



# An Empirical Study of Consumer Attitude Toward Adoption of Online Food Ordering App

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## ABSTRACT

The purpose of this paper is to identify the factors influencing the adoption of online food ordering apps and the degree of influence of each factor on consumer attitudes with moderating effect of technical barriers. This research proposed a conceptual model aimed to test the attitude towards online food ordering apps. Relationships among constructs were tested on the basis of 514 surveys collected in India and analyzed with the structural equation modeling approach of partial least squares path modeling. Findings established the positive relationship between effort expectancy (EF), performance expectancy (PE), perceived social norms (PSN), perceived complexity (PCL), perceived compatibility (PCT), perceived relative advantage (PRA), perceived risk (PR), and attitude towards online food ordering apps (ATT). In addition, TB plays a significant moderating role in the relation between PE, PCL, PCT, PR, and ATT. However, no significant moderation effect was found in the relation between EF, PSN, PRA, and ATT.

## KEYWORDS

Consumer Attitude, Online Purchasing, Perceived Relative Advantage, Perceived Risk, Performance, Smartphone Apps, Social Norms, Technological Applications

## INTRODUCTION

Whenever my family went for dinner or breakfast in my childhood, we were confused about where to go? What's the best restaurant of quality and price? Which restaurant gives a discount? After this confusion, the restaurant may be far from home. All these factors led our family to a restaurant once a month. I've never thought of a restaurant meal once a day, but when I graduated, I received an online food service notification in my e-mail. My dream had come true; I opened the website and solved all our family's problems with this single app. I was so excited to see all the menu items and prices of the restaurants, and all these just a click away. Developments and rapid growth in the e-commerce sector have attracted and strengthened new generation e-commerce companies, particularly online food services, and made everything accessible everywhere (Maher *et al.* 2006). Ordering food from a local restaurant through a website or mobile app makes it easy for young customers to signing up for their favorite restaurant accounts (Boyer and Hult, 2005). It offers a wide range of food choices, ratings, reviews, and better order handling.

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In the mid-2000s, India's first online food distribution companies appeared in parallel with increasing internet use and the creation of similar services in the world. India's food industry's annual contribution to world trade in food is increasing (Fan *et al.* 2000). Indian e-commerce is set to grow to \$100 billion by 2020 compared to \$2.9 billion by 2013. However, by 2019, online food and restaurant businesses are seeing a \$2.7 billion increase, with more than 1.37 billion people, 50% of the population is under the age of 25 and the remaining population is under the age of 35; India is the youngest country in the world. The food market is enormous between the ages of 18 and 40. The high growth rate is expected to cross \$12.53 billion in India's online food industry by 2023. The country's online food market is rising by 15% compared to a global growth rate of 9.01%. The Indian middle class will reach 550 million by 2025 (Badre, 2020). Young India's appetite is driving demand for food and drink online. Time crunch and a growing need to spend time together are the reason why nearly 92% of nuclear families (family consists of a mother, father, and the children) order food and takeovers online to save energy and time at home. According to He *et al.*, (2018), in emerging markets, particularly in India and China, mobile phone usage has grown enormously. Around one-third of all mobile phones used worldwide are the responsibility of these two nations. Smartphones can also be used to encourage the food industry. India's online food ordering market is likely to expand by more than 16 percent annually to hit USD 17.02 billion by 2023, according to a study by business consulting company Market Research Future ([www.businessday.in](http://www.businessday.in)). Thus it is important to measure consumer attitude towards online food ordering app

Working people spend most of their productive hours traveling and working, thus cooking meals at home means much less time on their own. Working women spend a lot of their disposable income on ordering or dining another primary demand driver for India's online food industry (Bagla and Khan, 2017). People living in metro cities and not knowing how to cook, when they're hungry, food apps help them. Swiggy, Zomato, and food panda are among the top food supply apps available in several cities across India. They have managed to penetrate India's tier II and tier III cities, contributing to their growth (Kapoor and Vij, 2018).

There has also been a great deal of work to gather information on consumer behavior online in food ordering (Chavan *et al.* 2015). Trait *et al.* (2016) have established an online model for food transactions that promotes the tolerance of online food items through five technologies: perceived risk, perceived difficulties, perceived relative advantages (PRAs), saw compatibility, and perceived social norms (PSNs). Many empirical types of research included some of these variables by analyzing their impact on consumer behavior, consumption pattern, or purchase intentions (Adithya, 2017). Past experience with online food orders, product attributes and demographic variables has had a major influence on online food ordering (Hansen, 2008). India has different food habits and cultures, but online food transactions also lack of knowledge of consumer behavior. No research is found on consumer acceptance of online food orders in India. This study aims to understand the online food ordering adoption of customers by identify the factors influencing the adoption of online food ordering app and the degree of influence of each factor on consumer attitude with moderating effect of technical barriers.

## Literature Review

Mobile food ordering apps have increased due to the growing number of young employees in metro cities and the vibrant culture of the workplace. This has created a new level for kitchen-workers. Today, consumers are more drawn to online apps than to home-delivery restaurants (Malhotra and Singh, 2020). Any human intervention in ordering online food apps offers additional security. Apps have several restaurants and cooks correctly identified with menus. Clicking a button makes it easy to order food. You can download them directly to your device and make them more accessible. Create your payment account by entering your account address and profile (Sarkar *et al.* 2014). Customers must download and register the software on their mobile devices. Customer profile design includes address and payment information including credit cards, debit cards, cash reduction, and cash on

delivery (Bagla and Khan, 2017). Various applications offer a variety of services, promotions, or functions to give discounts on specific vouchers, past order history, menu reviews, the latest ratings, and dishes (Anesbury *et al.* 2016).

Boston Consulting Group predicts that the Indian food industry demand will reach \$420 billion by 2020, which stands at around \$350 billion in 2019. Innovative ideas are being developed to ensure ease, dedication, and customer retention. Free home delivery business and online food order applications, is facing a significant competition (Alagoz and Hekimoglu, 2012). There are so many options and variations in the introduction of new technology and innovation. The idea of investors is reluctant at first, but after design success, the number of players is increasing such as Zomato, Swiggy, Food Panda, Uber Eats, and Feed and few licensed shops including Dominos, Pizza Hut, Fassos, KFC's supply chain (Malhotra and Singh, 2020).

Customers' response to the internet has opened doors for many businesses. Online banking has supported several online activities, including small food orders (Abadi *et al.* 2012). Online food supply meets the needs of busy residents who order online and collect deliveries in minutes. Previous order research focused on trust, satisfaction, and loyalty determinants. However, recently, researchers created an online platform that offers excellent interactive, personalized marketing opportunities (Burke, 2002). In the productive industries, a rising number of young Indians have enhanced living standards and strengthened wallets for sectors such as IT. Since 2006, the World Bank has seen an extraordinary 50% rise in per capita income. Urban India is undergoing a marked social change that is driving the adoption of online food. With dual-entry households, both parents take bacon and radically change their way of life, hobbies, and eating habits (Kaur and Shukla, 2016).

Bhatnagar *et al.* (2000) investigated risk convenience and online food orders. They identified marital status without any influence on buying behavior and found mixed outcomes based on gender, internet, and age. According to Sathiyaraj *et al.* (2015), the main factors affecting customer decision-making are discount offers and various menu options offered, free home delivery, user-friendly apps, cash payment options, and exclusive service. Dharni and Sharma (2015) found that the decision to order food was primarily influenced by friends, family reviews, and online forums. Research has shown that strong word of mouth communication input from existing customers and open forums impact consumers' decision-making. The online order of food differs across markets by various factors (e.g., technology, acceptance, and social demographics). However, Das (2018) reported that customer category preferences vary among different customer categories, that is, customers who want to eat fresh are less likely to purchase online.

The penetration of the total online food supply markets had decreased by 30% in 2016. As the market matures, we expect the penetration rate to continue to rise to 65% per year. Convenience, easy-to-handle menus, significant savings, no-hassle, etc. are the reasons for the success of the desirable food supply industry (De Groote *et al.* 2011). Anesbury (2017) said that e-commerce is increasing and that's what the food industry is doing. The TAM was also suggested as a template for the study of online food order applications. The data analysis reveals that the on-line food ordering strategy focuses on the simplicity and convenience of the ordering process and the many advances in IT. Bevan and Murphy (2001), aimed at exploring student experience, actions, and enjoyment in ordering and distributing online food. It is also noted that the main reasons for using apps are always to have access to their favorite food and free data (Alagoz and Hekimoglu, 2012).

Yeo *et al.* (2017) said that online food service helps restaurants expand and maintain big business online. Mortimer (2016) argues that the use of the mobile application to manage and track customer orders helped restaurants to offer online orders to customers immediately. The growing use of cell phones and computers is a food industry platform. The online ordering system is quick, efficient, and user-friendly, which should be improved every day in the coming days.

## Conceptual Framework

This research is measuring consumer attitude towards online food ordering app. There are various theories available for measuring the same. One of the pioneer social and psychological theory in the area of users' technology adoption behavior is The Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). TRA was observed as an important foundation in attitude measurement and then further the Technology Acceptance Model (TAM) (Davis, 1989) and the Theory of Planned Behavior (TPB) (Ajzen, 1985) and was evolved and used for measuring attitude towards technology adoption. TAM is one of the most common models used to determine the acceptance of technical advances in various contexts (Hu et al., 1999; Lim et al., 1994). The evolution of TAM is primarily used for technology adoption, but while it has proven its applicability, TPB has not been specifically developed for technology adoption behaviour. However, TPB does not do any better than TRA. Previous activity produces the best effects in the prevention and enhancement of behavioural outcomes and subjective expectations. (Sutton et al., 1999; Bagozzi and Bergami, 2000). TRA was also blamed for the inconsistent determination of behaviour by reason alone (Lok, 2015). Ajzen and Madden (1986) revised TRA to introduce an endogenous variable that contributes to the growth of behavioural intentions, considering the perceived weakness of the original TRA. TAM was criticized by Heerink et al. (2010) as Asian and Australian people have different levels of PU and PEOU within a technology. Another criticisms of TAM mentioned by Deb and Lomo-David, (2014) most often used in working environments that no longer cost the customer. The use of TAM to examine technologies used for commercial purposes, where costs are to be borne by the consumer, involved a certain amount of adjustment because the existing TAM constructions were too broad and general. Thus, for this study, we have not consider TAM fully. Diffusion of innovation (DOI) is another framework that can be consider for such kind of study. This model is used to measure how new innovation gets diffused in the society. According to Rogers (1995), the dissemination of innovation is a process by which innovation is distributed over time to social system participants across different networks. Similar to TAM, DOI is found to endow different results across culture (Kumar and Krishnan, 2002). Since the social interection is missing in the above mentioned model, then we should move towards another model t.e. Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003). This model was developed through the amalgamation of prominent theories such as Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), Theory of Reasoned Action (TRA). Diffusion of Innovation (DOI) and Social Cognitive Theory (SCT). However, Lee et al. (2003) explained that the lack of genralizability in this theory. Thus we have developed our model for measuring attitude towards online food ordering app in India based on the studies of Okumus and Bilgihan (2014) and Deb and Lomo-David, (2014). This is an actual combination of above mentioned prominent theories.

According to Khan (2012), attitude is temperament, culture, mood, thinking, and behavior. Kaur and Shukla (2016) have established a transparent and long-term approach for which clients have well-built ways of thinking, which can be a person, an agency, advertising, or an issue. Attitudes develop through learning, and attitudes and experience influence purchasing behavior (Yeo *et al.* 2017). Consumer attitudes toward a firm and its products have an enormous impact on the product's success or failure. The more positive a person toward specific perceived behavior, the more likely the person wishes to participate. Accordingly, the consumer attitude toward online food ordering app (ATT) in India—are effort expectancy (EF), performance expectancy (PE), PSN, perceived complexity (PCL), perceived compatibility (PCT), PRA, and perceived risk (PR).

Effort expectancy (EF) is defined as “the degree of ease associated with consumers' use of technology” (Venkatesh et al., 2012, p. 159) and it is similar to TAM's perceived ease of use. Sharma (2020) described the ease of use or (EF) as the degree of comfort associated with the device. Any technology is considered useful when customers can use it efficiently or operate with no effort at all. Perceived usability was affected directly by mobile innovation and its perceived benefits in terms of flexibility. Past studies established a positive relationship between effort expectancy and behavioral

intention (Shaikh et al., 2018). However, several other studies have not found a meaningful correlation between these two studies (Afshan and Sharif, 2016; Oliveira et al., 2014). The main reason that people use an online food app is that it is beneficial. Thus, our first hypothesis is developed as:

$H_1$ : EF has a significant effect on attitude toward online food ordering app (ATT).

According to Sharma (2020), the degree to which any system improves user productivity or helps with a performance at work is defined by performance expectations (PE). Customers are more drawn to the app which is easier to use and keep customers more aware of the service. PE directly affects the satisfaction of customers using technology that contributes to the continuous use of the product. Male customers find PE a critical factor in acceptance and continued use, helping them to achieve their goals. The theory of planned behavior (TPB) suggests a person's behavioral intent based on social norms (Ajzen, 1991). The concept of perceived ease of use has a beneficial effect on the intention that the profitability of online food order had a significant impact on consumer demand (Hansen, 2008). Food apps should be easy to use to avoid the problem of the "underused" program. The following hypothesis is developed:

$H_2$ : PE has a significant effect on ATT.

Perceived social norms can be viewed as societal pressure to perform acts or not. There is a reliable and beneficial relationship between subjective standards, online ordering preferences, social expectations, and PSNs. PSNs apply to what some people generally believe or accept. The impact of PSNs on actions potentially varies from the other ways in which people around us can influence our actions. The presumed social norm refers to the presumed opinions of other people, regarding the use of online food by a person linked to behavior, intent to purchase or use food online. Perceived social models in this study are similar to the definition of a user's opinions on whether he or she should use food applications or not. The following hypothesis is developed:

$H_3$ : PSN has a significant effect on ATT.

The PCL is a vulnerability of the consumer and is related to behaviour, deliberate transactions or online food consumption (Hansen, 2008). Consumer data are categorized as user-created and produced. When you buy a product online, buyer and seller information pose a risk to the purchaser. (Pavlou and Dimoka, 2006). When the purchaser cannot personally inspect the product and, therefore, must depend on details which may be incorrect or inadequate from the seller (Lee, 1998). The following hypothesis is developed:

$H_4$ : PCL has a significant effect on ATT.

Perceived compatibility (PCT) is the degree to which online food ordering is compatible with past and current personal habits and values, it is favorable for online food ordering, purchase intentions, or use. Consumers lose trust and reputation due to the unpredictable quality of goods from online consumer reviews (Liu and Park, 2015). Increased revenues and improved customer preferences contribute to high ratings and product reviews, however, customers consider the article to be positive or negative (Purnawirawan et al. 2012). Negative information from buyers is better to read than valuable information and is more important to buyers (Ito et al. 1998). The following hypothesis is developed:

$H_5$ : PCT has a significant effect on ATT.

The Perceived relative advantage (PRA) of online ordering is that it is considered to be superior to conventional offline food ordering (Heng *et al.* 2018). Customers with online food orders have two main advantages over traditional offline orders, that is, convenience ordering (e.g., time savings) and price advantage (e.g., money savings) that have positive effects on consumer expectations, intention to purchase, or online order (Wang *et al.* 2011). The following hypothesis is developed:

$H_6$ : PRA has a significant effect on ATT.

The perceived risk (PR) is a potential loss and damage to consumers of online food ordering and is negatively linked to success (Harridge, 2006). PR has a close relationship with repurchase plans. Given the central importance of perceived online risk, customer experience, and actual purchasing behavior, this concept has not been addressed (Chang and Wu, 2012). Regardless of technological advances, online consumer awareness and experience are often described as barriers to online ordering. Consumers may develop feelings of harmful effects during the online ordering process, such as frustration, disappointment, anger, anxiety, rage, and dissatisfaction with pick-ups, increasing their perception of risk through experience and ultimately reducing desire to buy back (Bhattacharya and Mishra, 2015). The following hypothesis is developed:

$H_7$ : PR has a significant effect on ATT.

Okumus and Bilgihan (2014) suggested that technical barrier can be measure as a moderator in the relationship between effort expectancy (EF), performance expectancy (PE), perceived social norms (PSN), perceived complexity (PCL), perceived compatibility (PCT), perceived relative advantage (PRA), perceived risk (PR) and Attitude towards online food ordering app (ATT). India is not a technological advancement country and people attitude towards adopting any technological advancement based on its technical complexity or simplicity. Thus, it is essential to emphasize the moderating role of technical barriers (TB). The relationship will be affected if the customer finds it difficult to access and use the app. It isn't straightforward for users of the device area to communicate with mobile interfaces (Bao and Qiu, 2012). The following hypotheses are developed:

$H_{8(a)}$ : Technical barriers (TB) have a moderating role in the relationships among EF and ATT.

$H_{8(b)}$ : TB have a moderating role in the relationships among PE and ATT.

$H_{8(c)}$ : TB have a moderating role in the relationships among PSN and ATT.

$H_{8(d)}$ : TB have a moderating role in the relationships among PCL and ATT.

$H_{8(e)}$ : TB have a moderating role in relationships, PCT and ATT.

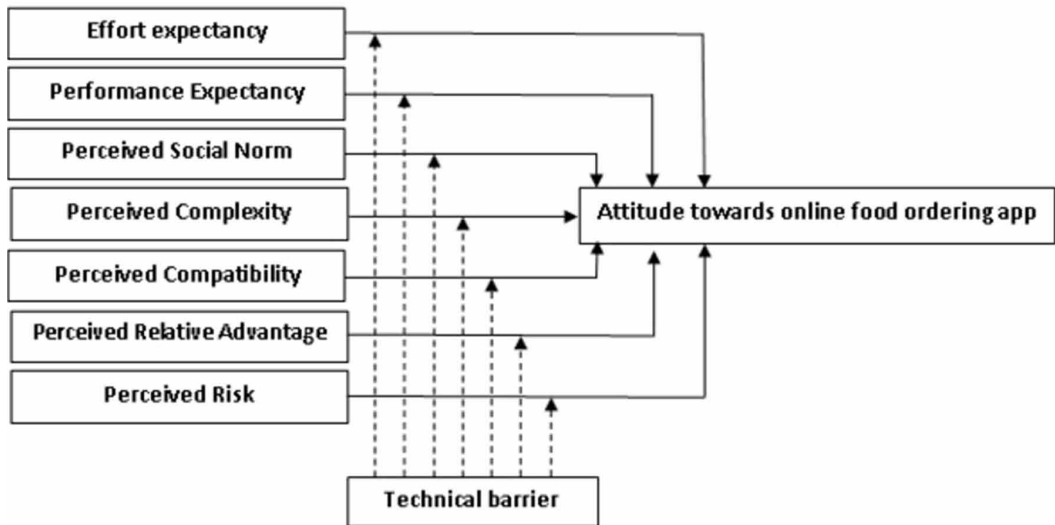
$H_{8(f)}$ : TB have a moderating role in the relationships among PRA and ATT.

$H_{8(g)}$ : TB have a moderating role in the relationships among perceived risk (PR) and ATT.

## Research Methods

The questionnaire comprised seven independent constructs, one dependent construct, and one moderating construct. Separate constructs involved of EF (Ghalandari, 2012) three items scale, PE (Hazen *et al.* 2014) three items scale, PSN (Wang and Somogyi, 2018) two items scale, PCL (Wang and Somogyi, 2018) three items scale, PCT (Wang and Somogyi, 2018) four items scale, PRA (Wang and Somogyi, 2018) three items scale, and PR (Wang and Somogyi, 2018) four items scale. Dependent variable ATT (Childers *et al.*, 2002) and Yeo *et al.*, 2017) comprised four items scale, and one was moderating variable TBs (Bao and Qiu, 2012) of three items scale. Items were measured by five-point Likert-type levels anchoring between strongly agree (5) and strongly disagree (1). Also, four demographic questions have been asked comprising gender (male/female), age (Less

Figure 1. Conceptual Framework



than 25/25–40/40–60/greater than 60), occupation (employed/self-employed/unemployed), length of association with any of the food ordering app (less than 6 months/6 months to 1 year/ more than 1 year).

A pilot survey was conducted to correct errors and to ensure that the questions were easily understood. Data were collected utilizing an online survey (e-mail) of people who used any of these apps such as Zomato, Swiggy, Food Panda etc. at least once. The target population for this study was urban Indian consumers as the awareness level is high for urban consumers (Datt and Sundharam, 1997). We sent questionnaires through e-mails to 1,057 people across New Delhi, Mumbai, Bangalore, Kolkata, Chennai, Agra, Jaipur, Hyderabad, Bhopal, Indore, and Chandigarh during the period of September 2019 to January 2020. Non-probability judgmental sampling has been used for data collection because of the unavailability of sampling. Finally, 514 responses were used for data collection as we received these responses during this stipulated period. Table 1 displays the demographic profile of the respondents.

The indications, constructs, and alpha values of Cronbach (Chin, 1998) are shown in Table 2. The Cronbach’s alpha values provide a reliable measure of consistency within. Reliability figures for all constructs vary from 0.794 to 0.943. It goes beyond 0.7 rules-of-thumb (Julious, 2005) and maintains appropriate internal consistency for the reliability of the scale. The research model proposed was estimated using the partial least squares (PLS)-path modeling for the testing hypotheses (Hongu *et al.* 2015), a soft-modeling method for the cause-effect relationship between latent constructs. As the data analysis methodology is distribution-free, distributional assumptions are not needed and are a more robust tool for managing small sample sizes and different measurement scales. Because PLS-PM has no distribution assumptions, methods of resampling and cross-validation are used to estimate parameter significance. The model was tested using a bootstrapping resampling with 5,000 resamples (Chin, 2010) and a Q2 cross-validation redundancy index (Boselie *et al.* 2017). First, the primary influence of the seven independent variables and the dependent variable was assessed, and the moderating effect of the TB was tested.

### Data Analysis

Before checking the hypotheses, we used smart PLS software to perform a confirmatory factor analysis for our measures. The residual standardized root mean square (SRMR) assessed the fitness

Table 1. Demographic profile of the respondents

Demographic characteristics	Frequency	%	Cumulative %
Gender			
Male	274	53.31	53.31
Female	240	46.69	100.00
Age			
Less than 25	152	29.57	29.57
25-40	232	45.14	74.71
40-60	94	18.29	93.00
Greater than 60	36	7.00	100.00
Occupation			
Employed	261	50.78	50.78
Self-employed	171	33.27	84.05
Unemployed	82	15.95	100.00
Length of Association			
<6month	39	7.59	7.59
6 month to 2 Yrs.	97	18.87	26.46
>2Yrs.	378	73.54	100.00

of the measurement model. A value below 0.08 is considered to be a good fit. Henseler *et al.* (2015) implemented SRMR as a PLS- structural equation modeling (SEM) fit-up to avoid misspecification of the model. The SRMR value in our analysis is 0.067, which is less than 0.08, so the model fits.

For assessing the validity of converging data, factor loadings of items, average variance extracted (AVE), and composite reliability (CR) were used (Hair *et al.* 2017). Table 2 presents the factor loadings, reliabilities, AVE, and Cronbach's  $\alpha$ . We note that all loading factors for items are above the threshold values (Hair *et al.* 2017). The benefits of composite reliability ranged from 0.86 to 0.925. These CR values also reach a minimum acceptable level of 0.7, as shown by Hair *et al.* (2017). For all constructs, the average variance ranged from 0.672 to 0.861 indicating that the construct described, on average more than half of the difference of its metrics (Hair *et al.* 2017). The Cronbach's  $\alpha$  ranged from 0.735 to 0.883 for all constructs. The discriminant validity of the variables was checked using the ratios of Heterotrait-Monotrait (HTMT), as suggested by Henseler *et al.* (2015) and Hair *et al.* (2017). The criteria by Fornell and Larcker (1981) were also used to test the discriminant validity. Some HTMT values were found to exceed 0.85 when assessing the discriminating validity via the HTMT ratio. As these were not the issues in a favourable case, however, we have kept the principles and it is well known that the HTMT ratio is a very accurate instrument for the assessment of the legitimacy of discrimination. (Hande and Ghosh, 2015). The results of HTMT are shown in Table 3. We tried to test the discriminant validity with the same Fornell-Larcker criteria. Table 4 shows the Fornell-Larcker criterion results, which accept the discriminatory validity, where the square root of each construction is more important than its highest correlation with other constructs.

In addition, descriptive statistics have also been computed in order to presents the basic feature of the data (Shown in Table 5). For this, composite score of the data has been calculated and then mean, median, standard deviation, skewness and kurtosis have been calculated on composite score for each variables consider of this study.



## Direct Effect

We have tested our hypotheses H1 to H8, which are measure the direct effect of independent variables and a dependent variable using the PLS-SEM technique. The overall fit of the structural model shows good predictability as the R<sup>2</sup> value is 0.655. These independent variables explain 65.5% of the variance for the dependent variable. Analysis of H1 showed that the direct effect of effort expectancy on ATT is positive (path 0.162) and significant ( $P < 0.01$ ), thus, supporting H1. H2 established the relationship between PE and ATT. There was a significant and direct relationship found between these constructs with a path coefficient of 0.061 ( $P$ -value = 0.381). H3 was tested to investigate the relationship between PSN and ATT. The findings revealed that there is a significant and direct relationship between these constructs with a path coefficient of 0.146 ( $P$ -value = 0.000). H4 tested the direct effect of PCL and ATT. The analysis found that there is a negative significant relationship between these two ( $\beta = -0.166$ ,  $P$ -value = 0.002). H5 measured the direct relationship between PCT and ATT. The findings revealed the positive (path coefficient = 0.181) and significant relation between these two constructs ( $P < 0.000$ ). H6 measured the direct relationship between PRAs and ATT. Results established a significant direct relationship between these two with a path coefficient of 0.198 ( $P < 0.01$ ). H7 showed that the direct effect of PR and ATT. Results confirmed the negative direct significant relationship between these two constructs with path coefficient  $-0.322$  ( $P < 0.000$ ). Path coefficient, T statistics, and  $P$ -values of testing of hypotheses from H1 to H7 have been displayed in Table 6.

## Moderation Effect

Since all the direct effects have been found significant, we can proceed for the moderation effect of TB between seven independent variables and ATT (H8a to H8g). For this, we have applied the bootstrapping method with the product indicator approach and default 500 iterations. Results of moderating effect revealed that there is a statistically significant interaction between PE and ATT with TB ( $\beta = -0.098$ ,  $t = 2.264^{**}$ ), between PCL and ATT with TB ( $\beta = -0.121$ ,  $t = 2.775^{***}$ ), between PCT and ATT with TB ( $\beta = -0.138$ ,  $t = 3.074^{***}$ ) and between PR and ATT with TB ( $\beta = -0.137$ ,  $t = 3.028^{***}$ ). Statistical insignificant interaction effect found between EF, PSN, and PRA and ATT with TB. All these values have been shown in Table 7.

## Discussion and Implications

This research presents a novel constructs that influence ATT and measure the impact of effort expectancy, PE, PR, PRA, PSN, PCL, and PCT on consumer ATT via technical behavior. First, this research proposed a conceptual model aimed to test the ATT. Second, this study reveals the critical influence of effort expectancy, PE, PR, and PRA, PSN, PCL, PCT on consumer ATT. This is consistent with the earlier findings of Lee *et al.* (2017) and the review of the Barreda *et al.* (2016). Third, this study also checked the moderation effect of a TB and discussed the attitude toward the app. This actually belongs to specific technological adoption. The moderation effect of the TB has been checked one by one between each independent variable and ATT as the dependent variable. Results of this test established that TB plays a significant moderating role in the relation between PE, PCL, PCT, PR, and ATT. However, no significant moderation effect was found in the relation between EF, PSN, PRA, and ATT.

If we discuss in terms of hypotheses, our first hypothesis checked the relationship between effort expectancy and ATT. This relationship found significant and positive. We can presume that users use these devices easily and communication with the technology is clear and understandable. The biggest reason for this vast population of India is now adopting mobile phones, the internet, and the same kind of technological changes at a good pace. Effort expectancy is the similar to the concept of ease of use in TAM. This also establish that our findings focused on Indians is also been applied to the TAM in other context. The testing of the second hypothesis established a positive relationship between PE and ATT. This is obvious as it creates a win-win situation for consumers, suppliers

Table 2. Factor loadings, composite reliability, AVE and Cronbach  $\alpha$  for the measures

Constructs	Indicators	Factor Loading	Composite Reliability	AVE	Cronbach's alpha
Effort expectancy	Learning how to use food order app would be easy for me	0.854	0.89	0.729	0.883
	My interaction with food order app would be clear and understandable	0.874			
	Food order app is easy to use	0.834			
Performance expectancy	food order app is useful in my daily life	0.887	0.922	0.798	0.892
	Using MB would help me accomplish things more quickly	0.893			
	Using MB might increase my productivity	0.901			
Perceived social norm	Members of my family think that it is a good idea to buy food/beverage online	0.929	0.925	0.861	0.869
	Most of my friends and acquaintances think that shopping food/beverage online is a good idea	0.927			
Perceived complexity	Online shopping of food/beverage is complex because I cannot really see and feel the products	0.854	0.86	0.872	0.785
	Online shopping of food/beverage is in general very complex	0.874			
	PWith online shopping of food/beverage it is difficult to order products	0.834			
Perceived compatibility	Online shopping of food/beverage is attractive to me in my daily life	0.737	0.834	0.857	0.827
	Buying food/beverage online is well suited to the way in which I normally shop groceries	0.779			
	In general, online shopping of food/beverage is problem free	0.739			
	Buying food/beverage online is beneficial to me	0.729			
Perceived relative advantage	Using online shopping of food/beverage saves much time	0.82	0.868	0.887	0.852
	Shopping food/beverage online is favorable as it makes me less dependent on shop opening hours	0.822			
	There is a lot of money to be saved through online food/beverage shopping	0.844			
Perceived risk	Return and exchange opportunities are not as good on the internet as in the supermarket/offline shop	0.85	0.914	0.825	0.838
	A risk when buying groceries via the internet is receiving low-quality products or incorrect items	0.842			
	Security around payment on the internet is not good enough	0.866			
	There is too many untrustworthy shops on the internet	0.849			
Attitude towards Online Food Ordering App	Using online food ordering app would be a good idea	0.876	0.919	0.84	0.889
	Using online food ordering app would be a (wise) idea	0.849			
	I (like) the idea of using online food ordering app	0.863			
	Using online food ordering app would be (pleasant)	0.853			

Threshold values: loading > 0.7; CR > 0.7 and AVE > 0.5 (Hair et al. 2017)

Table 3. Discriminant validity using HTMT

	ATT	EF	PCL	PCT	PE	PR	PRA	PSN
ATT								
EF	0.84							
PCL	0.802	0.896						
PCT	0.833	0.88	0.956					
PE	0.812	0.91	0.803	0.771				
PR	0.802	0.904	0.988	0.966	0.853			
PRA	0.768	0.922	0.746	0.784	0.963	0.837		
PSN	0.66	0.682	0.718	0.695	0.831	0.707	0.722	

Threshold: values < 0.85 (Henseler et al. 2014)

Table 4. Discriminant validity using Fornell Larcker Criterion

	ATT	EF	PCL	PCT	PE	PR	PRA	PSN
ATT	0.866							
EF	0.742	0.867						
PCL	0.763	0.79	0.812					
PCT	0.739	0.791	<b>0.905</b>	0.836				
PE	0.726	0.841	0.778	0.74	0.879			
PR	0.76	0.814	0.909	0.964	0.822	0.82		
PRA	0.587	0.599	0.559	0.543	0.654	0.662	0.94	
PSN	0.734	0.784	0.749	0.714	0.941	0.824	0.75	0.907

Table 5. Descriptive Statistics

Variables	N	Mean	Median	Std. Deviation	Skewness	Kurtosis
EF	514	3.4339	3.6667	.78956	-.628	-.837
PE	514	3.4196	3.6667	.85010	-.548	-.337
PSN	514	3.4572	4.0000	1.00200	-.846	-.118
PCL	514	3.3923	3.6667	.79647	-.512	-.749
PCT	514	3.4202	3.7500	.74827	-.581	-.647
PRA	514	3.4436	3.6667	.72902	-.589	-.242
TB	514	3.4079	3.6667	.71150	-.534	-.538
ATT	514	3.4786	3.7500	.68472	-.912	.054
Valid N (listwise)	514					

Table 6. Path coefficients and hypotheses testing of direct effects

Hypotheses	Path	$\beta$	T Statistics	P Values
H1	EF -> ATT	0.162	2.919	0.004
H2	PE -> ATT	0.199	3.081	0.001
H3	PSN -> ATT	0.146	2.576	0.000
H4	PCL -> ATT	-0.166	2.943	0.002
H5	PCT -> ATT	0.181	4.151	0.000
H6	PRA -> ATT	0.198	3.05	0.002
H7	PR -> ATT	-0.322	4.402	0.000

Table 7. Path coefficients and hypotheses testing of moderating effects

Hyp. No.	Hyp. Path	$\beta$	t statistics	P-value
H8a	EF -> TB -> ATT	-0.078	1.56	0.119
H8b	PE -> TB ->ATT	-0.098	2.264	0.024
H8c	PSN -> TB ->ATT	-0.065	1.39	0.165
H8d	PCL -> TB ->ATT	-0.121	2.775	0.006
H8e	PCT -> TB ->ATT	-0.138	3.074	0.002
H8f	PRA ->TB -> ATT	-0.064	1.404	0.161
H8g	PR -> TB ->ATT	-0.137	3.028	0.003

(restaurant), and delivery party. Our third hypothesis checked the relationship between PSNs and attitudes towards online food ordering app. Generally TRA and TPB are used to explain behavioral intention but these two established theories also explain that subjective norm play a significant role in forming attitude (Shih and Fang, 2004). Our Findings also show a positive relationship as potential users continue to develop their opinions on new technologies in their social environment and can benefit from the experience of other famous people. This result is consistent with the previous findings by Wang and Somogyi (2018). The fourth hypothesis established a positive relationship between perceived complexities and online food ordering app. This correlates to previous studies that considered complexity (e.g., ease of use) as a significant barrier to customer adoption of online food orders (Hansen, 2008; Davis et al., 1989). The fifth hypothesis checked the relationship between PCT and ATT. There has been a strong positive correlation, consistent with previous findings that when matched with the individual’s job obligation and belief system, the definition is more likely to be embraced. (Anesbury *et al.* 2016; Tornatzkey and Klein, 1982). The sixth hypothesis establishes a positive relationship between PRA and ATT. This is obvious as in India, online food ordering consumers increase at a good pace and in urban India. Rogers (1983) and Tan and Teo (2000) argued that relative benefits should be positively related to the acceptance of innovation. In the seventh hypothesis, the significant negative relationship found between PR and online food ordering apps. This result was also consistent with the previous findings of Monga *et al.* (2015) and Mortimer *et al.* (2016) but contradicting some studies (Wang and Somogyi, 2018). Our eighth hypothesis checks the moderation effect of the TB. With the coming of moderation affect our all relationship show a significant negative correlation, and it is because of resistance to adopting a particular technology.

This study enriches the knowledge of consumer behavior associated with an ATT by examining the link between effort expectancy, PE, PSN, PCL, PCT, PRA, and PR on ATT. The significance of this

study is to measure the moderation effect of TBs on the abovementioned direct relationship. Findings of this study advance the current academic knowledge in three ways: first, this study approached consumers' personalized technology behaviors in the context of online food ordering by empirically tested the extension model of Sharma (2020), Sathiyraj *et al.* (2015), and Wang *et al.*, (2011). This research offered a comprehensive conceptual model on ATT. Second, previous studies have not checked the moderation of TBs empirically. This improves our understanding of consumer behavior through the use of technology, demonstrating how significant technological activity is being moderated. Third, Indian consumer ATTs are found positive. Such findings provide new insight and knowledge of the online food ordering process for marketing researchers, despite the need for confirmation.

The results suggest that managers can safely establish a link between EF, PE, PSN, PCL, PCT, PRA, and PR on consumer ATT to achieve initial market acceptance. Marketing managers should adopt such strategies so that consumers adopt this style of ordering due to conformity or social norms and also reducing PCL and PR. Marketers should communicate/facilitate relative advantages to increase the adoption of online food ordering apps. India is a fast-growing country and so is the urbanization of this country. These dynamics grow the online and app-based businesses as peoples are busy in their work and shifting the culture of working of both husband and wife leads to an opportunity for online food ordering app businesses. Marketers have to use chain-marketing strategies for enhancing this business, and social norms emerge as a significant factor in this business.

Although the findings provide useful feedback for marketing studies, they are not free from any limitations and can lead to some potential recommendations for the research. First, convenience sampling was used so that the response / rejection rate could not be calculated. Neither response bias could be calculated. Consequently, the results could not necessarily be generalised. However, despite being evaluated with a convenience sample, the model is basically an exploratory one and provides a strong base for further study. Second, the sample of this study, confined to India, may nevertheless limit sample population generalization, which can be dealt with by replicating this study using samples from other countries. Third, this research survey based research which actually measured the reporting behaviour. Reporting behaviour may be differing from the actual behaviour. So, future researcher may adopt experimental research in order to map actual behaviour towards online food ordering app. Fourthly, it would be important to research the impact of demographic variables such as age, sex, income and occupation on organic pulse purchases.

### **Declaration of Interest Statement**

There is no conflict of interest for this manuscript. No funds have been taken from any funding agencies as well.

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