DID CORONAVIRUS PANDEMIC CHANGE CONSUMER PURCHASE BEHAVIOUR: PRELIMINARY RESEARCH

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Abstract

Many market researches have been showing that the global economic crisis in the year 2008/2009 has determined many changes in the new consumer behaviour such as: they became more economical, more responsible and more demanding. Considering that novel pandemic crisis (caused by coronavirus) is not only health, but also economic crisis, so it is necessary to examine whether and what changes have occurred in the consumer behaviour with respect to online purchase. According to novel studies, occurred in this pandemic crisis about consumer behaviour, it is evident that (as well as in previous crisis) consumers change their purchasing behaviour. However, in this novel crisis there is an important difference compared to previous: many stores were closed as a result of government-enforced containment measures so consumers were incapable to physically purchase goods in the traditional store experience. Consequently, many consumers used online purchase. Online purchase in 2020 increased significantly in Croatia, even 67% respondents are purchasing more online than in previous year. While that increase in 2019 was 10% compared to previous 2018 year, but also there was a significant number of internet users (55%) that have hesitated to purchase online. Therefore, it is necessary to strengthen research related to this topic in order to gain a clearer insight into this issue in this pandemic times. The research objectives of this paper are to analyse the impact of the coronavirus pandemic on consumer purchasing behaviour in Croatia, to investigate their perception of this problem and whether their purchasing behaviour has changed as a result. Therefore, this paper will investigate changes in the purchasing behaviour with regard on online purchase of the student population. Research was conducted at the Polytechnic in Sibenik and comprised students of all majors and years of study. Results indicated that corona virus crisis have affected respondent purchasing behaviour and that there are differences among consumer groups with regard to internal factors.

Keywords: consumer behaviour, purchasing behaviour, online purchase, crisis

JEL classification: D12, D81, Z3

Introduction and theoretical background

In early 2020 the novel coronavirus pandemic spread globally from China and negatively affected economies and industries on a global scale causing significant economic downturns, company and industry failures, and increased unemployment (Loxton et al., 2020). In such crisis time understanding of consumer behaviour and decision making process is crucial for firms in order to make better decisions by marketers within the context of marketing systems (Bettman, 1970. as cited in Šišara & Goleš, 2017: 199; Perriman, H. E., Ramsaran-Fowdar & Baguant; 2010; Sharma & Sonwalkar 2013; Mansoor & Jalal, 2011). Consumer purchasing behaviour can vary severely and has a very intricate trend therefore it has been the subject of researches for a long time (Mansoor & Jalal, 2011). Hence in crisis times, consumers tend to modify their current purchasing behaviour, they became more selective and they focus only on purchase they think is essential for them in order to survive (Gabriela, 2010). The most affected activities considering crisis times are: leisure, shopping and driving. Furthermore, consumers spend and will spend more time at home, will drive less and they will shop with caution (Booz & Comp, 2008; as cited in Gabriela, 2010).

Loxton et al. (2020) through critical analysis of several crises (2002-04 SARS outbreak, the 2011 Christchurch earthquake and 2017 Hurricane Irma) concluded that the consumer behaviour (regarding to panic buying, herd mentality and discretionary spending) experienced during the coronavirus pandemic was highly comparable to previous crises and shock events. Although they emphasized that in this crisis there was a significant difference compared to previous crises, ie in corona crisis many stores were closed by government-enforced containment measures so consumers were incapable to physically purchase goods in the traditional store experience. Because of that, the decline in consumption can't be accurately connected to a lack of consumer confidence. Although Cohen, Prayag, & Moital (2014) emphasized that the hedonic and affective aspects of consumer behaviour must be brought to bear even in crisis times.

A study that was made on a sample of 2400 people in France, U.S. and UK in the year 2009. related to economic crisis in that period of time, showed that most respondent in the study changed their purchasing behaviour by adopting a logical standby or a replacement, distinguishing their purchases or dropping different brands. Hence, the economic crises have effect on consumer purchasing behaviour (Voinea & Filipi, 2011). However, in that period of time, online purchase wasn't that much widespread. But in the years to come there is a substantial change - online purchase is increasing worldwide (OECD -Organisation for Economic Co-operation and Development, as cited in Silva et al., 2019) and consequently many suppliers increase use of Internet in their distribution strategies (Molinillo et al., 2017, Wu et al., 2014, as cited in Silva et al., 2019). Considering notable differences between online and offline shoppers (Arce-Urriza, Cebollada, & Tarira, 2017, Díaz, Gómez, & Molina, 2017, as cited in Silva et al., 2019), recent studies have considered the effect of perceived benefits (convenience, cost-effectiveness and variety) along with perceived risks and trust on the online shopping environment (Sharma, Menard, & Mutchler, 2017, Zhang et al., 2017, as cited in Silva et al., 2019).

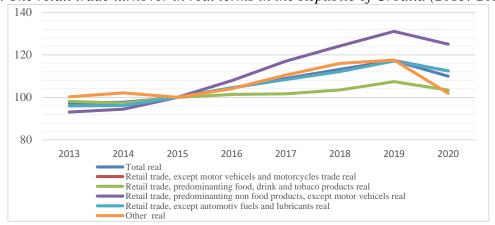
According to EUROSTAT research (Being young in Europe today, EUROSTAT Statistical books, 2015., as cited in Šišara, Neburac and Vartic, 2020) more than four out of every five young people (aged 16–29) use a computer on a daily basis. The highest rates (over 90%) of daily computer use among young people were recorded in Estonia, Latvia and Lithuania. In Croatia (and some other countries) recorded rates for the daily use of computers among young people were at least 25 percentage points higher than the whole population. Much higher proportion of young people use social networks compared to a whole population. According to Croatian Bureau of Statistic (CBS) in the year 2019 commerce via the internet shows a significant increase; 45% of internet users purchased goods or services via the internet which represents an increase of 10% compared to year 2018. The youngest population (aged 16-24)

maintained the lead in computer usage. The number of computer users was decreasing proportionally with age increase. The comparison of the results with data from the previous 2018. year have shown that habits had not changed much. Individuals mostly used the internet for obtaining information on goods and services (93%), for reading daily news and magazines (91%), obtaining information about health (79%), e-mail usage (74%), sending messages via phone apps (87%) and for participating in social networks (73%). Measuring the frequency on internet purchases, it can be observed that 74% of internet buyers had 1 to 5 purchases. However, 55% of internet users do not buy goods or services over the internet because they prefer to shop in stores in person and they like to see the product they are buying. Beside named, a significant share of respondents emphasized that they have a concern about fraud or abuse and about security aspects of buying online.

Consumer behaviour can be explained as: "the study of the processes that individuals or groups go through in making their purchasing choices in order to satisfy their needs." (Mansoor & Jalal, 2011). The purchasing behaviour generally depends on a broad set of basic internal factors such as: earnings, demographics, social and cultural factors. Beside these factors, there are also external factors that influence on consumer behaviour. The crisis, as external factor, causes changes in the consumers purchasing behaviour (Mansoor & Jalal, 2011).

Given the importance of research consumers' behaviour and the crisis impact on it, researches related to the consumer behaviour during coronavirus pandemic shows that consumers in this crisis have changed their behaviour (Berezin, 2020; Butu et al., 2020; Loxton et al., 2020; Stanciu et al., 2020; Mehta, Saxena & Purohit, 2020). Research provided by Croatian Bank Association emphasise that during coronavirus pandemic online purchase increase significantly (in year 2020, even 67% respondents purchase more online than in previous year). Considering that, the importance of further research of that issue is evident.

As it is shown on graph 1 (The retail trade turnover - is a turnover generated by all business entities engaged in this activity, irrespective of their registered main activity. Value indices show the turnover movements in current prices. Volume indices are calculated by deflating the value indices by the retail trade price indices of goods (without electricity and water distribution) according to the consumer price indices) in the Republic of Croatia (Croatia) highest growth rate in terms of turnover in real terms was achieved in Retail trade, predominating non food products, except motor vehicles; Other retail achieved the highest decrease in Corona virus pandemic time; however, all observed categories achieve decline in turnover in real terms in Pandemic year 2020. That is consistent with the research Loxton et al. (2020).



Graph 1: The retail trade turnover in real terms in the Republic of Croatia (2013.-2020.)

Source: https://www.dzs.hr/Hrv_Eng/publication/2020/04-01-01_11_2020.htm

According to comparison with the same month of the previous year of nominal growth rates of turnover from service activities (N 79 Travel agency, tour operator reservation services and related activities; I 55 Accommodation; J 59 Motion picture, video and television program production, sound recording and music publishing activities; I 56 Food and beverage service activities; N 77 Rental and leasing activities; H 50 Water transport) (Graph 2), in Croatia the turnover from service activities has been declining. In February 2021, the highest decrease in the turnover from service activities was recorded in: Travel agency, tour operator reservation services and related activities (-74.8%), Food and beverage service activities (-57.8%) and Accommodation (-47.4%). The highest increase in the turnover from service activities was recorded in the following three activities: Information service activities (19.4%), Wholesale and retail trade and repair of motor vehicles and motorcycles (17.8%) and Computer programming, consultancy and related activities (12.3%).

Graph 2:Nominal Growth rates of turnover from service activities, comparison with the same month of the previous year in the Republic of Croatia

NOMINAL CHANGE RATES OF TURNOVER FROM SERVICE ACTIVITIES WITH THE HIGHEST DECREASE IN TURNOVER,

Source: https://www.dzs.hr/Eng/Covid-19/service.html

Considering all of the above, the research questions of this paper are: Did students change their purchasing behaviour considering crisis caused by coronavirus pandemic? Did they become more economical? How much they were buying online before coronavirus pandemic and in this crisis? What kind of goods they were buying online? The research objectives of this paper are to analyse the impact of the coronavirus pandemic on consumer purchasing behaviour in Croatia, to investigate their perception of this problem and whether their purchasing behaviour have changed as a result. The hypothesis of this paper is: Students as consumers did change their purchasing behaviour in the period of pandemic caused by coronavirus.

Methodology

This research study is built on consumer theory based on behavioural science. In order to achieve the aim of the paper, it was necessary to carry out a survey. The survey questionnaire was constructed on the basis of the paper Mansoor and Jalal (2011) and research conducted by Croatian Bureau of Statistic, (Usage of Information and Communication Technologies (Ict) In Households and by Individuals, 2019, First Results).

This preliminary descriptive research was conducted by survey questionnaire in Sibenik (Croatia) at Polytechnic of Sibenik and comprised students of all departments (Department of Management, Department of Traffic and Department of Public Administration) and years of study. The number of students who studied at Polytechnic of Sibenik is 1100 and this survey was carried out on the sample of 146 students. The data were gathered during the month of April, 2021.

The research was anonymous and the respondents were informed about the purpose of the research. The questions posed in the questionnaire were structured. The survey was conducted on the basis of an appropriate and representative sample. Respondents were chosen exclusively on the basis of appropriateness and availability. The questionnaire was developed in Microsoft Forms format and sent to students in an electronic form along with instructions and contact information of the researchers.

Survey was divided into three section related to the aim of the paper. The questionnaire included 11 questions, first six questions was constructed to identify internal factors influencing consumer behaviour, one question was constructed to identify whether the coronavirus virus affected on purchasing behaviour (with respect to economical factor), following four questions were constructed to identify purchasing behaviour with regard to online purchase and specific product purchase. Factors influencing human behaviour variables were measured as: age, gender, household income, sources of financing and number of family members. Purchasing behaviour variables are divided on pre-corona and corona purchasing behaviour variables with regard to online purchase. The data were processed in Microsoft Excel 2016.

The statistics of the sample is shown in Table 2. The results of study can help in better understanding of consumer purchasing behaviour in crisis time.

Survey data overview

Variable description

Variables that have influence on consumer behaviour resulting from the primary research are: age, gender, household income, sources of financing and number of household members.

Variables that measure online purchasing behaviour resulting from primary research are: coronavirus influence on purchasing behaviour, groups of products that respondent purchase online, frequency of online purchase, reasons for not purchasing online.

Table 1 shows description of named variables.

Table 1 Variable description

Variable	Type of indicator	Measurement method	Code
Age	Quantitative indicator	Open question / respondent enters year of the birth	Age groups: 1: 19-23 2: 24-29 3: 30-41 4: 42-52
Gender	Qualitative indicator	Closed question / 2 answers offered	1-Male 2-Female
Household income	Quantitative indicator	Closed question / 4 groups of income offered /kn=kuna the monetary unit of the Republic of Croatia	1-below 1000kn 2-1000-2000kn 3-2001-3000kn 4-above 3001kn
Sources of financing	Qualitative indicator	Closed question / 4 groups of financial sources offered / more answers possible	1-employed 2-familly / subvention / other

Number of household members	Quantitative indicator	Closed question / 6 items offered (respondent as a number of household included)	1-one 2-two and more
Coronavirus influence on purchasing behaviour	Qualitative indicator	Closed question /5 claims offered Measurement with a Likert scale from 1 to 5	1-strongli disagree 2-disagree 3-don't know 4-agree 5-strongli agree
Online purchase	Qualitative indicator	Closed question /16 groups of products offered, plus "I don't purchase online" Pre corona and at the corona crisis – same groups of products offered) (more answers possible)	0-I don't purchase online 1-16 purchased group of products
	Quantitative indicator	Quantitative indicator / offered number of times for online monthly purchase	0-I don't purchase online; I don't purchase online monthly 1-ones a month 2-twice a month 3-thre times or more a month
	Qualitative indicator	offered reasons for not purchasing online / 7 claims offered (more answers possible)	1-7

Internal factors influencing consumer behaviour

According to statistic description of the sample (Table 2), largest proportion of respondents are in age from 19 to 23 (66%), considering gender 73% are female and 27% are male. In regard to economic status, most of respondents (45%) are employed, 28% of them are financed by family/parents and 19% have some kind of subvention. Most of them (42%) have monthly income less than 1000 kuna, while 25% have more than 3001 kuna, 23% have income from 1000 to 2000 kuna, and 10% from 2001 to 3000 kuna. Most of them live in household with more than 4 members (53%), and the smallest share of them live alone (8%) (Table 2).

Table 2 Statistic of sample

AGE	Number	Percent	
19-23	96	66%	
24-29	38	26%	
30-41	6	4%	
42-52	6	4%	
Total	146	100%	
GENDER	Number	Percent	
MALE	40	27%	
FEMALE	106	73%	
Total	146	100%	
MONTHLY BUDGET PROVIDED BY: (more answers possible)	Number	Percent	
EMPLOYED	88	45%	
FAMILLY	54	28%	
SUBVENTION	36	19%	
OTHER	16	8%	
Total	194	100%	
MONTHLY INCOM	Number	Percent	
BELOW 1000KN	62	42%	
1000-2000KN	34	23%	
2001-3000KN	14	10%	
ABOVE 3001KN	36	25%	
Total	146	100%	
NUMBER OF HOUSEHOLD MEMBERS (respondent included)	Number	Percent	

1	12	8%
2	20	14%
3	36	25%
4	40	27%
5	30	21%
6 AND MORE	8	5%
Total	146	100%

Influence of coronavirus pandemic on purchasing behaviour

In order to identify influence of coronavirus pandemic on purchasing behaviour, respondents expressed their agreement or disagreement with listed statements (Table 3) and they marked number of online purchase (monthly), pre corona and nowadays. These elements were observed with respect to the all internal factors (Table 3) of the respondents. According to listed statements it can be concluded that there are differences of the coronavirus crisis impact on the purchasing behaviour of respondents considering internal factors. Main differences are observed with respect to gender (coronavirus crisis affect more female); age group (crisis have more impact on older age group); sources of financing (crisis affect more employed respondents than those who are financed by others); and those who are living alone experienced higher impact of this crisis. As it could be concluded from presented analysis, coronavirus crisis has the greatest impact according to variable Monthly income, especially to those who belong to a group which generates a monthly income from 1000 to 2000 kn. Second most affected group are those with highest income. The least affected group in this category are those with lowest income. Before corona crisis, according to all respondents, mean number of different items purchased online was 2,6 while nowadays increase is observed (2,9). Considering number of monthly online purchase, it is below 1 purchase monthly (mean to all respondents is 0,8) while only respondents who have monthly income between 1000-2000 kuna have 2 purchase monthly.

Table 3 Online purchase variable

Table 5 Online purchase variable										
Internal factors	Statement 1: The coronavirus pandemic affected my purchasing behaviour		Statement 2: Because of the coronavirus pandemic I buy less		the c panden	at 3: Because of coronavirus nic I buy only nat I need	Statement 4: Because of the coronavirus pandemic, I only buy food products		Statement 5: Because of the coronavirus pandemic, I buy more online	
	Mean	Share of score 5 and 4	Mean		Mean	Share of score 5 and 4	Mean	Share of score 5 and 4	Mean	Share of score 5 and 4
Age group:										
1: 19-23	3,1	47,92%	2,8	43,75%	2,6	37,50%	1,8	14,58%	2,8	37,50%
2: 24-29	3,1	57,89%	2,5	36,84%	2,4	31,58%	1,6	10,53%	2,5	36,84%
3: 30-41	4,3	66,67%	3	33,33%	2,7	33,33%	1,7	0,00%	3,3	33,33%
4: 42-52	3,3	66,67%	4	100,00%	3	66,67%	1	0,00%	3,3	66,67%
Gender:										
Male	2,4	25,00%	2,4	30,00%	2,2	35,00%	1,3	0,00%	2,1	10,00%
Female	3,4	62,26%	2,9	49,06%	2,7	41,51%	1,9	16,98%	3	49,06%
Sources of										
financing:										
1-employed	3,9	80,95%	3,6	76,19%	2,7	42,86%	1,5	4,76%	2,6	38,10%
2-familly / subvention / other	2,8	40,38%	2,5	30,77%	2,5	34,62%	1,8	15,38%	2,8	38,46%
Monthly income:										
1-below 1000kn	2,8	38,71%	2,7	38,71%	2,8	45,16%	1,6	12,90%	2,6	32,26%
2-1000-2000kn	4,8	58,82%	3,3	35,29%	4,0	29,41%	4,3	23,53%	4,3	47,06%
3-2001-3000kn	3,0	57,14%	2,3	42,86%	2,4	42,86%	1,4	14,29%	2,3	28,57%
4-above 3001kn	3,8	66,67%	3,3	61,11%	2,3	27,78%	1,5	0,00%	3,0	44,44%
Household members										
1-one	4,7	100,00%	3,3	66,67%	3	50,00%	2	33,33%	2,33	33,33%
2-two and more	3	47,76%	2,7	41,79%	2,6	35,82%	1,7	10,45%	2,8	38,81%
All respondents	3,1	52,05%	2,8	43,84%	2,6	36,99%	1,7	12,33%	2,8	38,36%

Internal factors	Number of different items purchased online, before corona pandemic 0-non, 1-one etc.	Number of different items purchased online, nowadays 0-non, 1-one etc.	NUMBER OF ONLINE PURCHASE, MONTHLY		
	Mean	Mean	Mean		
Age group:					
1: 19-23	2,42	2,62	0,69		
2: 24-29	2,74	3,32	1,00		
3: 30-41	5,30	4,70	1,70		
4: 42-52	2,66	2,66	0,33		
Gender:					
Male	2,55	2,55	0,65		
Female	2,67	3,00	0,85		
Sources of					
financing:					
1-employed	3,00	3,70	1,00		
2-familly /	2,50	2,58	0,70		
subvention / other	2,30	2,30	0,70		
Monthly income:					
1-below 1000kn	2,27	2,00	0,35		
2-1000-2000kn	3,50	5,75	2,00		
3-2001-3000kn	3,10	4,40	1,40		
4-above 3001kn	3,40	3,70	1,16		
Household					
members					
1-one	3,17	3,5	1		
2-two and more	2,59	2,84	0,78		
All respondents	2,6	2,9	0,8		

Considering that coronavirus crisis has the greatest impact to variable Monthly income, table 4 presents the share of internal variables in variable Monthly income. Considering table 4, it can be observed that 50% of respondents who belong to the group which generates a monthly income from 1000 to 2000 kuna live alone. Respondents that belong to the group with highest income are employed and 100% of them belong to oldest age group. Description of internal variables of those respondents that belong to the group with lowest income are: most of them are mail (50%), they belong to youngest age group (50%), 46% of them live in household bigger than 2 members, and 52% of them are financed by family/subvention/other.

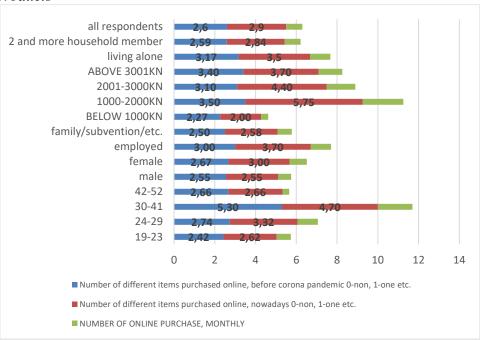
Table 4 Share of internal variables in variable Monthly income

Monthly income	Ger	nder	Age group				Household members		Financial sources		Total
	Female	Male	1	2	3	4	1	2	1	2	Total
1-below 1000kn	40%	50%	50%	37%	0%	0%	0%	46%	19%	52%	23%
2-1000-2000kn	25%	20%	27%	21%	0%	0%	50%	21%	5%	31%	42%
3-2001-3000kn	11%	5%	10%	11%	0%	0%	0%	10%	19%	6%	10%
4-above 3001kn	25%	25%	13%	32%	100%	100%	50%	22%	57%	12%	25%
Total:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: authors

As it could be concluded by Graph 3, according to all internal factors, only age group from 30 to 41 year and those with lowest income purchase lower number of group products while in male group there is no differences. In all other observed groups, increase in number of purchased products is evident. The highest increase is evident in group with income from 1000 to 2000 kuna.

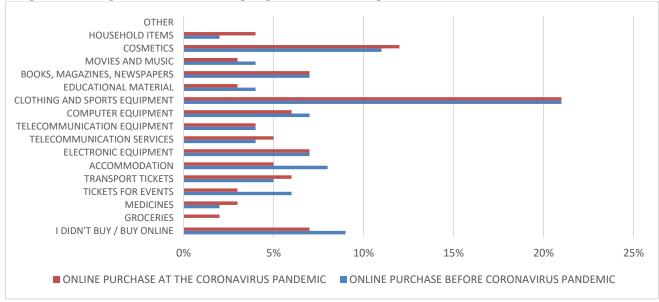
Graph 3 The influence of coronavirus pandemic on purchasing behaviour, according to number of group products



Identification of purchasing behaviour with regard to online purchase and specific product purchase

To identify differences in online purchase four questions were asked. First two question aimed to identify differences in online purchase behaviour pre pandemic and in pandemic (Graph 4). Following question aimed to identify frequency of online purchase (Graph 5) and last question aimed to identify reasons for not purchasing online (Graph 6).

Considering analysed results, it can be concluded that share of online purchase have increase in pandemic. Considering group of products (Graph 4) it is evident that "clothing and sport equipment" have highest share in both periods, while there is increase in 6 (out of 15) group of products: "cosmetics", "household items", "telecommunication services", "transport ticket", "medicine" and "groceries" (100% increase) in pandemic period. The same share in both observed periods have 4 groups of products: "books, magazines and newspapers", "clothing and sport equipment", "telecommunication equipment", "electronic equipment". Decrease was evident in 5 groups of products: "movies and music", "educational material", "computer equipment", "tickets for events" and "accommodation". For some group of products such as "Tickets for events" and "accommodation" it is reasonable that in pandemic year have suffer decline because all events and travels were on hold. While "educational material" in pandemic year was available online (and mostly it was free). Explanation for decline in "movies and music" and in "computer equipment" is difficult to explain without further research.



Graph 4 Online purchase behaviour pre pandemic and in pandemic

The growth in frequency of online purchase is evident in pandemic period (Graph 5). Considering variable Monthly income, it can be observed that there are no significant differences in frequency of online purchase nowadays while there are differences before pandemic – respondents that belong to the group with highest income purchase less than other groups of respondents.



Graph 5 Frequency of online purchase pre corona and nowadays

Source: authors

Graph 6 present reasons for not purchasing online. According to Graph 6 it can be observed that main reason for not purchasing online is related to the fact that respondents prefer to by in person in the store (36% of respondents). Other reasons are: fear of fraud and abuse (18,45%) and delivery time (13,59%), concerns about the guarantees (11,65%), not owning the credit card (4,85%) and lack of IT knowledge (only 1,94%).



Graph 6 Reasons for not purchasing online

Source: authors

Discussion and conclusion

Following conducted research, it can be concluded that observed respondent express similar purchasing behaviour as presented literature suggest (Gabriela, 2010; Voinea & Filipi, 2011; Silva et al., 2019; Croatian Bureau of Statistic (CBS), 2019; Mansoor & Jalal, 2011; Berezin, 2020; Butu et al., 2020; Loxton et al., 2020; Stanciu et al., 2020; Mehta, Saxena & Purohit, 2020). Most of respondents find that coronavirus crisis has influence on their purchasing behaviour, they purchase more online than before, and they are more economic. It is also very important to emphasize that according to observed internal factors significant differences were found among them, especially with regard to gender, number of household members and monthly income.

Although the research has reached its aims, there were some unavoidable limitations. First, the research was conducted only at Polytechnic of Sibenik on a small size of population. Therefore, to generalize the results more participants should be involved. Second, considering that a wide range of factors have influence on consumer behaviour this paper does not include all of them. Finally, this paper considers consumer behaviour according to crisis time and have focus only on online purchase. However, in order to gain more insight wider range of factors should be included and all aspects of purchasing products.

Further research could be conducted to identify more clearly differences in purchasing behaviour in crisis time according to the internal and external factors that have influence on consumer behaviour. Also, a comparison between consumers from different countries could bring more light regarding this subject.

This research has both practical and scientific implications. Scientific implication refers to the importance to expand knowledge in speciality literature regard to consumer behaviour during crises and this paper emphasize the importance for further research according this topic. Considering that in crisis time it is crucial for firms to understand consumer behaviour and decision making process in order to make better decisions by marketers within the context of marketing systems, practical implications arise. Practical implications refer to the fact that consumers change their purchasing behaviour in crisis so this change in consumer behaviour should influence to companies to reassess their strategies on the market, in order to survive crisis times.

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