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## Article

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## MANAGEMENT | RESEARCH ARTICLE

# Consumer purchase intention on Boba drinks in Kuching during Covid-19

Ricky Chee- Jiun Chia<sup>1\*</sup>, Magdalene Efendi<sup>2</sup> and Venus Khim-Sen Liew<sup>2</sup>

**Abstract:** Many businesses were badly impacted as consumer spending habit shifted due to Covid-19 outbreak. The purpose of this study is to investigate consumer purchase intention on Boba drink during Covid-19. By adopting Theory of Planned Behavior, this study explores the influence of perceived behavioral control, subjective norm, and attitude. Importantly, perceived risks is added to the conceptual model to study consumer purchase intention amid Covid-19. Boba drink is a popular beverage in every city in Malaysia, including Kuching, where one could easily spot a Boba drink outlet at almost every corner of the city. A total of 394 complete observations have been obtained from the respondents through a self-administered online survey. The outcome of the analysis uncovered that perceived behavioral control and subjective norm have significant direct relation, while attitude and perceived risks have significant adverse relation with consumer purchase intention during Covid-19. This research offers insights to Boba drink sellers to devise appropriate strategies to market their beverages by targeting consumers' ability to buy the beverage, health-conscious belief, food safety, and attractive promotion to encourage consumers to buy their products during the pandemic.



Ricky Chee- Jiun Chia

### ABOUT THE AUTHORS

Ricky obtained PhD in Economics from Yokohama National University, Japan. His research interest is in the fields of international finance, financial economics, finance and banking. As for research output, he has to date published more than 20 articles in refereed international and national journals, including those in Social Sciences Citation Index, SCOPUS and ERA indexing journal. Currently, Ricky is serving as the co-Editor-in-Chief for International Journal of Emerging Trends in Social Sciences (IJETSS) (RePec, IDEAS, EconPapers), Managing Editor for Labuan Bulletin of International Business and Finance (LBIBF) (MyCite, EconLit, Ebscohost, Cabell's Directory) and as an Academic Editorial Board for PLOS ONE (Scopus & Web of Science).

Magdalene Efendi is an avid Bubble Tea consumer. She used to work part-time in F&B industry for 7 years during her tertiary studies. She has a bachelor's degree with Honour in Human Resource Development and master's degree in Corporate Master's in Business Administration, obtained from the University of Malaysia Sarawak, Sarawak, Malaysia. She is currently pursuing a career in operations management.

### PUBLIC INTEREST STATEMENT

Pearl milk tea or bubble tea, a kind of beverage that often comprises milk tea as the base flavor accompanied by chewy tapioca balls has gained much prominence in the mainstream nowadays and become one of the major beverage markets in the world. The market value was USD 2.15 billion in 2019 and USD 2.3 billion in 2020, and it is expected to grow to higher level of market value. The sudden surge of this trend has gained the interest of scholars to investigate the consumer behavior towards this drink. However, most of these studies focus on major cities in the world. Lack of attention on this topic is given to small and lesser-known cities like Kuching, the largest city in the state of Sarawak, and the 16<sup>th</sup> largest city in Malaysia.

**Subjects: Marketing; Business; Business Management**

**Keywords: Consumer purchase intention; Boba drink; Covid-19; perceived behavioral control; subjective norm; attitude; perceived risks**

## 1. Introduction

Boba drink is also known as pearl milk tea or bubble tea. It is a kind of beverage that often comprises milk tea as the base flavor accompanied by chewy tapioca balls (Thompson, 2020). It has gained much prominence in the mainstream nowadays and has become one of the major beverage markets in the world. Global Boba drink market value was USD 2.15 billion in 2019 and USD 2.3 billion in 2020, and it is expected to grow to USD4.3 billion by 2027 (Allied Market Research, 2020, April; Grand View Research, 2020; Newswire, 2022). In Malaysia, there are over 100 Boba drink brands with more than 4000 outlets throughout the country (Bubble Tea Malaysia, 2020). Straits Research had estimated that Malaysia's Bubble tea market value stood at US\$49.8 million and it is expected to grow at a rate of 6.9 per cent per annum until 2026 (Bloomberg.com, 2019). In Malaysia, there are Boba drink specialty streets in almost every city, where different Boba drink chains can be found in close proximity with one another in an area (Foong, 2019; Reiko, 2019). For instance, Saradise and Galacity are two commercial places in Kuching that are well known for having various Boba chains. The sudden surge of Boba trend has gained the interest of scholars to investigate the consumer behavior towards Boba drink. However, most of these studies focus on major cities in the world. Lack of attention on this topic is given to small and lesser-known cities like Kuching, the largest city in the state of Sarawak, and the 16<sup>th</sup> largest city in Malaysia.

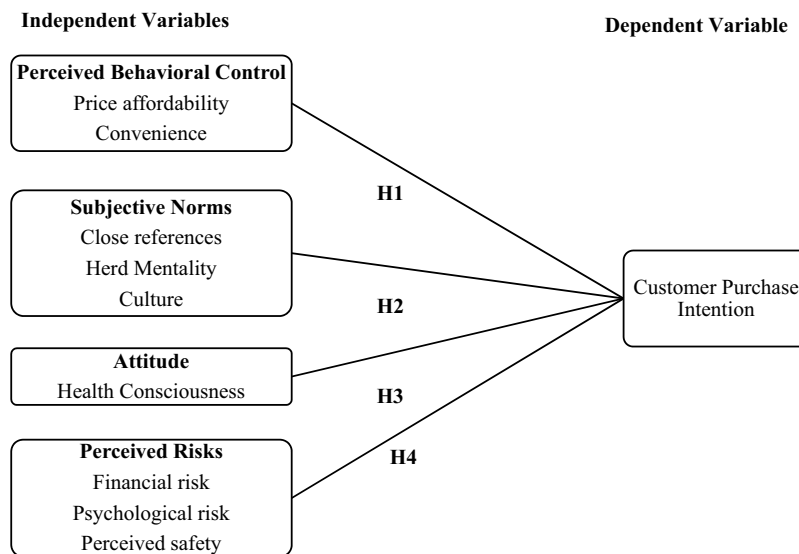
The unprecedented Covid-19 pandemic has critically disrupted every business across the globe, including the food and beverages business. In 2020, more than 2000 food outlets closures and about 8 Boba outlets in SS15 Subang Jaya (a Boba famed drink street in Kuala Lumpur) went out of business due to the movement control order (MCO; Annuar, 2020; Carvalho, 2020). With that, the shop unit rental had drastically dropped from RM8000 to RM12000 in late 2019 to RM7000 to RM8,000 in Mid-2020 per month, in SS15 Subang Jaya (Chin, 2020). As pointed out by Chin (2020), the MCO had accelerated the process of closing due to the drop in demand and supply in Malaysia. The closure of businesses amid MCO including factories and restriction of movement including transportation of goods for safety purpose hampered the supply for Boba business. The precautionary action enforced by the government had caused reduced crowd in the outlets and the purchasing power among consumers lowered due to the uncertainty of the economy (Abdul Hamid, 2020; Medina, 2020). Additionally, the rising daily Covid-19 cases and a series of preventive measures discourage consumer from eating out and urge them to order take-out (Alhousseini & Alqahtani, 2020). As a result, many outlets were forced to close due to the MCO. A report postulated that consumers are getting more health conscious because of the outbreak (Renzo et al., 2020). Despite the fact that sugar level can be calibrated to customers' likings, Boba drink is infamous for being unhealthy and could possibly contain illegitimate chemical substance that could be detrimental to the health (Choong, 2013; Whitehead, 2013). Thus, this study would like to address the purchase intention for Boba drink amid Covid-19.

The remainder of the study is arranged as follows. First, the theoretical framework reviews prior literature to examine the factors influencing consumer purchase intention. This is followed by the formulation of research model and hypotheses for the paper. The subsequent section explains the data collection method, the sample size, as well as the types of data analysis adopted in this study. Discussion on the findings of the study is provided prior to the conclusion.

## 2. Theoretical framework and hypotheses

Ajzen (1991) defined purchase intention as a thought-through internal response in which consumers agree to buy a particular good (Nguyen & Gizaw, 2014). It is the internal impulse of consumers that is stimulated by their assessment on their psychological, situational, personal,

**Figure 1. Conceptual framework.**



and social aspects towards a product or service, which triggers the possibility of acquiring it later (Tanner & Raymond, 2010; Younus et al., 2015). Mirabi et al. (2015, January) explained that consumer purchase intention typically is influenced by his/her perceptions, internal and external motivations, attitudes, and behavior towards a product. When consumers perceive that a product is worthy of value in terms of price and taste, has positive attitude towards it and the opinion of the people close to them towards the product is good, whilst internal and external factors such as financial capability and economic condition are favorable, the consumer will likely want to acquire the product (Adewale et al., 2018; Khofanda & Belgiawan, 2018; Nguyen et al., 2020). This correlates with the components as suggested in Theory of Planned Behavior (TPB) model by Ajzen (1991). Hence, this paper follows the framework of this theory.

TPB suggests that a person's intention can be predicted by three determinants namely perceived behavioral control, attitude, and subjective. Unlike the predecessor, Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975), TPB believes that consumers' true behavior is only reflected when they have limited control over a situation (Ajzen, 1991). TPB is often used to predict consumers' behavior under restrictive, new, or unfamiliar circumstances that are beyond their control by factoring in their accessibility to necessary opportunities and resources like money, time, and skills (Kim & Chung, 2011). TPB is commonly used to predict consumers' beverage consumption interest (Khofanda & Belgiawan, 2018; Nguyen et al., 2020).

Nevertheless, numerous literature pointed out that TPB fails to address situational impacts on human intention such as unpredictable circumstances, socio-economic condition, and the state of their physical and mental health (Sniehotta et al., 2014). Often when unfavourable events arise, people feel threatened and would shift their intention to react differently from the usual to avoid plausible danger (Hakim et al., 2021). Hence, this paper expands the TPB model to examine the consumer purchase intention during the unpredictable event, such as the unprecedented Covid-19 by incorporating perceived risks as one of the determinants of purchase intention. This inclusion is expected to better explain consumer purchase intention during unpredictability (Baskaran et al., 2017; Khofanda & Belgiawan, 2018; Nguyen & Gizaw, 2014). It is noteworthy that prior works found that perceived risks negatively influence consumer purchase intention (Hesham et al., 2021; Nguyen & Gizaw, 2014; Zhang et al., 2020). The conceptual framework of this research is illustrated in Figure 1. The related hypotheses are discussed in the following sub-sections.

### **2.1. Perceived behavioural control (PBC)**

PBC is the self-belief of a person and his/her view on the simplicity or difficulty to respond to an unfamiliar situation (Ajzen, 1991). The more confident a person feels about his/her ability, available opportunities and resources, and the lower the anticipation on challenges, the higher the probability a person would perceive more power over his/her response under circumstances that are unusual to him/her. In brief, when consumers trust that they have the means, they will believe that they can overcome the barrier (Ajzen, 1991).

Several past studies had discovered that PBC is a strong determinant in predicting consumers' intention to acquire products. Chen and Li (2007) explained that consumers who have difficulties in acquiring a certain product showed low desire in buying the product, despite having positive attitude and believe that being able to buy it is considered as a good behavior. In this respect, Bauert (2019) showed that behavioral intention for sweetened beverage consumption relies greatly on the perceived control, although subjective norm and attitude of a consumer showed positive influence too. Kim and Chung (2011) demonstrated that PBC is a good predictor in consumer purchase intention when they are confident that they have the means such as money, time, and ability. Bagozzi and Warshaw (1990) supported this and proclaimed that contingencies like limited resources, supplies, time, voluntary control, and habitual behavior could deter a person's purchase intention.

Numerous factors which could affect consumers' PBC and subsequently their purchase intention had been discussed in other prior literatures. One of them is price affordability (Vermeir and Verbeke, 2006). Price affordability is a crucial factor in influencing consumer purchase intention because it affects the ability and likeliness of the customer to pay for a certain good (Ling & Ng, 2020). The amount of disposable income that consumers have is going to determine their financial ability and willingness to spend their money (Habibah et al., 2018). Consumers who have enough disposable income would not consider price as a limiting factor as they can afford the product and their intention to purchase would be high (Goldsmith et al., 2010). PBC in terms of price affordability plays prominent role particularly during economic downturn as consumers are observed to be more sensitive in their spending during this period (Adewale et al., 2018; Hampson & McGoldrick, 2013; Kim & Chung, 2011).

PBC in terms of convenience in buying a product is another factor that could influence consumer purchase intention (Baskaran et al., 2017; Huang & Dang, 2014; Neger & Uddin, 2020, March; Yalcin & Kocamaz, 2003). Neger and Uddin 2020 found more Bangladeshi consumers in shopping online during Covid-19 due to its convenience in reducing shopping time and consumers were able to decide, select products and make payment quickly at the comfort of their homes, whilst having their things delivered to them. Besides, convenience in terms of ease of accessibility where products are easily available to the consumers, reduced waiting time and energy influences consumers PBC as they believe they are able to acquire the product quickly, easily, and comfortably. These motivate them wanting to purchase the beverage (Baskaran et al., 2017; Huang & Dang, 2014; Yalcin & Kocamaz, 2003). However, Covid-19 has given rise to many challenges such as unemployment problem, pay cut, and precautionary measures that restricts people's mobility. All these challenges put the consumer's ability to test and could possibly affect the consumer's perceived behavioral control in acquiring Boba drink during Covid-19. That draws the following research hypothesis.

**H1:** *Perceived behavioral control has significant relationship with consumer purchase intention for Boba drink during Covid-19.*

## 2.2. Subjective norms (SN)

SN is the conformity to the behavior that is considered acceptable in an individual's society (Ajzen, 1991). Consumers tend to lean onto the opinions of their close ones to gain their consent on their purchase intention. When close references such as family, friends, and society deem a decision as desirable, the consumers would show high intention to purchase a product (Khofanda & Belgiawan, 2018). Khofanda and Belgiawan (2018) confirmed in their study that subjective norm significantly affects the intention of the consumers to purchase sweetened packaged beverage. It was reported that close references such as family and peers affect the beverage consumers' intention more than the influence of media. Similarly, Nguyen et al. (2020) found a significant linkage between subjective norm and purchase intention for yogurt-based food and drinks.

Besides, consumers' intention also tends to be influenced by SN in the form of herd mentality. This happens when consumers are in distress or in unfamiliar situation such as Covid-19. Consumers tend to follow the common views and beliefs of most people, their network, and rely on the government to navigate their decision-making, which then affected their purchase decision on certain product (Loxton et al., 2020).

SN in the form of a community's culture also has influence on the consumer purchase intention. Consumers who live in a collectivistic society cherish interpersonal relationship and tend to seek validation from their surrounding people by doing things that are considered normal and congruent to the community (Zhang et al., 2020). They see this a sign of respect to maintain the community's harmony (Cherry, 2021). Therefore, they usually do not deviate from the norm and would often consider the inputs from people around them when they decide to buy certain products (Nguyen et al., 2020).

The outbreak of novel Covid-19 virus has brought everyone to live in an unfamiliar condition. Consumer becomes uncertain about the direction of their spending decision (Loxton et al., 2020), whilst considering the adverse effects of Covid-19 on different areas of their lives. Judging from the findings in previous studies, in ambiguous times like this, it is predicted that consumers would refer to the people around them for guidance on their purchase decision. This gives rise to the hypothesis below.

**H2:** *Subjective norm has significant relationship with consumer purchase intention for Boba drink during Covid-19.*

## 2.3. Attitude (ATD)

ATD is the inclination of a person on how he/she decides to react to a situation (Ajzen, 1991). It is an unwavering opinion or learned conviction a consumer has on a particular product based on his/her personal values, belief, past experiences, information seeking, or media exposure (Lee et al., 2013; Tanner & Raymond, 2010). Studies have found that ATD is the major motivation for consumer intention to purchase some products although other variables are desirable (Kim & Chung, 2011; Nguyen & Gizaw, 2014, 2014). Various empirical studies revealed that health consciousness is the main attitude attribute affecting intention to purchase beverage products. Health-conscious consumers are usually mindful about their health condition, well-informed about health issues, aware of the composition of their consumption and their effects towards health (Gould, 1988; Nguyen et al., 2020; Yang et al., 2014). For instance, Tangtienchai (2015) uncovered that health-conscious consumers prefer to drink sugar-free tea over sweetened tea or commercial-ready-to-drink beverage. They would only consume such drinks occasionally or when they are required to (Tangtienchai, 2015). Another study from Vietnam found that health-conscious consumers had high intention to purchase yogurt-based drinks as they showed positive attitude towards it. The study also found out that attitude was the strongest predictor as compared to subjective norm and perceived price (Nguyen et al., 2020).

Nevertheless, studies done during Covid-19 revealed mixed results on people's health consciousness and their purchase intention. Some findings reported that the pandemic has made people becoming more health conscious. The rise in herbal tea consumption, increase in sales in healthy cafes and restaurants, and decrease in consumption for sweetened beverage including bubble tea are testaments that people had high intention to protect their health during the pandemic (Barry, 2020; Jia et al., 2020). The data from Italian research also demonstrated a decline in unhealthy consumption of soft drinks, sweetened beverage, junk food, and processed meat. The researchers opined that this could be linked to the fear that diabetic and obese persons are more vulnerable to Covid-19 infection (Renzo et al., 2020). Women, elderlies, and highly educated consumers are found to be more health conscious and willing to participate in health-related surveys (Giacalone et al., 2020; Renzo et al., 2020).

Interestingly, some research discovered opposite outcome. People are reported to be less health conscious and they consume unhealthily during Covid-19. Being homebound more made them bored and stress, which lead them to consume unhealthily such as emotional binging, snacking, and ordering take-outs often. In this situation, studies showed that women were more susceptible to this than men (Giacalone et al., 2020; Renzo et al., 2020). A survey in Denmark also uncovered a 10% year-on-year basis rise in sugary drinks sales, be it carbonated or non-carbonated beverage around April 2020 (Giacalone et al., 2020). As Covid-19 is a global health crisis, it is important to investigate the effect of health consciousness in predicting consumer's intention to buy Boba drink during Covid-19. Thus, the following hypothesis is ensued based on those observations.

**H3:** *Attitude has significant relationship with consumer purchase intention on Boba drink during Covid-19.*

#### **2.4. Perceived risks (PR)**

PR is a personal opinion on one's vulnerability during unsafe circumstances (Jansson, 2019). The addition of PR could improve the TPB model's fit, especially when consumers feel threatened by a myriad of ambiguities ensued from Covid-19 (Hakim et al., 2021; Hesham et al., 2021; Nguyen & Gizaw, 2014). Numerous findings in the past revealed that during uncertain times, consumers preemptively reduce their perceived risks by avoiding circumstances that could possibly jeopardize them. Some of the common risks identified in previous studies are financial risk, psychological risk, and perceived safety (Baskaran et al., 2017; Hesham et al., 2021; Khofanda & Belgiawan, 2018; Nguyen & Gizaw, 2014).

Financial risk is the concern one has on one's odds of subjecting to monetary loses due to poor decision choices (Hesham et al., 2021; Nguyen & Gizaw, 2014). The instability of the economy that had resulted in job loss and pay cut made consumers be cautious about their expenditure to avoid losing money unnecessarily during Covid-19 (Hesham et al., 2021). Hesham et al. (2021) revealed that young adults and working-class people are more vulnerable to this kind of risk. Contradictorily, Nguyen and Gizaw (2014) revealed that economic factor did not pose financial risk to consumer and restrain their purchase intention, especially for healthy beverage. Consumers still intent to purchase beverage despite having financial constraints.

Psychological risk is the risk related to the dependency of shoppers on the public's judgment on them with regard to their purchase decision (Nguyen & Gizaw, 2014). It is also a kind of risk that relates to the consumers' low self-confidence and their fear in their purchasing decision. These perceived risks are attributed to their self-doubt in their own judgment, ambiguity about their personal needs, and unable to discern the appropriate choices at the given situation (Hesham et al., 2021). A finding reported that the biggest factor that contributes to the pandemic fear is the



health concern for the loved ones, followed by the respondents' worry for their own health (Mertens et al., 2020).

Moreover, perceived safety is also aggregated under perceived risks in various literature. Perceived safety is a person's opinion on his/her vulnerability in unsafe circumstances (Jansson, 2019). Few researchers had incorporated this in food and beverage (F&B) study and the risks are divided into two main categories, namely consumption safety and restaurant safety (Baskaran et al., 2017; Hakim et al., 2021; Lin & Roberts, 2019). Consumption safety refers to the likelihood to be infected with disease from eating or drinking certain food or drink. When it comes to F&B intake, consumers are concerned about the ingredients, nutritional value, whether the raw ingredients are genetically engineered, and their quality (Baskaran et al., 2017). Some consumers are also mindful about the cleanliness and want to ensure that their F&B are free from contamination (Hesham et al., 2021). This is supported by Alhousseini and Alqahtani (2020) who reported that consumer's intention to purchase F&B from outside during Covid-19 was lowered due to contamination concern. The pandemic has also made consumers to place more importance in restaurant safety, including other F&B outlets (Hakim et al., 2021). They want to assure that the premise is safe by following the preventive guidelines such as social distancing, so that they can trust that their health risk is minimized.

In a nutshell, the severity of Covid-19 triggers consumers to be socially anxious and constantly mindful about safety of their health due to the fear of getting infected (Hakim et al., 2021; Hesham et al., 2021). Hence, the following hypothesis is postulated based on prior works.

**H4:** *Perceived risks due to Covid-19 have significant relationship with consumer purchase intention on Boba drink.*

### 3. Research methodology

#### 3.1. Sample design and measures

According to the estimation by the United Nation (UN), the population in Kuching city is approximately 711,500 people according to 2020 population census conducted by Department of Statistics Malaysia. However, Boba drink consumer population in the city is unknown. Convenience sampling method was applied and this study only targets respondents who reside in Kuching. According to the Krejcie and Morgan's (1970) table, for a population size of one million people, a minimum of 384 respondents were required to fulfill the sample size to have 95% accuracy level and an error margin of 5% for this study (Krejcie & Morgan, 1970). Thus, 384 observations are adequate in this study even though not all Kuching city residents are drinking Boba drink. The survey respondents are identified through students of Universiti Malaysia Sarawak (UNIMAS), Boba drink online communities on Facebook and Instagram, Boba drink stores' Facebook and Instagram page.

An online self-administered questionnaire using Google form was used as the instrument for data collection. The survey was performed digitally because the whole country just went into lockdown which made it difficult to conduct field survey then. The questionnaire was developed in three languages (English, Malay Language, and Mandarin) to suit the respondent's preference in this multilingual city. The designated online census link was disseminated through social media such as WhatsApp, Instagram, and Facebook, and participation consent was provided. Overall, this survey was conducted for a week (from 31 May to 7 June 2021) and a total of 399 forms were returned in the end.

The questionnaire contains three sections. Section A collects the socio-demographic details (age, sex, highest education level, personal gross monthly income level, etc.). Items such as

respondents' Boba drink consumption, experience in buying the beverage online, and their perception on the price of Boba drink before and during Covid-19 were asked in this section too. On the other hand, Section B collects information pertaining to the independent variables of this study (perceived behavioral control, attitude, subjective norms, and perceived risks). Section C asks about consumer purchase intention for Boba drink during Covid-19. A 9-points endpoint anchored Likert scale was employed to examine the respondents' degree of agreement on the items more precisely. Endpoint 1 was anchored to "strongly disagree" and endpoint 9 was anchored to "strongly agree". Lastly, 7 items in the questionnaire were recoded from negative statements to positive statements after the data had been collected, to avoid acquiescence bias.

### 3.2. Data analysis

Out of the 399 observations collected from this survey, 394 are complete and usable. The data were analyzed through four statistical analyses, namely descriptive statistics, Cronbach's Alpha analysis, exploratory factor analysis (EFA), and Kendall's Tau-b correlation analysis. All the analyses were computed through SPSS developed by IBM. Descriptive analysis was carried out to gain an overview of the data distribution by evaluating the socio-demographic and the respondents' Boba drink consumption information. The findings are summarized in Table 1. According to Table 1, 60.9% of the respondents are female, while 39.1% are male. Majority of them (60.7%) are 19–36 years old, while the model education level and income level are, respectively, first degree (43.3%) and RM 2001 to RM4000 per month.

**Table 1. The demographic details of the sample population (n = 394)**

Demographics variables	Frequency (N)	Percentage (%)
<b>Sex</b>		
Male	154	39.1
Female	240	60.9
<b>Age</b>		
18 or below	26	6.6
19–24	96	24.4
25–30	91	23.1
31–36	52	13.2
37–42	38	9.6
43–38	31	7.9
49–54	24	6.1
55 or above	36	9.1
<b>Highest education level</b>		
Doctorate (PHD) or equivalent	4	1.0
Master's degree	28	7.1
Bachelor's degree	171	43.3
Diploma or equivalent	60	15.2
STPM or equivalent	50	12.7
Secondary school	71	18.0
Primary school	10	2.5
<b>Personal gross monthly income</b>		
Less than RM2000	125	31.7
RM2001—RM 4000	143	36.3
RM4001—RM 6000	66	16.8
RM6001—RM8000	38	9.6
More than RM8000	22	5.6

## 4. Results and findings

### 4.1. Principal component analysis (PCA)

Principal Component Analysis (PCA) had been conducted for this study to discover the true underlying construct of data to examine if the items in the questionnaire can be grouped and factorized together (Glen, 2021). Two preliminary tests were administered before conducting PCA to examine the suitability of the samples for factor analysis. They were Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test for Sphericity. The cut-off value that needs to be attained at least to pass the KMO test is 0.60; otherwise, improvements would be needed (Glen, 2016). As for Bartlett's Test, if the marginal significance value,  $p$ , is less than 0.01 ( $p < 0.01$ ), it means that the dataset in the model can be factored together (Zach, 2019). If the dataset fulfills the criteria for factor analysis, then PCA is performed. As noted by Kanyongo (2006), based on Kaiser (1960) rule, any data that has Eigenvalue over one will be extracted as factors.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value for this study is 0.813 (Table 2), which is meritorious (Kaiser, 1974). Besides, all data were correlated by the Bartlett's sphericity test (Glen, 2014a) for correlation (approximate  $\chi^2 = 2924.204$ ,  $p < 0.001$ ), implying that the dataset can be summarized into some factors. Both of these tests revealed that the dataset in the model is suitable for factor analysis.

The total variance explained from Principle Component Analysis (PCA) in Table 3 shows four components' initial Eigenvalues are above unity. These components are extracted as main factors, and they make up 62.98% of the entire dataset's variance.

The PCA analysis results in Table 3 suggest that four factors in the model are suitable to explain consumer purchase intention on Boba drink in Kuching during Covid-19. Referring to Table 4, the first factor which comprises six items and have high reliability ( $\alpha = 0.866$ ) can be regarded as attitude (ATD). It explains 28.193% of the variance. The next factor has three items related to subject norm (SN) with high internal consistency ( $\alpha = 0.878$ ). SN accounts for 17.875% of the variance. The third factor consisting of four items related to perceived risks (PR) with reliable internal consistency ( $\alpha = 0.751$ ). It constitutes 9.684% of the variance. It is noteworthy that one item related (not shown in Table 4) to PR was removed because the alpha coefficient generated was below the threshold of 0.60 ( $\alpha = -0.417$ ). This denotes that it did not correlate well with the

**Table 2. The outcome of KMO measure and Bartlett's test of sphericity**

KMO measure of sampling adequacy		0.813
Bartlett's test of sphericity	Approx. Chi Square	2924.204
	df	0.136
	Sig.	0.000

**Table 3. Total variance explained**

Component	Initial Eigenvalues		
	Total	% of variance	Cumulative %
1	4.793	28.193	28.193
2	3.039	17.875	46.068
3	1.646	9.684	55.752
4	1.229	7.228	62.980
5	0.985	5.796	68.775

Note: Results after 5<sup>th</sup> component are omitted to conserve space.

**Table 4. Rotated Component Matrix**

Items	Component			
	1	2	3	4
I care about my health a lot.	0.805			
Covid-19 makes me worried about my own health.	0.796			
I avoid drinking beverages with high content of additives.	0.795			
I know that Boba drink contains a lot of additives	0.793			
I think many people underestimate Covid-19's impact on people's health.	0.731			
I am worried that excessive sugar in Boba drink would put my health at risk for Covid-19.	0.704			
My friends' opinion about me buying Boba drink during Covid-19 is important to me.		0.904		
My family's opinion about me buying Boba drink during Covid-19 is important to me.		0.883		
My society's opinion about me buying Boba drink during Covid-19 is important to me.		0.831		
I'm worried about the hygiene of Boba drink during Covid-19.			0.805	
I'm worried that I'll unknowingly get infected by Covid-19 if I go to the store to buy Boba drink.			0.795	
Covid-19 makes me worried about my loved ones.			0.678	
Seeing people losing income makes me worried about my spending.			0.628	
During Covid-19, I can afford Boba drink.				0.852
During Covid-19, I can buy Boba drink conveniently.				0.780
% Of variance	28.193	17.875	9.684	7.228
Cronbach's Alpha	0.866	0.878	0.751	0.645

**Table 5. Summary of Component/Factor and Cronbach's Alpha**

Component	Factor	Number of items	Cronbach's Alpha, $\alpha$
1	Attitude	6	0.866
2	Subjective norm	3	0.878
3	Perceived risks	4	0.751
4	Perceived behavioral control	2	0.645

model. Lastly, the fourth factor contains two items only related to perceived behavioral control (PBC) with an acceptable internal consistency ( $\alpha = 0.645$ ). PBC is able to account for 7.228% of the variance.

#### 4.2. Internal consistency

Cronbach's Alpha analysis is conducted to ensure the internal consistency of the survey is acceptable (Field, 2006). Ursachi et al. (2015) suggested that the cut-off Alpha value,  $\alpha$  of 0.60, shows sufficient level of reliability. Any item with Alpha value less than 0.60 needs to be removed to improve the survey Glen, S. (2014b, December 8).. As a result, one item in subjective norm was removed because it reduces the internal consistency (Cronbach's Alpha,  $\alpha = 0.477$ ). After the adjustment, all items testing for independent variables scored above 0.60, which fall under the acceptable range (Table 5). The variable that scores the highest reliability is subjective norm at  $\alpha = 0.878$ , followed by attitudes at  $\alpha = 0.866$ , perceived risks at  $\alpha = 0.742$ , and lastly perceived behavioral control at  $\alpha = 0.645$ . Hence, the enhanced internal consistency of the survey is now ready for the examination of consumer purchase intention on Boba drink during Covid-19.

#### 4.3. Kendall's Tau-b correlation analysis

To examine the research hypotheses, Kendall's Tau-b's ( $T_b$ ) analysis was used to analyze the relationships between PBC, SN, ATD, PR, and consumer purchase intention (CPI) for Boba drink during Covid-19. Unlike Pearson correlation analysis which is applicable to normally distributed quantitative variables, Kendall's Tau-b's correlation analysis can be applied to data with at least ordinal level of measurement, regardless of probability distribution. Partial Kendall's Tau-b correlation analysis was also carried out by controlling the demographic factors to test their influence on the association between PBC, SN, ATD, PR, and CPI. The mentioned demographic factors were the respondent's sex, age, highest education level, and personal gross monthly income.

The outcome of Kendall's Tau-b correlation analysis as shown in Table 6 reveals that the association between PBC ( $T_b = 0.386$ ,  $p < 0.01$ ), ATD ( $T_b = -0.214$ ,  $p < 0.01$ ), SN ( $T_b = 0.111$ ,  $p < 0.01$ ), PR ( $T_b = -0.201$ ,  $p < 0.01$ ), and overall CPI of Boba drink are all significant at 1% significant level ( $p < 0.01$ ). Thus, all four hypotheses are supported. Moreover, both PBC ( $T_b = 0.386$ ) and SN ( $T_b = 0.111$ ) show positive relationship with overall CPI. This indicates that the more the consumer believe they are able to acquire Boba drink, the higher their intention to buy Boba drink during Covid-19. Moreover, when close references (e.g., family, friends, and society) support of the consumer's decision to buy Boba drink during Covid-19, the consumer's intention to buy the beverage increases. Otherwise, consumer intention to buy the beverage is reduced when close references do not encourage the consumer to buy Boba drink. The strength of all associations is weak, except PBC. PBC has moderate association with overall CPI ( $0.35_b \leq 0.67$ ) based on the correlation indicators proposed by Mason et al. (1983).

On the other hand, ATD ( $T_b = -0.214$ ) and PR ( $T_b = -0.201$ ) show inverse relationship with overall CPI. The negative  $T_b$  implies inverse relationship while the magnitude of  $T_b$  for both ATD and PR implies weak relationship. This means that a more (less) health-conscious consumer has less (more) intention to buy Boba drink during Covid-19. This is coherent with the findings (but are

**Table 6. The Kendall's Tau-b ( $T_b$ ) correlation analysis result**

Variables	PBC	SN	ATD	PR
Overall CPI	.386**	.111**	-.214**	-.201**
CPI to buy more Boba drink <sup>#</sup>	.049	.067	-.420**	-.277**
CPI to buy Boba drink online	.283**	-.023	-.028	-.009
CPI to buy Boba drink online more <sup>#</sup>	.039	.052	-.376**	-.253**

Notes: CPI stands for overall consumer purchase intention of Boba drink, PBC stands for perceived behavioral control, SN stands for subjective norm, ATD stands for attitude, and PR stands for perceived risks. # indicates consumers are asked to reveal their purchase intention during Covid-19, compared to before Covid-19 pandemic outbreak. Asterisks (\*\*) indicates correlation is significant at 1% significant level (2-tailed).

not Covid-19 related) in prior literature (Hesham et al., 2021; Nguyen & Gizaw, 2014; Zhang et al., 2020).

As depicted in Table 6, PBC has a significant role not only on CPI in general but also intention to buy Boba drink online ( $T_b = 0.283, p < 0.01$ ). This signifies that consumer intend to buy more (less) Boba drink when they believe buying beverage (both online or otherwise) is more (less) convenient to them.

ATD shows moderate and significant inverse relationship ( $T_b = -0.420, p < 0.01$ ) with CPI for Boba more drink during Covid-19, compared to before Covid-19 outbreak. Similarly, ATD also exhibits moderate and significant inverse relationship ( $T_b = -0.376, p < 0.01$ ) with CPI to buy Boba more drink online during Covid-19, compared to before Covid-19 outbreak. This signifies that a more health-conscious consumer has less intention to buy more Boba drink, even if it is online, during Covid-19. So, there is a significant negative association between attitude and CPI on Boba drink during Covid-19.

On the other hand, compared to before Covid-19 outbreak, consumers who have higher (lower) perceived risks (PR) have intention to buy less (more) intention to buy Boba drink in general during Covid-19 ( $T_b = -0.277, p < 0.01$ ). Similar finding is true for Boba drink online purchase intention ( $T_b = -.253, p < 0.01$ ).

To examine if demographic factors such as sex, age, highest education level, and personal gross monthly income exert influence on the relationship between the four factors and consumer purchase intention, partial Kendall's Tau-b correlation analysis is performed. This will avoid misleading results due to confounding factors, if any. The results are summarised in Tables 7 and 10, respectively. Overall, it is evident from these tables that demographic factors do not alter the nature and significance of the relationship between CPI and PBC, SN, ATD as well as PR as reported in Table 6.

**Table 7. Partial Kendall's Tau-b correlation analysis result controlled for sex**

Variables	PBC	SN	ATD	PR
Overall CPI	.493**	.143**	-.236**	-.291**
CPI to buy more Boba drink	.010	.021	-.465**	-.250**
CPI to buy Boba drink online	.345**	-.033	-.039	-.066
CPI to buy Boba drink online more	.044	.004	-.399**	-.213**

Note: See footnotes to Table 6.

**Table 8. Partial Kendall's Tau-b correlation analysis result controlled by age**

Variables	PBC	SN	ATD	PR
Overall CPI	.492**	.167**	-.240**	-.311**
CPI to buy more Boba drink	.009	-.004	-.462**	-.238**
CPI to buy Boba drink online	.350**	-.012	-.045	-.081
CPI to buy Boba drink online more	.042	-.010	-.397**	-.208**

Note: See footnotes to Table 6.

However, it could be seen from Table 7 to Table 10 that all the relationships observed in Table 8 are strengthened after accounting for the possible confounding demographic factors.

Overall, this study is able to find statistical evidences to support all the four research hypotheses. Furthermore, the significant relationship established in this study is relatively stable even if the cofounding effects of demographic variables such as sex (Table 7), age (Table 8), highest education level (Table 9), and personal gross monthly income (Table 10) level have been considered.

### 5. Discussion

This study shows that Perceived behavioral control (PBC), subjective norm (SN), attitude (ATD), and perceived risks (PR) and have significant relationship with consumer purchase intention on Boba drink during Covid-19. Perceived behavioral control and subjective norm are found to have direct relationship on consumer purchase intention (CPI) for the beverage during the pandemic. This means that consumers have intention to buy Boba drink because they believe they have the ability to do so. Based on the survey, consumers intended to buy Boba drink during Covid-19 because they could afford Boba drink. This is likely because Boba drink normally cost around RM6.90 to RM10 in Kuching, which is considered relatively affordable for non-alcoholic leisure beverage. The result also indicates that PBC has significant and moderate relationship with CPI to buy Boba drink online. This is likely because consumers typically find it convenient to buy Boba drink during Covid-19 as they know they can order the beverage online, despite the mandated mobility restrictions. This convenience increased their PBC, and thus increased their intention to buy Boba drink during this time. This finding is consistent with previous findings, for instance, Alhusseini and Alqahtani(2020).

Subjective norm (SN) has positive influence on CPI on Boba drink during Covid-19. If close references for examples family, friends, and society support consumers' decision to buy Boba drink during the pandemic, then consumers will have high intention to do so. They are prone to refer to their friends for behavioral guidance because they tend to share similar preferences and their support is important (Books, 2021). Family also plays a role in influencing their purchase intention during Covid-19 because consumers fear their purchase decision would pose health risks

**Table 9. Partial Kendall's Tau-b correlation analysis result controlled by highest education level**

Variables	PBC	SN	ATD	PR
Overall CPI	.493**	.148**	-.238**	-.291**
CPI to buy more Boba drink	.016	.019	-.463**	-.252**
CPI to buy Boba drink online	.366**	-.041	-.040	-.058
CPI to buy Boba drink online more	.033	.010	-.399**	-.216**

Note: See footnotes to Table 6.

**Table 10. Partial Kendall's Tau-b correlation analysis result controlled by personal gross monthly income**

Variables	PBC	SN	ATD	PR
Overall CPI	.504**	.146**	-.234**	-.289**
CPI to buy more Boba drink	.005	.022	-.469**	-.253**
CPI to buy Boba drink online	.358**	-.036	-.038	-.058
CPI to buy Boba drink online more	.038	.004	-.404**	-.215**

Note: See footnotes to Table 6.

to their family (Mertens et al., 2020). Subjective norm in the form of society's view also affects intention to buy Boba drink during Covid-19. It is likely because consumers intend to abide by the preventive measures publicly, to gain society support and avoid posing great risk to people around them. However, this subjective norm in general only impact the consumer purchase intention at a weak degree. This is plausibly because more than one-half of the consumers who had participated in this study were educated adults (attended at least diploma level of education) aged between 19 and 36 years old (about 60%). They might think that Boba drink is a kind of leisure drink that does not require difficult decision-making. They could purchase the beverage at their own discretion without having to depend heavily on other's opinion on their purchase decision.

Subjective norm (SN) and attitude (ATD) are found to have significant inverse relationship with consumer purchase intention of Boba drink during Covid-19. This means that consumers with positive attitude towards health consciousness tend to lower their intention to purchase Boba drink during Covid-19. In other words, health-conscious consumers were unlikely to buy more Boba drinks during Covid-19, which is deemed as a kind of unhealthy drink, more so during this health crisis amid Covid-19. This is consistent with Nguyen et al. (2020) who reported significant impact of attitude in influencing CPI for healthy food and beverage. The result from the survey of this study also reveals that health-conscious consumers are more likely to engage in healthy practices such as avoiding consuming drinks with high content of sugar and artificial additives. Besides, they would pay attention to their health and educate themselves about health-related information like the adverse health impact of Covid-19. All these traits influence their purchase intention for Boba drink during Covid-19 and these characteristics are in line with prior literature (Gould, 1988; Tangtienchai, 2015; Yang et al., 2014).

The above factors are consistent with Theory of Planned Behavior. This study argues that during health crisis like Covid-19, perceived risks (PR) plays a significant role in consumer purchase intention of Boba drink in specific and food and beverage consumption in general. From the perspective of perceived risks (PR), the more the consumer perceived a situation is risky, the lower is their intention to purchase Boba drink during Covid-19. Based on the survey, consumers felt threatened by the effect of Covid-19 on the hygiene of the beverage and possibly unknowingly be a victim of the viral disease due to Boba drink. One possible explanation is that the consumers tended to doubt the health condition of the people who are in contact with them during the course of acquiring and processing the beverage, such as the baristas, other customers in the store, and food delivery agents. From the survey, consumers were also worried that they would spread the disease to their loved ones if they indirectly contracted Covid-19 from buying Boba drink. Moreover, consumers were worried about their expenditure due to the financial uncertainty ensued from the effects of unstable economy, as a big portion of them (nearly 70% of the respondents) earned up to RM4000 only per month. This caused them to avoid buying Boba drink during this time. The observations in this study are consistent with prior works too (Hesham et al., 2021; Khofanda & Belgiawan, 2018).



## 6. Limitations and direction for future research, managerial implications, and conclusion

### 6.1. Limitations and direction for future research

Several limitations are detected in this study. First, the independent variables in this research showed only weak to moderate association with consumer purchase intention on Boba drink during Covid-19. A possible reason could be that the sample comprised respondents who knew about the beverage but not necessarily had ever consumed it, nor consumed it regularly prior to Covid-19. Their responses were likely to be based on their general assumption about the beverage and does not precisely reflect their true intention. In this case, responses from Boba drink consumers would truly be more beneficial for this study. Hence, some improvements need to be done, such as examining how much the respondents actually like consuming Boba drink, and the importance of the beverage to them, to investigate their purchase intention change when a crisis happen. These improvements might be able to enhance the robustness of future studies on this topic.

Besides, there was an issue in finding the proper terminology for the beverage. Initially, the commonly known term “Pearl Milk Tea” was considered to be used in this study as the term to describe beverage that contain tapioca balls. However, this name was not chosen because technically not all Boba drink have milk tea as the beverage base. Some sellers use fruit juice, slushies, yogurt-drink, or plain tea without milk as the base of the beverage. This would cause confusion to some respondents and affect their response on this study. Thus, “Boba drink” was selected as the term to describe the beverage as it encompasses all kinds of beverage that have Boba in it.

### 6.2. Managerial implications

Given that perceived behavioral control could significantly affect consumer purchase intention on Boba drink during Covid-19, Boba retailers are encouraged to offer their beverage at affordable price to continue attracting their consumers during pandemic period. Retailers should also provide online take-out service and register themselves in as many food-delivery platforms as possible so that their customers can order beverage from them at their convenience.

Besides, considering that attitude plays an eminent role in encouraging purchase intention for Boba drink during the pandemic, Boba drink sellers should design marketing strategies that targets consumers’ health-conscious belief. For instance, sellers could launch new and healthy Boba drink recipes. They could design informative cup seals or stickers too to educate the health-benefits of the ingredients contained in their beverages (for example, “Oolong tea can boost immunity”). Moreover, sellers should always ensure their customers are aware that they can customize their sugar level in their beverage and always encourage them to do so to reduce their sugar intake. Additionally, to minimize customers’ vulnerability to the viral infection, sellers should encourage their consumers to order the drink online by giving them special discounts, while walk-in consumers would have to pay full price for the beverage. These steps could potentially gain the customers confidence on the sellers and help sellers to maintain their business in this trying economic times.

Lastly, local enforcement authorities should often do spot-check from time-to-time on the Boba drink outlets to ensure they abide by the preventive and hygienic measures. Apart from wearing mask, authorities should also require food and beverage vendors to wear mouth or face shield always when they are preparing food or beverage for consumers. This should be done to provide double protection against viral transmission and boost consumers’ confidence.

### 6.3. Conclusion

In a nutshell, this study validated the influence of perceived behavioral control, subjective norm, attitude, and perceived risks on consumer purchase intention on Boba drink during Covid-19. This study reveals that consumers’ intention to buy Boba drink during Covid-19 is more affected by their

perceived behavioral control, followed by their attitude, perceived risks, and subjective norm. Therefore, Boba drink retailers could refer to the findings of this study to devise proper marketing strategies to encourage consumers to buy their beverage. Lastly, this study provides empirical reference for future researches.

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