a single-user review.

For the study, two well-known analytical software programs, Excel and NVivo, were used in a two-step data analysis process (preliminary and primary). In the preliminary data analysis process (1st Step), user reviews were gathered utilizing a data extraction script that comprised the food mobile app details, text of the user review, star rating given, and review date. All the user reviews were transcribed manually, extracting the same information without changing or modifying the content of the reviews. The consumer reviews were exported into Excel software and screened using the sampling criteria established earlier. Subsequently, the filtered, valid consumer reviews were imported into a more powerful qualitative data analysis software known as NVivo version 12 for further analysis. In the primary data analysis process (2nd Step), NVivo

version 12 was employed to manage, organize, and analyze the large volume of user reviews. Introduced in 1999, NVivo is a robust qualitative data analysis computer software designed for researchers to analyze unstructured or non-numerical data such as consumer reviews, interviews, and social media content. The data analysis software is quite popular among qualitative content analysis researchers across various domains (e.g., Nicholas et al., 2017; Rinawan et al., 2021; Rossolatos, 2019).

In this study, the qualitative data analysis software assisted the researchers in performing both deductive and inductive coding, which are required for the directed qualitative content analysis approach adopted in this study. In the deductive coding stage, the researchers predetermined the primary category coding based on the Expectancy-Disconfirmation Model and relevant literature on information systems, mobile apps, and technology adoption. As for the inductive coding stage, codes for the associated subcategories were generated while the researchers evaluated the collected data. Besides coding, the NVivo software helped the researchers automatically detect expressions of sentiment in user review content. This was performed using the Auto Code Wizard Sentiment Analysis function, in which the NVivo software was used to identify negative (moderately negative and very negative) tones in user review content. Although the auto-coding sentiment seems to make the coding process more manageable, the researchers still relied on manual coding for most of the data, proving more accurate (Ward, 2012).

The NVivo software was used to categorize, organize, and analyze unstructured textual data from the Google Play Store user reviews. Using the coding, querying, and visualization functions available in the NVivo software, the researchers conducted a deep analysis within and across the large volumes of user reviews. The researchers focused on the user reviews' manifest and latent contents, which were scrutinized and analyzed. As Thomas and Magilvy (2011) suggested, analyzing both the manifest and latent contents of user reviews in a directed qualitative content analysis can provide a profound understanding of the data. In the study, the manifest contents are limited to the constructs designated in the system quality expectancy-disconfirmation, while the latent contents involve the researchers' interpretations, which provide more profound and richer meaning to the available user review contents. The researchers used the Word Frequency Query and Text Search Query functions available in the NVivo software.

First, the Word Frequency Query was applied to identify the most frequently occurring words, phrases, or concepts within the sources of each main category. Prior to using the Word Frequency Query function, the researchers specified the query parameters to display the top 100 words, a minimum 3-word length, and group matching of similar words. Second, the Text Search Query function was applied to explore the words' use, context, and meaning found in the Word Frequency Query results. Here, the researchers evaluated emerging significant ideas or topics from the sources that might describe the main categories. Prevalent words or phrases within the sources of the main categories were scrutinized and coded as associated subcategories. The results from both the word frequency and text search queries were presented as word cloud and word tree visualizations, respectively. This has helped the researchers identify, evaluate, and interpret the multiple significant attributes underlying the main categories. After an exhaustive, in-depth cross-examination of the user reviews, several significant patterns and trends were found as reflections of the Expectancy-Disconfirmation Model.

Table 1. Description of User Review in the Top 5 Food and Beverage Mobile Applications

Store Rank	Food and Beverage Brand	Collected Reviews	Excluded Reviews	Valid Reviews
1	A	2726	2,023	703
2	B	1211	810	401
3	C	4929	2508	2421
4	D	561	440	121

5	E	467	247	220
Total	5	9,894	6,028	3,866

Table 1 describes user reviews collected from the top 5 Malaysian food and beverage mobile apps. A total of 9,894 user reviews dated from January 1, 2020, to December 31, 2020, and rated three stars or below were collected in five weeks. All user reviews were gathered from the top five most popular free Malaysian food and beverage mobile apps in the Google Play Store in 2021. The 9,894 user reviews were screened using the stipulated sampling criteria (inclusion and exclusion criteria), so not all user reviews collected were analyzed. Based on the screening process, 6,028 user reviews were excluded from the study, and the remaining 3,866 user reviews were processed for further analysis.

DISCUSSION

After a systematic data analysis, the study found that mobile app system quality is complex and multidimensional. This confirms the assertion by Keikhosrokiani et al. (2019) that users’ perceptions of mobile app system quality include usability, communicability, data processing capability, and response time. Likewise, Almaiah and Man (2016) asserted that system quality consists of functionality, accessibility, interactivity, ease of use, and interface design. This study divides the system quality expectancy disconfirmation category into two main subcategories: performance expectancy disconfirmation and effort expectancy disconfirmation. System performance expectancy is represented by functionality, response time, reliability, responsiveness, and accessibility, while system effort expectancy entails ease-of-use and interface design. The following subsections detail the users’ negative experiences caused by system performance and effort for food and beverage mobile app features that are not meeting user expectations.

Performance Expectancy Disconfirmation

Within the system quality expectancy-disconfirmation category, performance expectancy disconfirmation recorded the highest reference with 2537 user reviews. The text frequency and word cloud text content analysis revealed several significant keywords that represent users’ negative perceptions related to the performance of their food and beverage mobile apps. These include keywords such as errors in sign-in or login, slow, loading, not working, time-consuming, crashing, and bugs, which were often used to describe their negative usage experiences. Further interpretations of the data found three subcategories that further reinforce the performance expectancy disconfirmation category: inefficient mobile app systems, unreliable mobile app systems, and unresponsive mobile app systems. Figure 1 shows the result of text frequency analysis in the context of the word cloud visualization of frequent text found in the performance expectancy disconfirmation category.

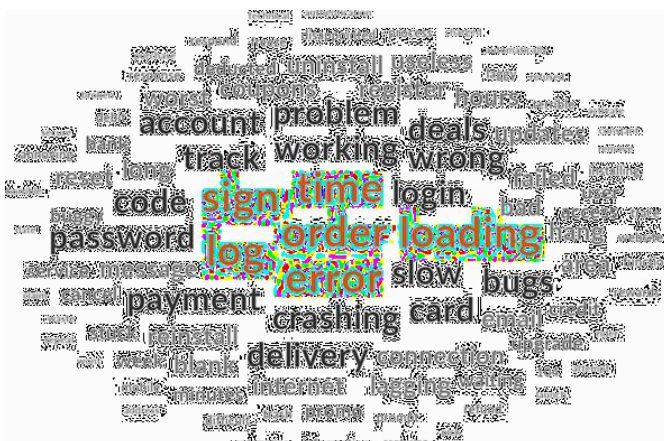


Figure 1. Word Cloud Visualization of the Most Frequent Words found within the System Quality

Performance Expectancy-Disconfirmation Category

Regarding inefficient mobile app operating systems, 1,743 references indicated that the food and beverage mobile apps could be more efficient in performing a specific task, such as new account registration and login. For example, users mentioned that a system error happened during account registration and login:

“... now it’s useless can’t login cause of some system error been like that for like three months now.”

“Whenever I create a new account for order the verification code does not enter it always say something went wrong or system error, please correct it.”

The inefficiency of the food and beverage mobile app operating system is also manifested throughout the users’ purchase journey, beginning with ordering, payment, deal redemption, security, and tracking orders. A system error has been mentioned during the ordering process and when redeeming an online deal, voucher, or coupon. For example, users stated that:

“... sometimes my order error when i so hungry hmmm.”

“Already pay for the order for take away, however their app error and the outlet not receive my order. Wasted all the time for this.”

“I’m beginning to think the error of the app is to limit the redemption of your deals/promo. If not generous, just stop promoting.”

“Can’t redeem any rewards. Says there is security error.”

Almiah and Man (2016) argued that users’ perceptions of an information system’s quality depend on a particular mobile app’s comfort and efficiency levels. This is evident in the study, as some users associated poor overall mobile app perception with poor overall mobile app system performance. Examples of this include:

“Useless app after download showing error login.”

“Lost all my deals and keep getting Oops error occurred when I try to redeem promotions. Horrible app.”

Ideally, a food and beverage mobile app should enhance efficiency for regularly performed tasks such as ordering and paying for product offerings. Users need more patience for slow and clumsy food and beverage mobile apps. They expect that the performance of renowned food and beverage apps should always be top-notch so that they can experience them at lightning speed. Thus, food and beverage mobile app users will be more likely to have negative usage experiences if the operating system fails to efficiently help them accomplish a specific task with the minimum possible number of resources (e.g., time and money). In terms of unreliable mobile app systems, 1,106 references stated that the food and beverage mobile app is unreliable in a system when operational and working, and it produces an error or unexpected result such as a bug or crash in the system. For example, users have reported that after installing the apps, the software got buggy, crashed, and stopped working in the worst-case scenario.

“App extremely buggy and unreliable. After installing works for a day or two then fails to open, and you have to completely remove and reinstall to get it back up and running. Very quickly becoming not worth the effort, even for the Nov daily deals/specials.”

“Always crashes and unreliable for collecting your coffee stamps to get free one.”

“Unreliable. Often doesn’t work and says I need to install later version of the app.”

Operating systems’ unreliability is also repeatedly brought up during the user’s journey while engaging with the app. Users have reported system errors, including the demand for the apps to be updated when they open the app or place an order. For example:

“I don’t understand why always need to update.”

“Always asking update new version.”

“This app needs to be updated frequently. I don’t care updating but too much is annoying.”

“App won’t load says update but there’s no update available.”

“Updated many times nothing changed, same error, clearing cache or data did not help.”

A food and beverage mobile app should increase its reliability to retain its performance and continue to function correctly without interruption. A reliable app satisfies the requirements and exceeds the expectations of those who use it. Regarding the unresponsive mobile app system, 343 references indicated that the food and beverage mobile app system is unresponsive when used. For example, users have complained that their mobile apps react too slowly while waiting for the next display. Also, some users stated that the loading time could be more prolonged.

“Respond is too slow, waiting for the next display every time you press the option on the screen.”

“Slow responding app.”

“The responsiveness of this is very disappointing, took me ages to load during payment.”

In line with the definitions by DeLone and Mclean (2003) and Demian et al. (2017), the findings show that system quality is multidimensional and includes information system usability, reliability, data quality, adaptability, integration, adequate response times, and ease of use. The study found that poor system quality affects the negative experiences of food and beverage mobile app users. Most users highlighted the issues of inefficient, unreliable, and unresponsive mobile app systems. Many expressed that they cannot use the app; the app is problematic based on user reviews; users posted negative reviews regarding this dimension. In the performance expectancy dimension, inefficiency (such as login, deals, and security) is the most frequently mentioned feature in reviews for food and beverage mobile apps, followed by unreliability and unresponsiveness. This shows the importance of system quality, especially in food and beverage mobile app operating system performance. The finding is consistent with Keikhosrokiani et al. (2019), who state that enhancing users’ usability, communicability, data processing capability, and response time of the mobile app will influence users’ perception of overall system quality. Food and beverage brand marketers should improve the quality of their mobile app regarding system responsiveness. The reason for this is that it has a direct correlation with task processing times and operation response times. Users have limited patience when it comes to a slow mobile app. It is critical to improve the user’s experience and respond to the app.

Effort Expectancy Disconfirmation

Effort expectancy disconfirmation recorded the second-highest reference with 470 user reviews. Often, users believe they will feel more at ease performing such tasks using mobile apps because the smartphone interface is more straightforward. Based on the text frequency query and word cloud visualization analysis, several key words related to the difficulty of using the food and beverage mobile app system were

identified. Among all, these include difficulties with “payment,” “ordering,” setting delivery addresses, and “navigation.” Figure 2 shows the word cloud visualization of the most frequently occurring word within the effort expectancy disconfirmation category.



Figure 2. Word Cloud Visualization of the Most Frequent Words found within the Effort Expectancy Disconfirmation Category

In terms of difficulty setting the delivery location or address, 165 references stated that users faced difficulty pinpointing the location for delivery. Some users mentioned that the GPS in the food and beverage mobile app cannot detect the location, while others stated that the map interface needs to be simplified. For example, users mentioned:

“Why is it so difficult to key in our addresses? Every time I’ve already moved the pin to my location and keyed in my building name and unit number it just keeps telling me that I need to put in my building name and pinpoint my address on my map. I already did??? But that message keeps popping up.”

“Stupid app. It is difficult to set your address which only allow GPS to set your location and not you.”

“Need to change the process of choosing location. The map makes it complicated.”

Regarding the difficulty of using the food and beverage mobile app, 85 references stated that the food and beverage mobile app is complicated to use and not user-friendly. For example, users mentioned:

“Very difficult to use. Not user-friendly n slow.”

“The most difficult app to use ever. Absolutely rubbish service making users go order online with the most confusing system and overlapping offers.”

The food and beverage mobile app users mentioned payment difficulties, namely limited payment options and a complicated payment process. In the era of the digital economy, electronic payment methods such as e-wallets and online transactions should be given priority. This is evident in most of the user reviews:

“Please add online banking. I don’t want to use my debit number to purchase.”

“Hard to do payment.”

Concerning the difficulty of ordering, users stated that the ordering procedure is complicated, and there needs to be more order personalization in the food and beverage mobile apps. Examples of this include:

“Not user friendly. The process gets more and more complicated after I selected my order.”

“Not user friendly. Editing or personalizing orders is difficult.”

Other subcategories related to effort expectancy disconfirmation cited by users were the difficulty of redeeming an online deal, using the interface, and navigation. Examples are as follows:

“Images are not opening, without images it’s difficult to select the coupons in the app.”

“Worst interface app-delivery. Page keeps refreshing.”

“Very difficult app to navigate. Wait... It is an app??? I don’t think so. I just a lazy Web version.”

“It is so difficult to navigate through the menu. After the whole hassle of ordering, can’t even order. Keeps bouncing back to the home page. End up did not order anything.”

In terms of effort expectancy, the difficulty of setting a location (such as global positioning systems, maps, and location) is the most frequently mentioned in reviews, followed by the difficulty of usage, the difficulty of payment, the difficulty of ordering, the difficulty of the user interface, the difficulty of navigation, and the difficulty of redemption. In this study, it is evident that users have high expectations for the mobile app system’s performance and ease of use, but this is only sometimes the case. The system quality failed to satisfy consumers because of the problem of the food and beverage mobile app. For example, if a consumer cannot perform such a task (such as login, ordering, deal redemptions, and paying), the app produces an error (such as bugs and crashes in the system), and the system is not responsive (too slow and loading). Ideally, a food and beverage mobile app should be effortless since developers develop mobile apps to make it easy to run on mobile devices without a desktop. This is in line with the findings of the mobile app technology adoption literature that highlighted the importance of system quality as a significant determinant of usage behaviors (Alzahrani et al., 2019; Keikhosrokiani et al., 2019; Almaiah & Man, 2016). Thus, food and beverage brand marketers should enhance the efficiency of their mobile app in utilizing a given system to reduce errors. Chua and Rezaei (2018) stated that consumers are more likely to use mobile apps if they are easy to use. Effort expectancy is crucial in determining the behavioral intention to use and actual use of technology. If a new technology requires less effort to learn and understand how to use it, users’ adoption intentions will be higher.

CONCLUSION

This study aims to identify and explore attributes affecting food and beverage mobile app negative usage experiences. Using theory-driven qualitative content analysis, the expectancy-disconfirmation model delineated significant attributes relevant to explaining food and beverage mobile app retention. The framework has proven robust, as in previous similar studies. The findings of this study indicate that performance expectancy and effort expectancy are two critical attributes of food and beverage mobile app system quality. Food and beverage mobile app retention significantly depends on the concerted effort of operating system software developers and food service businesses to enhance mobile app system quality to stimulate positive user perceptions and emotional usage experiences. Significantly, this study contributes to theoretical and practical progression in mobile app adoption and emotional usage experience. As for practical contributions, this study highlights the significant emotional usage experience attributes affecting food and beverage mobile app retention. The study’s findings can guide food service organizations and mobile app developers in designing better mobile apps for food and beverage. This is important as the mobile app market’s revenue is rising.

Although the researchers have meticulously considered all critical issues surrounding the study, several study limitations still exist that need to be addressed. Thus, great care should be taken when translating and

conveying the findings to other similar studies. First, concerning contextual shortcomings, the study solely focuses on negative user reviews in the Google Play Store's five most popular Malaysian food and beverage mobile apps. This may limit the findings to other service-based mobile apps, platforms, regions or countries. Therefore, future research should include mobile food and beverage apps owned by local Malaysian companies. Future work should consider a cross-country comparison study to have a broader view of the issues encountered by food and beverage mobile app users. For example, it would be worthwhile if future studies could compare Malaysian food and beverage mobile app usage experiences with those of Southeast Asian countries such as Thailand and Indonesia to identify similar patterns across cultures. Extending the study to other mobile app platforms and regions or countries would better understand how users' perceptions and emotions influence their food and beverage mobile app retention. Second, regarding methodological shortcomings, the study employed a qualitative content analysis, which limited the generalization of the findings. Future studies are encouraged to conduct quantitative studies to validate the findings of this study.

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