

# Consumer Awareness and the Preference for Domestic Products in Slovakia and Hungary

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**Abstract:** Are Slovak and Hungarian customers more cohesive with local traders during the COVID-19 pandemic? Over the last two years, both countries have introduced various restrictions that aimed to alleviate the consequences of the virus. These restrictions have some downsides as they affected the entire population. Thanks to the strong perseverance of the companies and their immediate response to these restrictions, a lot of them were able to switch to online distribution. Needless to say, the demand for the necessities comes to the fore and to some extent the shopping habits change during these times. The main purpose of this research is to analyse whether there is a linear association between the preference for domestic products and consumer awareness and between the length of COVID-19 and the growing interest in e-commerce. Cochran-Armitage tests of trend and Mantel-Haenszel linear-by-linear association chi-squared tests were used to study the main objectives. Thanks to the statistical analysis it can be stated that the Slovak respondents will prefer domestic products over foreign ones, whereas Hungarian respondents presumably will not. Moreover, it can also be said that there is no association between the length of COVID-19 and the growing interest in e-commerce in case of Hungary.

**Keywords:** consumer awareness; shopping habits; e-commerce; domestic traders

**JEL Classification:** E21; P36; L81

## 1. Introduction

The current circumstances have proved to be an extremely complex situation in all areas. Regarding the last two years we can state that the demand for certain products increased at such a level that panic buying came to the fore and there were huge stock losses also. According to Besson (2020), these shortages can negatively affect the helpless part of the society, as either older or low-income individuals won't find the goods they are particularly searching for. This fact can result in fewer opportunities in combatting the COVID-19 disease. In order to alleviate the consequences of the coronavirus, many countries all over the world have introduced a myriad of restrictions. These restrictions mainly aimed to decrease the number of infected people by limiting the movement or introducing lockdown. (Spinelli & Pellino, 2020; Vázquez-Martínez et al., 2021) These rules have broadly affected every part of society, and to abide by these guidelines, a myriad of businesses had to temporarily close, and just the pivotal shops could stay open where only the various necessary goods could be bought. The aforementioned facts have had a very negative impact on businesses

It is essential to point out that those businesses that have switched to fully online services have been able to reduce these effects to some extent.

Some businesses were struggling to switch, whilst the other were more successful in this matter. This is valid for a myriad of internet-based companies, mainly related to the entertainment industry, online purchasing, education and resolutions for telecommuting. They are always created to provide competitive prices and earn profit and the pandemic had negatively affected them. (Donthu & Gustaffson, 2020; Toubes et al., 2021; Okanazu, 2018) These new methods and solutions simultaneously affected the attitudes of consumers. In regard to the previously mentioned facts, the primary aim of this research is to seek information about the relationship between the preference for domestic products and consumer awareness, and the length of COVID-19 and the growing interest in e-commerce.

According to Sheth (2020), COVID-19 resulted in mobility shortages, which means that there is no need to follow various schedules in work or school, thus, consumers have more time flexibility. Based on his opinion, most habits will return back to normal, whilst there will be some habits that won't return as the consumers discovered alternative methods which result in more convenient, affordable, and accessible shopping opportunities. According to AlixPartners's survey in which 7,000 participants were involved, from which 48% marked that their shopping habits have been permanently changed by the pandemic. Needless to say, when such a crisis hits, the shopping habits ultimately change, and people start to buy necessities, for instance, protective devices and sanitizing gels. In these times, various psychological factors like attitudes, feelings, and behaviours can get less attention from researchers. Notwithstanding the less attention, these factors play a key role both for companies and customers. Analysing these factors can help companies to understand the new needs, and they can adjust their supply to meet them. It is also pivotal for the marketing strategies as advertising efficiency is crucial in present marketing environment. From a different point of view, it can also help consumers as they can be more prepared for these times which leads to a better response to these needs and feelings during the COVID-19. (Larson & Shin; 2018; Diebner et al, 2020; Tomčík & Rosenlacher, 2018; Di Crosta et al, 2021) According to Adwan (2020), in case that a consumer finds all the available information about a product or service they are looking for, the decision about the purchase is not made immediately. Based on this fact, the consumers try to read up on more about the product or look for new alternatives that fit best to what they want. After all the alternatives have been searched, they consider whether or not the purchase is worth it. For this reason, they consider different aspects of the product or service, such as the prices, packaging, size, quality, durability, and after-sale services.

However, it is essential to mention that there are downsides to the tangible increase of using e-commerce. According to Ishak and Zabil (2012), unawareness and lack of knowledge can negatively affect the consumers as they will not be able to defend themselves against the frauds that can happen by purchasing online, and there is also a slim possibility of financial theft. In such cases, customers should be more conscious about their purchases and make sure they do everything to prevent these frauds. Online shopping naturally requires stronger

consumer knowledge as they should be able to distinguish the websites from one another, thus, it can facilitate safer shopping.

## 2. Methodology

In our research we tried to give an international comparison between Slovakia and Hungary to cover an extensive range of information. Regarding our aims we have formulated two hypotheses.

The first hypothesis is the following:

*H01: There is a linear association between the preference for domestic products and consumer awareness.*

*H11: There is no linear association between the preference for domestic products and consumer awareness.*

For this purpose, we have used the Cochran-Armitage trend test for association. In order to successfully run this test, it is pivotal to meet the two main assumptions. Firstly, we should have one ordinal independent variable. In our case we have fulfilled this assumption as the preference for domestic products was measured on a five-point Likert-scale. Secondly, we should have one dichotomous dependent variable, which has also been fulfilled as the consumer awareness was decided by a Yes/No question. In fact, the question contained a cannot decide option, but we have excluded those answers as we had to fulfill all the assumptions. Lastly, it is essential to mention that this statistical test analyses whether there is a linear trend. This statistical test was used to determine whether a linear trend between an ordinal independent and a dichotomous dependent variable exists.

In case of the second hypothesis, we stated the following:

*H02: there is a linear association between the length of COVID-19 and the growing interest in e-commerce.*

*H12: there is no linear association between the length of COVID-19 and the growing interest in e-commerce.*

In the current case we have also analysed whether there is a linear trend, but between two ordinal variables. For this purpose, we have used the Mantel-Haenszel linear-by-linear association chi-squared test. At this point, both variables need to be measured on an ordinal measurement level. This assumption is fulfilled by our study design as one variable was measured on a five-point Likert-scale, whereas the other can be divided into different groups as we have measured the length of the COVID-19 pandemic.

The analysed respondents were Slovak and Hungarian citizens. We have used the one-time cross-sectional research methods, as we have taken a single sample of the population only once. The answer collection has taken place between January 2021 and March 2021. The survey was built up from 24 mainly closed questions, from which we have used 4 to analyse our objectives. These questions were the following:

The first question was part of various statements in which respondents could express their opinion on a 5-point scale (Not typical at all, Slightly typical, Cannot decide, Highly typical, Typical at all) about how typical the listed statements are true for them.

1. I will try to choose the domestic traders' products more often due to the COVID-19 pandemic.

The second question was a dichotomous one, in which respondents could decide whether they agree with the statement or not. In this case, the respondents were also able to choose cannot decide as an option. The statement was the following:

2. I will reconsider my shopping decisions more seriously and simultaneously gather all the available information about the product I want to purchase.

The third question was about the length of COVID-19 pandemic.

3. In your opinion, how long will the effects of the economic crisis caused by the coronavirus pandemic be felt from 2021?

The options were the following:

1 year; 2-3 years; 4 years; more than 5 years.

The fourth one was also included in the statements section and it was about the respondents' interest in e-commerce.

4. I believe that my interest in online commerce continues to grow.

In order to derive meaningful conclusion in our research it was essential to calculate the required sample size. According to Wiley (1999), we have used the following formula:

$$\frac{N * Z^2 * p * (1-p)}{(N-1) * e^2 + Z^2 * p * (1-p)} \quad (1)$$

According to the Statistical Office of the Slovak Republic (2020b) and the Hungarian Central Statistical Office (2021) the population equals to 15,190,136. Moreover, the critical value at 95% confidence level equals to 1.96, whilst the expected prevalence to 0.4. Finally, the precision equals to 0.05. Therefore, a size of 385 respondents could be appropriate to derive relevant inference in our research. Judging by the fact that 862 people have answered our surveys, our research can be considered as a fully representative one.

The proportion of the respondents was the following: 40.37% was received from the Hungarian respondents from which 54.03% were women, and 45.97% men. The Slovak answers formed 59.63% of all the answers, from which 50.77% were women and 49.23% men.

### 3. Results

Thanks to the following contingency table (Table 1) that had been produced for Hungary, we can illustrate whether the analysed trend exists.

Based on the illustrated contingency table (Table 1), we can notice in the Yes %within Preferences row that 23 respondents whose consumer awareness has changed marked the not typical at all choice. We can see that the percentage of respondents whose consumer awareness has changed for certain Likert-scale points was 71.9%, 88.0%, 71.9%, 92.5%, respectively. This means that based on the descriptive data we cannot observe a linear association, but we will statistically support this with the following Table 2.

Based on the value of Sig., we can declare that there is no statistically significant linear association between the examined variables as  $p > 0.05$  (see Table 2).

In order to sum up the results in case of Hungary:

A Cochran-Armitage test of trend was run to find out whether a linear trend exists between the consumer awareness and preference for domestic products. Certain points of the

**Table 1.** Contingency table for Hungary

			<i>Not typical</i>	<i>Slightly typical</i>	<i>Cannot decide</i>	<i>Highly typical</i>	<i>Fully typical</i>
Consumer_ awareness	Yes	Count	23	88	23	62	15
		% within Preference	71.9%	88.0%	71.9%	92.5%	100.0%
	No	Count	9	12	9	5	0
		% within Preference	28.1%	12.0%	28.1%	7.5%	0.0%
Total		Count	116	32	32	67	15
		% within Preference	100.0%	100.0%	100.0%	100.0%	100.0%

**Table 2.** Value of the Cochran-Armitage test of trend - Hungary

			Score	df	Sig.
Step 0	Variables	Preference	0.578	1	0.447
	Overall Statistics		0.578	1	0.447

five-point Likert-scale were the following: Not typical at all ( $n=23$ ), Slightly typical ( $n=88$ ), Cannot decide ( $n=23$ ), Highly typical ( $n=62$ ), Typical at all ( $n=15$ ) and the proportion of respondents with the strengthened consumer awareness was 0.719, 0.880, 0.719, 0.925, respectively. The statistical analysis pointed out that there is no statistically significant linear association between the analysed variables as the value of  $p$  is greater than 0.05. Based on this evidence, we cannot reject the null hypothesis and cannot accept the alternative hypothesis.

In case of Slovakia, we have observed the following results (see Table 3).

**Table 3.** Contingency table for Slovakia

			<i>Not typical at all</i>	<i>Slightly typical</i>	<i>Cannot decide</i>	<i>Highly typical</i>	<i>Typical at all</i>
Consumer_ awareness	Yes	Count	151	31	112	74	21
		% within Preference	79.9%	83.8%	88.2%	94.9%	80.8%
	No	Count	38	6	15	4	5
		% within Preference	20.1%	16.2%	11.8%	5.0%	19.2%
Total		Count	189	37	127	78	26
		% within Preference	100.0%	100.0%	100.0%	100.0%	100.0%

Based on the above illustrated contingency table, we can notice in the Yes % within Preference row that a linear association exists between the analysed variables, but for a more detailed analysis, we will statistically support this with the following Table 4.

**Table 4.** Value of the Cochran-Armitage test of trend - Slovakia

			Score	df	Sig.
Step 0	Variables	Preference	4.686	1	0.030
	Overall Statistics		4.686	1	0.030

Based on the value of Sig., we can declare that there is a statistically significant linear association between the examined variables as  $p < 0.05$ .

In order to sum up the results in case of Slovakia:

A Cochran-Armitage test of trend was run to determine whether a linear trend exists between the consumer awareness and preference for domestic products. Certain points of the five-point Likert-scale were the following: Not typical at all ( $n=151$ ), Slightly typical ( $n=31$ ), Cannot decide ( $n=112$ ), Highly typical ( $n=74$ ), Typical at all ( $n=21$ ) and the proportion of respondents with the strengthened consumer awareness was 0.799, 0.838, 0.882, 0.949, respectively. The statistical analysis pointed out that there is a statistically significant linear association between the analysed variables as the value of  $p$  is greater than 0.05. Based on this evidence, we can reject the null hypothesis and accept the alternative hypothesis.

In case of the second hypothesis the following Table 5 illustrates the observed results for Hungary.

**Table 5.** Mantel-Haenszel linear-by-linear association chi-squared test - Hungary

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	88.772	12	0.000
Likelihood Ratio	95.583	12	0.000
Linear-by-Linear Association	0.053	1	0.818
N of Valid Cases	348		

Based on the value of Linear-by-Linear Association, the value of  $p$  is greater than 0.05, which doesn't indicate a statistically significant result. Therefore, further analysis is not necessary, thus, we can conclude that a Mantel-Haenszel linear-by-linear association chi-squared test was used to determine whether a linear association exists between the length of COVID-19 and the growing interest in e-commerce. The test pointed out that there is no statistically significant linear association between these two variables as  $p > 0.05$ . Coming from the observed results, we cannot reject the null hypothesis and cannot accept the alternative hypothesis.

The following tables (Table 6 and 7) illustrate the observed results for Slovakia.

**Table 6.** Mantel-Haenszel linear-by-linear association chi-squared test - Slovakia

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	53.065	12	0.000
Likelihood Ratio	63.225	12	0.000
Linear-by-Linear Association	5.468	1	0.019
N of Valid Cases	514		

Based on the value of Linear-by-Linear Association, the value of p is not greater than 0.05, which indicates a statistically significant result. For this reason, we have analysed the value of Pearson Correlation to examine the strength of this statistically significant result.

**Table 7.** Correlations - Slovakia

		Length_of_COVID	Growing_Interest
Length_of_COVID19	Pearson Correlation	1	0.103
	Sig. (2-tailed)		0.019
	N	514	514
Growing_Interest	Pearson Correlation	0.103*	1
	Sig. (2-tailed)	0.019	
	N	514	514

The table above, illustrates the value of the Pearson Correlation which equals to 0.103. The existing association can be characterised by weak strength. In case of Slovakia, we can conclude that a Mantel-Haenszel linear-by-linear association chi-squared test was used to determine whether a linear association exists between the length of COVID-19 and the growing interest in e-commerce. The test pointed out that there is a statistically significant linear association between these two variables as  $p < 0.05$ . The value of Pearson Correlation indicated a weak strength between these two variables; thus, we can reject the null hypothesis and accept the alternative hypothesis.

#### 4. Discussion and Conclusion

Based on the acquired results from our statistical analysis, we can claim that Slovak answerer will choose domestic products over international ones, whereas Hungarian respondents presumably will not. Concerning the Slovak respondents, we can state that there is a linear association between the length of COVID-19 and the growing interest in e-commerce, whilst in case of Hungary there is not. Based on our statistical analysis, in the case of Slovak respondents we can reject the null hypotheses and accept the alternative hypotheses, whilst in case of the Hungarian respondents, we reject the alternative hypotheses and accept the null hypotheses. We hold the view that in order to stimulate the business of

local traders, consumers should reconsider their shopping habits, and if there is a slim possibility to support them by purchasing their products, they should do it. Choosing local products and traders over foreign ones can shield domestic sellers and strengthen their financial security during these challenging times. This point of view is also supported by Smith (2020), as he holds the view that the coronavirus pandemic has caused a financial problem for small and domestically owned businesses. His advice is that consumers should reconsider their shopping habits, and they can help the local business by purchasing their products and services. According to his opinion, by choosing a local trader, consumers not only support the local business community, but they can also get their products much faster. We can strongly relate to his opinion as we also reckon that consumers should reconsider their shopping decision in order to support the local community. In case that we take into account the wider scale of available information, we can notice that the President of CCI addressed an urgent meeting in order to encourage consumers to avoid online shopping as they should choose local traders. (Daily Excelsior, 2021) According to a report issued by the OECD (2020), COVID-19 is a humanitarian crisis at a wider scale. Given this fact, the virus seriously affects the economy, and it would be essential to keep trade flowing, in order to ensure the supply of essential products. This flow definitely requires co-operation and trust. Based on Cassia et al's (2012) results, consumers' satisfaction can be influenced by a myriad of factors, for instance, product quality, comparative price convenience, but also by the complementary impact of some intangible factors. In most cases, domestic sellers can offer good quality and after-sale service. In general, domestic traders try to maintain the existing close-knit bond with the customers and enhance them to choose their products and services once again. In many cases, it can greatly contribute to the consumers' satisfaction, and perhaps they will recommend either their products or services to others. From a company's point of view, during these times it is essential to implement new marketing methods in order to entice new customers and retain the existing ones. This is also supported by (Karaffová – Polónyi & Kusá, 2018) as they think that marketing communication reflects on current requirements and experience. Besides, the up-to-date IT solutions provide an easy access to information, communication and buying possibilities. Thanks to these tools, the consumers are also able to read different reviews. Needless to say, these opinions play key-role in consumers' life as they greatly influence consumers' purchasing decisions (Graa & Abdelhak, 2020).

It is important to mention some limitation which can greatly serve as a basis for further research directions. In case of Slovakia, we can state that there is a growing interest in using e-commerce. In this sense, it is worth highlighting the fact that some domestic traders were not able to switch to online distributions. It would be interesting to examine whether the respondents are willing to avoid online shopping in order to buy products or services from domestic traders. On the other hand, the outcomes pointed out that the Hungarian respondents presumably will not prefer domestic traders' products over foreign ones. In spite of this fact, it would be intriguing to examine the reasons behind this decision. It is essential to take into account that the answers were collected between January 2021 and March 2021. In this case the approaches and decisions can slightly differ, which gives us an opportunity to examine the population's opinion once again and compare the existing data with the new



one. Finally, we reckon that it would be worth extending the research to other countries like Poland and the Czech Republic as some similarities can be observed regarding their culture and post-pandemic trends.

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