



Evaluating the use of smartphone in planning dining out experience amongst patrons of restaurants in Sekondi-Takoradi Metropolis

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ABSTRACT

The purpose of this research was to investigate the use of smartphones in the dining-out experience from the perspective of restaurant patrons in the Sekondi-Takoradi Metropolis. The study conveniently sampled 400 diners across 26 restaurants in the Sekondi-Takoradi Metropolis. A cross-sectional design was employed in this study. Almost all the respondents were 18 years of age or older and had been using a smartphone for the last 12 months. The data was processed using SPSS version 21 for analysis and discussion. The Cronbach's Coefficient Alpha test was used to determine the instrument's internal consistency reliability. The study found that respondents typically (60%), used their smartphones to select the best restaurant, (60%), for a variety of dining-related tasks, such as taking restaurant photos (69%), finding restaurant locations (61%), making online orders (60%), reading specials and offers (60%), and making reservations (62%). The results show that a statistically significant relationship exists for sex (0.018) and age cohorts (0.011) in terms of dining information searches. The study concludes that customers in Sekondi-Takoradi use their smartphones for a variety of dining-related activities prior to their meals. The study recommends that restaurant managers should make an effort to have internet access available and also update their website to enable customers to search and make orders easily.

Keywords: smartphones, menus, dining out experience, patrons, restaurants, reservations

INTRODUCTION

Significant developments have occurred in the restaurant dining industry during the past century, including the emergence of fast food joints, chain restaurants, and upscale eateries, all of which have broadened the dining experience (Schlosser, 2012). The impact of smartphones on the restaurant industry may be the biggest transformation in this field (Spence al., 2016). In this study, smartphones are referred to as cell phones or personal digital assistants (PDAs) with a variety of features, including cameras and software that includes web browsers, email services, social media applications, and games (Nosrati et al., 2012). From how a restaurant is found and the type of restaurant that is selected to how a meal is experienced and how the experience is processed afterwards, the eating experience is gradually blending technology and social life (Halkier, 2016). Smartphone use has been mentioned in research on how technology and the hospitality sector interact as a possible "enhancer" or "mediator" of the customer experience (Neuhofer et al., 2012). The dining out experience can be categorized into three parts, including "before," "during," and "after" encounters, just like any other hospitality or tourism experience (Kuflik et al., 2015). Essentially, the smartphone and other digital technologies, which have dramatically increased over the past ten years, are transforming all three of these parts of the experience (Tussyadiah & Fesenmaier, 2009).

Before the advent of smartphones and the internet, the "planning stage" of a meal out was dependent on reviews in publications like newspapers or magazines, word-of-mouth, recommendations from friends and family, or a restaurant's overall reputation (Minazzi, 2015). In periodicals, the phone book, newspapers, or by word of mouth from friends or family, the location and driving instructions to the restaurant might be found. The restaurant received feedback from diners in the form of tips, which represented their happiness or dissatisfaction (Chon, & Cha, 2011). The modern dining experience, as impacted by smartphones, differs greatly from the standard dining experience of a restaurant in the 19th or 20th century. Customers today select restaurants based on a blog post, online search results, a location, good ratings, or social media posts about the restaurant's food. After making a reservation, customers look up the restaurant on Google Maps and use their smartphone to follow step-by-step directions there (Backer & McCune, 2014). Additionally, diners browse the menu online, read feedback from previous customers, learn about the ingredients and their health advantages, and examine culinary images (Frei et al., 2012)

Customers take their own photos of the food at the restaurant to post on social media or to include in their post-meal reviews. Diners take pictures of themselves while eating and post them to Instagram with a "geotag" that shares their precise location and relevant hashtags that characterize the establishment, the cuisine, and their overall experience (Xiang & Gretzel, 2010). Consumers utilize social media apps on their cellphones after an experience to share it with friends and family, leave a review on sites like Yelp or Trip Advisor, or even get in touch with the restaurant directly (Minazzi, 2015). Essentially, a modern dining out experience involves sharing a meal with friends in a public setting as well as with anyone else with access to a smartphone and the internet (Kaplan, 2012). An examination of the biggest trends is required in order to completely comprehend how smartphones affect the eating experience. The impact of smartphone uses on dining out requires a more comprehensive understanding in order to be described and explained. By studying how the dining out experience has changed as a result of

improved mobility and digital connectivity made available to customers through smartphones, the current study aims to close a gap in the literature.

Nowadays, people spend practically all of their time online engaging in a range of activities like finding friends, generating content, and exchanging knowledge, opinions, and experiences (Heinonen, 2011). Purchase decisions are frequently influenced by online interactions as consumers spend more time on smartphones and linked social media networks (Yadav et al., 2013). According to a 2015 survey by the US National Restaurant Association, 63 percent of restaurant patrons use their smartphones to make reservations, find nearby restaurants, examine menus, and read nutritional information on the food they eat. In a similar vein, results from a Google poll on "Consumer Dining and Smartphone Usage" performed in America by RetailmeNot.Inc. in 2017 showed that diners are more at ease using smartphones to search for restaurants. One (1) out of every four (4) customers, they discovered, presently has at least one restaurant-specific app on their smartphone. More than two-thirds of those who eat out 8– 10 times a week use a restaurant-specific smartphone app. The survey also showed that customers are less likely to use their smartphones while they are actually eating at a restaurant. Of the respondents, 37% said they were taking pictures, 19% were checking social media, 19% were looking for online deals, and 16% were looking up the nutritional content of the food.

The selling of prepared food for consumption on or off the premises is the primary focus of restaurants, which are public food service establishments (Barrows & Powers, 2009). In Sekondi-Takoradi, there are many types of restaurants that have been registered, according to GTA (2013). The Western Region contains 27 registered restaurants, 27 of which, according to the Ghana Tourism Authority (2013), operate in a casual setting with qualified employees who provide a commendable quality of service. The study aimed at investigating the use of smartphones in the dining-out experience from the perspective of restaurant patrons in the Sekondi-Takoradi Metropolis.

LITERATURE REVIEW

Theoretical Framework

Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989)

This study leans on the technology acceptance model (TAM), as it is one of the most prominent models that has been utilised to explore the acceptance of technology innovations in various contexts with strong predictive powers (Hu *et al.*, 1999). The study aimed at investigating the use of smartphones in the dining-out experience from the perspective of restaurant patrons in the Sekondi-Takoradi Metropolis. To the best of the researchers' knowledge, Okumus *et al.*'s (2015) study is the first of its kind. It used the Technology Acceptance Model, or TAM (Davis *et al.*, 1989), to evaluate the antecedents of smartphone app usage. However, that study has come under fire for disregarding users' unique traits and employing the TAM, which is seen as being out of date (Holden and Karsh, 2010). Using the Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical foundation, our study takes a more thorough approach to analysing consumers' acceptance of smartphone diet apps when placing meal orders in restaurants (Venkatesh *et al.*, 2003). Compared to TAM, UTAUT is more integrative and has better predictive power (Ali *et al.*, 2016). Higher innovativeness in people is connected, according to earlier studies. Previous research (Ali *et al.*, 2016; Bilgihan *et al.*, 2014) has demonstrated that people with higher levels of innovativeness also have more favourable attitudes and opinions

about technology. As a result, a key factor in determining whether or not users will use diet apps is likely to be personal innovation.

Smartphones and their related applications are not only tools to achieve utilitarian goals but also hedonic goals (i.e., the excitement of using the device). Perceived enjoyment enhances the hedonic value of smartphones and increases intended adoption (Kim *et al.*, 2007). Therefore, perceived enjoyment is expected to have a positive effect on the intention to use a smartphone for whatever purpose. The more self-efficacious users view themselves to be, the higher their intention to use new technology (Lim *et al.*, 2011). Thus, self-efficacy is expected to positively affect the intention to use smartphone apps. The social norm is the social influence of peers; it is defined as the degree to which individuals have the impression that important others believe they should use a new system (Verkasalo *et al.*, 2010). Literature on dining out suggests that social norms play a vital role in decision-making about dining and activity through their influence on attitudes and should be included as a potential variable in future intervention research (Baker *et al.*, 2010). Users who believe that their dining activity behaviours are important to their peers and family members are likely to be positive about sharing their meal experience with them on social media.

Sharing of Emotions Model

According to Venkatesh *et al.* (2003), social influence refers to a person's perception of how many relevant individuals think they should utilise a system. TPB (Ajzen, 1991) originally had a concept akin to this one called subjective norm, which was described as "the perceived social pressure to perform or not to perform the behaviour" (p. 188). TAM (Davis *et al.*, 1989) was criticised by academics for having a significant flaw because it excluded any aspect relating to social impact (Venkatesh and Davis, 2000). Social influence, according to El-Gayar *et al.* (2011), both initiates and significantly predicts an individual's behavioural intentions (Ali *et al.*, 2016; Schepers and Wetzels, 2007). Furthermore, a number of academics confirm that social impact greatly predicts the desire to use a system (Abushanab and Pearson, 2007; Eckhardt *et al.*, 2009). McFerran *et al.* (2010) demonstrated the effect of social influence on eating behaviour in the context of food intake. The social environment has a strong impact on dietary behaviour (Gallant, 2003). Customers can now easily access vast health information through health applications with integrated social media thanks to the widespread usage of smartphones over the past ten years (Hasman, 2011). These "social-health" apps, which are based on the social influence theory, encourage individuals to adopt particular behaviours by leveraging the pressures brought on by social interactions and norms (King *et al.*, 2013; Rodrigues *et al.*, 2013). So it stands to reason that social pressure to use smartphone diet applications will have an impact on users' inclinations to use them.

Smartphone and dining out experience

Smartphones are devices that combine the capabilities of voice communication, Internet access, and data management (Wang *et al.*, 2016). Mobile web browsing, thousands of programs, email, instant messaging, picture messaging, video and audio playback, GPS, gaming, a video camera, picture and video editing, and many more features are all available on smartphones, which have larger and higher quality screens (Nosrati *et al.*, 2012). These smartphone features and programs (apps) expand their capability to a variety of information services, including social networking, specialized information search, and navigation in the context of hospitality service (Wang *et al.*, 2016).

In recent times, people are almost always online and participating in a variety of activities such as making friends, creating content, and sharing information, experiences, and opinions (Heinonen, 2011). As people spend more time on smartphones and related social media networks, purchase decisions tend to be influenced by virtual interactions (Yadav, De Valck, Hennig-Thurau, Hoffman, & Spann, 2013). In a survey by the US' s National Restaurant Association in 2015, it was reported that 63 percent of restaurant guests have relied on smartphones to make reservations, look up restaurant locations, view menus, and read nutritional information about the food consumed. Similarly, in a Google survey conducted in America by RetailmeNot.Inc. (2017) on "*Consumer Dining and Smartphone Usage*", the results revealed that diners feel more comfortable using smartphones to search for restaurants. They also found that one (1) out of four (4) consumers currently has at least one restaurant-specific app on their smartphone. Among those who dine out 8 to 10 times a week, more than two-thirds use a restaurant-specific mobile app on their smartphones. The survey revealed further that consumers are less inclined to use smartphones during the actual dining experience at the restaurant; 37 percent of the respondents in the study indicated taking pictures, 19 percent checked in on social media, 19 percent searched for online deals, and 16 percent looked up nutritional information on the food.

OpenTable, an online restaurant reservation service company, conducted a survey in 2015 on "Technology and Dining Out" and reported that consumers relied heavily on smartphones in dining decision-making. All 6,000 respondents aged 18 and above indicated making at least one reservation using the app in the last 12 months at the time of the survey. The survey further confirms that guests lean heavily on the internet to make dining decisions; 86 percent regularly check out menus online before they dine out, 60 percent are likely to consult reviews from other diners, and almost 60 percent of respondents always or frequently check out images of their destination before visiting a restaurant. The survey further reports that about 25 percent of consumers indicated that they ' always' or ' frequently' use their phones to decide what to order, based on factors such as the popularity of dishes in reviews and photos. Also, loyalty programmes have the most traction, with 18 percent of respondents indicating they routinely interact with a restaurant' s loyalty programme using their smartphones. Other dining-related actions involving the smartphone include planning a repeat visit with friends (17%) and sharing experiences on social media (15%).

According to a Pew Research Centre study conducted in 2015, nine out of ten American smartphone owners use their phone to get location-based information (Anderson, 2016). Colbert (2001) raised the possibility of services that use mobile location information to facilitate "rendezvousing". He describes rendezvousing as the geographical coordination of small group activities. Colbert states that three possible types of position-aware services that come with smartphones may help in rendezvousing: position-aware communication services, position-aware navigation services, and position-aware information-seeking services. Position-aware communication services enable users to chat and send each other their precise locations. This is made possible today by mobile chat applications such as WhatsApp ("WhatsApp FAQ", 2017). Position-aware navigation services give a user his or her current location and facilitate navigation. This is also now possible through the use of services like Google Maps. Position-aware information-seeking technologies are similar in nature in that they help users seek information about what is near them and also provide estimated journey times depending on traffic.

Duarte Alonso, O'Neill, Liu, and O'Shea (2013) stress that mobile communication has given the smartphone user the ability to source out information such as pricing, location, ambience, menu variety, service and product quality, nutritional content, and previous customer experiences to help in the decision-making process. However, there is always the risk that the avalanche of information becomes counterproductive because too much information might not always be good. Lawson (2015) looks at this from a different perspective. The Google Think report highlights that smartphone users "want things right away". This sense of determination coupled with immediacy (facilitated by technology and services proffered by the mobile phone) has replaced deliberate considerations with a series of what Lawson (2015) calls "micro-moments". This is when the user "turns to mobile to act on a need". In this sense, micro-moments refer to the ability to get relevant bite-sized information on-the-go, which then shapes the user's preferences and triggers an immediate decision. The report's findings show that nearly half of American respondents who were surveyed admitted that they only decide which restaurant to dine at an hour before going.

Social media can be used as a medium to showcase a dining experience. In doing so, diners, especially the youth, may also reveal an idealised version of their lives. Boyd (2014) argues that teens aim to display a positive impression of who they are based on the context of a social media platform. She contends that this context is defined by the makeup of the audience that they assume is viewing their social media posts. Holmberg, Chaplin, Hillman, and Berg (2016) apply this to their analysis of food images on Instagram and say that their respondents use these images to fashion their identities online. They found that their respondents emphasised the event or activity in their posts rather than the taste of the food itself. Jones and Nash (2017) also observed a similar trend among young female professionals in Britain. They discovered that these women created an idealised version of themselves on Instagram by posting images of aesthetically pleasing food shot in exclusive dining establishments. While their research mainly focused on Instagram, youth have a myriad of social media channels available at their disposal. As Boyd (2014) contends, teens post in different ways on different social media platforms based on their audience as well as the norms associated with each platform. These norms are formed by "network effects," which he says are created when "peers influence one another about how to use a particular site and then help collectively to create the norms of that site." (p. 40). This illustrates how the context of a social media platform is socially constructed rather than determined by technical affordances. In other words, people choose a particular platform because they are aware that it is suitable for a certain practice.

Customers look for a good overall experience aside from good food when they visit a restaurant. The twenty-first century has been characterised by the emergence of the experience economy, and as such, the hospitality and tourism industries have been in the business of creating and selling experiences to customers to meet growing demands (Campos, Mendes, Valle, & Scott, 2018). Some hospitality and tourism studies have taken a process-based approach and categorised experience as a three-phase linear process (Xiang, Schwartz, Gerdes Jr., & Uysal, 2015). For example, Larsen (2007) suggested the interactive nature of guest experiences between guests and service systems encompasses three stages: before the activity; processes during the activity; and after the activity or event. Similarly, Jennings (2006) referred to these phases as: 1) the anticipatory phase; 2) the experiential phase; and 3) the reflective phase. This process involves unplanned encounters with waiters or waitresses or other people and activities such as information search, reservation, dining, and reflection (Meyer & Schwager, 2007). In effect,

customers' dining experiences may originate from these interactions between the guest, the facility, and employees of the facility (Verhoef, Lemon, Parasuraman, Roggeveen, Tsiros, & Schlesinger, 2009). The pre-purchase decision-making process involves various factors, activities, and consumer participation and is thus considered more complex and requires more time to complete than that required when buying goods (Song & Yoo, 2016). The service encounter stage refers to the time when interactions between customers and service providers are taking place. The post-process stage is the termination of the service at the end. Consumers evaluate their satisfaction level and service quality at the end of the service consumption process (Grace & O'Cass, 2004). The subsequent sections discuss these three phases of the dining experience in detail.

METHODOLOGY

A cross-sectional design was used for this study. According to Kumar (2005), this design describes research that samples respondents to comprehend the phenomenon at a specific time. By gathering a cross-section of the population for study, the design aims to determine the prevalence of a phenomenon or circumstance. With the aim of obtaining a general understanding of the prevalence and usage of smartphones in the dining out experience among customers of restaurants in the Sekondi-Takoradi metropolis, the study adopted a cross-sectional design to collect data from respondents with a variety of characteristics and demographics, including age, gender, income, education, geographical locations, and ethnicity. Sekondi-Takoradi Metropolis was used as the area of study. The area is the administrative and political seat for the Western region of Ghana. The area also hosts offices of major international companies and organizations, some of which are involved in the mining as well as oil and gas exploration in the region. The study explored secondary sources of data in addition to primary data. Customers who dined at restaurants in the Sekondi-Takoradi Metropolis were the primary source of data. The internet, books, journals, articles, and other published and unpublished sources were searched for secondary data that was pertinent. All patrons of restaurants in the Sekondi-Takoradi Metropolis made up the study population. The respondents must be eaters who have used smartphones for at least a year in order to be eligible to participate in the survey. Customers of restaurants who were dining there at the time of data collection made up the analysis's unit of analysis.

To determine the sample size for the study, Fisher et al., (1998)' s formula was being considered. The Fisher et al formula is given as follows:

$$nf = n \div 1 + \frac{n}{N}$$

Where:

nf = the desired sample size (when population is less than 10,000)

n = the desired sample size (when population is greater than 10,000)

N = the estimate of the population size

In order to derive ' n ' , Fisher et al, (1998) provided another formula as follows

$$n = \frac{z^2 pq}{d^2}$$

Where: n = population size for samples more than 10,000

z = the normal standard deviation, usually set at 1.96 (which corresponds
95% confidence level)

p = the population of the target that has similar characteristics

$$q = 1-p$$

d = the margin of error, which is equal to 0.05

Now, $z = 1.96$, $d = 0.05$, $p = 0.05$, and $q = (1-0.05)$

$$n = \frac{z^2 (p)(1-p)}{d^2}$$

Where: z = standard normal deviation set at 95% confidence level p = percentage picking a choice of response c = confidence interval

$$n = \frac{1.96^2 (0.5) (1-0.5)}{(0.05)^2}$$

$$= \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2}$$

$$= \frac{3.84 \times 0.25}{0.0025}$$

$$09.6 \div 0.0025$$

$$\text{Sample Size } (n) = 384$$

A calculated $n = 384$ was obtained. An extra five 10% was added to cater for sampling error and non-responses that may occur during the survey. Therefore, 422 respondents were selected for the study. The sample size of 422 was further distributed among the selected restaurants based on average daily customer cover. This was done in proportion to their daily customer covers (See Table1).

Table 1: Respondent distribution across the selected restaurants

Restaurants visited	Average daily customer cover	Sample size
Vienna city restaurant	92	32
Hill Crest restaurant	67	22
Captain Hooks restaurant	66	23
Akoma Plaza	65	22
Bocadillos restaurant	61	22
Gilou restaurant	58	21
Best Western plus Hotel	53	19
Seth Chinese restaurant	51	18
Court chop bar	50	18
Rainbow International	50	1
Paragon bar & Grill	48	17
U84 restaurant	48	17
Spikes Bar and restaurant	47	17
Planters lodge	46	16
Hot Ernest foods	41	15
May' s spot and restaurant	39	14
Naakoff-Chinese restaurant	39	14
Han Palace restaurant	38	14

Eagles large restaurant	38	14
Raybow international Hotel	31	11
Etti' s restaurant	29	10
Bake and Grill	26	11
Kingstel Hotel restaurant	26	11
Steller lodge	26	11
Chinese food restaurant	23	09
Messiah Hotel restaurant	21	08
<hr/>		
Total	1179	422
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Source: Researcher, (2018)

The convenience sampling method was deemed suitable for this study. Since there is no sample frame for the target population, using probability sampling would be challenging. This method enabled researchers to request volunteers for the study from diners who possessed and used smartphones. The researchers distributed questionnaires to customers of particular restaurants. In order to acquire standardized data for quantitative investigations, questionnaires are frequently utilized. Specific aims and research questions from the study were used to design the questionnaire's items. There were six (6) modules in the questionnaire. Each module looked at a different aspect of the subject. Module 1 asked for details about diner characteristics. A five-point Likert scale was included in module two (2) to gauge how much respondents agreed or disagreed with comments about using a smartphone to plan meals and look up information. Module three (3) consisted of a five-point Likert scale that measured respondents' agreement or disagreement to statements on smartphone use during actual dining. Similarly, module four (4) measured smartphone use in dining experience sharing while Module five (5) measure respondents' views on the use of smartphone in the dining experience.

On March 30, 2018, a pilot survey was carried out, and a sample of Metropolis restaurant consumers was used to pre-test the instrument. A total of 56 people took part in the pilot poll. The pilot survey's only problem, which was later fixed, was that several of the questions were confusing. The researchers were able to acquire a good notion of certain things to expect during the main survey thanks to this pilot survey, which also helped assess the viability and efficiency of the instrument and procedures prepared for the actual study. The Cronbach's Coefficient Alpha test was used to determine the instrument's internal consistency reliability. The various scales for smartphone use before, during, and after meals each exhibited coefficients over 0.75, which is good. Sarantakos (2005) asserts that instrument content is considered legitimate if it is thorough, pertinent, and representational of the items under examination. The survey instrument's content was carefully examined to make sure it was in line with the study's goals and to assess its practicality. In order to conduct the study on the properties of all hotels, an invitation letter with a description of the study's goals and a notification of the voluntary participation criteria (recruitment poster) was issued to each hotel prior to the data collection.

SPSS version 21 was used to process the field data collection. On the data, descriptive and inferential statistics were used. To describe the respondents' socio-demographic traits, frequency and percentage tables were employed. The study looked at moral concerns such as confidentiality, anonymity, and informed permission.

RESULTS AND DISCUSSION

Socio-Demographic Characteristics of Respondents

Smartphone used for dining-related purposes has been found to be influenced by demographic parameters like sex, education, income, and occupation of respondents (Sorce et al., 2005; Okazaki et al., 2015). Males made up 61% of the respondents, and 75% of them were under 35 years old. Young people are currently driving the market, according to a number of studies in the tourist and hospitality sector, including the restaurant sector (Zhu & Zhang, 2010; Mangold & Smith, 2012; Minazzi, 2015; Xiang et al., 2015). Additionally, research has shown that men's meals contain more food made outside the home than women's diets do (Lachat et al., 2011). In addition, female singles are more likely than male singles to make meals at home. Due to the socially constructed gender roles that men and women perform in African countries, this is anticipated. Culturally, women in African nations are more expected to perform domestic duties like cooking and housekeeping.

Regarding educational achievement, there was a significant concentration of individuals with tertiary degrees (63%), followed by those who had just completed senior high school (31%). Only 6% of the respondents had only a high school diploma. This gives the impression that using a smartphone for dining-related purposes is an exclusive pastime. Nearly half (48%) of the respondents worked in the formal sector, 36% in the unorganized sector, and the remaining 16% were students. These demographic groups are more likely to lack the time necessary to prepare meals at home. There are instances when leaving for the closest eatery is the only choice. People arriving home late from work due to the hectic pace of city life and traffic could lead to this type of circumstance.

Table 2: Socio-Demographics Characteristics of Respondents (N=400)

Socio-demographics	Frequency	Percentage
Sex		
Male	244	61
Female	156	39
Age		
18-35	298	75
36-50	77	19
50+	25	06
Marital Status		
Single	184	46
Married	181	45
Ever married	35	09
Education		
Primary/Basic	22	06
Secondary	124	31
Tertiary	252	63
Religion		
Christian	319	80
Islam	66	17
Others	15	03

Occupation		
Formal sector	192	48
Informal sector	143	36
Student	63	16

Source: Fieldwork, (2018)

Smartphone in Pre-Dining Experience

One critical element that might affect a customer's decision-making process is their pre-purchase experience (Ha, 2002). Consumers engage in a multitude of actions and processes prior to making a purchase, according to earlier studies on consumer behaviour in the service industry. According to Table 3, the study found that respondents typically (60%), from deciding where to eat to selecting the best restaurant, relied on their smartphones while making pre-dinner decisions. The study's participants reported utilizing their smartphones for a variety of dining-related tasks. Sixty-nine (69%) of the respondents said they used their smartphones to look at restaurant photos (including those of the food, the interior design, and the exterior), 67 % said they used their smartphones to find the restaurant, 64 % said they looked at restaurant photos, and 63 % said they used their smartphones to look up restaurants online. Others mentioned using their smartphones for online orders (61%), reading specials and offers (60%), and making reservations (62%).

This finding, as shown in Table 3, suggests that restaurant seekers in the research area are increasingly using smartphones, consulting internet directories and social media platforms for dining-related information. They increasingly integrate their smartphones into their dining experience, using them to find restaurants and figure out how to get there. In order to decide where to eat, diners mostly search online for images of the restaurant's ambiance and menus. These findings confirm Lawson's (2014) claim that diners largely rely on technology for information and decision-making related to dining. In the modern world, a mobile device's convenience is unrivaled. Restaurants must become more visible to a wider audience. Selecting a platform that best meets their needs will enable them to achieve this without losing their individuality amid the vast aggregate market. This suggests that restaurant management would need to develop online marketing plans to reach customers. This involves posting updated menus, alluring images of the restaurant's outside, and internet promotions.

Table 3: Smartphone use in pre-dining (N=400)

Smartphone use in pre-dining experience	Agreed	Neutral	Disagreed
	%	%	%
Look at pictures of the restaurant (e.g. food, interior décor, exterior)	68.9	10.0	20.8
Get directions to the restaurant	67.0	12.0	21.0
Check out images of the restaurant	63.8	16.0	20.3
Find restaurants on the internet	63.3	11.5	25.3
Make reservations	62.0	11.8	26.3
Make online orders	61.3	13.3	25.5
Read about deals and offers	59.5	17.0	23.5

Review price of items	58.3	15.0	26.8
Read reviews on the restaurant	57.6	16.0	26.3
Make special arrangements	57.5	20.5	22.0
Read professional restaurant reviews	54.8	20.3	25.0
Check out food menu on the internet	51.8	18.5	29.8
Access internet dinning guide	50.8	22.3	27.0
<i>Overage score</i>	<i>60.0</i>	<i>16.0</i>	<i>24.0</i>

Source: Fieldwork, (2018)

Factors Explaining Smartphone Use in Pre- Dining Experience

After assessing how respondents responded to the 13 variables evaluating use of smartphones before dinner, Principal Component Analysis (PCA) with Varimax rotation was used to further analyze the variables. The adequacy of the data for factor analysis was evaluated prior to doing PCA. The correlation matrix could be examined to find numerous coefficients of 0.5 and higher. The Barlett's Test of Sphericity obtained statistical significance (0.000), demonstrating the factorability of the correlation matrix. The Kaiser-Meyer-Oklun value was 0.937, exceeding the advised value of 0.6.

Table 4 shows that the principal component analysis found two components with eigenvalues greater than 1, which together account for 58% of the total variance. The threshold for a variable's inclusion was 0.5 (Hair et al., 2010), hence all 13 observed variables were kept. Eigenvalues 1 was utilized as the extraction criterion. Search for dining-related information and restaurant reviews are the two factors that were extracted. Finding a restaurant, making reservations, ordering food online, accessing a dining guide on the internet, reading about bargains and offers, making special arrangements, and looking up food menus online were all included in component I, the search for dining information. The factor's eigenvalue was 4, and it explained 33% of the variation in smartphone use before meals. Restaurant reviews made up the second element (26%) and included activities like looking at pictures of the restaurant, the food, the interior, and the exterior, comparing menu prices, getting driving directions to the restaurant, and reading expert reviews.

Table 4: Factors explaining smartphone use in pre-dining

Latent constructs and observed variables	Factor loadings	Eigene value	Variance explored	Cronba ch α
<i>Dining information search</i>		4.232	32.555	0.824
Find restaurants on the internet	0.702			
Make reservations	0.842			
Make online orders	0.713			
Access internet dinning guide	0.617			
Read about deals and offers	0.612			
Make special arrangements	0.593			
check out food menu on the internet	0.572			
<i>Restaurant review</i>		3.326	25.587	0.778
Check out images of the restaurant	0.762			
Look at the pictures of the food, décor and				

exterior	0.757	
Review price of menu items	0.658	
Get directions to the restaurant	0.607	
Read professional reviews	0.521	
Total variance explained		58.142

Source: Fieldwork, (2018)

Smartphone use in pre-Dining and Socio-Demographics of Respondents

This study further investigated any connections between smartphone use for pre-dinner reasons and guests' socio-demographics. The data were subjected to the chi-square statistic, with a significance threshold of 0.05. Table 5 lists specifics of the outcomes. The two components that explain smartphone use in pre-dining—information search and restaurant review—were cross-tabulated to determine socio-demographic characteristics such sex, age, education, marital status, religion, and occupation.

The results show that statistically significant relationship exists for sex (0.018) and age cohorts (0.011) in terms of dining information search. For sex and dining information search, a majority (76%) of the females who dined out used the smartphone to search dining related information, while 63 percent of the male diners used the smartphone for such purpose. A similar trend was noticed in relation to smartphone use for restaurant review although there was no statistically significant relationship. In terms of age and dining information search, most (71%) of the respondents, aged 36-50years used the smartphone for information search as compared to respondents aged 18-35years (68%) and those aged 50 years and beyond (68%).

This result implies that middle-aged persons frequently use their smartphones for information-seeking tasks like finding restaurants, making reservations, placing orders online, and accessing eating guides on the internet, as shown in Table 5. According to the findings, although smartphone use and addiction are linked to young individuals (Haug et al., 2015), middle-aged adults in the study area are more likely to use their smartphones to research restaurants before going out to eat. Given that the majority of the sample is drawn from the working class, which is frequently time-constrained, this conclusion is not surprising. They are compelled by their circumstances to seek out quick solutions, which the smartphone offers in terms of information search. Access to location-based services that can identify the diner's current location and make pertinent suggestions based on previous inquiries, menu items, and related services is one feature of smartphones that makes life more convenient (Räsänen et al., 2009).

Characteristics	Dining Info Search					Restaurant Review				
	A %	N %	D %	χ^2	P-value	A %	N %	D %	χ^2	P-value
Sex										
Male	63.1	21.3	15.6	8.089	0.018	70.5	14.8	14.8	3.794	0.150
Female	76.3	15.4	8.3			74.4	17.3	8.3		
Age										
18-35	68.1	20.2	11.6	13.062	0.011	73.1	15.2	11.6	2.699	0.609
36-50	71.4	21.4	7.1			64.3	21.4	14.3		
50+	68.0	0.0	32.0			60.0	20.0	20.0		
Marital Status										
Single	66.8	22.3	10.9	3.620	0.460	75.5	13.6	10.9	3.128	0.537
Married	68.5	17.1	14.4			68.5	17.1	14.4		
Ever Married	74.3	11.4	14.3			71.4	20.0	8.6		
Education										
Primary/Basic	72.7	18.2	9.1	0.459	0.977	72.7	18.2	9.1	1.010	0.908
Secondary	66.9	20.2	12.9			71.0	17.7	11.3		
Tertiary	68.3	18.7	13.1			72.2	14.7	13.1		
Religion										
Christian	66.5	20.1	13.5	2.540	0.638	81.8	12.1	6.1	6.344	0.175
Islam	75.8	15.2	9.1			69.3	16.9	13.8		
Others	73.3	13.3	13.3			86.7	6.7	6.7		
Occupation										
Formal	69.8	17.2	13.0	9.049	0.060	73.4	15.1	11.5	1.346	0.854
Informal	67.1	16.8	16.1			72.0	14.7	13.3		
Student	66.2	29.2	4.6			67.7	20.0	12.3		

Table 5: Smartphone use in pre-dining and socio-demographics of respondents
Pre-Dining Smartphone Use by Dining Characteristics of Respondents

This section investigates whether there were any statistically significant relationships between respondents' pre-dinner smartphone use and their socio-demographic characteristics. The significance level was set at 0.05 when the data were subjected to the chi-square (test of independence) statistic. Table 6 lists specifics of the outcomes. For eating out for fun versus

writing a restaurant review, a significant difference was discovered ($p=0.005$). Seven (7) out of ten (10) respondents who enjoyed eating out used their smartphones to look up restaurant information. These findings suggest that consumers who seek enjoyment are more likely to use cell phones to read blogs and customer reviews, look at images of the restaurant, and examines images of the food, interior design, and exterior, as shown in Table 5. They might be able to set expectations thanks to this information while making restaurant reservations. Consumers dining for health reasons and restaurant reviews both produced similar results ($p = 0.008$). It is anticipated that respondents who were dining for health reasons will check the restaurant's information on their phones. This group of eaters is likely to be more methodical and calculated when choosing restaurants, thus they can be interested in reviews from websites and social media platforms to guide their choice.

Table 6: Pre-Dining Smartphone Use by Dining Characteristics of Respondents

Characteristic	Dining Info Search					Restaurant Review				
	A %	N %	D %	χ^2	P-value	A %	N %	D %	χ^2	P-value
Expenditure										
Less than GHS10	70.8	18.8	10.4	1.576	0.954	72.9	18.8	8.3	7.336	0.291
11-49	66.7	17.6	15.7			70.4	14.8	14.8		
50-99	68.8	20.1	11.1			71.5	19.4	9.0		
100 +	68.0	19.0	13.0			74.0	10.0	16.0		
Dine alone										
Yes	71.3	16.5	12.2	1.808	0.405	76.6	12.8	10.6	3.911	0.141
No	65.4	21.3	13.3			67.8	18.5	13.7		
Party size										
1-3	67.4	19.4	13.2	3.290	0.511	70.5	18.6	10.9	3.820	0.431
4-7	61.2	22.4	16.4			61.2	19.4	19.4		
8-10	71.4	28.6	0.0			78.6	14.3	7.1		
Dining Partner										
Friends & Family	63.7	22.6	13.7	4.532	0.104	67.9	18.4	13.7	0.383	0.826
Work colleague	86.4	9.1	4.5			72.7	18.2	9.1		
Purpose of dining*										
Pleasure										

Yes	70.5	19.7	9.8	4.77	0.092	77.9	12.3	9.8	10.71	0.005*
No	64.7	17.9	17.3	6		62.8	21.2	16.0		
Business										
Yes	66.7	22.2	11.1	1.04	0.593	67.7	20.2	12.1	1.999	0.368
No	68.8	17.9	13.3	4		73.4	14.3	12.3		
Health										
Yes	58.7	23.9	17.4	6.79	0.147	63.3	14.7	22.0	13.66	0.008*
No	71.7	17.2	11.0	6		75.2	16.2	8.6		
Reasons for choice of restaurants*										
Food quality										
Yes	65.3	21.2	13.5	3.62	0.163	71.9	15.3	12.8	0.294	0.863
No	74.6	14.3	11.1	7		72.2	16.7	11.1		
Convenience										
Yes	64.7	20.7	14.7	2.11	0.347	70.7	14.7	14.7	1.971	0.373
No	71.3	17.6	11.1	7		73.1	16.7	10.2		

CONCLUSION

This study offers a number of conclusions that add to the literature on the interplay of smartphone in the eating experience. The survey found that the primary uses of cellphones during the pre-dining phase of the eating experience were for searching for dining-related information and reading restaurant reviews. Particularly, respondents rated the following as the top smartphone use activities related to decisions to eat out: looking at pictures of the restaurant (e.g., food, décor), reviewing menu prices, looking up a restaurant online, making reservations, and reading reviews about restaurants. It was discovered that sex and age had a strong correlation with dining-related information. The study concludes that smartphone use for dining-related purposes is a growing trend among Sekondi-Takoradi residents who enjoy eating out. The Chi-square study showed that this is especially true for diners looking to enjoy themselves and stay healthy.

RECOMMENDATIONS

The study recommends that Managers in charge of restaurants in the Sekondi-Takoradi Municipality should make an effort to have internet access available and also update their website to enable customers search and make orders easily. By doing so, the restaurant may get

more patrons and improve customer satisfaction. The consumer may receive a large number of likes on social media. Additionally, the report advises establishments to transition to mobile payment systems.

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