



# Analysis of Consumers' Consumption Behaviours Under the Background of the COVID-19 Pandemic

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**Abstract.** Since the beginning of 2020, the COVID-19 pandemic has started of a sudden without giving people any time to prepare. When people were facing challenges, for instance, a shortage of medical supplies, their familiar lifestyles were becoming inapplicable. The relatively high unemployment rate, rupture of the capital chain, business failure and inflation seemed to show up in people's lives at the same time. The impact of the COVID-19 pandemic on consumers has been considerable enough to force people to adapt to the new environment with existing technologies and knowledge. On account of the COVID-19 pandemic, some industries such as the car-hailing industry and tourism have encountered the 'winter season' and some industries such as the online shopping industry, fresh industry and distribution industry have boomed. In other words, consumers have been trying to accommodate and developed their new consumption behaviours and derived outcomes. This paper has analysed and summarised the changes in consumers' consumption behaviours, consumption preferences, consumption styles and preferred payment methods based on the present economic situation.

**Keywords:** COVID-19 pandemic · Consumption · Consumers · Public health · Online shopping

## 1 Introduction

### 1.1 Background

According to data released by the World Health Organization in mid-August, the cumulative number of confirmed cases of the COVID-19 reported worldwide has exceeded 590 million, of which 6,440,163 people have died. More and more people are becoming 'netizens' (net citizens) and this tendency has got increasingly significant since the COVID-19 pandemic particularly. This has led consumers to shift from the real to the virtualisation. Due to consumers' high concern for public health, consumers' behaviours are also altering to adapt to the new consumption system. Such a tendency and phenomenon are particularly special, it is vital, essential and worth studying.

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## 1.2 Related Research

Before the COVID-19 pandemic, the general consumption environment had several described characteristics below [1]: firstly, the increasing trend of consumption growth between 2010 and 2019 was continuously slowing down and this could be explained by the reduced consumption of merchandise such as mobile phones and vehicles and the reducing consumption in the tertiary sector, film and tourism for instance, in a one-sided way. Secondly, fresh consumption behaviours were brought out as, first, the 'ecosystem' of commerce and consumption was approaching to be thorough, and second, the new-fashioned digitised modes of payment such as Apple pay, Google pay, Wechat pay and Alipay started to be popularised and third, the new technologies such as 5G and AI started to be commercially used. Thirdly, there were not any significant fluctuations due to a stable rate of employment and a situation where the level of income can support the potential growth of consumption.

This helped make online consumption mainstream and it was also based on some advantages of online consumption itself. For example, as the price is always the main concern of consumers, the convenience of price comparison and commodity comparison provided by online consumption is particularly outstanding. The comfort of online consumption was also improved due to the continuous upgrading of mobile networks and media technology [2].

What is hard to deny is that young consumers are a major consumer group in society. Their consumption style is more in line with the general preference and they are the potential consumers of the future, at least for a decent while. More importantly, they are the group of users best capable of adapting to the new-fashioned digitised modes of payment. Cautiousness and the coexistence of rational and irrational consumption behaviours are the features of young consumers' consumption behaviours [3]. Among the young consumers, college students command a large proportion. Through the survey, their consumption was classified as social expenditure, predilection expenditure, basic expenditure and internet expenditure. The factors that have the potential to influence college students' consumption behaviours were also analysed, such as sentimental consumption behaviours, celebrity effect, gender differences and family factors. The concept of consumption stages for college years was put forward at the same time [4, 5].

During the COVID-19 pandemic, from the consumption environment and economic pattern to consumption styles, preferred payment methods and consumer preferences, they have been all affected to varying levels. Besides, there has been a rapid development of internet culture. All causes and effects seem to be global. More and more scholars begin to study and deepen this topic.

Although, at the initial stage of the COVID-19 pandemic, the market was in a record slump. Through the efforts of citizens and medical professionals, the consumer market has entered the recovery stage successfully. This is because consumer spending has appeared signs of improvement and there has been a noteworthy increase in the consumption of goods that can be upgraded and replaced. What is more, polarisations are appearing in the market as well which mainly embody in three following aspects. Firstly, the recovery of clustering consumption is slower than product consumption. Secondly, the recovery of the consumption of medium-income and low-income groups is slower than the recovery of the consumption of high-income groups. Thirdly, the pandemic

has forced the popularisation of new-fashioned digitised modes of payment (mentioned above) in advance [6, 7].

For a more complete analysis of consumers' consumption behaviours, the research has been extended to analyse from the perspective of psychology. Starting with safety needs and the motivation for security, therefore, explains impulsive consumption, for example, rushes on medical supplies [8].

### **1.3 Objection, Motivation and Framework**

This article is aimed at analysing and summarising current consumers' consumption behaviours based on existing research results. It is motivated to introduce the present situation, consumption environment and some viewpoints to readers. Most papers were established between 2020 and 2022 and focused on the COVID-19 pandemic and consumption could be selected to cite.

## **2 Methodology**

This section has explained literature analysed in four aspects. They are databases searched, selection criteria, categorisation of papers and reports, and research methods of papers and reports.

### **2.1 Databases Searched**

The databases searched consists of Baidu Scholar, CNKI, Frontiers, Google Scholar, iResearch Global, National Bureau of Statistics in China Database, PLOS ONE, Quest Mobile, Simple Psychology, The Central Bank of the People's Republic of China Database and World Health Organisation Database.

### **2.2 Selection Criteria**

In term of regions and languages, studies in China, Italy, Spain, the United States of America and the United Kingdom are referred to. Papers were only written in either Chinese or English.

### **2.3 Categorisation of Papers and Reports**

The COVID-19 pandemic has affected multiple industries. Scholars have started studying the impact brought by the COVID-19 pandemic on their fields. Papers and reports are referring to business, economics, marketing, psychology and statistics.

## 2.4 Research Methods of Papers and Reports

The majority of papers and reports were carried out by a series of questionnaires, surveys and interviews. The sample size was between 150 and 20000. Some papers and reports were citing secondary researches, and some involved several models and theories. Among models applied in papers and reports, business model design (BMD), logit models, probit models and multiple regression models were employed. They were careful in selecting control variables such as gender, age, education attainment and income level. In term of theories, there were theories, such as terror management theory and Maslow's hierarchy of needs mentioned.

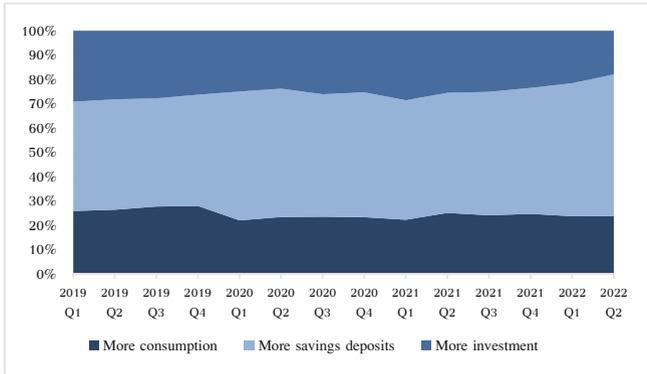
## 3 Classification of Research Contents

The COVID-19 pandemic has reshaped the environment of consumption and altered many economics conditions. Consumers' consumption behaviours and preferred payment methods are varying. The diversity of the crowd and demands is making the consumption system develop towards the direction of individuation. The advanced technology and the impact of the COVID-19 pandemic on people's daily lives have also contributed to the individuation development of the consumption system. This content has divided some available research achievements into two aspects for analysis and summary.

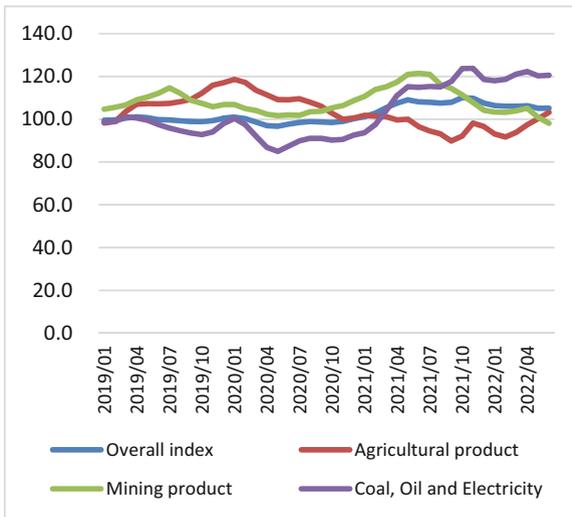
### 3.1 Economics and Consumption Behaviours Under the COVID-19 Pandemic

#### Consumers' Willingness to Save, Deposit and Invest

Since COVID-19 pandemic, residents' willingness to save has shown an upwards trend whereas their willingness to consume has gone the opposite way, the pandemic has appreciated many goods, therefore, consumers were less willing to purchase. And it is worth noting that residents' willingness to invest started declining even before the COVID-19 pandemic in 2019, as shown in Fig. 1. Despite a few small consumption and investment booms, the consumption level was still relatively low, and the idea of the stage of recovery has not started yet is reasonably valid. In other words, based on four stages of psychological change of residents when experiencing public health emergency mentioned by a past study [8], namely alarm stage, passive defense stage, adaptive stage, and recovery stage. It is most likely that the majority is still at the adaptive stage as the current medical conditions are fairly enough to manage the outbreak but the current economic conditions are not prepared enough for an economic rebound. According to the corporate goods price indices carried out by the People's Bank of China, as shown in Fig. 2, the overall index is becoming higher and higher and energy prices particularly, had an outstanding growth. The problem of excess demand and supply shortage of some goods is also magnified. For instance, pork price has increased continuously due to an excess of demand, a supply shortage and African swine fever during the COVID-19 pandemic [9].



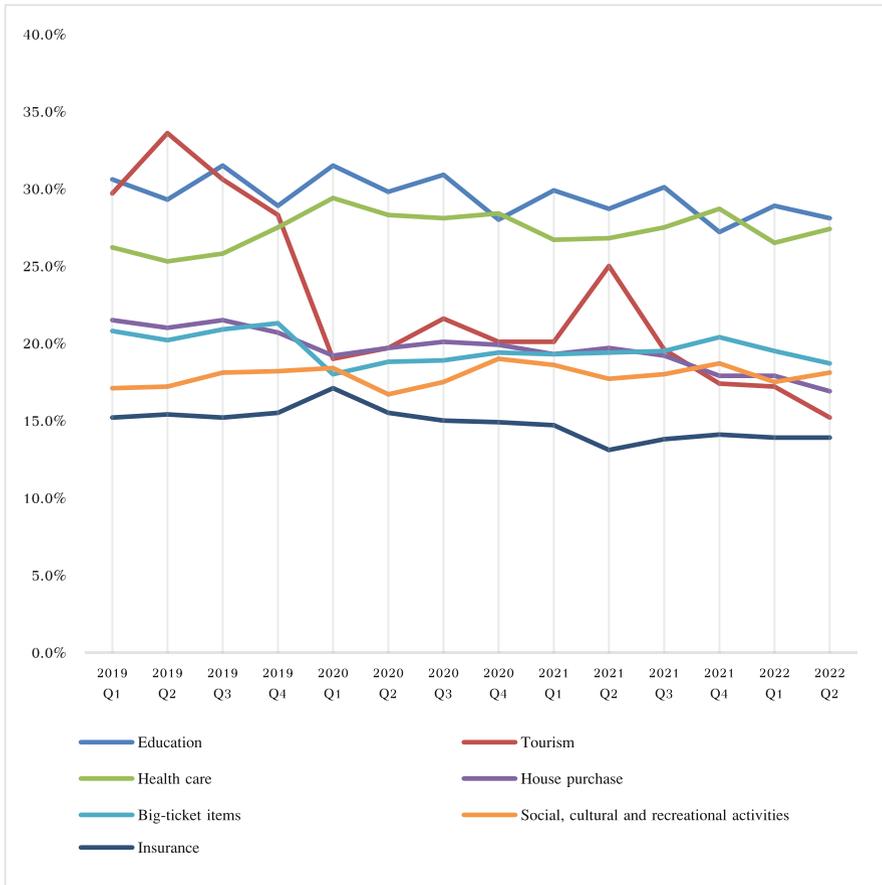
**Fig. 1.** Residents’ Willingness to Consume, Save And Invest (Data source: <http://www.pbc.gov.cn/en/3688006/index.html>, Photo credit: Original)



**Fig. 2.** Corporate Goods Price Indices (CGPI) (Data source: <http://www.pbc.gov.cn/en/3688006/index.html>, Photo credit: Original)

### Items on Which Residents Plan to Spend More Over the Next Three Months

By analysing items on which residents plan to spend more over the next three months, as shown in Fig. 3, there are items such as education, tourism, health care, house purchase, big-ticket items, social, cultural and recreational activities and insurance. It is reasonably to state that residents have started attaching importance to their health care and the correlation between the severity of the COVID-19 pandemic and residents’ daily lives is significant. As suggested by previous research [10], residents’ willingness to purchase commercial health insurance was found to be strongly positive correlated to the impact of the COVID-19 pandemic. In terms of tourism, it is deeply affected by the COVID-19

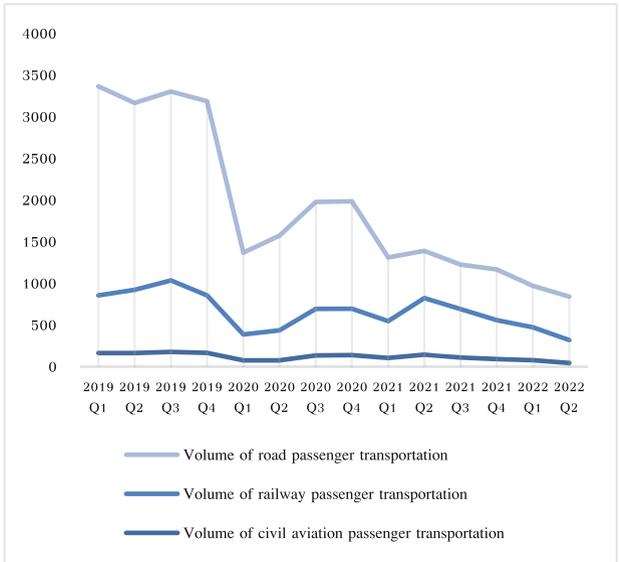


**Fig. 3.** Items On Which Residents Plan to Spend More Over The Next Three Months (Data source: <http://www.pbc.gov.cn/en/3688006/index.html>, Photo credit: Original)

pandemic. This was also suggested by the report carried out by the Ministry of Transport of the People's Republic of China, as shown in Fig. 4.

### Loan Demand, Credit, Leverage and Economic Growth

By analysing loan demand indices, as shown in Fig. 5 and Fig. 6, from the first quarter in 2019 to the second quarter in 2022, the overall loan demand index has decreased. Manufacture sector, infrastructure sector and firms of all sizes are having less loan demand. On the one hand, cash flow and debt financing issues were discovered in a large number of enterprises. Previous literature [11] has concluded that the stringency of pandemic prevention policies introduced by countries has affected comparatively the ability of debt financing by firms during the COVID-19 pandemic. The relationship between the stringency of pandemic prevention policies and the ability of debt financing was positively associated. In countries with strict pandemic prevention policies, firms



**Fig. 4.** Volume of road, railway and civil aviation passenger transportation (million passengers) (Data source: Ministry of Transport of the People’s Republic of China, Photo credit: Original)

have been increasingly worrying about their liquidity. This seems to be negatively effective on loan-borrowers and loan lenders due to the distribution of household wealth in China, a share of 70% of China’s household wealth was in real estate [12]. On the other hand, past literature stated that household leverage in both developing and developed economies have increased over the past few decades, in some cases substantially, such as in China, Finland, Greece, Italy, Holland, Poland, Spain and Turkey. Increasing household leverage existed for at least half of the period (in years) recorded in these countries. To achieve economy stimulus and economy recovery, expansionary policies and eased credit standards are likely to be offered, increasing household leverage led by eased credit standards will harm potential future economic growth (over the next 6 years) severely and persistently [13].

### Irrational Consumption

The occurrence of irrational consumption behaviours during the COVID-19 pandemic is quite frequent, that is the booms could probably be defined as irrational consumption booms. On the one hand, the previous paper [14] proposed three types of irrational consumption behaviours and they are conformity consumption, impulse consumption and scarcity consumption. On the other hand, another past paper [15] found that to relieve negative feelings, consumers, tend to buy goods and services. Both behavioural explanations and psychological explanations are necessary for explaining these phenomena.

Conformity consumption describes that individual consumers are following the majority and purchase whatever the majority purchases. In psychology, conformity refers to a situation in which an individual or minority’s behaviour is influenced by the majority.

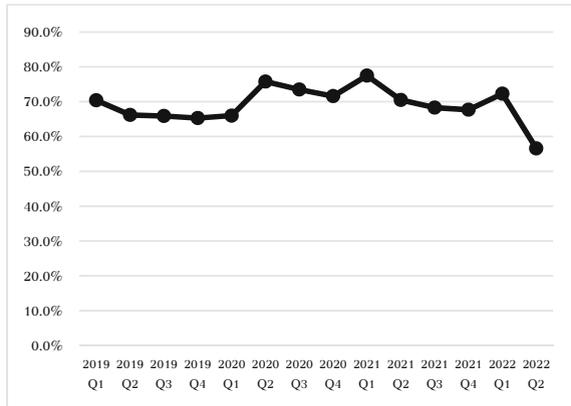


Fig. 5. Overall Loan Demand Index (Data source: <http://www.pbc.gov.cn/en/3688006/index.html>, Photo credit: Original)

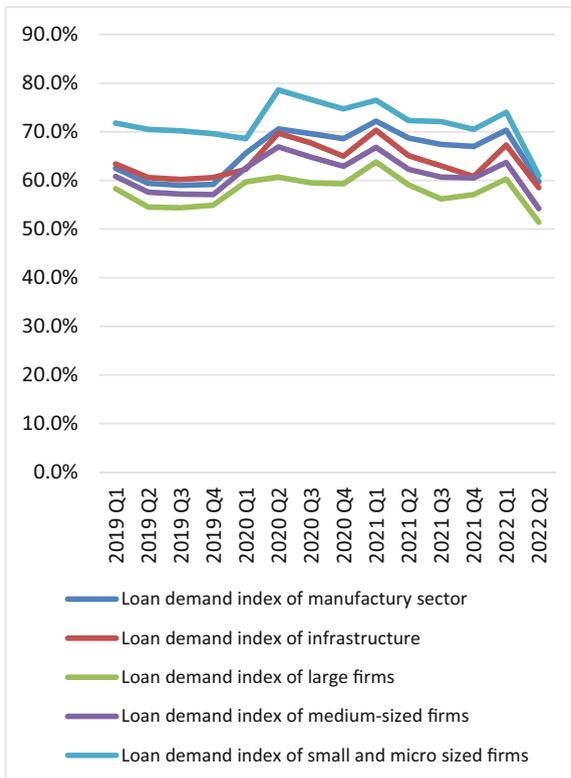


Fig. 6. Loan Demand Indices (Data source: <http://www.pbc.gov.cn/en/3688006/index.html>, Photo credit: Original)

More specifically, there are three types of conformity and they are internalisation, compliance and identification. In this case, as the COVID-19 pandemic was an emergency and everyone was unfamiliar with it, which leads to misconceptions of what behaviours would be considered 'correct', therefore they look for information about how to behave. It is called internalisation. Eventually, conformity consumption existed.

In terms of impulsive consumption, it describes a situation where consumers purchase goods and services without considering if they are essential and worthy. From a psychological perspective, considering Maslow's hierarchy of needs [16], the existence of impulse consumption is more understandable. Moreover, from a bio-psychological perspective, the theory of evolution stated that the reason why there are changes in behaviours is to increase the chance of surviving. And survival psychology provides an explanation, it illustrates that when individuals are experiencing natural disasters and health crises, they are more likely to engage in behaviours that helps to survive and behave differently, including herd behaviour, changes in consumption behaviours, consumption preferences and consumption styles [17], in this case, people desire to buy as many 'necessities' as they can.

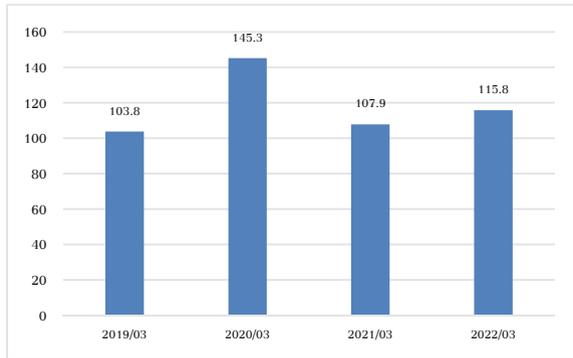
The third one, scarcity consumption, is purchasing products that people feel are scarce. Previous literature [17] stated its hypothesis and findings as negatives feelings drive consumers to consume necessities and only necessities, the development of negative feelings such as anxiety and fear are progressed when individuals lack security and desire to meet their security needs. The COVID-19 pandemic brings consumers negative feelings and these feelings aggrandise consumers' sense of scarcity psychologically, therefore there is a overconsumption of the products. However, overconsumption leads to an excess of demand and a lack of supply. Eventually, both the consumers' sense of scarcity and the market condition get worsened.

### **3.2 Internet Culture and Individualised Consumption Under the COVID-19 Pandemic**

#### **The Mutual Effects Between Internet Culture, Consumption Styles, Consumer Preferences and Payment Methods**

All types of irrational consumption behaviours acted by consumers are considered as putting efforts into obtaining control lost because of the COVID-19 pandemic again [17]. In the behavioural aspect, consumers will try to minimise physical interaction, therefore they are more tend to choose contactless delivery and mobile payment. For example, consumers who are more willing to purchase fresh food online are usually aware of the risks of going out [18]. Moreover, a previous report [19] has highlighted that as of December 2021, in China, there were 1.03 billion netizens with an annual growth of 2.6% and 840 million online shopping platforms users with an annual growth of 7.6%. By using such online shopping platforms, both the negative feelings and needs of security are alleviated and met. It seems to be well-reasoned and logical to answer why online shopping is becoming resident's preferred choice.

In addition to online purchases of physical goods, consumers seemed to be spending more on online virtual games, such as X-box, PlayStation and Nintendo Switch. This



**Fig. 7.** Monthly Average Daily Usage Time of Mobile Game App (in min) (Data source: <https://www.questmobile.com.cn/research/report-new/237>, Photo credit: Original)

was possibly because industries with mainly clustered consumption, such as the catering industry and film industry are the most affected. And the isolation policy restricted consumption. It was to make up for the lack of offline consumption, there was a shift in consumers' consuming desire. A considerable portion of demand has shifted to spiritual and cultural fields. And the video games satisfied residents' partial spirit demand [20]. It is analysed that, on the one hand, participants' spatial abilities are developed, their motivation and enjoyment are enriched and their cognitive control and attention are enhanced while playing active video games [21]. On the other hand, a range of fundamental psychological needs could be satisfied by playing video games, for example, participants would feel like socially connected with others, namely relatedness [22]. Participants' negativity due to the COVID-19 pandemic was effectively dispersed. Another point worth noting is, according to Quest Mobile [23], as shown in Fig. 7, the monthly average daily usage time reached an unusually high level in March 2020, the beginning of the COVID-19 pandemic.

In 2015, before COVID-19 pandemic, past survey [24] showed statistically that using bank credit cards was already the main mode of payment at the time (By analysing a survey with a sample size of 500, the percentage of people who use bank credit cards once a week was 86%) and in terms of the motivation of using bank credit cards, high quota and attractive privileges. Based on economic and technological conditions at the time, it is analysed that giving a high quota was because of well credit records whereas attractive privileges were given due to the popularisation of card machines as a part of the income of the bank depends on the service charge generated by transactions made between consumers and shops which usually involved card machines during that time.

However, since the COVID-19 pandemic, it seems to be no longer the main mode of payment. It is essential to understand that it is using 'easy money' when using bank credit cards. The COVID-19 pandemic sent the global economy into a downturn. Limited purchasing power reduces the money flow in the economy. The climbing unemployment rate leads to an imbalance in household income and expenditure. The fluctuating price of commodities makes residents have scruples about every single expenditure. The high interest and poor and undesirable credit record generated by having overdue payments.

Overall makes residents want to seek out others modes of payment. In addition, according to the report [25], several features were stated. First, the bank credit cards ownership was low. Second, its usage rate was low. Third, its vacancy rate was high. As young consumers were the main target of the survey, therefore, it can be reasonably concluded that using bank credit cards is not young consumers' first choice anymore.

## 4 Limitations and Future Outlooks

So far, analysis of consumers' consumption behaviours under the COVID-19 pandemic and the fickle economics situation have attracted more and more related scholars' attention. Researches and derived research results have also obtained some theoretical supports. However, current studies do not seem to be sufficient enough to interpret and account for the changes of consumers' consumption behaviours during the COVID-19 pandemic due to the existence of mighty uncertainties.

Firstly, since the COVID-19 outbreak, it has been nearly 3 years. The COVID-19 pandemic has been through multiple stages and is still ongoing. At different stages, people are likely to have various attitudes towards the COVID-19 pandemic and therefore their behaviours and mind change. Some researches were considered longitudinal researches, the COVID-19 pandemic can develop into another stage when they get to the completion of the report. There are still lots of uncertainties in the future.

Secondly, related and available papers and research results could not represent and generalise the COVID-19 pandemic. Based on considerably limited data, reports, and uncontrolled pandemic, the developmental trend of the COVID-19 pandemic and the potential economic situation are fairly unpredictable. More researches should be done to get to know about the current situation.

Thirdly, although the sample size was usually acceptable, there were not many specialisations in groups and subjects such as college students, people aged 25 to 35, and middle-aged people. Such groups and subjects consists of well-educated people, people with decent wage (or salary) and people with relatively strong purchasing power. On top of that, they made up the majority of society.

Besides, in terms of future outlooks, if the situation is getting clear, retail sales of consumer goods and services in particular in the market can show asymmetrical 'V' shape [26]. Prices maybe acceptably pulled up or pushed up. Consumers' confidence and willingness to spend can gradually rise. Income policies and consumption policies will be loosened. More subsidies may be introduced. However, uncertainties generated by the COVID-19 pandemic should not be ignored. If the situation is not getting better, medical expenditure can reasonably increase. Negative available predictions from scholars may become a trend. Willingness to spend and invest may be lower ever though it is reasonably expected to have a couple of irrational consumption booms.

## 5 Conclusion

In this paper, the consumption behaviours under the background of the COVID-19 pandemic have been analysed. Through breaking down and summarising some existing papers and reports from various perspectives, more specifically, papers and reports were

broken down into consumers' consumption willingness, consumers' consumption predictions, loan demand, credit, consumers' irrational consumption behaviours, technologies and consumers' consumption styles. Since the first quarter of 2020, the outbreak of the pandemic has affected global people's normal daily lives. At present, the global pandemic still seem to be at a relatively harsh level, the virus can mutate over and over again. From a social macro perspective to individual consumption, the economy has been affected severely by the pandemic. The economic situation during the pandemic, the changes of consumer behaviours during the pandemic, and internet culture were discussed. The specific consumption types and consumption behaviours can be known from the specific discussion in the content. The impact of the COVID-19 pandemic on consumers has been considerably wide and negative, stronger willingness to not spend and invest, for instance. As the COVID-19 pandemic progresses, adapting to the environment seems to be the only one approach for people. New payment methods, new consumption styles, and online shopping platforms are what people created during the adaptation period and after the adaptation period.

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