CONTENTS

FORUM

REVIEW

WHAT TO DO IN FINANCIAL MARKETS? PREFERENCES AND INCOHERENCES OF FUTURE INVESTORS

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ABSTRACT *The beliefs and strategies to be mobilized by individuals who are about to start their activity as investors in financial markets is an issue scarcely explored in the field of the sociology of finance. In this paper we present new evidence about the opinions of future investors recurring to a survey administered to 177 master's students. Our results highlight the structural incoherence in the values adopted by future investors and the centrality of these social actors' beliefs in the construction of the prevailing practices in financial markets.*

KEYWORDS: *sociology of finance; structural incoherence; theory of performativity; survey; future investors*

INTRODUCTION

The way social actors imagine the world determines what they think is important, and what they select as the focus of attention among the myriad of facts to which they are constantly exposed. Only after making this selection can thoughts and descriptions begin to be formed (Midgley 2004).

How do future investors assess financial markets? Do they think that it is better to take a defensive strategy and try to avoid losses, or do they think that it is better to accept higher risks in exchange for higher (expected) returns? What kind of discourses and strategies mobilize investors to try to seize investment opportunities, make a profit, and deal with losses? Little is known about these important issues.

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This paper examines the beliefs, preferences, and concepts of future investors regarding strategies for adoption in relation to financial markets through responses to a set of 177 questionnaires administered to first-year students of a master's degree in finance at the School of Economics and Management of the University of Porto, Portugal in the period 2015 to 2017. The work developed in this paper follows the research program established by the field of the sociology of finance (MacKenzie 2006; Carruthers and Kim 2011), and thus contributes to this stream of literature.

The growth of internet-based investment and the growth of the financial services industry have been facilitating the activities of non-professional investors over the last two decades (Greenwood and Scharfstein, 2013; Guttman, 2016). In order to understand how financial markets will continue to evolve, one needs to inquire into the trading strategies preferred by future investors. Evidence suggests that a significant proportion of current finance students, given their interest in financial matters, will participate in financial markets at some point in their lives (Arrondel, Debbich and Savignac, 2012; Almenberg e Dreber, 2015). Moreover, the overrepresentation of highly educated individuals in the universe of financial market investors suggests that studying the opinions of university students may be important for understanding the decisions of market participants (Campbell 2006; Calvet, Campbell and Sodini 2007). Inexperienced investors have become an important group among market participants, but they are a subject rarely studied in the field of the sociology of finance (Vollmer, Mennicken and Preda 2009).

The metaphorical concepts related to financial markets that are adopted by future market participants have a significant influence on their performance; they are the matrix of thought, the foundation upon which their mental habits are shaped and those which provide them with the tools with which they organize information about the financial market as a social institution. The importance of the beliefs adopted by the social actors who are about to participate in financial markets can be understood on three levels. First, there are consequences for the agents themselves. For example, if a future investor believes that high returns can be achieved in financial markets, they will be willing to risk greater exposure to those markets. This choice may lead to losses when the investor is faced with situations that run counter to their initial expectations. It should also be noted that, in opposition to the recommendations of standard financial theory, empirical studies show that less experienced investors typically hold undiversified portfolios (Goetzmann and Kumar 2008), trade too much (Barber and Odean 2000), and exhibit gambling behaviors when investing in financial assets (Sjöberg and Engelberg 2009). There is also substantial evidence that the returns obtained by such investors are abnormally low (Barber, Lee, Liu and

Odean 2009). For all these reasons, understanding the perspectives that future investors have about their own decisions is of paramount importance.

Second, investor beliefs produce consequences for the market itself. Within the framework of social studies in finance, the performativity argument (Callon 1998, 2007; MacKenzie and Millo, 2003; MacKenzie 2006) provides a powerful framework for understanding the central role of the values adopted by social actors – in this case, investors – in terms of the creation of financial markets. Performativity theory claims that the conceptual models adopted by agents contribute to the creation of financial markets.

Finally, it is necessary to identify the values adopted by social actors, because these values, when based on an erroneous interpretation of reality, can have deleterious consequences for social welfare. The role played in the 2007/2008 financial crisis of the (wrong) belief that capital markets necessarily tend towards equilibrium is perhaps one of the best examples of what we have just described (Shefrin and Statman 2012).

This is why it is so important for the social scientist to have some awareness of the formation and stabilization of metaphorical concepts concerning financial markets. In this regard, surveys can provide important insights.

De Bondt (2005) carried out one of the few studies in the field of sociology of finance concerning the beliefs of individual investors. Using investor surveys from six European countries (Belgium, United Kingdom, France, Germany, Italy, and Spain), the author concluded that individuals' "mental frameworks" tend to be shared by the members of the same social group. Their beliefs are correlated with socially relevant variables such as nationality, gender, age, and religion. In addition, their insights about financial markets have predictive power regarding their investment strategies and portfolio choices.

De Bondt's research (2005) focused on wealthy investors: more than half of the sample respondents reported having invested between 100,000 euros and 1 million euros. Our study complements these results by addressing subjects who are new to or about to begin their careers as investors in financial markets.

The remainder of the paper is organized into five sections. We will start by discussing the importance of studying investors' beliefs, and explain how such beliefs can be understood as a reflection of the way social institutions (namely, educational institutions) contribute to the establishment of paradigms. The third section examines the implications of the theory of performativity as a construct that is useful for understanding how markets are created by investors' beliefs, and how investors implement their opinions about the reality they face. The fourth section presents and discusses the details of the survey that underpinned the empirical research. The last section of the paper offers conclusions.

STUDENTS, NARRATIVES AND EDUCATION SYSTEMS

Studying the beliefs of students of economics and finance is relevant to sociology. It is important to understand that knowledge in general, and economic and financial knowledge in particular, is increasingly valued for its contribution to economic activity. Such knowledge transmission generally has the significant institutional support of educational systems (Rubinson and Browne 1994). This support is necessary if knowledge is to spread in a given population, and also from generation to generation. Economic theories define patterns of rationality and risk categories and determine the rules that underlie the decisions of social actors. It is now well established that the educational system, through education in the fields of economics and finance, serves to manage identities and to produce subjectivities (Ghoshal and Moran 1996). In fact, an economic education, by contributing to the formation of students' beliefs about the composition of types of agents present in the economy, can trigger strategic responses by individuals. Students tend to adopt behaviors similar to the agents that are assumed to exist in the models they know about. Experimental studies reveal that the teaching of economics and finance, which is often based on the fictional assumption that agents are selfish in nature, is associated with the suppression of cooperative behavior by students (Frank, Gilovich and Regan 1993). As a result, social studies often claim that business schools produce opportunistic agents (Ghoshal 2005).

Callon (1998) argues that the dissemination of economics and finance students by economic institutions is essential in the construction of strong beliefs that allow for the emergence and implantation of arguments and metrological tools. These, in turn, contribute to the triumph of certain forms of framing of economic issues. Social actors tend to become partners and intermediaries, and economic theory is allowed to enter into dialogue with practitioners, shaping their perspectives and actions. In this sense, it is the job of social scientists to study the profession of economists, since it is the latter that produces the knowledge that agents make use of when they undertake so-called "economic functions." Thus, studying students' beliefs about economic reality, and in particular, those of students who are closest to such "economic functions," is one of the most direct ways of accomplishing such a goal.

Studying the values and beliefs of this segment of the population seems to be particularly useful at a time when the relationship between theoretical knowledge and the real world is highly relevant, given the greater proportion of people who have access to university and to the theories and knowledge generated by social scientists.

Finally, knowing about investors' beliefs is also of importance from the perspective of financial literacy programs. Knowledge of financial concepts is increasingly seen as a way of increasing individuals' participation in financial markets, although data indicate that such participation may depend on other factors such as income and social status (De Bondt 2005). Increasing levels of literacy are needed to help individuals decide in an environment in which financial institutions tend to defend their interests by capitalizing on information asymmetries vis-à-vis their clients (Lépinay 2011). Clearly, the issue of financial literacy lies at the heart of financial decision making. What do individuals really know about financial markets? When a financial problem calls for a decision, there is no clear model of action. Many people use metrological models that do not guarantee good results. The discussion about the most empirically valid courses of action in the financial arena remains a hotly debated issue within the finance literature. Perhaps one of the clearest signs of division in this debate was shown by the awarding of the Nobel Prize in Economic Sciences in 2013 to Eugene Fama and Robert Shiller, two scholars with widely differing views about how financial markets operate.

According to McCloskey (1992), the lives of social actors are closely intertwined in narratives – in stories that are heard and told, and that are reworked to form the story that agents tell themselves. In this sense, social actors live immersed in narratives. Narratives, regardless of their empirical validity, have played a central role in the construction of social knowledge throughout the evolution of the human species (Boyd 2010). The narratives constructed by social actors act as stories that integrate the most important pieces of information to provide the basis for the best decision heuristics. Financial market participants live their lives in metaphors and stories, and today these adaptive elements are the subject of study of social scientists in the most diverse organizational and market contexts (Tuckett 2011; Tarim 2012). Students in the field of financial markets are no exception: they also live surrounded by the rhetoric produced by the education system. The study presented here represents a privileged perspective about the narratives adopted by these economic actors.

STUDENTS, THEORIES AND PERFORMATIVITY

Studying students' conceptions of economics and about financial markets is important in the context of performativity theory. Performativity is a key concept within sociology of finance (Callon 1998, 2007; Boldyrev and Svetlova 2016). The content of financial economics that is conveyed in universities leads

to various ideas and formulas being consecrated in capital markets within social actors – in this case, market participants – and adopted as rules of conduct.

The concepts and models of economic science accepted by social actors are more than mere abstractions; they are also constituents of market practices and part of the infrastructure of modern markets. The economy, as argued by Callon (1998, p. 30), "is embedded not in society, but in economics." Economics does not describe a pre-existing external "economy" but rather makes that economy material; economics thus creates the economic system; it gives rise to the phenomenon it describes.

In principle, any belief about price formation, if shared by a sufficiently large number of social actors, can become performative. This assertion is especially important for those investors with greater knowledge of finance, as is the case of the students who operate in this area of knowledge. In fact, one of the most robust results in the literature about financial literacy is that individuals with greater financial knowledge are more likely to participate in financial markets (Yoong, 2011; Arrondel, Debbich and Savignac, 2012; Almenberg and Dreber, 2015).

The approach of performativity theory has been criticized in several areas: for example, the ambiguity of the concept of performativity (Fine, 2003; Mäki, 2013). Some authors consider that the effectiveness of economic science as a performative technique may after all be quite limited since some features of humans (those of a psychological or sociological nature, for example) are undervalued in the process of learning and applying theories (Mäki, 2013). Despite the assumptions of economic theories, market agents are influenced in their decisions by the social norms and values that prevail in the society to which they belong (Santos and Rodrigues, 2009). Therefore, some authors conclude that the performative strength of economic models is very variable, which can lead to significant discrepancies between what is predicted by these models and the outcomes of the decisions that are made by economic agents (Fine, 2003; Aspers, 2007; Santos and Rodrigues, 2009).

The emergence and application of the Black-Scholes formula for option valuation is perhaps the most widely studied example of performativity within the sociology of finance. In two key papers in the field of social studies in finance, Mackenzie and Millo (2003) and MacKenzie (2006) show that, after its introduction into financial markets, the Black-Scholes formula was quickly adopted as a canonical tool, in spite of its unrealistic assumptions. As a consequence, market prices converged to the levels predicted by the model. The model became successful not because its creators had discovered a pre-existing price pattern, but because markets, as a result of the widespread use of the formula, made the assumptions of the model more accurate. In other words,

the success of the model rested on its prescriptive strength, not on its descriptive capability.

According to Ferraro, Pfeffer, and Sutton (2005), theories can become dominant when their related language is widely accepted in a non-critical manner and when their assumptions are accepted and valued as norms, regardless of their empirical validity. New notions and concepts, once introduced into market practices, can define their own realities. When theories create their own beliefs in a self-fulfilling manner, societies, organizations, and leaders can become prisoners of a harmful and unproductive cycle that is almost impossible to break.

The assumption of the performativity argument raises key questions about the domain of ethical responsibility of those agents who use such economic models and contribute to their propagation. On the one hand, the understanding that financial truth is created through a process of performativity means that participants in financial institutions bear (collective) responsibility for the conditions under which they operate, such as price volatility or income inequalities generated by market practices. On the other hand, it is important to understand the dimension of the theory of performativity as a critique of the results of applying standard economic models. The debate over the scope of this critical dimension is still alive in the literature, with a group of authors arguing that the performativity perspective has been too conformist in relation to the false abstractions used by economists (Miller 2002; Mirowski and Nik-Khah 2007, 2008).

In any case, the theory of performativity highlights the eminently historical nature of economic processes. Regularities resulting from the stabilization of certain forms of the organization of market relations remain limited in time and space. Economic science has power because, unlike physics, it can in principle influence the economy through the behavior of social actors. But economic science is also weak in that it is unable to exert this influence at all times and in all economic spaces. There are no natural laws in markets; only temporary and changing laws that can be associated with particular markets in certain historical circumstances. Understanding finance as a performative practice suggests that the processes of knowledge and interpretation are not of secondary importance; they are precisely the way finance materializes. It is not only the case that financial knowledge is socially constructed; it is the very material structures of financial markets – including prices, costs, and capital – that are discursively and historically contingent. Therefore, one of the main implications of the concept of performativity is that it is relevant to study the extent to which concepts, notions, or theories are accepted by social actors. This is precisely what the present study is intended to do.

SURVEY

As mentioned before, our study follows the standard survey method. The questionnaires were administered to students of the Markets and Financial Investments (MFI) course that takes place in the first year of the Master of Finance at the School of Economics and Management of the University of Porto (FEP) in Portugal. The questionnaire was written in English – the language in which the MFI course was taught – and was made available in the first MFI class in three consecutive academic years (2015/2016, 2016/2017 and 2017/2018).

The universe of students enrolled in the FIM course is considered to be a good proxy of the group of future investors: first, they are individuals with a clear interest in the financial markets; and second, the Master of Finance at FEP is aimed at students who have completed their bachelor's degree and have not yet started their professional careers.

The choice of finance students as an object of inquiry is not new in the literature. For example, Sjöberg and Engelberg (2009) used a survey with 93 students in this area of knowledge to conclude that individuals expressed a positive attitude towards risk–taking and gambling behaviors.

Our survey contains a total of six statements about which students were asked to give their opinion using a seven-level Likert scale (1: completely disagree in any situation; 2: strongly disagree in almost all situations; 3: tend to disagree in most situations 4: hard to tell; 5: tend to agree in most situations; 6: strongly agree in almost all situations; 7: completely agree in any situation). The six statements presented relate to the best investment strategies to adopt in relation to financial markets. In the analysis of the results, the responses are coded as follows: strong disagreement (-3), moderate disagreement (-2), slight disagreement (-1), neutral response (0), slight agreement (+1), moderate agreement (+2), strong agreement (+3).

Survey results and discussion

A total of 177 survey responses were collected, while one student did not answer the question regarding educational background. Of the students who provided information, 38 (21.6%) reported having had some experience investing in financial markets, while the vast majority (138 students, accounting for 78.4% of the total) said they had not. One-hundred-and-sixty-two (92.0%) students reported having completed their bachelor's degree in the fields of economics or management (this included courses on economics, management, finance and accounting) and 14 students (8%) had obtained a degree in another

domain (including engineering, telecommunications, international relations, international trade, marketing, public administration, philosophy, physics and political science courses).

Overall survey results

Table 1 presents the overall survey results regarding respondents' opinions about the best investment strategies to be followed in financial markets. It can be observed that most respondents (52.0%) disagree that it is possible to systematically obtain better results than those of the market. Only 22.6% of respondents agree. The general opinion is therefore of disagreement with the first statement, and the higher value of the mean (-0.57) in comparison to the median (-1.0) indicates that there is a minority of individuals who agree in the extreme.

This result contradicts evidence obtained from other studies. For example, Statman (2017) documents from a similar survey of amateur investors that about 62% of respondents said they believed they could beat the market within a 12-month period.[2]

If the future investors in our survey considered it impossible to consistently beat the market, we would expect to find answers to the following statements that were consistent with the adoption of passive investment strategies. Indeed, if an investor believes that it is very difficult (or impossible) to systematically achieve better results than the market, one might expect that this investor would try to adopt strategies aimed at achieving market returns (for example, through the purchase of shares of index mutual funds).

However, this is not the case. When answering the second question, a large majority of respondents (81.4%) stated that it was important to know what other investors would do before investing. The general opinion here is one of strong agreement (+1.31) and, once again, the mean is higher than the median, thus suggesting the existence of a minority of respondents who agree in the extreme.

2 The concept of beating the market refers to obtaining higher rates of return than the market return, within a given time period, at the same level of risk.

Table 1 *Beliefs about the strategies to adopt when trading in financial markets*

	Mean	Median	Mode	Variance	% Agree	% Disagree	Dif.
1. It is possible to beat the market	-0.57	-1.0	-1.0	1.74	22.6%	52.0%	-29.4%
2. When one invests in financial markets it is important to know what other investors will do	1.31	1.0	1.0	1.64	81.4%	10.7%	70.7%
3. The best strategy for investing in financial markets is:							
3a. … buying the stocks issued by the best firms	0.03	0.0	1.0	1.21	39.6%	30.5%	9.1%
3b. … buying the stocks issued by the firms we know best	0.98	1.0	1.0	1.52	75.7%	13.0%	62.7%
3c. … investing in a diversified portfolio	2.26	2.0	3.0	0.94	94.9%	2.3%	92.6%
4. If one wants to invest in the long run, it is better to hold stocks than treasury bonds (bonds issued by the governments)	-0.27	0.0	-1.0	2.21	26.6%	48.6%	-22.0%

Notes: The 177 respondents rated the extent of their agreement or disagreement with each statement. Responses were measured on a seven-point Likert scale, ranging from (-3) to (+3), the extremities of which were labelled "strong disagreement" and "strong agreement," respectively.

It is difficult to reconcile the first two answers. If the market is expected to be difficult to beat, passive investment strategies should be chosen. And if this is the case, it should not be important to know the decisions of other investors in advance. The first two results seem to support the perspective of authors such as Zuckerman (2004) and Tarim (2012) who claim that financial markets, as an area of meaning and practice, are a structurally incoherent terrain due to the different positionality of social actors regarding this institution.

The following statements refer to students' responses about the best investment strategies to pursue. In relation to Statement 3a, it is worth noting that individuals are clearly divided about the desirability of buying stocks issued by the best firms. The level of agreement (39.6%) and disagreement (30.5%) are relatively similar. This is the statement concerning which the level of division among respondents was the most profound. As a result, the overall opinion is neutral (+0.03) and very close to the median (0.0).

Again, the responses to the next two statements show traces of inconsistency in the preferences of the respondents. In relation to Statement 3b, a large majority of respondents (75.7%) believe that it makes sense to buy stocks from companies that one knows best; only 13% of respondents disagree. Thus, the overall level of agreement is high (the mean opinion is +0.98) and opinions are essentially symmetrical (median value of +1.0). This response indicates that a majority

of respondents accept the fundamental principle of "value strategies." Value strategies are perhaps the main active strategy, and rest on the assumption that the best firms can be chosen from the range of possible investment alternatives (this practice is commonly referred to as stock picking).[3]

Answers to Statement 3b appear to be in opposition to the responses observed with respect to Statement 3c. A very large majority (94.9%) of respondents agree with the idea expressed in Statement 3c that a passive investment strategy, obtained through portfolio diversification, is the best alternative.[4] Only 2.3% of the responses involved disagreement. The overall level of agreement is very strong (the mean is +2.26), and the most frequent opinion is of strong agreement (the mode is +3.0), while there are some individuals who very strongly agree (the median is +2.0) and the level of dispersion of responses is the lowest of all the statements under scrutiny (variance of 0.94).

The belief among higher-educated future investors that diversification is a beneficial strategy supports the findings of Reinholtz, Fernbach and De Langhe (2016). The authors report that many people incorrectly believe that diversification increases the mean performance of a portfolio. This bias is especially severe in the case of individuals with a high level of financial literacy, such as those covered by our survey. Regardless of the reasons behind the answers in our survey, the widespread acceptance of the perceived benefits of diversification is an extremely important result from the perspective of financial literacy. For example, Statman (2013) shows that diversification strategies remain the best way to protect portfolios from large losses, even in the context of a financial crisis. Nevertheless, the apparent contradiction between the preferences exhibited in the responses to Statements 3b and 3c seem to reinforce the importance of the structural incoherence mentioned above.

Future investors disagree moderately with the last statement (-0.27 mean opinion) that investing in stocks is better than investing in long-term treasury bonds. There are some extremely negative opinions (the median is 0.0) and the level of divergence of opinions is very high, which is reflected in this statement having the largest variance of the whole set (2.21). It is interesting to note that the general opinion expressed in this statement not only runs counter to

3 A value strategy refers to the identification of mispricing among securities that share similar economic and financial characteristics (Lakonishok, Shleifer and Vishny, 1994; Lobão and Azeredo, 2018). Stock picking, also known as selectivity, can be defined as the ability to select securities that are undervalued and will outperform the market over some period of time (Mikhail,Walther and Willis, 2004; Neto, Lobão and Vieira, 2017).

4 Diversification is a risk management strategy that involves mixing a wide variety of basically uncorrelated securities or asset classes with others within a portfolio with the objective of reducing the overall risk of the portfolio.

empirical evidence that shows that, in the long run, stocks are the class of asset that yields higher risk-adjusted returns (Siegel, 2014), but also differs from the results reported by De Bondt (2005) in a similar survey conducted with a group of European investors with large portfolios.

Survey results by trading experience and field of academic degree

When investigating how beliefs, preferences, and opinions differ for different investor demographic groups, one usually has to introduce financial variables as control variables. However, in the case of our survey the respondents are a fairly homogeneous group – they are all students with an interest in the field of finance. For this reason, we present in Table 2 the comparisons between means computed for two subgroups of respondents. The purpose is to highlight possible differences between the latter.

Trading experience seems to produce some change in investors' beliefs about financial markets. Although there is general disagreement with respect to the first statement in both subgroups (experienced respondents and inexperienced respondents), the percentage of positive (agreement) responses is more pronounced in the subgroup of experienced investors. Only 18% of inexperienced investors agree with the latter statement, while for the sub-group of investors with trading experience the proportion of individuals who concur reaches 39.5%. The difference is statistically significant at a significance level of 1%. This result is consistent with the assertion presented by Barber and Odean (2001, 2002), among others, that a belief in one's own capacities may be a strong source of motivation for investing in financial markets.

With regard to the second statement, the belief that it is important to know about the performance of other investors is stronger in the case of investors with trading experience (+1.48 vs. +1.24), but the difference is not statistically significant.

Opinions about Statements 3a and 3c are not significantly different between the two subgroups. As for Statement 3b – the best strategy is to buy stocks issued by firms people know best – the proportion of "agree" responses is higher for the subgroup of inexperienced respondents (78.4% vs. 65.8%) and the difference is significant but only at a level of 10%.

A substantial divergence of opinion may be observed again with regard to the last statement: while individuals with no trading experience show a preference for holding long-term bonds (mean opinion of -0.45; percentage of concurring responses of 20.9%), respondents who already have traded in financial markets agree with the idea that it is better to hold stocks in the long term (mean opinion

of +0.39; 47.4% concurring responses). The difference is statistically significant at a level of 1%. The opinion of experienced respondents is in accordance with the argument presented by Siegel (2014). The author shows that, historically, the stock market has generated abnormally high long-term returns in most countries. This fact, commonly referred to as the "equity risk premium puzzle," is attributed to investors' excessive reluctance to invest their savings into these markets. Our results complement Siegel's (2014) argument, as they indicate that this reluctance to enter the stock market is based on the (historically erroneous) belief that bonds produce superior results in the long term.

Table 2 *Beliefs about the right strategies to adopt when trading in financial markets according to trading experience and field of academic degree*

	Trading experience						Field of academic degree					
	Experienced (38 obs.)		Inexperienced (139 obs.)		*z* stat.	*p-value*	Finance (162 obs.)		Other (14 obs.)		*z* stat.	*p-value*
	Mean	% Agree	Mean	% Agree			Mean	% Agree	Mean	% Agree		
1. It is possible to beat the market	-0.42	39.5%	-0.61	18.0%	2.81	<0.01	-0.60	21.6%	-0.29	21.4%	0.02	0.49
2. When one invests in financial markets it is important to know what other investors will do	1.48	84.2%	1.24	80.6%	0.51	0.31	1.31	79.6%	1.29	85.7%	-0.55	0.29
3. The best strategy for investing in financial markets is:												
3a. … buying the stocks issued by the best firms	-0.03	39.5%	0.04	39.6%	-0.01	0.50	0.00	35.8%	0.26	71.4%	-2.63	<0.01
3b. … buying the stocks issued by the firms we know best	0.84	65.8%	1.01	78.4%	-1.61	>0.05	1.01	74.7%	0.57	71.4%	0.27	0.39
3c. … investing in a diversified portfolio	2.58	97.4%	2.17	94.2%	0.78	0.22	2.26	93.2%	2.21	100%	-1.00	0.16
4. If one wants to invest in the long run, it is better to hold stocks than treasury bonds (bonds issued by the governments)	0.39	47.4%	-0.45	20.9%	3.28	<0.01	-0.23	26.5%	-0.79	14.3%	1.00	0.16

Notes: The 177 respondents rated the extent of their agreement or disagreement with each statement. One of the respondents did not answer the question regarding the field of academic background. The responses were measured on a seven-point Likert scale, ranging from (-3) to (+3), whose extremities are labelled "strong disagreement" and "strong agreement," respectively. The z statistic tests whether the levels of agreement in the two subgroups of respondents are significantly different.

According to performative theory, as mentioned earlier, market participants produce value judgments based on metrological disciplines – that is, based on disciplines that aim to measure some aspect of reality. As has been emphasized by several economic sociologists who agree with the argument of performativity

(Abolafia 1996; DiMaggio 2002; Pixley 2002; Davis 2006), social actors operate by observing and conforming to the objectives defined by economics and other related scientific disciplines. It was this perspective that led us to break down the results between respondents with an academic background in economics (which includes having completed a course on economics, management, finance, and accounting) and respondents with other areas of expertise.

Results about the impact of the students' field of expertise should be considered with caution given the relatively small number of respondents who reported to having a degree in a field apart from economics. It should be noted, however, that this factor in general does not seem to be of fundamental importance in terms of opinions about

the best strategies to adopt with regard to financial markets. In fact, with the notable exception of Statement 3a, for all the remaining statements the differences observed in the preferences of the two sub-groups was found not to be conventionally statistically significant.

The only significant difference observed in the opinions between the two subgroups of respondents is connected to Statement 3a ("The best strategy for investing in financial markets is to buy stocks issued by the best firms"). The proportion of concurring responses is about double in the group of individuals with no academic background in finance (71.4% vs. 35.8%), and the difference is found to be highly statistically significant (p-value of less than 0.01). This result indicates that learning about pricing mechanisms may be important for helping future investors overcome beliefs that have no empirical support.

CONCLUSION

As Krippner (2005, p. 173) states, "it is difficult to escape the impression that we live in a world of finance." The extraordinary growth of finance over past decades has been accompanied by remarkable efforts to develop the sociology of economics and the sociology of finance (Smelser and Swedborg 1994; Cetina and Preda 2005).

In this paper, we follow the research program of the sociology of finance and investigate, through the survey method, the beliefs of a group of 177 master's students of the School of Economics and Management at the University of Porto (Portugal). The group is understood to be a good proxy of the class of future investors in financial markets.

The opinions collected in the survey show that future investors do not believe that it is possible to consistently beat the market, and that the best strategy is

to invest in a diversified portfolio. This result contradicts other preferences expressed in the same survey and by the same individuals; namely, the idea that one should buy the shares of the companies one knows best, and also the notion that it is important to know what other investors intend to do in financial markets. The inconsistency found in the results is highly significant within the framework of social studies in finance. Indeed, the latter seem to confirm the claim that the universe of financial markets, being characterized by high levels of uncertainty and ambiguity, tends to be inhabited by social actors with structurally incoherent positions (Zuckerman 2004; Tarim 2012). Sociology of finance has revealed that current and future market participants tend to develop different beliefs and rituals (Abolafia 1996) that eventually manifest themselves in incoherent market practices (Beunza and Stark 2005).

The empirical evidence presented in our paper is also relevant with respect to financial literacy programs. Our results suggest that trading experience is important in highlighting to market participants the benefits of long-term stock market participation. In this sense, the responses suggest that the potential benefits of financial literacy strategies may not be solely based on more formal learning methods, but may also rest on activities such as virtual market participation and trading simulation practices (Mandel 2006; Harter and Harter, 2010).

Our study also contributes to developing the conjectures underpinning performativity theories in a financial context. In fact, the results show that institutions such as financial markets that may at first sight appear to be nature-like, or purely technical, are in fact culturally constituted and shaped by social relations and by the relative positioning of actors towards these institutions. For example, the results indicate that while respondents in general disagree that investing in stocks leads to better results in the long term, there are significant differences between the beliefs of individuals with and without trading experience. Following Fama (1970), it is plausible to admit that financial prices only reflect the pieces of information that investors believe are most important. However, if a large proportion of investors believe that it is better to adopt passive investment strategies and ignore the information that is available about the market, prices should incorporate that information only slowly and incompletely. Thus, given that the vast majority of the respondents in our study (94.9%) believe that portfolio diversification is the best investment strategy, it is expected that these future investors will not contribute to the rapid incorporation of such information into financial prices. Thus, following the reasoning of the theory of performativity, it is possible to understand how diversity in the beliefs of social actors can be translated into a variety of practices and strategies in financial markets.

One of the questions left open by this study concerns the degree of persistence over time of the results reported here. On the one hand, it has been argued that the relationships that are established between investors and the investment services industry play a key role in the beliefs developed by market practitioners. The investment services industry provides conceptions and metrological tools for analyzing financial markets, helps to create a discourse about these institutions, and forges strong emotional personal relationships (Roscoe, 2015). However, the rapid development of the industry of investment services may also help to change investor beliefs, with consequences that are difficult to predict. On the other hand, in the aftermath of the most significant global financial crisis of the last 80 years, several scholars and political agents have questioned the role that the financial system has played over the last decades. A vast literature on the so-called "financialization of economies" has proliferated over recent years, and has addressed the phenomenon from an essentially critical perspective (Krippner 2005; Lin and Tomaskovic-Devey 2011, 2013). Whether these criticisms will ever be reflected in investors' beliefs is a matter that should be addressed by social scientists in the future.

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BEHAVIORAL INTERVENTIONS RELATED TO CHOICE DECISIONS: CONVENIENCE AND VISIBILITY INTERVENTIONS VERSUS TASTE PREFERENCE

Rapeepat Manasoontorn[1]

ABSTRACT *Successful behavioral interventions for reducing the consumption of unhealthy food can ease the burden of non-communicable diseases and their economic cost. In prior research, conventional approaches such as the provision of nutritional information were not able to overcome the impact of tasty but unhealthy food. Thus, this study was designed as a field experiment at a casual restaurant to assess the effect of taste using a behavioral approach; namely, a combination of convenience and visibility enhancements of healthier meal choices. The results of this study show that increasing the difficulty of ordering high-calorie food along with decreasing their visibility can reduce calorie intake and compensate for the calorie increase caused by ordering according to taste. However, there are differences in the effectiveness of interventions according to types of participant.*

KEYWORDS: *behavioral economics, taste, food decision, field experiment*

INTRODUCTION

It is evident that non-communicable diseases (NCDs) are one of the leading preventable causes of disease and death throughout the world. The death toll from NCDs is unprecedentedly high. These diseases create costs that extend beyond health issues – causing people to miss work, weakening workforce productivity, dampening economic growth, and creating disparities in opportunity, wealth,

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and power (Bloom et al. 2011; World Health Organization [WHO] 2018). Over the next twenty years, Bloom et al. (2011) estimated that dealing with NCDs could cost more than US$30 trillion, and predicted that a significant persistent economic impact could be expected worldwide. In particular, dietary behavior has become more of a main risk factor in this regard. For example, the prevalence of obesity among adults (those aged 18 years and above) has increased dramatically to around 650 million people throughout the world (World Health Organization [WHO] 2018).

Previous interventions have focused mainly on persuading people to take better care of themselves by providing them with information about how to stay healthy. In order to encourage people to act in their own best interests in terms of their health, behavioral economists have introduced interventions that subconsciously nudge people to make decisions that optimize long-term benefits while at the same time not precluding the familiar lifestyle behaviors with which they are comfortable.

The focus and attention of economists have shifted from assuming the rational decision-making of individuals towards hypothesizing a limited role for rationality in decision-making. Previously, standard economic theories assumed that individuals made decisions rationally, but failed to explain the decisions that individuals make when, for instance, they make choices that are not in their best interest, or are sometimes even harmful to themselves. Food choices are perfect examples of such irrational decision-making, where the visibility, desirability, and availability of particular food items dominate decision-making (Cohen & Farley 2008; Marteau et al. 2012; Wansink & Sobal 2007).

Recently, behavioral economic theories have been implemented in the healthcare sector to address the risk behaviors that have resulted in poor health and increased healthcare costs. Behavioral economic interventions, employed to tackle risky behaviors in the context of NCDs, need to alter unhealthy eating habits and to have an adequate impact in order to mitigate the significant death toll from NCDs. This paper aims to identify behavioral interventions that are more effective at changing unhealthy eating behaviors and to investigate their impact and how they work. Successful behavioral interventions that reduce the consumption of unhealthy food will ease the burden of NCDs.

Based on the sizes of effects investigated per intervention type in prior research, it is anticipated to be convenience enhancements that are among the most effective interventions, being more robust than nutrition labeling. There are two main reasons why labeling may have limited effects. First, nutritional information alone cannot overpower other influences such as an unpalatable taste, or dislike of low-sugar or low-salt and low-fat food (Thunstorm & Nordstrom 2015), or the delayed benefits of having better health after healthy

eating (Lynch & Zauberman 2006; Rick & Loewenstein 2008). Second, when consumers are hungry, they tend to be in immediate need of food and thus are less motivated to process nutritional information before deciding what to eat (Wisdom, Downs, & Loewenstein 2010).

Arguably, the power of combined cognitive and behavioral interventions may prevail over taste preferences, but this statement still needs to be proven. Therefore, the present research is designed to assess the effects of a taste and eating-related behavioral intervention – namely, a combination of convenience enhancements and visibility enhancements of healthy meal choices compared with visibility enhancements alone.

The behavioral bias exploited in this research is the present-biased preference. We address this through convenience and visibility interventions that are intended to increase the immediate cost (in terms of effort) to consumers of ordering tasty but less healthy meals, thereby offsetting the immediate benefit of the former.

Interestingly, no studies in Thailand have examined the combined effect of interventions and taste controlling. The hypothesis is that combining convenience and visibility interventions can overcome the taste effect of less healthy food choices, and that the effectiveness of combined interventions is higher than visibility interventions alone. However, without the influence of taste, the effectiveness of combined interventions may be even greater.

The intention behind this paper is twofold. First, to explore the effectiveness of a combination of convenience and visibility interventions on food intake when individuals' experienced taste regarding food is taken into account. Second, to investigate whether other factors, such as individuals' eating behavior and demographic characteristics, influence the effectiveness of such interventions.

THEORETICAL BACKGROUND

Traditional interventions, such as subsidies for healthy foods or taxes on unhealthy foods and nutrition-related education, have been employed to tackle the aforementioned problem. In spite of these interventions, results indicate that the adult obesity rate has not yet subsided (World Health Organization [WHO], 2018). Afshin et al. (2017), who conducted a meta-analysis of healthy-food-subsidy- and unhealthy-food-tax-related studies, found that healthy food subsidies are more effective than taxing unhealthy food. Taxing sugary beverages has only a moderate effect on normal-weight individuals, and no effect on overweight individuals. These results suggest the possibility that other factors,

such as nutrition-related education or food attractiveness, should be involved in subsidizing and taxing interventions. Murimi et al. (2017) studied nutrition-related educational interventions (e.g., counseling and education about the need to increase fruit and vegetable consumption) and suggested that insufficient time spent on interventions, incomplete intervention delivery, and inadequate support for the "choice environment" contribute to less effective interventions.

In the last few years, evaluating the health consequences of eating habits has loomed as an influential and meaningful research topic (Antunez, Gimenez, & Alcaire 2017; Jo & Lusk 2018; Kurz 2018; Oliveira, Ares, & Rosires 2018; Tangtammaruk 2017). The research objective here is to explore the important but overlooked factors in unhealthy eating. Among such factors is the fact that consumers may intuitively be drawn to a particular food because of its unhealthiness.

"Tasty = unhealthy?"

Taste is generally cited as the foremost reason, or among the top reasons, for consumers choosing particular foods, followed by health concerns and other reasons (Glanz, Basil, Maibach, Goldberg, & Snyder 1998; Lennernas et al. 1997; Tepper & Trail 1998). Consequently, it is very difficult to promote healthy food because taste is often enhanced by the addition of unhealthy ingredients such as sugar, fat, and salt (Drewnowski 1997), and consumers are not willing to substitute taste for the putative health benefits of less tasty food (Verbeke 2006).

Educating consumers about the health benefits of good nutrition not only contributes to changing their perceptions about health, but also to their perceptions with regard to taste (Teisl, Bockstael, & Levy 2001; Mai & Hoffmann 2015). Previous research has revealed a negative relationship between perceived healthiness and taste. Raghunathan et al. (2006) found support for the intuition that "tasty=unhealthy" in that consumers saw less healthy food as tasting better and being more enjoyable to consume, and thus preferred by consumers who value joyful eating over health. They also concluded that American consumers tend to over-consume unhealthy foods because they subconsciously consider unhealthy foods to taste better than healthy foods.

In spite of the strong "tasty=unhealthy" association, there is some evidence of a positive relationship between health and taste. For example, Chinese consumers, unlike their American counterparts, were found to tend to view healthy foods as tasty (Jo & Lusk 2018). Likewise, Jo, Lusk, Muller, and Ruffieux (2016) and Werle, Trendel, and Ardito (2013) found evidence that the equation "tasty=unhealthy" may not be universal. In fact, they found evidence for the

opposing association ("tasty=healthy") in France, where healthier food is rated as tastier. Ultimately, Werle et al. (2013) concluded that cultural and product differences play a role in the variety of consumer perceptions.

Some other groups have also been shown to less strongly associate "tasty" with "unhealthy" (Howlett, Burton, Bates, & Huggins 2009; Irmak, Vallen, & Robinson 2011). Evidence has indicated that health-conscious consumers tend to believe that their actions matter to their health, and thus engage in more preventive health activity than less health-conscious consumers (Gould 1988; Jayanti & Burns 1998). Furthermore, Verbeke (2005) found that both female and older consumers are willing to substitute some loss of taste for the greater health benefits of functional foods. Also, when there is a dire need for food, such as in some underdeveloped countries where some people survive on barely enough food, tastiness is believed to have a positive relationship with healthiness (Drewnowski 1997; Smith 2004).

Heuristics, biases and interventions

Consumers make quite a number of meal-related decisions per year, and food choices involve a complex process that is influenced by many factors – for example, the characteristics of products, the consumers themselves, and context. In order to ease decision-making, these decisions are deeply influenced by heuristics – a rapid form of thinking that creates sufficient but not optimal solutions to accelerate the decision-making process (Wansink & Chandon 2006; Haws, Reczek, & Sample 2017).

To help consumers make healthier meal choices, given that people's choices are not fully rational, interventions that alter the environments in which people make decisions are needed and have become more popular. Hollands et al. (2013) defines interventions as consisting of the changing of various properties; i.e., the placement of items or stimuli as a part of "small environments" with the aim of subconsciously influencing people's behavior via "choice architecture."

These "changing proximity" interventions rely on present-biased preferences. Individuals who have present-biased preferences more highly value present payoffs in relation to future payoffs (O'Donoghue & Rabin 1999). In the context of eating behavior, people's time-inconsistent preferences cause them to choose less healthy food in the present at the expense of poor health in the future. Interventions that affect such present-biased preferences thus need to put disproportionate weight on favoring healthier options.

Changes in convenience – either making healthier food more convenient or making less healthy food less convenient – have been shown to reduce food

intake (Hanks, Just, Smith, & Wansink 2012; Rozin et al. 2011; Wisdom, Downs, & Loewenstein 2010). This is equivalent to adding an extra cost to the "present" by making unhealthy options less accessible. After a period of time, making unhealthy food harder to access helps contribute to body weight loss and is potentially an exceptional strategy among all other healthy eating strategies (Meiselman, Hedderley, Staddon, Pierson, & Symonds 1994; Rozin et al. 2011). In addition, making healthy food more visible by changing the order of items on a menu, or serving healthy food first can increase healthy food ordering and consumption (Dayan & Bar-Hillel 2011; Elsbernd et al. 2016; Kurz 2018). Despite significant results with convenience and visibility interventions, Painter, Wansink, and Hieggelke (2002) went on to test the effectiveness of both convenience and visibility simultaneously and found that food that is more convenient to consume contributes more to overeating than does its visibility.

Other studies have found different results. Harnack et al. (2012) show that serving both fruit and vegetables before other meal items increases only fruit intake but not that of vegetables, which may reflect a compensation mechanism between fruits and vegetables and other menu items. Worst of all, de Wijk et al. (2016) found that making whole grain bread more accessible compared to white bread does not increase its sales. This lack of effect may be explained by a couple of factors. First, people with strong preferences might not primarily be affected by the intervention (Kurz 2018). Second, the effectiveness of interventions is context specific (de Wijk et al. 2016). Hence, interventions require a certain degree of effectiveness if they are to influence consumer decision-making.

Which behavioral intervention is the most effective?

Cadario & Chandon (2019) reanalyzed data in a meta-analysis of healthy eating interventions and made comparisons between them. They divided seven interventions into three types of "nudges" – namely, cognitively oriented nudges, affectively oriented nudges, and behavioral-oriented nudges. First, cognitively-oriented nudges are interventions that attempt to change people's thoughts. For example, food labeling gives nutritional information to people, and visibility enhancements indirectly change information about food options. Second, affectively oriented nudges attempt to change people's feelings without changing their thoughts. These interventions provide hedonic enhancement in the form of attractive pictures of food or mouth-watering food descriptions. Third, behavioral-oriented nudges attempt to change people's behaviors unconsciously. Changes in convenience are located in this category.

Comparison of each intervention type shows that the size of effects increases when changing from cognitively oriented nudges to behaviorally oriented nudges. Interestingly, the best intervention may be expected to be six times more effective than the average intervention, and interventions are more effective at reducing unhealthy eating than increasing healthy eating or reducing eating per se (Cadario & Chandon 2019).

These results give insight into where follow-up research should be heading. First, conducting a study on behavioral interventions for reducing unhealthy eating is likely to be the more effective approach. Second, the lack of evidence regarding the effectiveness of combined interventions should encourage the further study of the effectiveness of mixed interventions such as a combination of behaviorally oriented nudges and other nudges.

METHODOLOGY

Experimental design

The following procedure, as shown in Figure 1, was employed in the study.

Figure 1 *Steps in the experiment*

Step 1	Participants are recruited	PARTICIPANTS
Step 2	Participants rate tastiness of seven pasta dishes	INTERVENTIONS
Step 3	Participants order food from menu	
Step 4	Participants answer surveys	MEASURES

Participants

Three hundred and ninety participants were recruited in this study over a six-month long experiment (15 February 2019 – 15 September 2019) at an Italian fusion restaurant called Barefoot in Chiangmai, Thailand. The experiment was conducted every day during lunch time from 11 A.M. to 3.00 P.M. except on Tuesdays and Wednesdays, when the restaurant was closed. Participants were invited, through a separate advertisement posted in the restaurant and via the

restaurant's social media, to participate in a taste experiment. Participants who agreed to participate needed to buy a lunch set (pasta dish, side dish, drink, and sweet) priced at 300 Thai baht (3,000 Hungarian Forints). A lucky dip draw to win a 1%, 10%, 20%, or 50% discount or a free meal at the restaurant was offered to participants who completed the taste experiment and survey.

Interventions

The study implemented a 2 (taste experiment or not) × 3 (visibility of most calorific, least calorific, or a mix of pasta dishes) × 2 (least convenient of most calorific pasta dishes or not) experiment.

Taste experiment

Participants were invited to the restaurant and lined up to taste the pasta dishes. Different flavored pasta dishes, labeled A to H, were assembled on small plates in equal one-bite-size portions for each participant and were presented one at a time in a random order. The participants were asked to score the taste of the eight different pasta dishes on a scale from "1" ("very poor") to "7" ("very good"). The scores were written down on the form that was provided.

Visibility intervention

After having rated the taste of the different pasta dishes, participants were asked to pick their meal from the menu, first choosing a pasta dish from the pasta dishes they had just tasted, followed by a side dish (seasonal salad, Caprese salad, fried tofu, or potato fries), a drink (latte, milk tea, green tea, or water), and a sweet (panna cotta or Greek yogurt). The presentation of side dishes, drinks, and sweets on the menu was the same across treatments.

The visibility intervention was applied in this experiment by listing the non-highlighted items after the highlighted pasta dishes on the menu. The highlighted menu, however, listed two of the eight pasta dishes. This menu consisted of three treatments, either 1) the two most calorific (carbonara pasta and lasagna), 2) the two least calorific (olio mushroom pasta and chicken sausage pasta), or 3) a mix of both types of pasta dishes (carbonara pasta and olio mushroom pasta), as the status-quo control environment.

Convenience intervention

The convenience intervention came into play when participants choose the pasta dish from the supplementary menu. Participants were given instructions at the bottom of the main menu that said that they could either order the pasta dish from the main menu or the supplementary menu, but that the latter menu was on the back of the menu page. Also, participants needed to write down the name of the dish from the supplementary menu. However, the participants only needed to check off their choice of pasta dish on the main menu.

Both convenience and visibility interventions were implemented only for a choice of pasta dishes so as to observe the compensatory effect on non-pasta dishes. This is because making a choice between the least calorific pasta dishes might have caused participants to compensate themselves with higher-calorie side dishes, drinks, and sweets later on.

Measures

Following meal selection, participants were asked to complete the survey and were informed once again that they would be awarded a random draw of either a discount coupon or a free meal coupon for participating in the taste experiment after they had finished their meals.

Effect of interventions on total calorie intake and pasta calories

The impact of both visibility and convenience interventions on total calorie intake and pasta calories were estimated with Ordinary Least Square (OLS) regression, controlling for taste and participant characteristics. A separate OLS was estimated to examine the compensatory effect on the calorie intake of non-pasta dishes (side dish, drink, and sweet).

Effect of interventions on least calorific dishes

To control for both the impact of taste and the interventions on the choice of the two least calorific pasta dishes, logistic regression was estimated.

Dependent variables and explanatory variables included in this model are as follows:

Table 1 *Variables and definitions*

Variable	Definition
totalcal	Total calorie intake of participant's meal
choselowcalpasta (dummy)	Choice of low-calorie pasta, taking value of "1" if participant chooses one of the two least calorific pastas (olio mushroom pasta & chicken sausage pasta), and "0" otherwise
pastacal	Pasta calorie intake of participant's meal
nonpastacal	Non-pasta calorie intake of participant's meal (side dish, drink, and sweet)
taste (dummy)	Participant involvement in the taste experiment, taking value of "1" if participant engages in the pasta taste experiment or otherwise "0"
vishigh (dummy)	Visible intervention on most calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
vislow (dummy)	Visible intervention on least calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
vismixed (dummy)	Visible intervention on mix of both most and least calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
visconhigh (dummy)	Visible and convenient intervention on most calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
visconlow (dummy)	Visible and convenient intervention on least calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
visconmixed (dummy)	Visible and convenient intervention on mix of both most and least calorific pasta menu, taking value of "1" if participant receives this menu, and "0" otherwise
age	Participant's age
bmi	Body Mass Index is ratio of participant's weight (kilograms) to square of participant's height (meters)
female (dummy)	Female participant, taking value of "1" if participant is female, or "0" otherwise
diet (dummy)	On diet participant, taking value of "1" if participant states that he/she is currently watching or restricting their number of calories, and "0" otherwise
yearedu	Participant's years of education
income	Participant's monthly salary, ranging from "1" (below 5,000 baht) to "7" (30,001 and higher)
enjoymeal	Participant's response to "How much do you think you will enjoy your meal?", on a scale from "1" (won't enjoy very much) to "7" (will really enjoy it)
hungry	Participant's response to "How hungry do you feel right now?" on a scale from "1" (not at all hungry) to "7" (extremely hungry)

RESULTS

Participants

A total of 390 participants engaged in the experiment (180 in visibility treatment, 180 in visibility and convenience treatment, and 30 in super control treatment). The majority of participants reserved seats in advance to take part in the experiment. Sixty-five percent were female, 94.36 percent Thai, 4.6 percent other Asian, and 1.04 percent American/European. The average age of participants was 29.77 years old, and ages ranged from 5 to 69. The average body mass index (BMI) of participants, calculated from participant-reported weight (kilograms) divided by squared height (meters), was 22.62, ranging from 13.76 to 37.83.

Twenty four percent of participants were overweight according to the commonly accepted threshold (BMI $\geq$ 25). Thirty-three percent of participants reported that they were currently dieting. Participants reported a mean hunger level of "6" and a mean anticipated meal enjoyment of 4.97 (both on 1-to-7 scales). The majority of participants reported that their income was higher than 30,001 Thai Baht (300,000 Hungarian Forints) per month and two-thirds of participants reported that they visited the Barefoot restaurant where the study was conducted about once a year or less. Participants' educational level was a bachelor degree on average.

Tastiness versus healthiness

Figure 2 shows how each pasta type, tastiness, and the calories of pasta items interact. Lasagna was the most preferred dish, whereas olio mushroom, chicken sausage, and bacon sun-dried chili were among the least preferred. The average taste scores for all pasta alternatives range from 4.24 to 5.84 (on 1-to-7 scales), and the average taste scores for the top two least calorific pastas was 4.29 (healthy alternative) and 5.22 (unhealthy alternative) for the top two most calorific types of pasta, and an average of 4.76 across all pasta dishes.

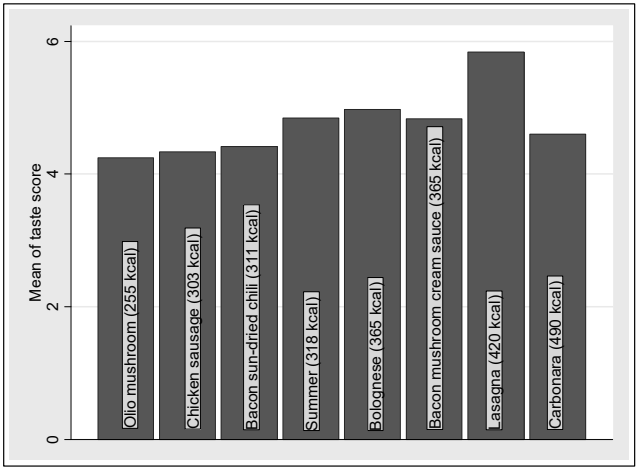
Taste tends to be positively related to calories because taste is boosted by fatty, sugary, and salty components, which are unhealthy. That is, the mean taste score of pasta was strongly related to number of calories, if the five lowest calorie pastas are considered ($r = 0.81$, $p < 0.1$). Results seem to support the UTI (unhealthy=tastiness) hypothesis in which tastiness and healthiness are negatively related. Essentially, tastiness is enhanced by unhealthy food

ingredients. Without considerations of health consciousness and other influencing environments, food choices are mainly based on food flavor.

The taste experiment was included in the regressions to estimate the impact of taste and visibility and convenience on pasta choice and calorie intake. The results of the taste experiment are reported first, followed by those of the regressions on calorie intake determinants.

The results of the taste experiment confirm a strong positive effect of taste on calorie intake (Figure 3). When compared to the no-tasting group, the tasting treatment led to higher calorie intake in every menu offered. Statistically, if participants awarded taste a score of more than "4" to any type of pasta, this reduced their chance of picking a low-calorie pasta by 41%. Taste boosted pasta calories and meal total calories by around 30 calories and 100 calories, respectively.

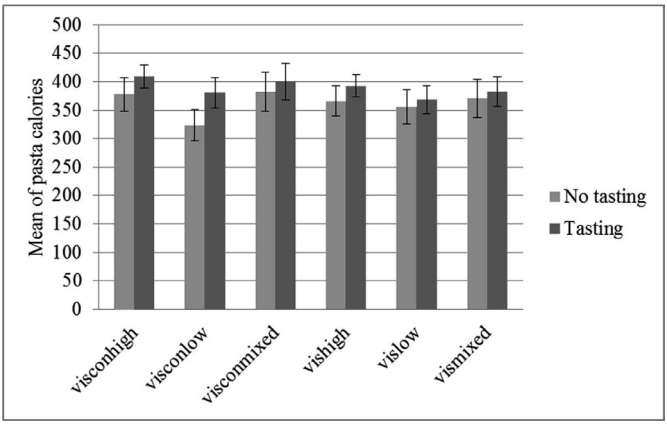
Figure 2 *Taste score*



Surprisingly, participation in the tasting treatment not only had an effect on pasta calories but also non-pasta calories, even if participants tasted only pastas. It is possible that the taste of pasta may have worked as an anchor that strongly influenced non-pasta orders. Participants tended to order more non-pasta calories when they tasted pastas first.

Overall, the results imply that the less healthy the food, the higher the taste score and the more calories consumed by participants.

Figure 3 *Comparison of mean pasta calories consumed and 95% confident intervals across menu*



Nudge effects on pasta and meal calories

A regression analysis was implemented to test the hypotheses and the impact of nudge effects on calorie intake, with controls for demographic characteristics. At the designated restaurant, the salience of the low-calorie or high-calorie or mixed-calorie pastas was increased by adjusting the menu (visibility) and manner of ordering (convenience). Table 2 separates the results into three types by interventions: 1) only visibility, 2) visibility and convenience, and 3) aggregating 1 & 2.

Visibility

Two dummy variables of nudges were included in the regression to test the visibility effect of both least calorific and most calorific pasta menus, compared to the mixed-calorie pasta menu. In the visibility intervention (Column (1) in Table 2), the least calorific menu *(vislow)* had a significant negative impact on total meal calories with an estimated coefficient of −50.17, even though it was intended to refer directly to only the pasta menu. However, the most calorific menu did not significantly affect total meal calories.

Table 2 *Regression on total calorie consumption & pasta calorie consumption*

VARIABLES	(1) Visibility	(2) Visibility and Convenience	(3)All	(4) Visibility	(5) Visibility and Convenience	(6)All
	Total calorie	Total calorie	Total calorie	Pasta calorie	Pasta calorie	Pasta calorie
taste	121.6*** (23.91)	91.27*** (27.20)	106.1*** (17.79)	13.45 (11.68)	39.31*** (12.20)	26.61*** (8.287)
vishigh	20.67 (28.06)		-15.88 (26.07)	3.722 (13.70)		-7.019 (12.15)
vislow	-50.17* (29.20)		-82.31*** (26.36)	-18.14 (14.26)		-24.73** (12.28)
age	-4.171** (1.765)	-2.567* (1.453)	-2.665** (1.063)	-1.493* (0.862)	-1.452** (0.652)	-1.542*** (0.495)
bmi	11.92*** (2.734)	8.074** (3.689)	9.425*** (2.201)	2.749** (1.335)	1.853 (1.655)	2.136** (1.025)
female	-0.730 (24.97)	29.44 (29.06)	16.71 (18.94)	-9.974 (12.19)	12.91 (13.04)	1.810 (8.824)
diet	-82.40*** (25.15)	-15.42 (29.10)	-46.14** (18.98)	-2.688 (12.28)	-3.753 (13.06)	-1.902 (8.845)
yearedu	3.031 (5.301)	8.237 (6.357)	6.159 (13.06)	-0.109 (2.588)	1.677 (2.852)	1.535 (1.890)
income	6.301 (6.928)	0.0248 (7.544)	1.295 (5.012)	0.184 (3.383)	3.085 (3.385)	1.334 (2.335)
enjoymeal	-9.596 (13.12)	0.467 (14.78)	-4.786 (9.696)	-2.560 (6.404)	2.015 (6.632)	0.634 (4.517)
hungry	25.24*** (8.902)	28.23*** (10.09)	25.00*** (6.644)	-6.133 (4.347)	6.611 (4.529)	-0.559 (3.095)
visconhigh		-53.84* (32.40)	-20.58 (26.12)		0.729 (14.54)	10.05 (12.17)
visconlow		-84.36*** (31.78)	-55.64** (25.42)		-41.07*** (14.26)	-30.37** (11.84)
Constant	464.2*** (133.7)	420.6*** (155.9)	445.6*** (101.7)	409.5*** (65.27)	279.4*** (69.95)	338.3*** (47.37)
Observations	175	174	349	175	174	349
R-squared	0.305	0.170	0.209	0.103	0.166	0.110

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

Visibility and convenience

Results indicate that visibility and convenience can influence calorie intake ($B = -84.36$, $p < 0.01$) almost as much as taste ($B = 91.27$, $p < 0.01$) if only total meal calories are considered (Column (2)). Visibility and convenience

interventions on the low-calorie menu (*visconlow*) led participants to order significantly fewer calories.

Interestingly, when considering only pasta calories, which is what was intended from the menu, visibility and convenience combined in the low-calorie menu to outperform the taste effect. In terms of numbers, visibility and convenience reduced the pasta calories consumers ordered by 41.07 calories compared to a 39.31 increase in pasta calories by taste (Column (5)). That is, taste had less power to influence what participants would eat than the environments did during the decision-making.

Aggregating all interventions

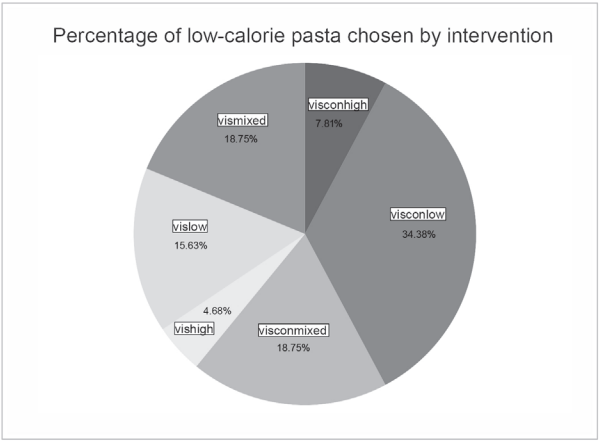
Comparison of the impact of the two interventions on total calories and pasta calories can be observed in Columns 3 & 6 in Table 2. The significant negative interaction between the visibility intervention and total calories signifies that weaker intervention (only visibility: *vislow*) had a significantly larger impact on total calories ($B = -82.31$, $p < 0.01$) than did stronger intervention (both visibility and convenience interventions: *visconlow*) ($B = -55.64$, $p < 0.05$) (Column (3)). However, this effect could not overpower the taste effect ($B = 106.1$, $p < 0.01$). When considering pasta calories instead of total calories, the effect was the opposite. The stronger intervention ($B = -30.37$, $p < 0.05$) overpowered both the weaker intervention ($B = -24.73$, $p < 0.05$) and taste ($B = 26.61$, $p < 0.01$) (Column 6).

While overall calorie intake can be decreased with the help of nudges, the data show that some participants' characteristics may also strengthen nudge power. Older participants and those who self-reported being on a diet consumed significantly fewer total calories. However, participants with higher BMIs and levels of hungriness took in more calories (Table 2). Surprisingly, female participants tended not to order low-calorie pasta, and education, income, and enjoyment were not significant.

Pasta versus non -pasta calories and compensatory effect

Figure 4 gives a brief overview of how each intervention interacted with low-calorie pasta choice. Visibility on the least-calorific menu combined with convenience responded best to low-calorie pasta choice, while visibility on the most-calorific menu alone or combined with convenience were among the worst. Thirty-five percent of participants who received visibility plus convenience on the least-calorific menu chose low-calorie pasta.

Figure 4 *Proportion of diners choosing low-calorie pasta according to intervention (%)*



The reasons why each intervention worked (or not) were explored further through separate regressions. The determinants of low-calorie pasta choice and non-pasta calories (side dish, sweet, and drink) were regressed (Tables 4 & 3).

The visibility intervention alone on the low-calorie menu (*vislow*) or visibility and convenience combined on the high-calorie menu (*visconhigh*) may have significantly helped participants but could have indirectly resulted in total calorie reduction (Columns 2 & 3 in Table 3) through decreasing by 57.78 and 54.57 non-pasta calories, respectively (Columns 1 & 3 in Table 3).

Table 3 *Regression on non-pasta calorie consumption*

VARIABLES	(1) All	(2)Visibility	(3) Visibility and Convenience
taste (dummy)	79.48*** (15.57)	108.2*** (21.25)	51.96** (23.58)
vishigh (dummy)	-8.858 (22.82)	16.95 (24.93)	
vislow (dummy)	-57.58** (23.07)	-32.03 (25.94)	
age	-1.122 (0.930)	-2.678* (1.569)	-1.115 (1.260)
bmi	7.288*** (1.926)	9.166*** (2.429)	6.221* (3.198)

female (dummy)	14.90 (16.58)	9.244 (22.19)	16.53 (25.20)
diet (dummy)	-44.24*** (16.62)	-79.71*** (22.35)	-11.67 (25.22)
yearedu	4.624 (3.552)	3.140 (4.711)	6.560 (5.511)
income	-0.0392 (4.387)	6.117 (6.156)	-3.060 (6.540)
enjoymeal	-5.420 (8.487)	-7.036 (11.65)	-1.549 (12.81)
hungry	25.56*** (5.816)	31.37*** (7.911)	21.62** (8.749)
visconhigh (dummy)	-30.63 (22.86)		-54.57* (28.09)
visconlow (dummy)	-25.27 (22.25)		-43.29 (27.55)
Constant	107.3 (88.99)	54.76 (118.8)	141.2 (135.1)
Observations	349	175	174
R-squared	0.174	0.290	0.109

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

Additionally, logistic regression was applied to examine the effectiveness of interventions on the choice of low-calorie pasta (Table 4) where the reported parameters were the regression coefficients. Table 4 (Columns 1 & 3) shows that there was neither significant impact on pasta choice when applying a visibility intervention on the low-calorie menu *(vislow)* nor on visibility and convenience intervention on the high-calorie menu (*visconhigh*), although interventions were intended to affect pasta decisions. These findings lead to the explanation that there was a potential trade off or compensatory effect between consuming higher calorie pasta and then consuming fewer non-pasta calories. Participants who ordered higher calorie pasta may have later preferred to reduce overall calorie intake by ordering fewer non-pasta calories. It is worth noting that this effect was eliminated when drink-related calories were excluded.

Table 4 *Logistic regression on choice of low-calorie pasta*

VARIABLES	(1) All	(2) Visibility	(3) Visibility and Convenience
taste (dummy)	-0.992*** (0.207)	-0.642** (0.297)	-1.328*** (0.323)
vishigh (dummy)	-0.868** (0.360)	-0.974** (0.385)	
vislow (dummy)	-0.104 (0.273)	-0.240 (0.329)	
age	0.0369*** (0.0104)	0.0202 (0.0199)	0.0517*** (0.0142)
bmi	-0.101*** (0.0314)	-0.100** (0.0437)	-0.125*** (0.0475)
female (dummy)	-0.308 (0.212)	0.142 (0.333)	-0.754** (0.309)
diet (dummy)	0.571*** (0.210)	0.567* (0.306)	0.756** (0.332)
yearedu	-0.0308 (0.0411)	0.0319 (0.0623)	-0.0575 (0.0585)
income	-0.0619 (0.0548)	-0.0152 (0.0850)	-0.127 (0.0809)
enjoymeal	0.110 (0.100)	0.258 (0.162)	0.0205 (0.145)
hungry	-0.162** (0.0726)	-0.0905 (0.111)	-0.289*** (0.111)
visconhigh (dummy)	-0.593* (0.320)		-0.348 (0.396)
visconlow (dummy)	0.626*** (0.237)		0.962*** (0.332)
Constant	1.814 (1.146)	-0.388 (1.756)	3.847** (1.646)
Observations	349	175	174

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

The visibility and convenience interventions on the least calorific menu, on the other hand, had their strongest effect on pasta choice, which was not unexpected because the interventions were aimed at pasta order, but not at side dish, sweet, and drink choice. As many as 36.67 percent of participants chose the least calorific pasta when this intervention was implemented. The regression results support this descriptive analysis. There was an increase in the predicted probability of participants choosing a low-calorie pasta when the least calorific menu was made visible and convenient (*visconlow*). Conversely, participants were less likely to order low-calorie pasta when the most calorific menu was made visible and convenient (*visconhigh*). Likewise, weaker intervention on

the high calorific pasta menu (*vishigh*) decreased the predicted probability of choosing a low-calorie pasta (Table 4).

Effects among overweight participants

The aforementioned analyses are based on the entire population of this study, who may not have had health problems or any reason to change their eating habits. This section, on the other hand, measures the impact of interventions on overweight participants (BMI ≥ 25) who typically need to cut down meal-related calories.

Table 5 shows regression results for the overweight participants (n = 95; 24.48 percent of the sample). Dependent variables are total meal calories and pasta calories (Columns 1 & 2) and non-pasta calories (Column 3). Independent variables are the same as for the whole population.

Table 5 *Effects of taste, visibility, and convenience on overweight participants (BMI≥25)*

VARIABLES	(1)	(2)	(3)
	Total calorie	Pasta calorie	Non-pasta calorie
taste (dummy)	72.56*	4.753	67.81**
	(37.45)	(19.03)	(32.32)
vishigh (dummy)	-59.62	-8.226	-51.40
	(58.16)	(29.56)	(50.20)
vislow (dummy)	22.23	-29.14	51.37
	(57.37)	(29.16)	(49.51)
age	0.814	-1.980**	2.794*
	(1.758)	(0.894)	(1.518)
bmi	11.77**	5.437*	6.336
	(5.759)	(2.927)	(4.971)
female (dummy)	1.142	1.399	-0.257
	(35.15)	(17.87)	(30.34)
diet (dummy)	-42.60	-0.277	-42.32
	(36.08)	(18.34)	(31.14)
yearedu	9.704	4.706	4.998
	(12.04)	(6.120)	(10.39)
income	-2.640	0.732	-3.373
	(10.20)	(5.183)	(8.801)
enjoymeal	-11.90	-4.789	-7.115
	(20.20)	(10.27)	(17.43)
hungry	24.69*	-8.370	33.06***
	(13.72)	(6.971)	(11.84)

visconhigh (dummy)	13.14 (55.72)	-16.09 (28.32)	29.23 (48.09)
visconlow (dummy)	-180.9*** (48.31)	-35.33 (24.55)	-145.5*** (41.70)
Constant	295.2 (284.6)	292.7** (144.6)	2.519 (245.6)
Observations	86	86	86
R-squared	0.344	0.219	0.329

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

Compared to the whole population, all nudges converted 15.46% of overweight individuals' choice of pasta to low-calorie pasta – approximately 2% less than for the total population. While the taste of pasta and combined interventions on the least-calorific pasta menu had the same effect on calories consumed among overweight participants, the single intervention (*vislow*) did not work on overweight participants. In fact, the single intervention resulted in movement in the opposite direction towards total calories, but this was not significant (Column 1 in Table 5).

Since only visibility and convenience in combination worked on overweight participants rather than visibility alone, this suggests that convenience was significant in determining what overweight individuals would eat. Moreover, this finding emphasizes the need to further investigate the effectiveness of interventions in more detail on this sub-sample, since it is this group of people who urgently need to shift their behavioral patterns to make sure that a desirable effect is achieved.

DISCUSSION

General discussion

This study is among the first pieces of research to investigate the effects of both taste and nudges (namely, visibility and convenience) on food consumption. The differences in nudging effectiveness on each type of participant (for example, overweight and normal weight participants) make this topic more worthy of investigation. Also, the taste effect that may alter nudging effectiveness also requires research attention.

The results of this study show that consumers can be nudged to order lower-calorie food even when the influence of taste is accounted for. Both visibility and convenience played a role in determining consumption choice at the

restaurant. These findings support the claim of previous studies that behavioral interventions are among the most effective ways of reducing unhealthy eating, but suggest that combined cognitive and behavioral interventions are stronger. Judging by the calorific intake of our sample, combined interventions can nudge consumers, with or without the influence of taste, to reduce unhealthy eating. Considering broader samples, both visibility and convenience on the least calorific menu decreased the total calories ordered. The combined interventions on the least calorific menu also reduced pasta calories and influenced pasta choice significantly, whereas the visibility intervention alone on the least calorific menu only reduced total calories but did not influence pasta choice. However, applying the single intervention on overweight consumers neither helped reduce calorie intake nor affected pasta choice.

Unlike previous studies, the impact of combined interventions on high-calorific pasta was surprisingly weakened by compensatory effects. Instead of compensating using a low-calorie menu now with a high-calorie menu later, the higher calorie content of pasta choices was compensated for and overpowered by the lower calorie content of the non-pasta choice. This finding suggests that merely making a high-calorific menu more visible can succeed in reducing calorie intake if low-calorie, non-main-dish choices are included in decision-making. In contrast, this trade-off can have inverse consequences in terms of more visibility of low-calorie main dish menus as well. The inventions must be applied cautiously since the effect can be dampened by this trade-off.

While education was initially believed to potentially increase health knowledge and to improve eating habits, the results showed that calorie intake was similar across participants with different education levels. This suggests that both those with a low- and high-level education can equally be nudged to reduce calorie consumption.

Policy recommendations and concerns

The ineffectiveness of visibility interventions related to overweight participants suggests that weaker interventions are not enough to change the eating behavior of this group. Stronger interventions or combined interventions should be considered to nudge the overweight group to make healthy changes. In this study, adding difficulty to ordering high-calorie food along with decreasing its visibility was able to reduce calorie intake and compensate for the calorie increase caused by ordering according to taste.

However, before scaling up policy implementations, it is vital to find out why nudges work (do not work). The compensatory effect might partly

explain why interventions that target low-calorie main dish choices are not very effective. Consumers who choose low-calorie main dishes because of the factor of visibility and convenience may add extra calories later on via side dishes, drinks, and sweets, and vice versa. Further research is still needed to understand the compensatory behaviors of the overweight population, for which this study did not produce results due to the small sample of these participants. Additionally, social interaction at restaurants might also influence and complicate compensatory behaviors. Customers who come in a group may order a variety of types of food for sharing with the group without considering calories. The study of the interrelationships in group dining that may influence compensatory behaviors is also worth exploring.

The question whether such policies would be become burdensome to restaurants if they were implemented can be answered in a quite straightforward manner. First, the implementation cost of nudging customers to make healthy food choices at real restaurants is minimal. Restaurants only need to make minor adjustments to their menus. Second, such nudging need not negatively affect their profit. To sum up, nudging consumers toward better nutrition is not difficult to implement and represents little burden to restaurants.

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IN TRUST WE THRIVE: WHAT DRIVES THE SHARING ECONOMY?

Kinga Szabó, Dr. Gauri Shankar Gupta[1]

ABSTRACT *The rapid growth of the sharing economy in the last two decades may signal a paradigm shift in global capitalism and societal values. Digital platforms have brought together strangers with under-utilized capacities and assets with those who need them but who are not looking for ownership. The radius of trust, which was initially confined to family, friends and local communities, now encompasses strangers who speak no common language and who may live oceans apart. Trust, driven by Digital Identity (DI) and Trust and Reputation Information (TRI), has enabled what was considered improbable or even impossible some years ago. The further expansion and deepening of trust, based on new technologies combined with the international legal framework, has the potential to rewrite the apparatus of modern capitalism and societal values. Civil society and governments need to engage on this issue to guide them in a direction that is most beneficial to society. However, the current extraordinary situation due to the Coronavirus pandemic, coupled with the foreseeable tendency to complete digital control, is likely to have far-reaching impact on the future development of the sharing economy.*

KEYWORDS: *sharing economy, trust, digital platform, digital identity, trust and reputation information*

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INTRODUCTION AND THEORETICAL BACKGROUND

We humans are social animals (Aronson, 2007), driven by a need to belong (Brooks, 2011), and "an urge to merge." Therefore, sharing is as old as the very existence of mankind. In ancient times there were many examples of the sharing economy, involving hunting, fishing, farming, and cooking. Subsequently, these practices took the form of tribal or community behaviour and rules. In more recent times, public toilets, public baths, public libraries, public transport, public parks, hotels, community cooking, and similar other practices are good examples of the sharing economy. With the advent of internet, mobile devices, mobile applications, and technology platforms, the sharing economy has taken on a completely new form in the twenty-first century. Global business models have emerged driven by peer-to-peer (P2P) or consumer-to-consumer (C2C) internet platforms, social media platforms, and information systems based on real-time interaction. With the rapid growth of information technology and a variety of online platforms, the global economy has been witnessing what we call the "sharing economy" (SE), which is new form of business model for time-sharing resources and assets and exchanging goods and services. This is different from opening a store, hiring employees, and selling products to consumers.

DEFINING THE SHARING ECONOMY

Bartering goods and services is an ancient practice. Before the advent of money (currency) as medium of exchange, there were physical markets for enabling the barter of goods and services. In a limited way, the modern concept of the sharing economy started with the sharing of excess- (both in terms of quantity and time) resources and assets on digital platforms. Strictly speaking, the sharing economy was initially identified with peer-to-peer platforms for time-sharing excess resources. However, over time the concept expanded and now covers some elements of e-commerce, including the bookings made through online market places. Thus, the sharing economy is an economic model based on peer-to-peer activities on an IT-based platform involving providing or sharing access to an excess of goods and services. Many academic experts describe the sharing economy as a growing ecosystem of online platforms and market places devoted to the exchange and renting of goods and services (Botsman et al. 2010; Hawlitschek et al. 2016; Lessig, 2008; Zervas et al. 2015). Traditional forms of sharing, bartering, lending, trading, renting, gifting, and swapping, are being redefined by using digital technology, which is revolutionizing and

mainstreaming the way people consume and share knowledge (Gata, 2015).

While the term "sharing economy" is very popular and has been in use for over two decades, a widely accepted, well-articulated, precise and comprehensive definition is still lacking. Thus, multiple definitions are still under intense debate in academia, government, and the business community. The sharing economy is also known as collaborative consumption, the platform economy, access-based consumption, and so on (Botsman et al. 2010; Bardhi et al. 2012). According to Böckmann, the sharing economy refers to a business model whereby participants share unused resources and assets among them via a peer-to-peer (P2P) platform (Böckmann, 2013). This model implies the creation of economic value or the monetization of unused resources and assets through multiple transactions without loss of ownership mediated by use of a P2P platform. Thus, use of a peer-to-peer business model that provides temporary access to the private resources of other individuals using a real-time IT platform is the fundamental characteristic of the sharing economy. Economic transactions that occur in line with this model are based on payments for one-time use, or time-based rentals or fees, and do not involve the transfer of ownership. However, there are sharing economy platforms like eBay where ownership changes hands. Therefore, in this broader sense, the sharing economy implies a new economic model based on digitally-enabled, peer-to-peer platforms for goods and services that connect the spare capacity of individuals with the demand of those who need the former, and offer access by enabling renting, lending, swapping or even selling (Avital et al., 2015; Bardhi et al. 2012; Belk, 2014; Botsman et al. 2010; Möhlmann, 2015). The extensive penetration of information technology and peer-to-peer digital platforms in all spheres of human interaction has created numerous options for online communication. It has transformed the way people think, live, eat, travel, shop, entertain, and interact. On the negative side, the growth of a plethora of digital platforms over the last two decades has also given birth to an increasingly anonymous, impersonal, and virtual society that many perceive to be unpredictable, uncertain, and devoid of warmth (Cook et al., 2005; Giddens, 1990; Luhmann, 1994; Sztompka, 2000).

In most cases, these market places comprise individuals (consumers) who transact directly with other individuals (sellers), while the marketplace platform itself is maintained by a third party (Botsman et al. 2010). This new model of the economy has provided an opportunity for individual owners to use their idle assets/resources to generate regular income through use of an IT platform to generate real-time interaction. For example, Uber's platform that enables idle vehicles to be used for the transportation of passengers, and Airbnb's platform for individuals to rent unused apartments, clearly represent sources of additional income for the respective owners. Although a variety of IT platforms

have emerged to contribute to the sharing economy, the sharing of vehicles and accommodation are two principal areas where the sharing economy has spread its wings wide and fast. The personal transportation network Uber and the accommodation-sharing platform Airbnb have emerged as global giants (Demos, 2015). The sale and exchange of goods and equipment is another important area where large platforms such as eBay have emerged.

A PwC Consumer Intelligence Series document published in 2015 estimated the size of the global sharing economy at $15 billion, which is like to likely to expand to over $335 billion by 2025. According to this report, peer-to-peer access-driven business transactions are shaking up existing businesses, and 44 percent of US consumers were familiar with the sharing economy. Airbnb hosted 155 million guest stays in 2014, 22% more than the Hilton worldwide which hosted 122 million guests. Within five years, Uber was operating in 250 cities and by February 2015 was valued at $41.2 billion (PwC, 2015). Tech pioneers like Amazon, Google, eBay, and PayPal, coupled with smart phones, IT applications, and IT platforms have changed traditional ways of doing business within a very short span of time. Fundamental changes in social perceptions regarding the ownership of assets are one of the prime movers of the sharing economy. With such changing global perspectives, today the ownership of assets is no longer considered an important symbol of status in society. The younger generation is happy with the time-sharing of assets. According to a study conducted by Nielsen during August-September 2013 that covered 60 countries with over 30,000 respondents, sixty-eight percent of global online consumers were willing to share or rent their personal items for payment. The survey revealed that 28 percent of respondents were willing to share their electronic devices, 23 percent their power tools, 22 percent bicycles, clothing, household equipment, and sports equipment, and 21 percent their car (Nielsen, 2014). According to the Demos study, there are considerable opportunities in this booming market as there is almost $3.5 trillion dollars' worth of resources sitting idle. These idle assets and the desire to share these assets for monetary consideration is therefore the driver of the sharing economy. Environmental considerations, a lack of space, traffic congestion, maintenance issues, and other fixed costs are other important considerations. For example, the sharing of cars reduces pollution, traffic congestion, parking problems, and fixed costs such as insurance premiums, interest on investment, and the cost of parking space. Considering the importance of the sharing economy, Rifkin described it as the third industrial revolution (Rifkin, 2011).

TRUST AS THE FOUNDATION OF THE SHARING ECONOMY

While the factors stated above are important, trust is the cornerstone of the sharing economy. A closer look shows that trust is as old as the existence of the human race. To share is to trust. Trust is based on the strong belief that a person or institution is dependable and is going to do things in a consistent and reliable manner in accordance with assurances or expectations. This implies aligning words and action. It is improbable to conceive of the sharing of assets and resources when there is a trust deficit between the parties involved. Moreover, trust is a two-way street. Both sides must reciprocate and reinforce trust through their actions. With consistency in words and behaviour over time, trust grows and becomes firmly rooted. According to Gefen et al., "trust is the belief that the other party will behave in a dependable, ethical, and socially appropriate manner" (Gefen et al. 2003, p. 53).

Historically, trust was initially confined to family members or blood relations, which is why it is said that blood is thicker than water. Gradually, trust expanded to close friends and local communities. While there is considerable debate about the precise definition of trust, it is generally agreed that trust is a psychological state that reflects the willingness of an individual to place himself or herself in a vulnerable position vis-à-vis the actions of another individual or institution, while knowing fully well that they have no direct way of monitoring the behaviour of the other individual. Trust also depends on the place and the context. In general, trust has stronger roots in nomadic societies, tribal communities, and close-knit societies. Commenting on the historical evolution of trust, Cook and Putnam hold the view that trustworthiness and trust were initially bestowed only on members of one's family and close family friends, who formed an intimate, homogeneous community with shared norms and sets of behaviours that facilitated honesty and cooperation (Cook, 2001; Putnam, 2000). In this sense, family, neighbourhood, observed behaviour in the past, and physical proximity played an important role in fostering trust.

Sociologists believe that close social interaction helps with initiating and promoting trust. Frequent social interaction during social or religious events or community matters offers such opportunities. Linguistic affinity, ethnicity, and professional and institutional association also foster trust. Coleman argues that trust is not lodged either in the actors themselves or in the physical implements of production, but is usually built among members of closed networks, such as communities that frequently interact, and through close family, religious, and community affiliations and interactions (Coleman, 1988). According to Mayer et al. trustworthiness is the willingness to be vulnerable to the actions of another

party, based on the expectation that the other will undertake particular action that is important to the trustor, irrespective of the ability to monitor or control that other party (Mayer et al. 1995). As suggested by Barber, trust in social exchanges is based on the expectation of the consistent fulfilment of fiduciary obligations and responsibilities based on a natural and social order. Thus, from a social perspective, trust is centred on moral duties and obligations (Barber, 1983). From a rational and financial perspective, trust centres on self-interest; an increase in trust will decrease the transaction cost associated with protecting oneself from others' opportunistic behaviour or mischief (Lauer et al. 2007). The non-fulfilment of obligations may result in substantial financial losses to the trustor.

The sharing economy represents an altogether new setting. Here, individuals are required to interact with strangers with no past experience. Moreover, unlike in a neighbourhood or in a shopping mall, interaction is not physical but mediated through an invisible platform. Additionally, such individuals may come from two different parts of the world, and may not even speak the same language. Hence, sharing goods and services via internet and digital platforms is based on the fundamental premise of de facto strangers interacting with each other in the digital virtual sphere. Most often, the role of vendor is adopted by another private individual or a corporation, such as occurs with renting out cars, two wheelers, apartments, or other equipment. Nevertheless, the platform acts as a mediator between both sides – the supply side and the demand side – of the market. Since transactions on the internet are anonymous, trust becomes a critical factor in decision making. Obviously, no-one wants to risk financial loss or the security of their person. Thus, without trust no sharing is possible, especially on a regular basis, although there may be a period of trial and error in the first few instances. Trust is central to the normal conduct and survival of any online business (Subba Rao et al. 2007), and is of the utmost importance in relation to users' intention to continue using online services (Zhou et al. 2018).

"Sharing, whether with our parents, children, siblings, life partners, friends, co-workers, or neighbours, goes hand in hand with trust and bonding" (Belk 2010, p. 717). In the context of the sharing economy, given its critical role, trust is even referred to as the currency essential for transactions to occur (Botsman et al. 2010). However, trust is a multifaceted and complex construct – often hard to pin down to one particular factor (Keen et al. 1999). Trust allows us to form communities and institutions, to cooperate and interact with each other, and even, at times, to find solutions that go beyond plain self-interest. Trust determines the nature of the relationships we form with our family and friends, and why and how we develop business relationships or decide to buy products in the marketplace (Cook et al. 2009).

Being perceived as trustworthy is an important source of motivation that has impacts extending beyond one's immediate community circle (Sztompka, 2000). It involves the concept of reputation, which travels far and wide. A breach of trust could lead to financial loss, mental stress, and even physical harm that adversely affects reputation. For example, a defective vehicle could cause an accident, or unsafe accommodation could become the cause of illness or a source of financial loss. Therefore, given the dominance of strangers, trust in the context of the sharing economy is far more important than in an ordinary business transaction. In practice, trust starts with personal relationships, then moves to communities and functional systems and abstract social objects, and finally transcends all these circles, connecting all of them and being transformed into reputation. Thus, trust and reputation are related but not identical. Reputation is the collective opinion of a group of people regarding the performance of a platform or an entity. Reputation evolves over time. In the context of a traditional business firm or an enterprise, it is also called "goodwill." On the other hand, trust always remains the individual's subjective feeling that guides their decisions. Nevertheless, reputation is one of the most significant elements contributing to trust, and trust is the fundamental requirement for reputation. According to Fukuyama, trust and trustworthiness in the sharing economy stem from interpersonal relationships that expand outwards in a "radius of trust" (Fukuyama, 1995). That is why most empirical studies on trust have focused on reputation method.

The expansion of the sharing economy is directly correlated to the expansion of the radius of trust, particularly between strangers over digital platforms. The larger the radius of trust, the better the performance of the sharing economy. The emergence of information technologies, real-time communication networks, and rapid and innovative transport logistics have helped expand the radius of trust through effective and quick customer service without the necessity of local proximity (Mazzella et al. 2016). With new innovations, the expansion of trust has found new forms and models that transcend subjective feelings. Economies of scale, manufacturing and storage in multiple places, global financial integration, and the movement of funds and global marketing techniques have enabled corporations to develop global corporate brands with a worldwide customer base (Mazzella et al. 2016; Sundararajan, 2016). This has involved an unorthodox method of expanding trust beyond normal boundaries. Some may even describe it as substituting trust with global branding. Thus, the sharing economy seeks to mitigate "stranger-danger" bias by designing and developing new trust-building capacities among strangers who interact through digital platforms by placing people at the heart of the system. As digital technologies expand, the human and social world is undergoing a tremendous shift. The way

we communicate and interact, and the mechanisms of conducting business and the consumption of products and services has undergone a fundamental shift. Today, not millions but billions of people connect, interact, and transact business over digital platforms based on network algorithms. Ratnasingam argues that in the context of an e-commerce environment, trust has two different forms: trust in technology and IT applications, and trust in partners (Ratnasingam, 2005). The former infuses assurances that the technological infrastructure of platforms and policies adopted by a business entity can minimize risks, whereas the latter relates to one's dispositional trust and the evaluation of one's competence, among other things (Mayer et al. 1995).

As far as the antecedents of trust are concerned, McKnight et al. classifies trust-related issues into four categories – institutional mechanisms (institution-based trust), dispositional trust (personality-based trust), familiarity and one's first impression of another party (knowledge- and cognition-based trust), and cost-benefit analysis (calculative-based trust) (McKnight et al. 1998). Institution-based trust may take the form of fair, transparent, and binding rules and regulations pertaining to a mode of transaction, for example. Indeed, when transparent rules are in place, users are likely to be more confident that the other party will behave as expected, reposing greater level of trust, assuming risks away (Gefen, 2002). Cognition-based trust is often addressed through the quality of information and privacy and protection of the security of all the users who are involved (Kim et al. 2008). Users' perceptions that the necessary security measures are in place and that sensitive information will remain protected are important for cognition-based trust. Information quality, on the other hand, relates to the accuracy and the comprehensive nature of available information, but also to the ease of locating and putting this to use (Miranda et al. 2003). Knowledge-based trust depends on perceived competence, goodwill and integrity (Lin, 2011), and brings out the importance of shared goals and understanding (Chen et al. 2014). Knowledge-based trust feeds into expectations that make it easier to associate behaviour with a likely outcome (Matzat et al. 2012). Finally, calculative trust deals with cost-benefit analysis that compares the likely costs and the expected benefits of collaboration (Gefen et al. 2003). However, this distinction is more academic. In practice, the line separating the four varieties of trust described above is very thin and very often overlapping. Individuals normally take a collective view of the impact of all the four categories when making business decisions. In this sense, trust is one single indivisible feeling that allows one to dive into the vortex of the sharing economy.

TECHNOLOGY AND TRUST

As explained in the previous section, a solid foundation of trust is essential for economic development and the growth of markets. Both attracting investment and successfully marketing final products requires a foundation of trust. Trust-based relationships may multiply the effectiveness of an enterprise, while adversarial or antagonistic relationships could become a drain on resources (Sjoberg, 2008). Researchers and scholars from across multiple disciplines agree that trust is even more significant in relation to the growth of the sharing economy, where strangers interact and conclude business deals on IT platforms. According to Earle and Siegrist, trust is the willingness to make oneself vulnerable to another based on a judgment of similarity of intentions or values (Earle and Siegrist, 2006). Although there are no validated theories concerning the principal driver of trust in the marketplace, a literature review indicates that social capital and institutions are definitely two such drivers. Generalized trust, values, and norms of reciprocity and cooperation are viewed as the key pillars of social capital, while trust in institutions, on the other hand, is influenced by the type of institution and institutional change (Galluccio, 2018). Rothstein and Stolle promote a similar view when they say that one cannot deny that social capital is a primary driver of trust in many markets due to the personal touch and appeal it offers (Rothstein & Stolle, 2001).

In today's world, a majority of the information and opportunities present on the local and global scene are made available to those who are connected to the channels of information or networks. The digitalization of the modern world has promoted the growth of social capital (Galluccio, 2018). Bridging social capital takes place as a result of linkages among people with different backgrounds who build networks to share their ideas, thoughts, or useful economic and social information (Nahapiet and Ghoshal, 1998). According to Kinghorn, globalization and social media have provided a platform for the formation of networks with people all around the globe, and obtaining access to privileged information through such social capital. Digital platforms such as Facebook, Twitter, Whatsapp, Instagram, and Google+, and global search engines like Google, Wikipedia, and Investopedia among others have made networking and access to information much easier by speeding up communication and permitting people to access resources that they would otherwise not have had access to (Kinghorn, 2013). Hence, in the modern era, social media represents a considerable stimulus to the radius of trust in the marketplace.

Institutions are human-made legal entities that are structured and designed for political, social, and economic interaction within society. These institutions are based on a well-structured legal framework of rules and norms. Historically,

these institutions are known to have been created with the sole purpose of maintaining order and helping reduce uncertainty in societal interactions (Nahapiet and Ghoshal, 1998). Social capital can thrive if connected to official, political, and lawful institutions. It depends on the government, institutions, or politics to survive, and cannot operate on its own (Uzzi, 1999). State laws and rules provide support to social capital through the institutional framework by fostering trust amongst people. The cooperative ability of people is raised when supported by institutional reputation. Institutions can be built to promote the value transformation of individuals and to help generate solutions among teams that struggle with the issue of managing a shared pool of resources. A well-structured and well-run institution is able to inspire people and give them new confidence and trust. People tend to feel appreciated when their views are taken into account positively and their complaints are acted upon (Edwards and Foley, 1998). Since trust is centred on credibility or on perceived reliability, the use of the internet and social media and other tools of modern technology by institutions could help enlarge the radius of trust. Thus, modern IT-based technology and social media have emerged as effective tools for strengthening and multiplying trust through the use of social capital and institutional frameworks.

DIGITAL IDENTITY (DI) AND PUBLICITY

Digital identity is an important innovation of the modern era that can foster trust in an unknown situation. The global reach of digital technologies and the internet have created multiple options for interaction and communication with others online. In any sharing economy transaction generally, there are three factors; person, product, and platform (the three Ps). Of course, the person is the most significant of the three, as individuals are the decisionmakers and must accept the related consequences of their decisions. However, the platform that offers a product or service, and the products and services themselves, are equally important. The digital identity of an entity or a platform or an individual is the "overall online footprint over a period of time." Online reviews are considered an important form of computer-mediated communication. Such DI emerges after a reasonable period of time based on the interplay of information and evaluation willingly shared by the users of the sharing economy platform based on their past experiences. Online reviews can be used as an information source about prior consumer experiences, and for disentangling the different service features that impact user perceptions (Siering et al. 2018). Moreover, online reviews tend to be seen as more useful than more standardised information (such as security

assurances and certifications), especially because they communicate the actual experiences of others (Cheng et al. 2019). Text-based feedback is becoming even more popular as it contains rich qualitative information about perceptions, preferences, and behaviour, with research showing that online reviews exert significant influence on other users' buying choices (Matzat et al. 2012). While in general digital identity is a complex and multifaceted concept, in the context of the sharing economy it acquires new significance and a more precise meaning. This arises from the interplay of the information willingly shared by the users of digital platforms about their peers regarding their past interactions with them, as well as about the performance of platforms themselves. Such reputation-building information constitutes the core of any sharing economy platform.

User Generated Content (UGC) is converted through statistical synthesis into a Reputation Score. Such reputation scores are also knowns as Trust and Reputation Information (TRI). Most sharing economy platforms actively promote mechanisms through which users can share their reviews and rate others. Such reviews and ratings are normally sought out using a scale of 1-5, or 1-10, supplemented with additional questions and comments. Such online reviews have become standard practice in the sharing economy sector. Very often, reputation scores are prominently displayed on the platform. For example, Uber asks both drivers and passengers to review their trips. In addition to the overall review, passengers are also asked questions about punctuality, the behaviour of the driver, the cleanliness of the car, and so on. Similar review statements are encouraged by Airbnb and Booking.com and most other platforms. Based on this UGC, the reputation score of each driver and each unit of accommodation is calculated and displayed on the platform, which helps with building trust and guiding the behaviour of the consumer. Simultaneously, drivers are rewarded based on their passenger reviews.

In the case of car sharing for long-distance travel between two cities and accommodation, such reviews are even more significant. No one wants to undertake long-distance travel in a car with an unreliable driver, or stay in accommodation that is unsafe or unhygienic. Precisely for this reason, customer reviews serve as the most significant factor in car-sharing decisions related to long-distance routes, as in the case of Oszkár in Hungary. Similarly, in the case of Airbnb, occupants provide their reviews about the quality of accommodation and services offered, which serve as the basis for decisions by future clients. In practice, such reviews play a significant role in the trust awarded individuals in favour of or against a particular service. While trust is an important factor in any business transaction, the presence of trust is a major precondition for successful transactions in the sharing economy. Trust helps to alleviate uncertainty in a complex and unknown business environment that may be associated with

financial and security-related risk.

Internet users interact with multiple sources before they firm up their decisions. Many platforms offer a comparative list of prices to prospective buyers. Price, service, and trust are then woven into one package before the order is placed. Therefore, the buyer's expectation that the behaviour of the other party in the transaction will not deviate from the stated agreement is extremely important. Similarly, the party that offers the service on the platform expects the other party to use resources as per the conditions of the contract. Hence, the notion of platform-mediated, peer-to-peer trust has important implications for the sharing economy. Its multi-entry characteristics involve peers on both the supply and demand side, as well as platform providers. These enlarged human circles empowered by new trust-building digital mechanisms have made "stranger sharing" a growing reality in the modern era. The increasing number of IT platforms, and their success, are good indicators that digitally generated Trust Reputation Information has been successful in fostering consumer confidence and trust. Perhaps without designing for digital trust, the sharing economy might never have emerged the way it did. Today, DI and TRI have become an integral part of publicity, not only in the case of the sharing economy platforms, but for the entire range of e-Commerce.

TRUST AND LEGAL FRAMEWORK

The legal framework governing economic transactions is an important element in the promotion of trust. In the traditional economy, transactions are protected through a variety of national and international laws, regulations, and business practices. For example, hotels, taxis, and restaurants are strictly regulated by local laws concerning, pricing, hygiene, quality, security, and so on. If the requisite standards are lacking, customers are duly compensated. However, in the sharing economy an adequate legal framework for consumer protection is still missing, partly due to the evolving nature of this sector, and partly due to the very special operating features and the parameters of the sharing economy. There is a view that any elaborate legal measures governing this segment of the economy have the potential to become very intrusive, impinging on the privacy of individuals. For example, generating a legal framework for governing the millions of individual drivers operating for Uber is not an easy process. It is precisely for this reason that some Uber drivers have been found to be involved in cases of misbehaviour, theft and even rape. Similarly, in some cases accommodation provided through the Airbnb platform

has been found to be unsafe and unsuitable for habitation. In the absence of specific laws governing the sharing economy, all such cases are dealt with under the normal civil and criminal laws of the respective country. Therefore, in the absence of a comprehensive legal framework, the trust factor acquires added importance. The sharing economy has four drivers; social, economic, environmental, and practical (Lea, 2015). However, no matter which motive lies behind sharing, trust is the key to sustaining the sharing economy's growth and success (Botsman et al. 2010).

Since IT platforms facilitate all peer-to-peer transactions and interactions that take place through their digital channels, the adequate monitoring of such platforms is also needed. To enforce such monitoring at a global level, an internationally accepted legal framework, guidelines, and norms are needed to prevent misuse and manipulation of the vast amount of information that is generated (Sztompka, 2000). Such legal measures would help enlarge the radius of trust that is so critical for the continued growth and success of the sharing economy. Since social evolution gives birth to legal frameworks, new laws governing the sharing economy will emerge in the years ahead. Intense debate is already underway about this issue.

THE WAY FORWARD

The sharing economy is a new disruptive paradigm that has the potential to rewrite the social and economic model of world capitalism. Being successful in the sharing economy means building business models that are based on trust, authenticity, and transparency with customers. Trust is the cornerstone of the sharing economy. With new advances in IT technology, user-generated digital information has further expanded the narrow base of trust which was initially confined to family, friends, and local community. The risk of allowing strangers into one's private space is not an easy barrier to overcome. IT platforms and TRI have made it possible. As of now, global sharing firms are in the lead with regard to transforming business ethics, economic practices, societal norms, and legal and moral codes of conduct. They are engaged in rewriting consumer behaviour and business practices. In a deeper sense, sharing economy actors have initiated a societal shift through facilitating trust between strangers. The application of business practices in the sharing economy could be improved further based on the analysis and experiences of platforms in local, regional, national, and international settings. Legislative measures and business guidelines based on best practices could further enhance the radius of trust. In this context, the

engagement of civil society and governments is indispensable for reshaping globalized society and business practices. The further enrichment and expansion of digital platforms' feedback mechanisms are important for expanding and deepening trust.

While User Generated Content on platforms is relatively widespread these days, in the future digital trust could be accumulated in the form of trust capital which could be utilized and exported, not just on a single platform, but across a plethora of platforms and applications, similar to the notion of digital social capital that allows users to display Facebook friends or LinkedIn contacts exported from other digital networks. Such trust capital could be collected through the different interactions of individuals on social media, digital platforms, and other virtual fora such as banks, insurance companies, legal firms, and supermarkets. Although this could immensely enrich digital TRI, such a possibility will have to address privacy issues satisfactorily before it could be put into practice, as sensitive information about individuals is also prone to risks regarding cyber security, data exploitation, and surveillance issues. Moreover, the question of statistical uniformity is also important, since at times collecting and collating information from different digital settings and entities could also lead to confusion and contradictions as all these entities may operate in line with different parameters with different objectives. However, rapid advances in blockchain technology have the potential to facilitate direct peer-to-peer interaction in the sharing economy (Sundararajan, 2016). Building trust among strangers is indeed a spectacular achievement of the sharing economy model, particularly when person-to-person direct interaction was on the decline in the recent past. Of course, further debate involving all stakeholders is needed about this extremely important and sensitive issue before digital trust can transform our stranger-danger mentality into the perception that "strangers=friends." New national and international legal frameworks could be needed to address some of the fears and legal issues. These economic platforms have penetrated the lives of individuals and society as a whole using the very data provided by the individuals who use these platforms. This penetration has the capacity to bring about a radical shift in human society and the global economy.

Before we conclude, a preliminary assessment of the impact of the Coronavirus which has turned the world upside down would be desirable. The global economy and human activities came to a complete halt during March-June, 2020, as never seen before. Most of the global population were confined to their homes. The incalculable human and economic toll exacted by the rapid spread of the killer virus that originated in Wuhan, China has shaken up the global economy and geopolitics. Since mid-June, economies and human lives have started being unlocked in phases, although the restoration of the former status quo is still far

away. The unlocking of economies and human lives has also led to spikes in the spread of Coronavirus in some countries/regions, creating new uncertainties. These uncertainties are likely to continue until an effective vaccine against Coronavirus is available. By most accounts, this may take another three to six months. According to Worldometers, as of July 5, 2020, there were 11.4 million cases of infection and a total of 5,34,164 deaths, with the USA, Brazil, Russia, and India having the most infected (Worldometers, July 5, 2020). Keeping these limitations in mind, the following predictions have been made by the UN, IMF, and other global institutions about the potential economic impact in the near future.

The UN Department of Economic and Social Affairs (DESA) has predicted serious disruption in global supply chains and international trade, with nearly 100 countries closing national borders during the past months due to the Coronavirus pandemic. DESA has observed that the movement of people and tourism flows have come to a screeching halt. With the large-scale restrictions on economic activities and heightened uncertainties, the global economy has come to a virtual standstill in the second quarter of 2020. "We are now facing the grim reality of a severe recession of a magnitude not seen since the Great Depression" stated DESA (UN News, May 13, 2020). In the same message, UN DESA predicted that the world economy would shrink by 3.2%; the economies of the developed countries would contract by 5%; and those of developing countries by 0.7% during 2020. According to the International Monetary Fund (IMF), the world economy will contract by 4.9% in 2020, 1.9 percentage points less than the April 2020 World Economic Outlook (WEO) forecast of the IMF. The IMF confirms that the COVID-19 pandemic has had a more negative impact on activity in the first half of 2020 than anticipated, and that recovery is projected to be more gradual than previously forecast. In order to ensure a smooth recovery, the IMF has recommended strong multilateral cooperation on multiple fronts, liquidity assistance for countries confronting health crises, and debt relief and financing through the global financial safety net (IMF, World Economic Outlook, June 2020). Statista admits that while there is no way to tell exactly what the economic damage from the global coronavirus pandemic will be, there is widespread agreement among economists that it will have severe negative impacts on the global economy. Early estimates predicated that most major economies will lose at least 2.4 percent of the value of their gross domestic product (GDP) in 2020 (Statista, June 2020).

Based on the above, it is clear that the global economy will contract somewhere between 3 and 5% in 2020. The re-opening of borders will take time due to fears of a revival of the pandemic adversely affecting the travel and tourism

industry. This would naturally have negative impacts on the sharing economy, which could be somewhat greater than the general economic decline. Uber has already closed down some of its offices abroad due to a lack of business. Airbnb has done so as well. This pandemic is a defining moment that could reshape the global economy and human society and the way we interact, socialize, eat, travel, shop, entertain and live. However, it is premature to objectively evaluate the precise impact of this pandemic on the sharing economy at this moment. Moreover, this is the subject matter for another article.

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FORUM

THE SOCIAL ACTIVITY OF THE SUBJECTIVE MIDDLE CLASS OF A RUSSIAN REGION: RESULTS OF QUALITATIVE SOCIOLOGICAL RESEARCH

Svetlana Martynova, Polina Sazonova[1]

ABSTRACT *The article presents the results of a study of the middle class of a Russian region in terms of the manifestation of various types of social activity. The emphasis on the analysis of social activity is motivated by the consideration of this attribute as a criterion for defining the middle class in the post-industrial period. The research method is in-depth focused interviews, through which two tasks are carried out: identification of the degree of significance for informants of social activity and examples of its manifestation; and determination of their degree of readiness to participate in the implementation of the innovation development strategy of the Tomsk Region and thereby act as a "driver" of social changes. Representatives of the middle class are included in the sample based on their self-identification. It is revealed that the middle class in this Russian region is active at realizing personal, but not social goals. Willingness of the post-industrial middle class to drive social development could not be observed. Based on the results of the study, proposals are made for increasing the involvement of the middle class in regional planning and decision-making regarding generally significant issues.*

KEYWORDS: *self-identification, social activity, sociological research, qualitative methods.*

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INTRODUCTION

The middle class in post-industrial society is scientifically characterized as having various features that distinguish it from other social strata in the industrial period. One of the key differences is an active position in life involving a willingness to both assert one's rights (Safiullin et al., 2012) and to lead others to modernize society (Volkov, 2012). Researchers note that, having reached the desired level of personal well-being, modern individuals may feel the need to solve wider social problems (Inglehart, 1990), be more willing to promote common interests in a wider social field (Shatkin, 2010), be "distributors" of new social economic and sociocultural practices (Vlasova, 2010), and thus be drivers of social change.

It is the social behavior of the middle class that is emphasized in studies that have been conducted in different countries: such class representatives defend their interests in relation to the development of public policy, demand a more equitable distribution of income (Unger, 2006), advocate for a clean environment (Kharas and Gertz, 2016), and are active in their communities of residence (Villegas, 2010). In addition, such subjects are capable of social self-description (Barbehön and Geugjes, 2019). The self-referencing ability of such modern actors means that self-identification with the middle class has become one of the leading criteria for stratification (Ilyinykh, 2017), since it is the actor's own attitudes that motivate models of their economic and social behavior. Namely, if a person feels that they are a representative of the middle class, and is committed to self-realization based on their own strengths, then this will be reflected in their action.

The relevance of the study is motivated by the fact that it is impossible to achieve serious success in terms of the socio-economic development of the regions of Russia without the participation of the middle class, the most active part of the population. Many regions of Russia have adopted development strategies for the period until 2030, and the manifestation of activity that contributes to the achievement of such strategic goals by the middle class is thus required.

The novelty of the study is due to the fact that, even in the second decade of the twenty-first century, approaches to understanding the middle class of Russia in a significant proportion of all scientific work are based primarily on *material* criteria associated with the industrial era (Vlasova, 2010; Alekseenok, 2014; Khayrullina, 2012, and other); in studies of the Russian middle class, the social activity of the latter is practically not considered.

The aim of this study is to identify the degree and forms of manifestation of the social activity of representatives of the subjective middle class in regions of Russia using the example of the Tomsk region. The proportion of residents

who can be classified as middle class in the regions of the Russian Federation does not exceed 20% of the total population. According to the data, conditions in the Tomsk region are exemplary of the standard of living in Russia. In this region, the percentage of residents who belong to the middle class is 18.1%. This is the average for the Russian Federation. Accordingly, using the example of the Tomsk region, the social activity of the middle class in Russia can be appraised. The concept of the middle class refers to families that are able to purchase a car or apartment for private use that corresponds to the size of their respective family, and who, after making monthly payments on loans for cars and housing, twice the average living wage per person.

MATERIALS AND METHODS

The research method is in-depth focused interviews (Minichiello et al., 2008) and subsequent systematic data analysis. This choice is based on the general methodological shift in modern sociology towards qualitative approaches. Within the framework of an in-depth focused interview, it becomes possible to thematically cover all key topics for research while maintaining the freedom to interpret the individual biographical trajectories of informants. This method has proven to be informative in studies of the middle class; in particular, of women entrepreneurs (Martynova and Sazonova, 2018).

The interview guide contained two thematic blocks covering different problem areas:

1. Questions designed to identify the degree of significance for informants of social activity and examples of its manifestation. Questions contained in this block included: *Give examples of your social activity. Give examples of your participation in making socially significant decisions. Why are you participating (not participating) in such activities? Do you consider it important for a modern person to be socially active? How active are you at achieving your life goals? How important is it for you that such work creates benefits for others, and for society? In what types of activities do you strive to show your abilities?*
2. Questions designed to determine the degree of willingness to participate in the implementation of the innovation development strategy of the Tomsk Region and thereby act as a "driver" of social change. Some questions from the block: *Do you feel that you are a resident of an innovative region? Why? Do you support the development goals of the Tomsk region, and why?* Further, the interviewer demonstrated and further discussed in detail with the informants a list of strategic goals.

Respondents were selected by the interviewer, relying on the generally accepted definition of the middle class. The middle class includes members of that social group who have stable incomes and can satisfy a wide range of personal material and social needs. Sampling was carried out using a subjective method based on people self-assigning themselves to the middle class. The final sample included the cases of seven informants (three men and four women living in the largest cities of Tomsk Oblast – Tomsk and Seversk), who uniquely identified themselves with the middle class and met the quota criteria in terms of a sufficient number of sociodemographic parameters. These parameters included age, gender, social status, involvement in those types of professional activity associated by modern social theorists with the typical employment of the middle class (managers and engineers of large enterprises, entrepreneurs, and employees of the scientific and educational complex (Pishnyak, 2017; Lipasova , 2016)). The study was conducted in 2018.

The methodology underlying the preparation, processing, and analysis of interviews is described in the works of sociologists who have applied a qualitative paradigm (Semenova, 1998; Ilyin, 2006; Steinberg, 2014). Interviews were audio recorded, after which they were transcribed using a denaturalized technique (Bucholtz, 2007), following the rules of the Russian language and speech. In the process of analysis, meaningfully similar answers and judgments of informants were combined into clusters, each of which was accompanied by a primary hypothesis that contained a probabilistic interpretation of the relevant data. In the "Results and Discussion" section, a comprehensive analysis of the aggregated data is presented.

A systematic process of data analysis was used to determine the degree of readiness of respondents to participate in the implementation of the strategy of innovative development of the Tomsk region. We analyzed answers about the state of the region and the possibilities for its development. The authors drew conclusions about the attitude of the inhabitants of the Tomsk region to the degree and possibilities of the development of the region. Respondents' readiness to participate in the implementation of this strategy was assessed.

RESULTS AND DISCUSSION

The Russian Federation is a country with a hybrid political regime. A hybrid regime is a special type of political regime that combines elements of democracy and an authoritarian regime that has a tendency to ignore and violate the interests of society (Ekman, 2009). Hybrid regimes assume all the institutions

of democracy: parliament, president, and constitution. However, there is no turnover of power, freedom of speech, or other sign of democracy. In the context of the existence of a hybrid political regime in Russia, there is also a low level of social participation and social mobilization in society (Robinson, Milne, 2017). Hybrid political regimes are also characterized by a low level of citizens' trust in political institutions, and a low level of political participation.

The Tomsk Region was formed in 1944. According to Rosstat, 1,079,271 citizens live within the region. The largest cities in the Tomsk region are Tomsk and Seversk. The Tomsk region has been classified as one of the ten best regions for living in Russia. In general, the economic and social situation in the Tomsk region corresponds to the all-Russian trends. The main positive trends in the development of the social sphere include that fact that the pensions of residents of the Tomsk region have increased, the number of unprofitable organizations has decreased, and the average monthly nominal wage has increased by 5.8%. These trends have increased the satisfaction with social development of some groups of the population – in particular, retirees and other people who receive payments from the state, and the population who are employed in the public sector.

Comparison of informants' statements regarding whether they consider it important for a modern person to be socially active, as well as how they evaluate their own social activity, revealed a mismatch between the informants' values and their real behavior: "*I do not consider myself to be socially active. But I think that this is important" (24, f., entrepreneur); "Probably, being socially active is important. But this [such activity] is not about [relevant to] me" (40, m., employee of a research institute); "This is undeniably important. The question is what the goals are for social activity ... I have recently seen people who are socially active solely to popularize themselves. This does not appeal to me" (36, m., head of a state corporation).*

The reflections of informants about their participation in socio-political life showed, on the whole, a low degree of such participation, as well as their primary engagement with more or less standard democratic procedures: elections, voting, and petitions: *"I only go to the elections ... I regularly sign various petitions on the internet against various unfair decisions [because I have] the need to see change" (40, m., research institute employee); "I take part in voting. Recently, I took part in a project to create a comfortable urban environment. As for, for example, the wording of some proposals ... I doubt their effectiveness. [Authorities] seem to be asking people, but in fact it turns out that they are not interested in their opinions" (24, f., entrepreneur); "I participate only in polls and elections ... [I do not take part in other socio-political initiatives] because of my natural inclinations. I just don't really like to submit my opinion to public court" (41, f., leading specialist at an enterprise).*

It is worth noting that, in some cases, when participation in social activity was reported, informants could interpret its subjective semantic value: *"I constantly participate in some kinds of polls. I don't know why (laughter) ... I don't see anything wrong with spending three minutes filling out a questionnaire or answering questions by phone. I don't know what benefit there is in doing this, but nevertheless, I do it" (36, m., head of a state corporation).*

Thus, all the proposed examples of social activity are exclusively participatory in nature: informants are inclined, sometimes without much reflection, to take part in activities that have already been initiated, without expressing the intention to act as the organizers of their own social projects.

As factors inhibiting the manifestation of social activity by informants, the authors single out the following:

1. Distrust of the system in terms of the public evaluation of authorities' activities: *"I do not see that the proposals of citizens would be taken into account or implemented. After a visit to the tax inspector, they gave me a questionnaire to evaluate the quality of service, and part of the answers had already been written in for me" (24, f., entrepreneur).*
2. Bureaucratic barriers to such activity: *"It would be easier if you could participate in surveys and submit your proposals through electronic resources. Now the procedures are difficult: you have to go to the reception, stand in line" (24, f., entrepreneur).*
3. Lack of personal need for and benefit from these types of activity: *"[It is only important for me] if it involves some material gain, or if the solution of some issue will concern me personally ... I don't care, for example, whose name is on the airport, or what is shown on a banknote" (21, m., student with entrepreneurial experience); "I consider myself a cautious person, and in order to be socially active, I need serious reasons. Just screaming, screaming – what if they hear?! – I would never do that" (36, m., head of a state corporation).*

In contrast to the position noted above, informants reported to engaging in activity related to the implementation of their own life goals: *"I am engaged in entrepreneurial activity, and I have plans to make it more ambitious. Now I am preparing to do one more higher education course for this purpose" (24, f., entrepreneur); "For me, professional excellence is important, I strive for it ... I try to achieve, translate into reality any events that are planned, there is goal setting for this [purpose]" (68, f, university professor).*

It is worth noting that, in citing examples of initiative and independence related to solving problems that arise in connection with the achievement of significant life goals, the vast majority of informants also mentioned issues

related to the professional sphere: *"A Sports Week was announced at school, it had to be filled with something ... I remembered that we have parents in the class who are successful at [sports]. I called them ... made contact" (31, f., teacher); "At work, many problematic situations arise. I perceive them rather as tasks ... They can be planned for a month, and I try to solve them in time" (36, m., head of a state corporation).*

In some cases, engagement in such activities can even be perceived of as conditions for feeling happy: *"I consider myself to be a happy person, [when] I have a lot of business ... When I have such kind of pace in my life, I manage to do it [business] everywhere, both here and there, and with friends, and at work, and in university. It is important for me to be active" (21, m., student with experience at entrepreneurial activity).*

Most informants noted that they have a need to be involved in various activities other than professional ones. However, social activity is not always one of these: *"I learn to play the guitar, play sports" (24, f., entrepreneur); "I play volleyball, basketball, table tennis. And another important part of my life is business trips to foreign countries" (40, m., research institute employee); "I do not do sports professionally, but I love yoga. Recently, I have been paying attention to various psychological training materials. And for brain training, I have started to practice remembering my English language"(41, f., leading specialist of an enterprise); "I can't sit in one place for a long time, I need to put my energy somewhere, and after playing sports, my head and body as a whole work better. Reading is also already a habit" (21, m., student with entrepreneurial experience); "I have been doing ballroom dancing for many years, performing at competitions. Recently, my husband and I started going to the gym" (31, f., teacher).*

The answers of informants to the question if it is important that such activity benefits others (society) were classified into three clusters:

1. A cluster of "knowledgeable" workers (education and science) for whom contributing to the development of society is inextricably linked with their own professional competencies: *"I work in a field that is associated with what it calls work in the field of human capital formation. At the very beginning, it was spontaneous, but due to a process of self-determination [increasing my knowledge] in this area, my understanding of the significance and importance of this contribution increased" (68, f., university professor); "Scientific knowledge benefits society. And former students become part of the national economy and begin to pay taxes" (40, m., research institute employee); "It seems to me that I have begun to realize [the benefits of my work] only now, when other teachers began to praise my class. It gave me great pleasure" (31, f., teacher).*

2. A cluster of professional specialists who work in state-owned corporations pay more attention to the importance of their own professional activities in relation to their impact on their inner circle – i.e. employees and colleagues in their own work collectives: *"I think that [my work] is of some benefit. Together we control and ensure the safety of the process" (41, f., leading specialist at an enterprise); "There is an atmosphere of mutual assistance in our team; we are trying to help each other. Speaking more broadly, about society, our state corporation contributes to the budget, and with this we benefit society" (36, m., head of a state corporation).*
3. A cluster of entrepreneurs who deny the importance of the value of their chosen professional activity: *"I don't think so. And for me it is not very important. Although I have staff, so it turns out that I create jobs" (24, f., entrepreneur); "Most probably not. Frankly: in my work, the primary goal is earning money. Therefore, most likely, what I want to do, and what I will do, will be two different things. And the first [priority] in my life will be just to make money for the second" (21, m., a student with experience at entrepreneurial activity).*

Thus, it is possible to talk about the high degree of importance of an active life for informants, but this is more concentrated around personal goals and objectives, including professional activity, education and self-development, designing business, and having friendly relations, etc.

A comprehensive analysis of informants' judgments within the framework of the second thematic block revealed the low level of self-identification of inhabitants with the idea of the region as an innovative territory: *"I think it is stupid to consider our region innovative" (40, m., research institute employee); "I always felt like a resident of a student city, not an innovative city" (41, f., leading specialist at an enterprise); "I don't feel that I live in an innovative region. And maybe one should not ascribe such status to a university city" (68, female, university professor); "I believe that in Russia, unfortunately, there are no innovative regions. We have come up with the term "innovation," but we haven't yet come up with what to do with it" (36, m., head of a state corporation).*

To the question about respondents' support for the priority innovative development goals of the region, mostly negative answers were received. Informants had a range of motivations for such responses:

1. Personal hostility to some areas, lack of interest or ability: *"I have personal hostility towards agriculture" (21, m., student with experience in entrepreneurial activity); "High-tech industries are not very close [familiar] to me" (24, f., entrepreneur); "I do not support the development of production in the region where I live. As they say, it's good that it*

exists, but not in my backyard" (36, m., head of a state corporation); "Entrepreneurship is for more motivated people. I decided that for me, self-employment is the best option" (41, f., leading specialist at an enterprise).

2. Lack/insufficiency of institutional conditions for implementation in these areas: *"My friend is engaged in agriculture. She says that government agencies are the last place where she would turn for help, for a grant. Because there is terrible bureaucracy" (24, f., entrepreneur); "Both agriculture and business are very risky areas of activity in our country. It is possible that under other conditions, entrepreneurship would be interesting to me" (36, m., head of a state corporation).*

The study revealed some of the psychographic features of members of the modern middle class in the Russian region that motivate subjects to adopt an active position in relation to life. The authors attribute to these individuals:

- a desire for independence, as evidenced by the recognition of the priority of personal interests, the ability of respondents to independently achieve their goals, and to ensure their own well-being;
- an orientation towards self-realization, registered both on the plane of economically oriented behavior, and within the framework of other forms of activity (education and self-development, building family and friendships, health and sports, etc.).

With regard to social activity, a discrepancy between values and attitudes and real behavior was recorded: despite the fact that the middle class recognizes the importance of social activity for modern people, they themselves demonstrate it to a small extent. The reported forms of manifestation of social activity are not numerous: participation in elections, voting and polls about public projects, and signing petitions. The social and political activities of citizens are interconnected. Thus the citizens of the Tomsk region who take part in elections and sign petitions are also engaged in social activities. Signing petitions and participating in voting is intended to improve the socio-political situation in the state. The main conditions for increasing social participation are the authorities taking into account the opinion of the population, and the personal interests of citizens themselves.

The study revealed the relationship between an awareness of the value of one's own work to society, and the sphere of its professional realization. Thus, workers in the "knowledge" sector (education and science) demonstrated a high degree of cognitive and emotional involvement in professional activities, which they assess as socially significant. For professional specialists in state-owned corporations, a value orientation involving the interests of a more local community – their

own work collective – turned out to be characteristic. Entrepreneurs reported that it does not matter to them whether an activity benefits the community.

Noteworthy is the low level of reflexivity that accompanies the social participation of the middle class. Many informants found it difficult to determine the motives that prompt them to engage in this kind of activity in terms of circumstances external to them.

These observations are consistent with the conclusions of scientists that have been formulated on the basis of sociological studies in the first decade of the twenty-first century in relation to the low level of social activity of Russians (Potekhin, 2010).

With regard to the Tomsk region, the results are supported by the conclusions of foreign scientists in the following areas: researchers from other countries have found that middle-class representatives – employees of the public sector (teachers, doctors, scientists, employees of government bodies, etc.) – are loyal to the government and are not critical of the political arena (Gerke, 2015). Since the city of Tomsk is a large university and scientific center, there is also a large number of such representatives of the middle class. It has been found that residents who work in state structures are more loyal to the authorities and the state. There is a simple explanation for this mass phenomenon. Employees of government agencies try not to provoke conflicts with directors and authorities in order to avoid conflict situations. So, for example, citizens who are employed in the public sector may be required to take part in elections and other forms of voting – this activity is controlled by the director of each enterprise. The size of employee bonuses, working conditions, and the issue of employment in general may directly depend on the decisions of employees with regard to voting and other political issues. This kind of pressure is exerted on many workers in schools, universities, hospitals, and other government agencies. Thus, employees of government agencies tend to show great loyalty to the state and authorities.

In relation to whether the middle class may be considered to be a driving force for the implementation of overall development strategy, this characteristic is weakly expressed. Most respondents do not support the strategic goals of the region. These goals are thought of more as the activities of authorities, rather than citizens. Studies have revealed the sources of motivation for this distancing. In addition to professional concerns about certain types of activities (for example, agriculture and production) other obstacles and barriers were noted: a lack of faith in respondents' own abilities, and the perceived lack of institutional conditions. Note that the latter circumstance was formulated in claims about the authorities, which, according to informants, are not able to create favorable conditions for the self-realization of the population in areas such as high-tech industry, small and medium-sized businesses, and agricultural production.

CONCLUSIONS

The middle class in the examined Russian region is certainly active in terms of realizing personal goals associated with a wide range of activities: professional activity, education and self-development, sports, and many other hobbies. For some, such activity in its various manifestations may represent a source of happiness.

However, the majority of middle-class representatives in this qualitative sample did not identify the need to solve social problems. There is a discrepancy between ideas and action: albeit recognizing the importance of social activity, subjects themselves do not engage in such activity. Even when individuals participate in projects related to public life, they do not fully realize the meaning and value of this participation.

The middle class of the Tomsk region can be characterized as not ready to act as the drivers of social development. Also, it should be noted that the middle class do not show any interest in the strategic goals of their region. Moreover, in most cases citizens do not consider their activities to contribute to the implementation of the priority areas for development. Also, the tendency is for respondents not to support the indicated directions. In general, we can summarize that the middle class of the Tomsk region is not ready to participate in the development of their territory.

As a result, the main conclusion of the study can be formulated as follows: the (subjectively defined) middle class of this Russian region confidently recognizes its class affiliation, but in its characteristics does not fully display those features characteristic of individuals of the post-industrial period. One such deficit is social activity. Based on the results of the study, the authors hereby offer some recommendations that may help authorities to solve this problem. First, regional development strategies should be developed and adjusted with the participation of middle-class members of society. Second, citizens can be motivated to participate in public life by receiving reports from authorities about how the results of previous public discussions and proposals have been used in decision-making; and explanations of how topics under discussion may affect their personal interests.

Third, the manipulation of citizens' responses should be avoided. Finally, electronic communication channels should be more widely involved. The official websites of the bodies of the State Medical University can become a reference platform, provided that additional efforts are made to promote them. Otherwise, such sites should include those internet resources that are popular with citizens.

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SOCIAL PERCEPTIONS OF CONVENTIONAL VERSUS COMPLEMENTARY AND ALTERNATIVE MEDICINE IN SLOVAKIA

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ABSTRACT *The aim of the paper is to reveal the attitudes of society in Slovakia towards conventional, and complementary and alternative medicine (CAM). A modified methodological approach using the Kano model was used to investigate the opinions of a sample of 275 individuals from Slovakia. The stated hypothesis is that conventional medicine is preferred to complementary and alternative medicine. The results confirmed that members of the sample prefer conventional medicine to complementary and alternative medicine in the case of illness. Complementary and alternative medicine is used more to reduce the symptoms associated with illness or eliminate the side effects of conventional medicine.*

KEYWORDS: *conventional medicine, complementary and alternative medicine, attitude, behavior, Kano model*

INTRODUCTION

The human body is rich in self-healing and regenerative ability, but requires a suitable environment and proper stimulation for its support. Health and treatment are associated with four levels of activity – physical, emotional, mental, and spiritual (Conway 2001). Different healing techniques originated

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during the process of human evolution and are still currently developing to help individuals to balance the former levels and sustain health. Although many of these techniques are now called "alternative," their roots are in the distant past, thus they may be considered to be traditional methods of treatment. Health is the responsibility of each individual, and the selection of medicine one uses depends on many factors that are related to consumption behavior.

The aim of this paper is to describe the attitudes of society in Slovakia to conventional, complementary and alternative medicine using the Kano model. The study sample is composed of randomly selected individuals.

The paper consists of an introduction, presentation of the theoretical background to the problem, the methodology (a description of the Kano model), the process of the research, and results. The latter highlight the attitudes of Slovak respondents to conventional and alternative medicine. The research described in the paper uses the Kano model, which allows us to identify and analyze the requirements of individuals. These requirements are nonlinear and asymmetric dependent variables. They relate to the importance awarded and satisfaction of individuals with conventional and alternative medicine. The Kano model has not been used in any study of attitudes to conventional, complementary and alternative medicine in Slovakia before.

THEORETICAL BACKGROUND

Most individuals live a lifestyle that reflects their attitude to the use of medicine in the case of illness. Some individuals, in attempting to create a healthier lifestyle and thereby improve quality of life, prefer alternative types of medicine to conventional medicine.

The quality of society life presupposes that it involves the most important aspects of human well-being in society and that these aspects are equally important to all individuals (Džuka, 2013).

Quality of life in such terms is becoming part of a specific type of economic sector in which particular social and market economy principles exist. From this perspective, individuals in society, when deciding on the use of conventional or alternative medicine, behave as consumers.

Kulčáková and Richterová (1996) define consumer behavior as the behavior that buyers display while searching for, purchasing or using a product/service that they expect will satisfy their needs. Richterová et al. (2005) considers consumer behavior to be the dynamic interaction of human beings with the environment, involving the emotions, knowledge, and procedures according to which humans

make exchanges with the intention of satisfying their needs. Consumer behavior may be differentiated into three phases (Kulčáková – Richterová 1996):

- Pre-purchase phase – awareness of needs, information selection, product / service selection or trade.
- Purchase – situational factors that influence buying behavior.
- Post-purchase phase – product rating after purchase.

Szarková (2007) defines three types of consumer behavior: 1) consumer behavior that is characterized by a strongly embedded individual value system (introverted consumers who are personally or interest-defined); 2) consumer behavior, which is characterized by a strongly embedded individual value system, but which is applicable only to specific socio-economic groups (consumers who prefer the traditions and customs of their group); 3) extroverted consumers, who are not interest-defined.

The marketing literature has focused primarily on the purchase situation, and on added value. Because of this focus, the needs of some specific segments of the population have remained hidden. The marketing focus supports observations about the health belief model (HBM), which has the following components: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Risker 1996). Another focus in the marketing literature is Bettman's consumer decision model (CDM), which is composed of six interrelated components. These components include information, brand recognition, attitude, confidence, intention, and purchase.

The standard neoclassical model of a perfect market presupposes the existence of well-informed, reasonable consumers who act in their own best interests by systematically choosing which goods and services to buy, and from whom to buy them, to maximize their well-being (Dixon et al. 2010). Basic economic rules are applicable to the health care market, although the latter is also characterized by many specifics (Glova – Glavúrová 2013). Consumers and health-care providers in the market behave differently to those described by the "idealized" market model. Many researchers have focused on determining these differences. One of the first to attempt this, Arrow (1963), systematically analyzed the shortcomings of the market and the key characteristics of health-care consumers, finding out that all of these specifics stem from the factor of uncertainty about medical conditions and treatments. The specific characteristics of patients as consumers arise from the facts that… (Dixon et al. 2010):

- Health care is based on reputation – patients cannot try a product before consuming it, thus it is difficult to assess overall quality of care after use (experience).

- Patients find it difficult to obtain information about which medical treatment is appropriate for their condition – medical knowledge is complex and difficult to understand. Patients as consumers know far less than sellers do, so trust in providers is important.
- There is strong dependence between patients – one patient choice can have a significant (positive or negative) effect on another patient (for example: the choice whether to be vaccinated against influenza).

This paper deals with conventional medicine versus complementary and alternative medicine. Conventional medicine, also referred to as Western, classical, or scientific medicine, is according to MedicineNet (2012) medicine practiced by doctors and health professionals such as physiotherapists, psychologists, and registered nurses. Complementary and alternative medicine, in English abbreviated to CAM (complementary and alternative medicine), is also often called natural, traditional, or unusual. It includes a range of methods and products with a history of use or origin outside of conventional "Western" medicine. We include here the use of one or more complementary and alternative forms of medicine, such as acupuncture, Ayurveda, chiropractic care, energy healing therapy, special diets (including vegetarian and vegan, macrobiotic, and other modified diets), folk medicine and traditional healers, homeopathic therapy, hypnosis, naturopathy, nonvitamin and nonmineral dietary supplements, massage, meditation, relaxation, tai chi or yoga, chelation (detoxification of the body from metals), and EEG biofeedback (autoregulating the frequency of the electrical activity of the brain) (Clarke – Black 2015). Complementary medicine refers to complementary diagnostic and therapeutic medical procedures that are not part of conventional medicine, but which are used in parallel with conventional methods of treatment, while alternative medicine treatments are used instead of conventional procedures.

Previous studies have shown that individuals often use complementary and alternative approaches to improve health and well-being (McCaffrey et al. 2007), or to reduce the symptoms associated with chronic diseases and the side effects of conventional medicine (Lo et al. 2009). In the United States, most people who use complementary and alternative medical approaches do so to complement conventional care, rather than replace it (Astin, 1998).

Decisions about treatment and the choice of therapy involve a difficult and complex process that requires patients to consider the full range of physical and psychological treatment outcomes (Robles et al., 2013). The authors agree that the choice of treatment is also influenced by psychological factors (Rabin 1983). Difficulties associated with treatment choice may be further enhanced

by patients making their decisions based on personal beliefs, and may be of particular importance as regards treatment decisions when there is great uncertainty around the long-term effects of treatment (Robles et al. 2013; Brown et al. 2010; Porter – Diefenbach 2009).

Decision-making processes play an important role in the field of medicine. Healthcare professionals make a variety of decisions on a constant basis. These decisions are related to different matters, such as the type of diagnostics or intervention required, whether to modify standard procedures, or how make a treatment more effective (Halama 2013). Health-care decisions can be particularly complicated, involving a complex web of diagnostic and therapeutic uncertainty, patient preferences, values and costs (Kamhalová et al. 2013). Very frequently, these decisions have serious outcomes and can result in financial or human harm. Decision making in the area of health care has specific features (Halama – Gurňáková 2014), while paramedic decision-making situations are characterized by complexity and time pressure (Pilárik – Sarmány-Schuller 2011).

METHODS

Social perceptions about conventional medicine versus complementary and alternative medicine (CAM) are analyzed based on the methodology of the Kano model (Loučanová et al. 2015). This model allows us to identify the specific requirements of individuals according to the nonlinear and asymmetric dependence between the importance and satisfaction associated with conventional medicine and CAM treatments. The methodical approach to identifying the "requirements" individuals expect of conventional medicine and CAM comes from the elementary steps of the Kano model. The first step represents identifying the basic categories of alternative medicine. Here belong, according to Conway (2001), phytotherapy (herbalism), aromatherapy, nutritional medicine, homeopathy, flower therapy, art therapy (therapy using art), anti-stress therapy, meditation, massage, and touch. Perceptions about the aforementioned types of CAM are studied and contrasted with conventional medicine. Based on this, a questionnaire containing positive and negative statements was drawn up to collect the responses of individuals using a Likert scale (with the responses strongly agree, partially agree, neutral, partially disagree, strongly disagree).

Questioning is the main method used to identify the specific requirements (demands) of individuals in relation to medicinal treatments, representing a

complex method that has the aim of gathering primary data about the activities and attitudes of members of the study sample.

The process of creating the database of information took place after questionnaire implementation. Individual answers to positive and negative statements were evaluated separately for each type of medicinal approach. The Kano model (Table 1) was used to specify the requirements of individuals related to the given type of medicine. This approach classifies the latter in accordance with social perceptions into: "must be" requirements (M), one-dimensional- (O), attractive- (A), reverse- (R), indifferent- (I) and questionable requirements (Q) (Table 1).

Table 1 *KANO model for assessing the needs of respondents*

		Negative statement				
		Strong agreement	Partial agreement	Neutral stance	Partial disagreement	Strong disagreement
Positive statement	Strong agreement	Q	A	A	A	O
	Partial agreement	R	I	I	I	M
	Neutral stance	R	I	I	I	M
	Partial disagreement	R	I	I	I	M
	Strong disagreement	R	R	R	R	Q

Source: Ducár et al. (2006)

Individual categories describe the satisfaction of the requirements of individuals and can be characterized as follows (Chen and Cheng, 2010; Chen et al., 2010):

1. Must be requirements (M) are considered natural, and individuals expect them automatically. They may be identified as primary or basic, indicating that individuals pay attention to them only in the case of their non-fulfilment. Their identification plays a primary role mainly because meeting these requirements will have an effect on the satisfaction of individuals, but their lack or non-fulfilment is noticed by individuals immediately, who thus end up unsatisfied. Ultimately, such a situation will be reflected in maximal dissatisfaction.
2. One-dimensional requirements (O) represent those attributes of a product whose fulfilment leads to satisfaction (or in the case of their non-fulfilment, to the dissatisfaction of individuals); i.e. the greater the rate of fulfilment of these requirements, the more satisfied individuals are. However, compared to must-be requirements (M), one-dimensional requirements are

not automatically expected to be present by individuals. There is direct linear dependence between the fulfilment of these requirements and the satisfaction of individuals.

3. Attractive requirements (A) are those that have a clear effect on the satisfaction of individuals because they do not initially expect them. Non-fulfilment of these requirements will not lead to feelings of dissatisfaction.
4. Reverse requirements (R) are called the exact opposite, but represent product attributes to which customers react in a contradictory manner (Ducár et al. 2006; Ullah – Tamaki 2011).
5. Indifferent requirements (I) do not have an influence on individuals. These attributes are not crucial to customers. Their fulfilment or non-fulfilment does not affect customers' satisfaction or dissatisfaction.
6. Questionable or ambiguous requirements (Q) express questionable results. These are due to wrongly formulated questions or to the misunderstanding of questions by customers.

The individual categories of requirements for conventional medicine or types of CAM are subsequently expressed in percentage values. The highest percentage identifies the final attitude to the examined category of medicinal approach.

To determine the dependence of the individual results using the Kano model, the correlation coefficient was used to measure the dependence between two quantitative variables using Microsoft Excel software. The value of the correlation coefficient explains how the values of these two variables simultaneously change. Positive values mean that they change together in one direction, while negative values mean that they change in the opposite direction, and a zero value mean that they change independently from each other. Values range from -1 to 1. Cohen (as cited in Rimarčík 2015) says that if the absolute value of a correlation coefficient in psychological research is below 0.1, it shows a trivial level of dependency, if the value is in the range from 0.1 to 0.3 it shows minor dependency, from 0.3 to 0.5 shows moderate dependency, and values of over 0.5 show strong dependency (Rimarčík 2015).

RESULTS AND DISCUSSION

The research examines the attitudes of members of the convenience sample towards conventional, and complementary and alternative medicine. The study is based on the methodology of the Kano model, which helps observe the impact

of attributes' interactions on individual satisfaction – that is, interaction between internal and external psychological motives (Tontini et al., 2013). Based on the above, a Kano questionnaire was formulated and implemented in Slovakia on a convenience sample. Structured interviews were used for the purposes of the research. The former were addressed to the 275 respondents who represented a convenience sample, of whom 159 were men and 116 women aged 18-65. The following results were obtained from the survey data evaluation (Table 2).

Table 2 *Research results*

Requirements	Conventional Medicine	Phytotherapy	Aromatherapy	Nutritional Medicine	Homeopathy	Flower therapy	Art therapy	Anti-stress Therapy	Meditation	Massage	Touch Therapy
M – must be	40	8	15	26	13	28	31	26	35	36	32
A – attractive	15	85	56	42	31	59	17	29	18	19	23
O – one dimensional	24	22	24	5	3	20	8	31	18	16	16
R – reverse	22	36	24	18	50	31	56	25	33	52	29
I – indifferent	171	110	150	175	165	130	158	154	152	147	169
Q – questionable	3	14	6	9	13	7	5	10	19	5	6

Source: Authors' calculation

The perceptions of individuals in the sample about individual types of medicine (conventional medicine and CAM) do not significantly vary, thus we reject the stated hypothesis. The primary results of the survey, however, do not take into consideration other facts such as the health status of individuals in the sample. The influence of this factor on the results is discussed further.

The association between the health status of individual respondents and perceptions about types of medicine (using the correlating coefficient to identify linear dependence between the two quantitative variables (Table 3), is moderately strongly correlated, especially for the use of conventional medicine (0.405). This suggests that individuals who are not ill are almost completely disinterested in the influence of alternatives types of medicine.

Table 3 *Correlation coefficients*

Monitored factor	Suffering from illness
Suffering from illness	1.000
Disease-free	-1.000
Conventional medicine	0.405
Phytotherapy	-0.039
Aromatherapy	0.032
Nutritional Medicine	0.062
Homeopathy	-0.068
Flower therapy	0.110
Art therapy	0.011
Anti-stress therapy	0.083
Meditation	0.153
Massage	0.142
Touch therapy	0.073

Source: Authors' own calculation

Based on the results that have been thus modified, we make the following conclusions with regard to the topic "Conventional versus complementary and alternative medicine in accordance with social perception in Slovakia" (Table 4).

Table 4 *Respondents' attitudes to different types of medicine*

Attitudes	Conventional medicine	Phytotherapy	Aromatherapy	Nutritional Medicine	Homeopathy	Flower therapy	Art therapy	Anti-stress therapy	Meditation	Massage	Touch therapy
M – must be	40	8	15	26	13	28	31	26	35	36	32
A – attractive	15	85	56	42	31	59	17	29	18	19	23
O – one dimensional	24	22	24	5	3	20	8	31	18	16	16
R – reverse	22	36	24	18	50	31	56	25	33	52	29
Identified attitudes	M	A	A	A	R	A	R	O	M	R	M

Source: Authors' own calculation

Based on non-linear and asymmetrical dependence between the importance and satisfaction of individuals with conventional medicine and CAM, individuals who are ill prefer conventional medicine, meditation, and touch therapy as mandatory types of medicine. These are thus the basic "requirements" of individuals in the sample that are considered natural and automatic, and such individuals expect them, or they are their first choice. We suppose that when individuals are ill they are more likely to use drugs or conventional therapies (over-the-counter drugs from the pharmacy, or those prescribed by a doctor), to take up meditation (while idle in bed), or alternatively prefer touch therapy.

The next most dominant is alternative medicine, which includes phytotherapy, aromatherapy, nutritional medicine, and flower therapy. These types of treatment have a clear effect on the satisfaction of individuals in relation to their perceived efficacy – as individuals do not expect such approaches necessarily to have any effect, in the case of fulfilment they are satisfied; however, the ineffectiveness of the former does not result in their dissatisfaction.

In Slovakia, only anti-stress therapy is considered to be a one-dimensional type (O) of medicine. In such cases, the greater the rate of fulfilment of the related requirements is, the more satisfied individuals are, but such requirements are not automatically expected, in contrast to mandatory requirements. This may be because not everybody is able to put aside their duties in the case of illness, and their non-fulfilment increases stress.

The sample of the study consider homeopathy, art therapy, and massage to be contradictory types of medicine. These types of medicine are received by individuals in a contradictory fashion, suggesting that the former are not absolutely sure about the efficacy of these types of alternative medicine, or that their efficacy is perceived only in some kinds of illnesses but not globally for all kinds of illnesses.

Some types of medicine, despite presently being perceived as alternative, were formerly considered traditional methods of treatment. Results clearly indicate that out of all types of treatment in Slovakia, conventional medicine (39.6%) is perceived very positively in relation to the issue of "Conventional versus complementary and alternative medicine in accordance with social perceptions in Slovakia." Other types of treatment that we examined are perceived as "attractive" complementary and alternative medicines (33.3 %) (Table 5).

Table 5 *Final attitudes of sample in relation to conventional medicine, and complementary and alternative medicine*

Attitudes	Conventional medicine (%)	Complementary and alternative medicine (%)
M – must be	39.6	21.9
A – attractive	14.9	33.3
O – one dimensional	23.8	14.0
R – reverse	21.8	30.7

Source: Authors' own calculation

The results clearly indicate that members of the Slovakian study sample prefer conventional medicine to complementary or alternative medicine, proving our hypothesis. Slovak individuals consider the use of conventional medicine as mandatory type , however complementary and alternative types of medicines are still attractive to them. Based on the low correlation coefficient of different types of medicine in relation to health status, alternative approaches to the treatment of illnesses appear to be being used by individuals to reduce symptoms related to illness or to reduce the side effects of conventional medicine, as also observed in earlier research by McCaffrey et al. (2007), Lo et al. (2009), and Astin (1998).

Future healthcare problems may be solved with the use of robotization. As suggested by research from the University of Auckland (Datta et al. 2012), this approach consists of the use of a Stationary Robotic Medication Management System to design, implement, and monitor systematic therapeutic plans that can produce the desired outcomes from medication regimes, thereby improving the quality of people's lives. A key part of our research involves designing a system that will help prevent medical errors and increase collaboration to eliminate the asymmetry that exists in the formation of successful therapeutic relationships. Adherence to medical regimes, along with a focus on safety, are concerns that can be addressed using the robot.

The research results presented herein provide both theoretical and practical information for businesses, innovators, and experts working the field of the relationship between the health status of individual respondents and types of medicine. Such theoretical knowledge and research results can help define objectives and policies that assist with implementation.

CONCLUSION

From a sociological perspective, it is interesting to observe the consumer behavior of the study sample in Slovakia in terms of the perception of different types of medicine that they search for and use, and what customers require to meet their needs given the specificity of this economic sector.

Based on the survey results we can clearly state that conventional medicine is preferred to complementary and alternative medicine in the sample. The sample in Slovakia perceived conventional medicine as the core type of medicine for use in the case of illness. The latter is seen as a natural choice and automatically used in case of health problems. Complementary and alternative medicine is also very attractive to members of the sample, demonstrating a clear effect on the satisfaction of individuals in the case of having effects that were unanticipated. Complementary and alternative types of medicine are used more for the relief of symptoms associated with disease, or the elimination of the undesirable effects of conventional medicine.

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THE PERCEPTION OF DIETARY SUPPLEMENTS AMONG CONSUMERS ENGAGED IN SPORTS ON A REGULAR BASIS

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ABSTRACT *Inaccurate perceptions about body image can be identified not only among physically inactive people, but also among those doing sports on a regular basis. Corporate marketing communication further increases these uncertainties and doubts, thus the former readily become actual consumers of dietary supplements. The results of our primary research (n=737) describe the sports-related activities, attitudes, and segmentation of those regularly engaged in sports, including details about the dietary supplements market. Our results indicate that the group of people engaged in sports on a regular basis is far from homogeneous. As many as 56.4% of them generally have a positive attitude towards dietary supplements, and constitute the potential consumers of this product range. Opinion leaders (coaches), reference groups, and word-of-mouth advertising (fellow sportspeople) were found to play the key role in the choice of dietary supplements.*

KEYWORDS: *people engaged in sports on a regular basis, attitude, consumer protection, dietary supplements*

INTRODUCTION

The role of sport in the fight against gaining weight and obesity is unquestionable. Developed countries keep failing in their attempts to reduce the proportion of those who are overweight and obese due to physical inactivity, thus, quite understandably, much less attention is paid to those members of

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society who consciously fight physical inactivity; i.e. those who engage in sports on a voluntary basis. Of the population of the European Union, 27.6% do not engage in any kind of physical activity. The corresponding figure of 49.8% measured in 2017 among the population of Hungary can be considered particularly unfavorable (EUROSTAT, 2019). With regard to leisure-time-based physical activity outside of work, research data produced by the European Health Interview Survey (ELEF) suggest that only one-third of the adult population of Hungary engage in any kind of sports-related activity at least on a weekly basis. People who do physical activity every day of the week account for only 4.5% of the adult population (CSO, 2015a)[2]. As recommended by the WHO in 2011, at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical aerobic activity per week is necessary for the benefits of exercise to be realized. To achieve additional health benefits, this should be increased to 300 minutes of moderate-intensity exercise, and 150 of more intense activity. In a study completed in 2017, Keller and Dernóczy pointed out that only 36% of young people aged 15-29 did sports in addition to compulsory physical education lessons at school, and the popularity of competitive sports was declining among young people. In the previous 20 years, the proportion of individuals engaged in the latter had decreased by 12% to 5% (Keller-Dernóczy, 2017). The overall conclusion is that, according to a combined indicator calculated based on walking, cycling, and doing sports, only a small proportion of the Hungarian population engage in the recommended level of physical activity (14.8% of men, and 10.2% of women).

In this study we describe the attitudes of those engaged in sports on a regular basis towards dietary supplements. In a study from 2017, Bauer et al. found that 19% of respondents aged 15-29 consumed some kind of vitamin product at least on a daily basis, while the proportion of those consuming other types of dietary supplements was 7% (Bauer et al., 2017). According to Bíró et al. (2011), more than 25% of the Hungarian population consume dietary supplements, and every second individual in this group does so every day. Assessments of the related product range vary considerably in the literature. A study by Lugasi (2014) discusses the risks of consuming such supplementary products. Németh et al. (2016) examined consumer behavior in the dietary supplements market and identified four segments. The weakness of the study is the small sample size. Boros et. al. (2012) studied food-related consumer attitudes in the context

2 Older individuals show less engagement with sports. ELEF's detailed summaries demonstrate that 28.5% of men aged 15-34, and 10% of men aged 35-64 (a mean of 14.8% for men) engage in sporting activities in accordance with the recommendations of the WHO. The proportions for women are 20.2% and 8.2%, respectively (with a mean of 10.2%) (CSO, 2015b).

of functional foods and food supplements. Gilbert (2000) focused on the effect of the communication of the product range on the target market, examining the attitudes and knowledge of respondents. Dwyer et. al. (2018) described the challenges and difficulties of regulating the related products. The consumption of dietary supplements is very popular among sportspersons[3]. Reasons for the consumption of different products vary (e.g. protein products, amino acids, isotonic drinks, 'weight control' formulas, etc.), but their effectiveness is disputed. According to Poulios et al. (2019), taking protein supplements is widespread among professional and amateur team sports athletes, accounting for a market of 5 billion USD in the USA alone. Despite being frequently consumed, the number of supplements that have been shown to positively affect health or performance is low. However, individuals in specific situations can require supplements (Kruseman, Gremeaux 2020). A paper by Lubowiecki-Vikuk et al. (2019) clearly summarizes the basic factors involved in the consumption of such products, including the social and marketing aspects. The authors state the following: In the USA, more than 60% of the adult, and in Australia more than 70% of the university population, use dietary supplements.

The use of various dietary supplements may be associated with the nature of postmodern society – with its passive lifestyles, excessive consumption, medicalization of the body, and pressure on individuals to maintain a healthy and attractive body. The marketing activities of the pharmaceutical industry are also a factor in the increase in dietary supplement use, despite known cases of poor-quality production processes and the contamination of some supplements with prohibited substances. Despite concerns of efficacy and safety, supplements are still used for the purpose of weight management. These supplements are advertised as requiring less effort than dieting and exercise, are associated with claims of effectiveness, and are often cheap and are commonly available. A study by Magkos and Yannakoulia (2003) draws attention to the following: the under-reporting of habitual energy intake is widespread among athletes, and its magnitude should be carefully addressed when interpreting the results of dietary assessments. Other issues specifically related to sportspersons that are often neglected include the adequacy of standard portion sizes, the frequency of snacking, fluid intake, supplement use, weight-control practices, and the seasonality of sporting activities and food consumption. The segmentation of sportspersons is not as precise as may be assumed. One thing is certain: a highly profitable industry complex has been built on a segment comprised of those who are active in terms of sports, who are targeted with a product

3 The word "sportsperson" in this article is used in the sense of "anyone engaging in sports activity on a regular basis."

range the professional appraisal of which varies widely. The consumption of dietary supplements may be interesting in terms of consumer protection too – for example, in the case of special segments (youth). Parezanovic (2016) draws attention to the fact that the use of dietary supplements among adolescents seems to be influenced by their belief that dietary supplements work. The media has contributed to stimulating the use of dietary supplements by spreading, for instance, the myth of the ideal body. During adolescence, a period when self-confidence develops, many adolescents do anything they can to meet that goal. Moreover, dietary supplements are often sold in drugstores or gyms as over-the-counter products without advice from a pharmacist.

For the study described herein, the aim was not to adopt a position about the efficiency of dietary supplements or their effects in terms of helping individuals to reach particular goals; instead, we describe the attitudes of different segments of consumers who are engaged in sports on a regular basis towards dietary supplements.

MATERIAL AND METHODOLOGY

In the research, we assessed the attitudes of respondents concerning the issues discussed above, including the form of the sports-related activities they do, and their consumption habits related to dietary supplements. For the selection of the target group of our primary research a conscious sampling procedure was used. The target group consisted only of people who voluntarily engaged in sports on a regular basis – i.e., at least once a week. People who did compulsory sports-related activities (e.g. in physical education classes at school) were not included in the sample, even if they did such activities several times a week (e.g. four classes of physical education at school). However, respondents who did sports voluntarily (e.g. handball training, or jogging) beside compulsory physical education classes were not excluded from the sample. Data were collected by students at the University of Debrecen Szolnok Campus, who helped to fill in the questionnaire according to strictly predetermined criteria (e.g. proportion of men and women; age of respondents – over 14 years old –; targeting a wide range of sports activities and geographical location; sport defined as physical activity, so – for example – e-sports are excluded, etc.). If respondents met the requirement of undertaking voluntary sports-related activity (the non-random part of our sampling), the selection process was extended using the snowball method to the circle of acquaintances of the interviewee.

We involved the widest range of sports activities in our research. Starting from yoga, through riding, gymnastics, running, and martial arts, almost all sports were represented. Their classification suggested 21 types of sports activities. When asked about the type of exercise they do, 24.8% of respondents specified aerobic exercise, 47.7% anaerobic exercise, and 27.5% of them both aerobic and anaerobic exercise. The most popular sports among the respondents were as follows: weight training (34.5%), running (29.4%), ball games (18.9%), cycling (15.9%), swimming (9.9%), calisthenics (8.8%), martial arts (6.0%), and aerobics (5.8%). Among ball games, soccer was the most popular, at 8.1%. We can state that our sample is very wide-ranging.

To examine attitudes, we conducted a questionnaire-based survey in paper format in Hungary, involving a sample of 737 people (n=737). The survey was carried out in 15 counties. The greatest proportion of respondents in the sample were from Jász-Nagykun-Szolnok county (36.5%), but respondents from other counties were also involved in the following proportions: Pest county (18.6%), Bács-Kiskun county (14.0%), Csongrád county (12.2%), and Békés county (6.1%). According to the type of settlement, the proportion of respondents in the sample was as follows: villages 13.8%, towns 53.9%, county towns 26.3%, the capital city 6.0%. As regards the financial situation of the respondent's family, 59.0% of respondents considered it to be average, while 28% slightly above average. The survey was conducted between 6 November 2019 and 13 December 2019. All age groups from 14 to 72 years of age were represented. The mean age of the sample was 30.2 ± 11.7 years, mode 20 years, median 27 years. The proportion of women in the sample was 47.5%, and of men 52.5%. The gender diversity of the sample conforms to that of the population engaged in sport-related activities. As regards educational attainment, the distribution was as follows: secondary school graduates (42.4%) – representing the largest proportion of the sample, followed by higher education graduates (37.5%), skilled workers (7.9%), and respondents with a primary education (10.7%). Of course, there is no national list that includes all the people who voluntarily engage in sports on a regular basis (i.e. at least once a week) so we cannot state that our research is representative. In our sample, there are more men than women, which accords with data from the Hungarian Central Statistical Office (CSO 2015a, CSO 2015b). The frequency distribution of our sample in terms of physique is extremely similar to the distribution of people who engage in sports activities in accordance with the recommendations of the WHO; i.e. our sample reflects the population defined and described by the WHO in terms of body shape.

Table 1 *BMI categories in our sample and in the WHO sample*

	Underweight	Normal	Overweight	Obese	Total
BMI category of respondents in our sample (n=737)	3.9	55.0	30.7	10.4	100.0
Distribution of BMI of people who engage in sports activities in accordance with the recommendations of the WHO	5.6	56.1	28.6	9.7	100.0

Note: Authors' calculations according to CSO 2015c

The questionnaire also contained questions about respondents' personal characteristics such as body weight and height, which were used to calculate BMI. Statistical methods were applied to process the data (mean, mode, median, standard deviation, Cramer's association evaluation, Kendall's coefficient of concordance, cross analyses, factor, K-means cluster analysis, discrimination analysis, etc.).

RESULTS

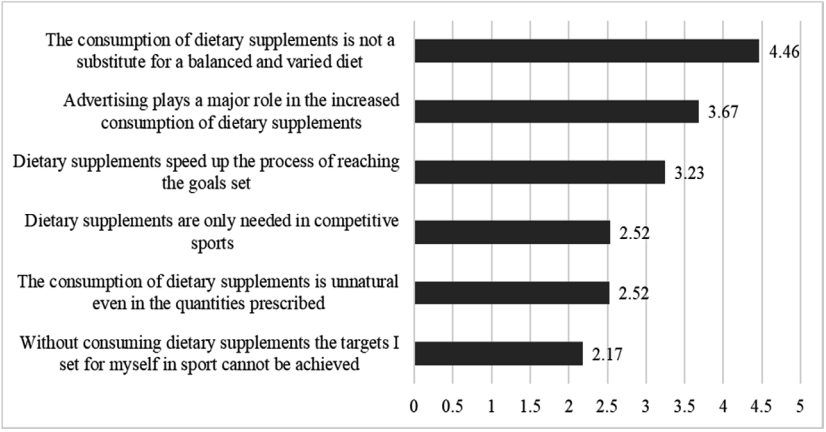
The frequency of doing sports, as measured by demographic characteristics in the sample, corresponds perfectly to the data provided by the Central Statistical Office. Participants in the survey do sports-related activities 3.4 times a week on average. The value of the mode and median is 3. Of the respondents, 88.9% conformed to the WHO recommendation that muscle-strengthening activities should be performed on at least two days a week. These data confirm that we were able to reach the population who are currently active physically in terms of sports. The proportion of those doing sports at least five times a week is 20.9%, while 13.5% of them do sports once a week. As concerns the frequency of exercise, among the demographic factors Cramer's association coefficient was highest for age (0.3). In the sample, the proportion of those who had been engaged in sports for more than five years was 57.3%. As regards gender, men do sports 3.75 times a week on average, while women do so 3.12 times. Our research confirms that sport is still primarily a male privilege. For men, the proportion of those exercising only up to twice a week is 25.1%, while for women this proportion is 39.4%. Among male respondents, 25.1% do competitive sports, while for women the rate is 16.3%.

It is also important to assess the attitude respondents have towards sports. As many as 62.1% of respondents consider themselves to be "sportspeople." Among those exercising at least five times a week, this proportion is 85.6%. In

their case, having a highly positive attitude is a relevant factor. Additionally, 66.2% of respondents exercising 3-4 times a week consider themselves to be sportspeople. Among respondents exercising a maximum of twice a week, 37.9% consider themselves sportspeople. In their case, some slight overconfidence may be noted, which is where the self-defense mechanism of the respondents can be observed. However, another even more serious problem is that 61.9% of those classified as overweight based on their BMI (calculated from their body weight and height) considered themselves to be sportspeople, and the proportion of respondents claiming the same in the obese category was 51.9%. Both proportions exceed the 51.7% of slim-build respondents who consider themselves to be sportspeople. Consequently, questions may arise as to how realistically the respondents perceive their body build, and how this is related to social value judgement. Another factor that may also be considered influential is earlier childhood body build, which, burnt into memory, could affect the current body image of respondents. It should be noted that 64.8% of the respondents of medium build according to the BMI classification consider themselves sportspeople, which may be a good basis for a comparison of the values associated with the other categories mentioned above. Our study was also extended to assess respondents' perceptions of their muscularity: namely, we examined how developed respondents perceived their own muscles to be, and then how they thought other members of society assessed the degree of development of their muscles. A difference between these subjective and objective body images was detected with ca. 30% of respondents. The relationship between the two factors was measured by Cramer's association coefficient. Ideally, the value of the indicator should be 1, in which case individuals see themselves in exactly the same way they think society sees them. The actual value of the indicator, 0.582, shows that respondents think other members of society do not find the degree of development of their muscles to be exactly the same as they do. These doubts create exploitable business opportunities in terms of marketing. Due to the ideal body image promoted by consumer society, thin people would like to have a heavier build, and "fatter" people would like to be thinner; i.e. we encounter a social problem that exists only in the minds of consumers. The producers of dietary supplements offer solutions to all segments of the population for the real or perceived problems they may have. For a thin body shape, protein and muscle-enhancing supplements are offered, and for those struggling with perceived or real excess weight, 'fat-burning' products are available.

In the research, the general attitudes of respondents towards dietary supplements were also assessed with the application of a five-point Likert scale (1 – strongly disagree, 5 – strongly agree). The mean of agreement with the given statements is presented in Figure 1.

Figure 1 *General perception of dietary supplements*



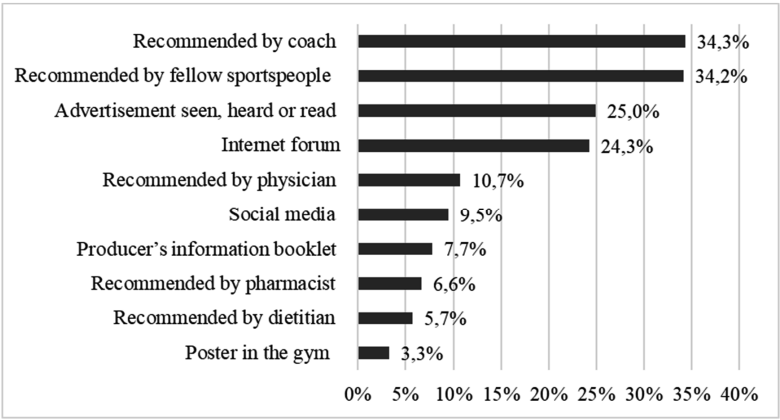
Note: Authors' calculations, 2020.

Figure 1 (above) shows that respondents generally disagree with the statement that the targets they define cannot be achieved without consuming dietary supplements (2.17), and also with the statement that the use of dietary supplements is only necessary in competitive sports (2.52). There is slightly stronger than average agreement with the statement that the use of dietary supplements speeds up the achievement of desired results (3.23). However, respondents do not accept that the consumption of dietary supplements is unnatural even in small quantities (2.52). Respondents confirm the importance of a balanced and varied diet (4.46), and the fact that dietary supplements cannot be a substitute for this. Results indicate that respondents find the claim that an increase in the consumption of dietary supplements can be attributed to advertising to be true (3.67). These findings can be interpreted as positive attitudes towards dietary supplements in terms of marketing. The results can be differentiated according to several viewpoints. A higher level of agreement can be observed in the following segments with the claims that: i) achieving defined goals is more difficult without the use of dietary supplements, and ii) consuming them is necessary to produce results faster: males; those who have been engaged in sports for a longer period of time; those with more muscles than average; and the overweight and obese, according to the classification based on BMI. In the segments mentioned above, the use of dietary supplements and corporate communication promoting these products is perceived more favorably than average. By calculating Kendall's coefficient of concordance (W), agreement

with and the intensity of, the differences in the respondents' opinions can be determined. With respect to the 737 people surveyed, the calculated Kendall's W value among the respondents is 0.287 (28.7%). The indicator draws attention to a below-average level of agreement; i.e. there are diverging opinions as regards the assessment of dietary supplements. Kendall's W value demonstrates that the population is far from homogeneous; indeed, it can be considered largely heterogeneous.

As concerns the means of promoting the sales of dietary supplements, communication by opinion leaders (coaches) and reference groups, and word-of-mouth advertising (fellow sportsmen) were found to be outstanding, surpassing the efficiency of traditional advertising. The number of mentions of the given sources of information are shown in Figure 2 below.

Figure 2 *Sources of information about dietary supplements (number of mentions/n)*



Note: The question was a multi-choice one, so the cumulative percentage exceeds 100%. Authors' calculations, 2020.

From Figure 2 (above) it can be concluded that non-traditional marketing communication tools may prove more effective in the market for dietary supplements than classical advertising. It is important to point out that it is not primarily from experts in the field that respondents acquire information – they use considerably less reliable sources. Guidance by physicians, pharmacists, and dietitians is outweighed by advice from coaches and fellow sportspeople, and more attention is paid to advertisements seen, heard, or read, or to information gathered from internet forums and social media than to information from experts. Figure 2. complements Parezanovic's results (2016) well. This situation

may pose health risks in certain cases (such as with the consumption of fat burners, pre-workout formulas, and hormone regulators), and may give rise to justifiable calls for the regulation of communication regarding the product range; we are of the opinion that further examination needs to be carried out in relation to communication associated with this product range. Respondents in our survey generally purchase dietary supplements without asking people with medical expertise about their consumption, and the information they collect does not come from credible sources.

The consumption intensity of dietary supplements was also assessed in our survey. It is important to mention that different dietary supplements are recommended for consumption at different frequencies. Some of them are recommended as "cure-like" products for ad hoc consumption, or on a few occasions per week, while others may used up to several times a day. Consequently, objective and quantifiable consumption frequencies, applicable to all dietary supplements, cannot be established. In our view, respondents who reported the frequent, very frequent, daily, or a multiple times a day frequency of consumption of a particular dietary supplement should be regarded as regular and predictable consumers of the given product. Data from our research clearly shows that the dietary supplements consumed most frequently include (percentages in brackets refer to regular consumers)

– vitamins and minerals (75.7%),
– proteins (47.5%)
– protein bars, cereal bars and energy bars (45.2%)
– products for joint support (35.8%)
– amino acids (30.4%)
– isotonic drinks (20.9%).

Beside the product range listed above, pre-workout and post-workout formulas are also very popular, but it is hard to find any dietary supplements among those that are legally available for which effective demand was negligible. For the sake of comparison, the consumption intensity of illicit dietary supplements – steroids – was also included in the study. Naturally, it cannot be taken for granted that respondents will admit the consumption of illicit drugs in a survey due to social pressure. Findings about the consumption of illicit dietary supplements – steroids – among respondents in the study show that 22 people use them rarely or very rarely, four often, and four very often or on a daily basis.

The previous statement – that an above average positive attitude can be observed in specific segments: namely, males, respondents doing weight training, those with above-average muscles, and the overweight and obese according to the BMI classification – was also been found to be true as regards

the consumption intensity of dietary supplements, although in a differentiated manner. Sympathy is also manifested in the conative component of the attitude, i.e. it is not restricted to the affective component only which means that the proportion of positive attitude and the consumption intensity are higher in these specific segments. The consumption intensity of dietary supplements can be differentiated by segments that include, but are not limited to, those identified in the list below.

– Men – with a few exceptions – consume dietary supplements at a higher intensity than women. Exceptions include protein bars, cereal bars, and energy bars, the consumption intensity of which is roughly the same for both genders; and the category of vitamins and minerals, where women have a 4% higher consumption intensity.
– Respondents classified into the overweight and obese BMI category consume the following products at a higher intensity: weight-control formulas, joint support products, proteins, hormone optimizers, and pre-workout and post-workout formulas. In their case, the reported consumption rate of illicit dietary supplements is as much as 2.6%.
– The real target market of the producers of dietary supplements is represented by the segment of those doing weight training. These individuals consume dietary supplements in significantly higher proportions, almost without exception. Seventy per cent of the respondents use protein supplements at least at a frequent intensity, and 86% of them consume vitamins.
– The former purchase and consume practically everything they believe will help in their development, such as proteins, amino acids, joint support products, etc.

The consumption of dietary supplements can be investigated according to several criteria, such as gender, sports experience, BMI category, sport activity, etc. We do not think it is advisable to create a general, multivariate analysis because this would lead to an overly general result. For example, in relation to different sports activities, different dietary supplements are consumed by different groups according to age, gender, etc. This could not be shown in a general model. In our research, we thus used a better and more generally accepted method (K-means clustering) to classify the consumption of dietary supplements into different segments.

Since respondents in the study expressed quite different attitudes to the statements about dietary supplements, and moreover, this was also confirmed by the different data on consumption intensity in the different consumer groups, we examined what segments (clusters) respondents can be classified into based on their opinions, properties, and as regards consumption intensity. As Kendall's

coefficient of concordance showed a below-average value (28.7%), we created a larger number of segments based on additional segmentation criteria. Because of the great number of segmentation criteria (28 criteria were used to establish the segments), we give a shorter description of these criteria. Segmentation criteria included:

– questions examining the sports-related habits of the respondent sportspersons (e.g. How often do you play sport on a weekly basis? How long have you been doing it? Are you an amateur or professional sportsperson? Your category of sports?)
– questions examining the demographic and other descriptive characteristics of the interviewed sportspersons (e.g. gender, BMI, household income, etc.)
– attitudes towards dietary supplements. We used 5-point Likert scales and measured agreement with or rejection of the following statements: the use of dietary supplements means you can more quickly achieve goals in sports; their consumption is not natural; their consumption is not a substitute for a balanced, varied diet; their consumption is only necessary in professional sports; advertising plays a considerable role in the increase in consumption, etc.
– questions examining the consumption intensity of dietary supplements (e.g. how often do you consume proteins; amino acids; protein bars, cereal bars, energy bars; weight control formulas; vitamins, minerals; joint support products; creatine; muscle-building supplements; hormone optimizers; isotonic drinks, powders, gels; pre- and post-workout formulas or prohibited dietary supplements/steroids).

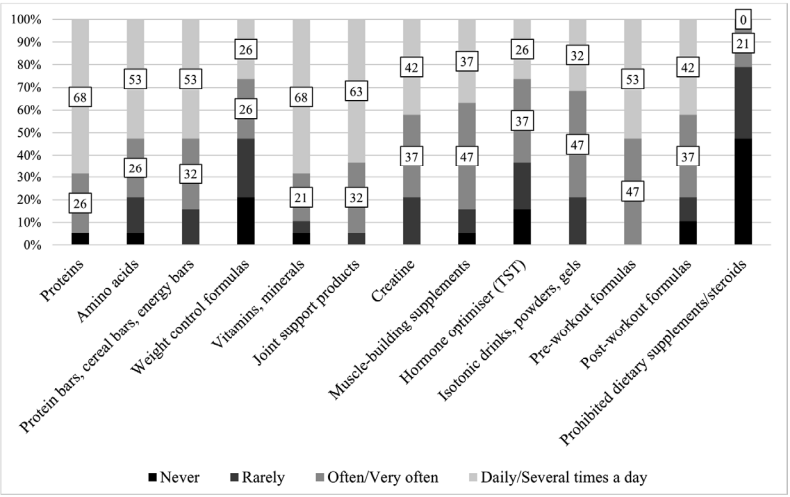
In the course of cluster analysis, the establishment of four groups (segments) proved to be a precise solution, with opinions that are clearly distinguishable. The main characteristics of the groups that were formed are described in the following paragraphs.

Segment 1: athletes

Sport is their life; members of this segment exercise five times a week on average. In this group, the proportion of individuals training up to several times a day is highest (21.1%). 57.9% of the members of this segment claimed they were competitive athletes and undertook sports activities competitively. Members of this group consider themselves real sportspeople (94.7%), and are typically of medium build, but their muscles and physique are developed to a well above average degree. They are genuinely critical of themselves; in their

responses they reported a feeling of being slightly overweight. Not only do they show a positive attitude towards dietary supplements, but they also consume them in large quantities. Here, the consumption of all dietary supplements is higher than average. These individuals are also stable consumers. The high rate of consumption of prohibited dietary supplements/steroid is problematic (21.1% consume significant amounts of steroids). The distribution of the consumption frequency of different dietary supplements in this segment of athletes is shown in Figure 3. These individuals are informed about dietary supplements by their coaches. The proportion of men in this segment amounts to 84.2%. Within the group engaged in sports in regular basis, the size of this segment is 2.7%.

Figure 3 *Distribution of the consumption frequency of dietary supplements in the segment of athletes*



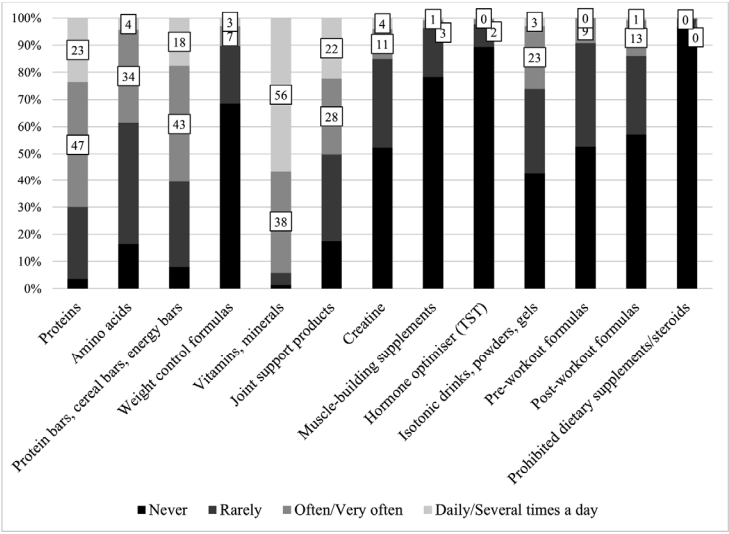
Note: Authors' calculations, 2020.

Segment 2: recreational athletes

Their lives are not centered around sport, but sport plays an important part. Members of this segment exercise two or three times a week (three times is typical). They are typically not involved in competitive sport, yet 66% of them claim to be sportspeople. Members of this segment are true, regular recreational athletes, and representatives of grassroots sports – the "mainstream" – with

varied body shapes and degrees of muscular development. The proportion of women in this segment is high, reaching 47.6%. The perception of dietary supplements is average and so is their consumption intensity. Members accept and consume the most popular dietary supplements, but apart from these, they have no special demand for this product range. A high degree of agreement can be observed concerning the statement that the increase in the consumption of dietary supplements is due to the marketing activities of producers. Dietary supplements are popular. The most common dietary supplements (e.g. proteins, protein bars, vitamins, minerals, and isotonic drinks) are consumed at a higher rate. The proportion of this segment within the population is 38.1%. The distribution of the consumption frequency of different dietary supplements in the segment of athletes is shown in Figure 4.

Figure 4 *Distribution of the consumption frequency of dietary supplements in the segment of recreational athletes*



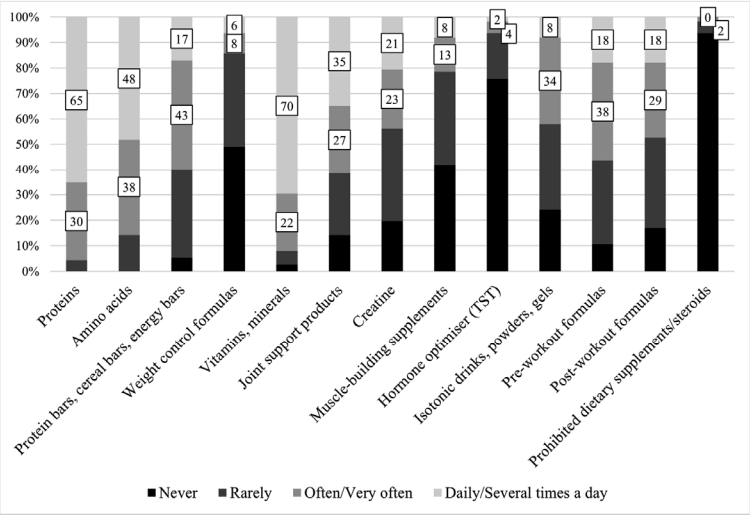
Note: Authors' calculations, 2020.

Segment 3: average sportspeople

These individuals are fond of sports, and doing sports is an important part of their lives. They exercise 4-5 times a week on average (five times is typical), but

not usually on a competitive basis. Their aim is to keep in shape, and to achieve and maintain an optimum state of health. The proportion of competitive athletes in this segment is 25.0%. They also consider themselves to be sportspeople (82.1%); however, in their case, beside medium build, some incidence of being overweight can also be observed. 13.5% of the respondents define themselves as overweight, and 1.8% obese. Members of this segment tend to underestimate the incidence of obesity based on the BMI classification. Their muscles are much less developed than those of athletes, but they are in a significantly better shape than ordinary people. The group contains a high proportion of men (75.9%), although women respondents are also well represented in this segment (24.1%). Their attitude towards dietary supplements is positive to an above average degree, and consumption intensity is also high in the segment. The size of this segment within the population is 15.6%. Consumption of dietary supplements is high (similar to segment 1 – athletes) but these individuals are not professional sportspeople. One considerable difference is that the consumption of prohibited dietary supplements/steroids is negligible. The distribution of the consumption frequency of different dietary supplements in the segment of average sportspeople is shown in Figure 5.

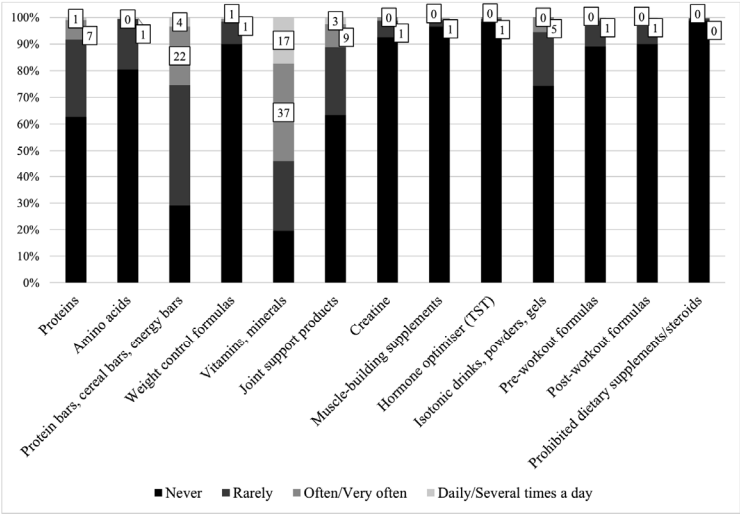
Figure 5 *Distribution of the consumption frequency of dietary supplements in the segment of average sportspeople*



Note: Authors' calculations, 2020.

Segment 4: those who refuse dietary supplements

Figure 6 *Distribution of the consumption frequency of dietary supplements in the segment those who refuse dietary supplements*



Note: Authors' calculations, 2020.

These individuals support a natural approach to health; in a narrow sense, they are "natural" sportspeople. They exercise twice or three times a week on average, but only once a week is not rare for this segment (22.1%). Consequently, 50.3% of the members of this segment do not consider themselves to be sportspeople. They are people for whom sport is much more a form of pressure than fun. 18.4% of the respondents consider themselves overweight or obese, with 52.2% believing they have average muscles As regards body build, their judgements of themselves are favorably biased compared to their BMI classification, since the proportion of overweight and obese respondents in this segment is 40.1%. They express significant doubt about dietary supplements, and their attitudes are considerably more negative about them than positive. They believe that there is really no need to consume dietary supplements when doing sports, and that such need is generated by advertising. They are even skeptical about more generally accepted vitamins and minerals; 19.6% of them never consume such dietary supplements. The combined proportion of responses of never, very rarely, and rarely responses is 46.2%. This is the segment in which the proportion of women

is highest (57.7%). Within the population, the size of this segment is 43.6%. The distribution of the consumption frequency of different dietary supplements in the segment of those who on average refuse dietary supplements is shown in Figure 6.

The accuracy of the distribution can be confirmed by the fact that 96.5% of all respondents could be properly classified.

CONCLUSIONS

The findings of our research clearly indicate that the group of people engaging in sports on a regular basis is far from homogeneous (for example, according to their consumption of dietary supplements), even though they exercise voluntarily. In our research, we identified four different segments. Groups can be unambiguously identified and have a variable nature. This segmentation indicates that there are two segments ("athletes" and "average sportspeople") who have a strong, positive attitude towards dietary supplements and who constitute the stable consumers of the product range. The segment "recreational athletes" expands the range of potential consumers. This is the "mainstream" of the market. The total size of the three above-mentioned segments is 56.4%. Only one segment ("those who refuse dietary supplements") expresses strong doubts about dietary supplements, and their attitudes are considerably more negative than positive. Moreover, the situation is a lot more nuanced than this. There are some other factors that influence consumers' buying behavior.

Respondents' dissatisfaction with their own body shape is further intensified by the cult of the body emphasized in our present consumer society, by the ideals of an unrealistic body shape (too thin, too muscular) presented by corporate marketing communication, and by powerful advertising. The same holds true for the perceptions of our respondents. However, producers and distributors, beside drawing consumers' attention to and emphasizing the flaws with their body shape (too thin, overweight, not muscular enough), offer solutions to problems both perceived and real. They provide products for dealing with all kinds of problems – e.g. they offer weight gain products for people of a thin build, pre-workout formulas for those who intend to train hard, protein for those wishing for more muscle mass, fat burners for the obese, etc. This is a highly profitable industry, which builds on individuals' lack of self-confidence, doubts, and fears. People who are uncertain about their own body shape are potential customers of dietary supplements. The more uncertain the consumer is, the more favorable the situation is for the producer, since such consumers

are more likely to make a purchase – typically, an emotional problem-solving purchase. In terms of marketing, the formula is simple; draw consumers' attention to their imperfect body shape, highlight problems, and, at the same time, offer solutions to the given problems. Consumer protection policy is typically meant to protect such consumer groups from corporate marketing activities by means of active and passive methods of consumer protection. However, at present, regulation of the communication of this product range is rather weak, and producers and distributors of dietary supplements do not have to comply with substantial restrictions. Based on the results of our research, we do not intend to take a stand about the need for stricter active legislation; the latter will not be the solution in the long term, although it may yield results in the short run. Passive approaches may be more effective at strengthening consumer awareness in the long term. In our view, one serious problem is that respondents collect information about dietary supplements primarily from laypeople, by way of word of mouth advertising, and not from health experts (physicians, pharmacists, or dietitians). Our previous research studies have pointed out that the cognitive level of consumer awareness is extremely low in Hungary; consumers simply have little knowledge about foods, or consumer rights. Individuals like to believe that they are conscious about such things, but except for a very small segment, they are not (Szűcs, 2019). Respondents purchase dietary supplements because their coach advised them to do so, or because they allegedly worked for a fellow sportsperson who trained well and rapidly gained muscle. For example, respondents purchase protein powders and consume three shakes a day without knowing the exact protein demand of their bodies (the word 'protein' in the previous sentence could be replaced with any other dietary supplement). As regards acquiring information, respondents can by no means be considered conscious; thus we believe that producers should be under stricter obligations to provide more accurate information.

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SOCIO-PSYCHOLOGICAL IMPLICATIONS OF THE OUTBREAK OF COVID-19: ISSUES, CHALLENGES AND FUTURE PROSPECTS

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ABSTRACT *The outbreak of coronavirus (COVID-19) occurred in the capital of Hubei province in China in December 2019, and has since engulfed almost all sectors of society across the globe, irrespective of age, sex, race, religion, or color. Exposure to COVID-19 has increased the risk of numerous socio-psychological problems such as the risk of domestic violence, suicidal behavior, social stigma and discrimination, human-rights-related challenges and crime, depression, anxiety, stress, phobias, confusion, traumatic events, and other mental health problems. This article describes the socio-psychological implications pertaining to the spread of coronavirus, how it has caused numerous deaths, and how developing and developed countries alike have imposed lockdowns, curfews, and restrictions on public movement, affecting markets, workplaces, construction sites, and transport facilities, while members of society have been instructed to maintain social distance, adversely affecting their day-to-day lives. This study is based on a comprehensive review of literature, as well as data regarding the socio-psychological implications of COVID-19. The study concludes that the outbreak of COVID-19 has catastrophic socio-psychological implications, especially in developing countries, where the vulnerable in society are hit hard. The study suggests that there is a great need for the attention of policy makers and planners in relation to responding to the COVID-19 crisis.*

KEYWORDS: *COVID-19, social implication, psychological problems, stress, violence*

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INTRODUCTION

The coronavirus plague emerged in Wuhan city in China in December 2019, and has since engulfed many developed and developing countries around the globe. It poses a major threat to humanity, and a serious challenge to health organizations, social scientists, and medical professionals. The director general of the WHO acknowledged that the outbreak of "Coronavirus as pandemic" is due to the dramatic increase in COVID-19 positive infections and deaths (Mahase, 2020). The ongoing reporting of experts, national and international organizations, and media coverage and research indicates that coronavirus disease is increasing at an alarming speed on a global level, and that the large number of deaths and infections will continue to rise if not controlled adequately. Congestion and crowding, especially in slum and refugee areas, may exacerbate the human tragedy and humanitarian crisis, and will have disastrous consequences due to poor sanitation and lack of hygienic drinking water and other facilities (Lacobucci, 2020). The situation in care homes, and the lack of personal protective equipment increases the risk of viral infections (Lacobucci, 2020). Countries across the globe imposed health emergencies due to public health risk through the international spread of disease (Zhou, 2020). Individuals with disabilities, migrant workers, and those with cardiovascular disease, respiratory problems, and physiological disorders are more prone to the effects of the pandemic (Armitage et al, 2020; Parkin, 2020; Singh et al, 2020; Chen et al, 2020). Mobile apps have been developed which could help with tracing patients with symptoms of coronavirus (Mayor, 2020). To tackle such emerging problems, the Secretary General of the United Nations, Antonio Guterres, has said that the least developing countries need fully fledged support and aid from the global community to control the plague. Knowing that coronavirus is harmful to humanity, the General Secretary of the UN has said that the coronavirus epidemic could increase the incidence of other diseases such as cholera and measles and is "threatening the whole of humanity, and the whole of humanity must fight back." He added, in announcing the related initiative, that "global action and solidarity are crucial. Individual country responses are not going to be enough"[2] . As on 31 january 2021, there were 102 139 771 confirmed cases, 2 211 762 confirmed deaths, and 222 countries

2 Al-Jazeera (2020, March 26). UN launches virus aid plan, says all of humanity at risk. https://www.aljazeera.com/news/2020/03/launches-virus-aid-plan-humanity-risk-200325170858275.html. Accessed April 6, 2020.

and territories were affected by the virus globally .[3] Since it has taken a heavy toll across the globe, therefore to tackle COVID-19, the World Health Organization said that every country immediately needs protocols and firm action to mitigate the risks of the spread of COVID-19.

The outbreak of the COVID-19 crisis is likely to have long-lasting socio-psychological implications beyond the global health crisis, which may increase threat to the development, stability, and security of both developed and developing countries. An eminent Brazilian security expert has said that "Covid-19 represents the most significant threat to population especially to the health and political and economic stability in a generation" (Kim, 2020). As far as the social implications are concerned, the pandemic has created widespread social disorder, social chaos, social disorganization, and social problems, such as an increase in domestic violence cases, social insecurity, hunger, reverse migration in some regions, and violence against medical professionals, etc. The emergence of this contagious disease not only causes fatalities, but also poses a great threat to the social security, services, national capacity, and general development of society (World Bank, 2020). Marginalized and poor sections of society, such as migrant workers, street vendors, and daily wage laborers, have been at increased risk, including that of suicide, violence, and many other issues, as individuals are stuck at home. In this regard, a study entitled "Suicide Mortality and coronavirus disease 2019 – A perfect storm" led by Mark Reger reported that the incidence of suicide and family-related violence could increase in the current circumstances due to the ongoing loss of jobs, income sources, business earnings and trade, as well as the lack of social contact, community support, and social hardship (Reger et al, 2020). Further, Chiara Crespi in Northern Italy found that healthcare workers and people residing in Northern Italy have been adversely affected. Crespi reports that feelings of loneliness, wretchedness, and an increase in stress are the major impacts of the pandemic (Crespi et al, 2020). The crisis has created unique changes in social structures and public health, and is leading to social stigma, discrimination, suicidal behavior, the violation of human rights, and an increase in the risk of family violence and other criminal activity. The COVID-19 crisis has also weakened the social fabric of society and created a formerly unimaginable situation.

Additionally, the epidemic outbreak of COVID-19 has created psychological depression and mental health deterioration among many parts of society. A

3 COVID-19 Weekly Epidemiological Update Data as received by WHO from national authorities, as of 31 January 2021,https://www.who.int/docs/default-source/coronaviruse/situation-reports/20210202_weekly_epi_update_25.pdf?sfvrsn=b38d435c_4&download=true. Accessed February 5, 2021

shortage of essential services such as food, shelter, clothes, and medicine has already caused psychological distress among the vulnerable. A lot of people have become victims of psychological disorders and traumatic events due to their social isolation, hopelessness, forced quarantine, unhappiness, the death of beloved ones, infection with the virus and loneliness. Studies have reported that the epidemic of COVID-19 will increase psychiatric disorders, particularly among those who are infected and dealing first-hand with the epidemic (Carvalho et al, 2020). A study conducted by Xin Bo and his colleagues found that more than 96 percent of COVID-19 infected patients experienced post-traumatic stress symptoms. The study further says that the outbreak of COVID-19 will lead to an increase in psychological disorders (Xin, 2020). Exposure to a diverse range of COVID-19-related distress and hardship has increased the risks of mental health problems among large segments of the affected population. A study entitled "Nationwide Survey of Psychological Distress among Chinese People in the COVID-19 Epidemic," led by Jianyin Qiu and his associates revealed that the outbreak of COVID-19 has seriously damaged the psychological and mental health of individuals. Further, the study also reported that it has caused a wide range of psychological disorders such as depression, anxiety, stress, and panic disorders (Qiu et al, 2020). There are number of negative implications of the COVID-19 pandemic, such as stigmatization, job loss, discrimination, feelings of loneliness, forced quarantine, a lack of social contact, a lack of social security and essential commodities, social isolation, etc. that have triggered mass psychological distress among those who are affected, who thus need immediate medical intervention. In fact, COVID-19 has had catastrophic implications for every sector of the affected societies, including the social, political, economic, and health sectors, and has created socio-economic problems, psychological issues, and physical and mental health deterioration. The present study explores the socio-psychological implications, issues and challenges related to COVID-19. There is a dire need for the study and better understanding of the COVID-19 pandemic and its impact on the masses from socio-psychological perspective.

METHODOLOGY

The study we describe here is theoretical in nature, and based on primary and secondary data such as the publications of state, local, and central governments, newspapers, media coverage, research articles, paper publications, magazines, the publications of national and international organizations, and reports of scholars, etc. Data were primarily collected from various government official

reports, newspapers, journals, and from the records of national and international organizations, websites, and statistics. Additionally, data were also collected through telephone interviews, observations, and recordings. Therefore, the authors rely on multiple secondary sources to highlight a variety of socio-psychological problems caused by the outbreak of COVID-19 at the global level.

THE SOCIAL IMPLICATIONS OF COVID-19

The outbreak of COVID-19 has profound implications, not only for the health of human beings, but for many other areas of society, including family, religion, government, education, and economic institutions, as well as psychological health, security, and individual standards of living. The pandemic is likely to cause and accelerate multidimensional social issues, such as increasing the incidence of poverty, suicide, unemployment, family violence, hunger, social insecurity, criminality, mass displacement, reverse migration, violence against healthcare staff, human-rights related challenges, and domestic violence against women and children, as well as stigmatization and discrimination generally. Frontline workers such as doctors, nurses, paramedics, sanitation workers, burial teams, security forces, and those communities directly affected by the coronavirus are facing social stigma and discrimination. A document prepared by the United Nations International Children's Emergency Fund in March 2020 under the heading "Social stigma associated with the coronavirus disease (COVID-19)" reported that the pandemic-related crisis has triggered stigmatization, prejudice, and discriminatory behaviors against people, especially healthcare staff, law enforcement agencies, communities affected with the virus, caregivers, the kin of infected and deceased patients, friends, neighbors, people with a history of recent travel, and residential areas affected by the virus (UNICEF, 2020). Since the outbreak of coronavirus, many people and religious ethnic groups have been labeled and discriminated against due to their perceived association with the coronavirus disease. Nida Moukaddam and Asim Shah have noted that, "stigma and xenophobia are two aspects of the societal impact of a pandemic infectious outbreak" (Moukaddam et al, 2020). Many people do not have any direct link with the disease, but reside within communities in which they may suffer from discrimination and stigma, along with the residents. In many places in India, groups of people and communities have claimed that people in neighboring areas have boycotted interaction with them, as well as labeled them as carrying the virus. Such behavior may give birth to other social and mental health issues, like feelings of loneliness and helplessness. Such people may avoid going for

health checkups because they prefer to escape social stigma and discriminatory behavior. The establishment of quarantine centers has had shocking implications for senior citizens, disabled persons, the poor, children, and people with chronic health conditions. Besides the need to maintain social distance, restrictions on social gatherings and continuous lockdowns can have long-lasting impacts on families and communities. Jeff Lagasse has maintained that social isolation, a lack of communication, feelings of loneliness, forced quarantine, and a lack of community support or involvement can heighten the impact of other health-related issues (Lagasse, 2020). Removing people from their day-to-day social, economic, religious, and cultural surroundings can result in chaotic situations and can also affect their well-being. Poor and weaker sectors of society such as daily wage workers, senior citizens, disabled people, migrant laborers, private employees, etc. have been severely affected. The situation of continuous lockdown has created manifold problems in society, especially for poor people who are unable to manage their food and shelter; but also for older people who may find themselves isolated from their families since breadwinners may be unable to return home, while migrants' and daily wage laborers' rations may run out.

The pandemic crisis has resulted in violations of human rights, especially attacks on healthcare staff, security personnel, forced quarantine, forced displacement, and reverse migration. The regional director of the WHO for Europe reported that the outbreak of COVID-19 poses a major threat to the many vulnerable groups in society, and is linked to increasing violence against women, children, frontline workers, and the public in general.[4] For instance, in India, millions of migrant laborers, poor families, and people living in slums or congested and at-risk areas have been forced to quit work and return to their homes, in the absence of transport facilities. Thousands of people such as pujaris, clergymen, priests, imams, and religious heads have been sent to jail for violating laws and restrictions. A lot of people have been injured, beaten, and put behind bars due to violations of law and order. Many people around the globe, especially in India, such as street vendors, vegetable and fruit sellers, and sometimes health professionals as well as people who have left their homes for essential commodities, have been humiliated and punished by paramilitary and police forces, representing a challenge to their human rights. Moreover, misinformation and false news circulating in social media have also had devastating consequences. For example, in Iran 100 people lost their lives and thousands are on ventilators after drinking alcohol in the hope that this would save them from COVID-19, due to inappropriate guidance (Aitken,

4 WHO/2019-Ncov/SRH/Rights/2020

2020). The outbreak of coronavirus has also increased the risk of suicide. The French sociologist and founding father of Sociology, Emile Durkheim, claimed that people are more prone to the risk of suicide when they live under extreme social pressure, feel detached from the bonds of group life, and are cut off from the majority of society (Mukherjee – Ghosal, 2006). Similarly, during the lockdowns associated with COVID-19, many medical professionals, workers, laborers, businessmen and people of other backgrounds have committed suicide due to a fear of isolation, alienation, loss of their loved ones, and the rapid breakdown in the social structure. Since the outbreak of COVID-19, an increase in the incidence of suicide among healthcare staff and other frontline workers has also been identified (Dutheil et al, 2019). Epidemic-related issues such as forced quarantine, social isolation, discrimination, stigma, social distancing, and economic recession can increase the risk of suicide. Many pieces of research have observed that economic recessions (Oyesanya et al, 2015) and a lack of community and religious support may increase suicidal ideation (Tayler et al, 2016). Catastrophic life events, social disequilibrium, business failure, personal dilemmas, and unhappiness can encourage individuals to engage in non-typical activities. Evidence suggests that incidences of suicide may increase as people are unable to handle socio-economic and environmental pressure. The maintenance of social distancing and absence of daily routines may also encourage the risk of suicidal behavior (Streva, 2020). Accordingly, the crisis has increased the number of cases of suicide across the globe.

The lockdowns imposed across the globe have accelerated domestic violence against women and children, as well as criminal activity and the illegal cultivation of cannabis and other drugs. The United Nations Secretary General, Antonio Guterres, has stated that the "horrifying global surge in domestic violence" directed towards women and girls is linked to lockdowns imposed by governments responding to the COVID-19 pandemic.[5] The Brazilian judge Mello Adriana said that "we think there has been a rise of 40% to 50%, and there was already really big demand [for legal services]; we need to stay calm in order to tackle this difficulty we are now facing." Further, in Wuhan city in China, a retired police officer reported that more than 90 percent of family-violence-related incidents during the lockdown were closely associated with the outbreak of coronavirus (Harrison et al, 2020). Amanda Taub claims that government-imposed restrictions on the movement of people that have forced people to stay at home throughout the world in response to the virus have

5 Decries 'horrifying' rise in domestic violence amid virus lockdown. https://www.france24.com/en/20200406-un-chief-decries-horrifying-rise-in-domestic-violence-amid-virus-lockdown. Accessed on 18 April 2020.

resulted in an increase in intra-family violence (Amanda. 2020). The lockdown has had profound implications for the structure, function, and stability of family management. Nicole et al. revealed that the outbreak of COVID-19 lockdown means a challenging time for the victims of family members (Westmarland. et al, 2020). The pandemic has disturbed both the social and biological relationships of families, and resulted in violence, abuse, and threats between both husbands and wives, and children and other members of families. It has adversely affected the emotional, moral, mental, social, and behavioral patterns of families, and is subsequently causing the maladjustment of children, impaired relationships, financial misery, and stress. Women-centered policing units in lockdown countries have received numerous complaints about family violence. Fried Ina states that the crisis of family violence has drastically increased due to mass psychological depression, stress, and anxiety, as well as the need to stay at home and financial distress caused by the COVID-19 lockdown (Fried, 2020). Exposure to large-scale family distress, financial difficulties, job losses, income sources and sociocultural determinants, as well as social isolation and psychological pressure has increased the likelihood of domestic violence. In addition to this, a rise in crime and the illegal cultivation of drugs have also been reported in many places in the world. Crimes like stealing and burglary involving money, gold jewelry, and domestic household items have been reported in many places in India where family members are lodged in quarantine centers (Haq, 2020). The illegal cultivation and production of cannabis and other illicit drugs has also been on the rise. Fertig and his associates have stated that "cannabis products will find its moment amid the coronavirus outbreak" (Natalie et al, 2020). It is believed that an outbreak of coronavirus will increase the legalization of the cultivation and production of cannabis legalization products in the United States (Mann, 2020). Experts believe that the coronavirus outbreak will increase the production and consumption of illicit harmful drugs, which may pose a great threat to the physical and mental health of individuals. In general, the epidemic of coronavirus disease is not only merely a global health problem, but a social problem as well due to the fear and threat of stigma, discriminatory behavior, social isolation, forced quarantine, violation of human rights, violence, suicidal ideation, and social phobia.

PSYCHOLOGICAL IMPLICATIONS OF COVID-19

The outbreak of the COVID-19 crisis has had disastrous implications for the growth and development of the psychological and mental health of people.

Dr. Hans Henri P. Kluge, Regional Director of WHO Europe, in a statement entitled "Mental health and psychological resilience during the COVID-19 pandemic," reported that the pandemic crisis has caused a lot of worries, threat, fear, anxiety, stress and panic among the people affected by it, which has resulted in significant mental health deterioration and mass psychological pressure (Kluge, 2020). A study carried out by Cuiyan Wang in 24 cities in China with a sample of 1210 respondents found that 53% of respondents had experienced psychological pressure, of whom 16.5% indicated depressive disorders, 28.8% anxiety disorder, and 8.1% stress (Cuiyan et al, 2020). It has also come to the forefront that patients with hypertension, cardiac disease, diabetes mellitus, and cerebrovascular disease are at greater risk of coronavirus infection and psychological distress (Fang et al, 2020 – Eastin, C., & Eastin, T. (2020)). A study entitled "Outbreak of COVID-19 and its impact on global mental health" conducted by Julio Torales stated that the coronavirus crisis epidemic will increase, on a global basis, mental health challenges such as depression, frustration, anxiety, stress, insomnia, dread, rage, negation, and pressure (Torales et al, 2020). The epidemic has provoked great fear, depression, and stress among the masses worldwide and led them into a state of chaos and confusion. Health professionals such as doctors, nurses, and other paramedic staff are more vulnerable to the risk of mental health and psychiatric problems, especially when they handle coronavirus patients (Neil et al, 2020). Xiang et al. observed that recovered coronavirus patients suffer from self-doubt, feelings of aloneness, fury, boredom, frustration, uneasiness, depression, sleepless disorder, and post-traumatic stress due to false social media portrayals, physical malaise, incertitude, and lack of contact and alienation (Xiang et al, 2020). Teens and children who are under home quarantine and in quarantine centers may be seriously psychologically afflicted, and those whose loved ones have died or were affected by coronavirus may suffer from long-lasting effects in terms of mental health and psychological well-being (Jia et al, 2020). Sprang and his associates have claimed that kids and teenagers who are separated and locked down in quarantined locations such homes, health centers, and other places during the pandemic may be prone to stress, sadness, distress, and behavioral- and depression-related disorders (Sprang et al, 2020). The crisis has created great panic that affects psychological health, and has harmed individuals in many ways: it has created panic, stress disorders, phobia, depression, anxiety disorders, and insomnia. It has created anxiety to such an extent that it has increased the risk of psychiatric disorders, trauma and mental health problems like mood disorders, behavioral disorders, depressive disorders, headaches, sleep terrors, hypertension, frustration, aggression, nervousness, suicide ideation, fear, flashbacks, and strain, making individuals feel insecure, fragile,

and volatile. Yenan Wang found that psychological problems like anxiety and depression are more typical among females, older people, and those with a masters' degree compared to males, young people, and those with vocational degrees (Wang et al, 2020). Importantly, it has caused stress, fear, and worry among vulnerable groups, as well as children and teens, women, pregnant women, those with chronic disease, medical professionals, healthcare experts, security personnel, psychiatric patients, and people who suffer from substance use disorder.[6]

The devastating consequences of the pandemic crisis, particularly when combined with the impacts of economic recession and the socio-cultural environment, have increased chaos, confusion, and disruption among individuals, sparking widespread psychological distress. The study "The psychological impact of quarantine and how to reduce it: rapid review of the evidence" conducted by a team of experts observed that quarantine and social isolation have caused unprecedented mental health problems such as post-traumatic stress symptoms, upset and anger, stress-related factors such as frustration, fear (of infection), loneliness, fatigue, dissatisfaction, as well as aggression, strain, suicidal thoughts, anxiety-related disorders, social phobia, disillusionment, and unhappiness (Brooks et al, 2020). Many psychologists have reported that social isolation, separation from family, sudden deaths, epidemics, divorce, alienation, and the death of parents and loved ones during early childhood can have long-lasting effects on mental health, and lead to the development of psychological disorders such as moodiness, stress, anxiety, and suicidal thoughts later in life (Torsten et al, 2015). In addition, pressure and distress can cause health worries, changes in sleeping pattern, escalating health problems, alterations in eating patterns, and may increase the susceptibility of vulnerable individuals to engaging in unbeneficial activities.[7] Yeen Huang found that medical professionals and young people who spend more time on their day-to-day routines are prone to psychological distress. Moreover, the study found that 35.1% of individuals reported having anxiety symptoms, 20.1% depressive symptoms, and 18.2% poor sleep quality. Among these, young medical professionals reported an increase in the prevalence of anxiety symptoms and sleep disorders (Huang et al, 2020). Keeping social distance and self-isolating from one's family, social groups, and community during quarantine may lead to anxiety, boredom, loneliness, and depressive disorders, and significantly affect mental health. Verena H Menec and his colleagues found that being socially isolated, a lack of companionship, and feelings of loneliness are connected with the provision of social services and gaps

6 www.cdc.gov/center.com

7 www.Samhsa.gov.in

thereof; affected individuals are also at heightened risk of mass psychological disturbances (Menec et al, 2020). A research article published in the Lancet reported an increase in the incidence of symptoms such as confusion, anger, fear, anxiety disorder, depressive disorder, and post-traumatic stress disorder among people living in home-quarantine and quarantine centers, which could have long-term effects on their psychological health (James, 2020). Needless to say, the exposure to a diverse range of factors associated with the pandemic crisis has increased the risk of psychological problems and mental health deterioration among large segments of population, particularly those directly affected by the virus such as health workers and families.

DISCUSSION

This study has examined the socio-psychological implication of the dynamic outbreak of COVID-19 across the world. Based on the findings of various research articles, journals, experts, media reports, and those of international organizations about the psychological implications of the outbreak of coronavirus, it appears that the COVID-19 pandemic has significantly affected the mental health of people generally and in different ways, such as economic recession, loss of jobs, financial stress, forced quarantine, direct infection with the virus, loss of loved ones due to the virus, social distancing, lack of community support, abstinence from engagement with religious activities, social isolation, feelings of loneliness, social stigma, discrimination, and the lack of day-to-day routine activities. All these negative aspects significantly impact the mental health of individuals. The coronavirus crisis has therefore created multidimensional problems around the globe, and in every area of life, whether health, social-psychological, political, economic or educational, and has increased the chance of a solitary life, alienation, loneliness, ostracism, exclusion, chaos, and a state of confusion among individuals.

The outbreak of COVID-19 has become a major public health issue and thus needs a worldwide response. This plague has brought together international agencies and communities worldwide on one platform to suggest possible solutions. COVID-19 has created new challenges for medical professionals, different international organizations and communities, who are striving to respond and plan for this global situation of turmoil. The political, social, economic, technological, environmental, cultural, and educational issues have been brought to the forefront by the outbreak of COVID-19 (The Lancet, editorial, 2020). It is clear that the epidemic of coronavirus has had grave consequences

for every sector of society, including family, economy, policymaking, religion, and education, as well as physical and mental health. Combating this pandemic requires serious and immediate attention from all stakeholders, policymakers, and health professionals, thus governments across the globe have a vital role to play. There is an urgent need for the formulation of policies and programs that help reduce and control the plague, and help the most affected sectors of society. Prospective suggestions pertaining to COVID-19 are manifold. First, greater attention should be paid to those vulnerable individuals in society such as daily wage laborers, senior citizens, and the healthcare staff who are battling with this epidemic. Second, adequate psychological counseling and guidance should be given to those people who are infected with coronavirus; who are quarantined in homes and other places; and more importantly, to children, elderly people, and doctors and nurses. Third is psychological help for affected individuals and their families in the form of individual counseling, group therapy, family counseling, group counseling, psychological education, and psychological interventions. Counseling and mental-health assessment clinics should be established to reduce the psychological disorders experienced by people due to coronavirus. Adequate financial and other relief should be given to needy sectors of society. The government should relax its terms for loan holders, farmers, and money lenders. The government should also help those families who have lost their main breadwinner. The healthcare system, training programs and skills, and other medical facilities should be strengthened to ameliorate the present health crisis. The authorities and health professionals that are involved in battling COVID-19, such as doctors, nurses, and other paramedic staff, should pay great attention and care to the physical and mental health status of people, badly affected by the outbreak of the coronavirus disease.

CONCLUSION

The outbreak of the COVID-19 crisis has severely affected many sections of society throughout the world. The epidemic of COVID-19 has raised numerous challenges for families, communities, law enforcement agencies, policymakers, international organizations, planning initiatives and programmes, as well as health-related services on a global level. Criminality, mass psychological trauma, mental health distress, financial distress, reverse migration, the disruption of social networks and essential services, the growing incidence of domestic violence, poverty and unemployment, stigma, social isolation and deprivation are some of the grave implications that go beyond the direct health crisis associated with

the outbreak of COVID-19. The COVID-19 pandemic has caused tremendous pressure, frustration, and stress among people across the globe, putting them into a state of confusion and chaos. In all developing countries, it is having grave repercussions for all strata of society, and resulting in severe individual, family, socio-economic and mental health problems. Governments, civil society, and stakeholders need to reach out to the poor and the needy in society to curb the spread of the COVID-19 disease. While no potential vaccine has yet been administered to cope with COVID-19, it is incumbent to cooperate with administrative and law-enforcement agencies. More importantly, the outbreak has provided an opportunity for every nation to strengthen its health-care, build better, safer, and more welcoming hospitals, and to provide enhanced medical services. In fact, the novel coronavirus has revealed a lack of skills and coordination, technology, policies and planning, training, and preparedness, while other areas also need to be addressed immediately in order to fight it. Furthermore, it is essential to intensify public awareness and implement prevention programs in society.

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REVIEW

SPECIAL REVIEW SECTION: RESEARCH PROJECTS ON SOCIAL CONSEQUENCES OF THE COVID-19 PANDEMIC

The current COVID-19 pandemic is having a fundamental impact on everyday lives and thus profoundly shaping research in the social sciences as well. Many have denounced the crisis of social sciences in this respect, questioning their capability to generate meaning under the pandemic situation, while others have claimed the increasing importance of social sciences due to the necessity of understanding the current situation beyond its medical and epidemiological implications: i.e. the economic, political, social, and psychological impacts of the pandemic, and how people experience and cope with these. It affects the current subjects of social research whether research is focused on the (impacts of the) pandemic itself, or if the latter is taken into account as the context, while new funds are being provided for such research, and conferences organized and special issues and sections dedicated to these topics. The pandemic also affects the way research is carried out, as methodological approaches have required readjustment, whether qualitative or quantitative: face-to-face contact has been reduced, while telephone-based and online methods have thrived, increasing the opportunity for methodological experimentation, while framing old problems in a new light (for example, achieving representativity in an online survey, and how to deal with biased samples). Response rates also seem to have been affected: some respondents seem to be even more eager to share their opinions and experiences, although new issues with preselection bias may have occurred. The virus has also affected the way researchers work together, with many new forms of collaboration emerging that will ultimately advance the state of Open Science. Furthermore, the pandemic that started as an 'event' during the Spring of 2020 has become a phenomenon that has stayed with us, creating an ongoing context with an uncertain end, thus affecting the way the latter appears in social research: instead of applying event-analysis logic (measuring the situation before, during, and after the event), the situation requires consideration of the pandemic as part of the context, often altering earlier social realities and disrupting or even invalidating the continuity of data collection.

In the current issue, the Corvinus Journal of Sociology (CJSSP) acknowledges the many new research projects related to the COVID-19 pandemic in the

Review section. In the call, we asked for short presentations of research projects at various stages – covering project objectives, the research questions/hypotheses, the methodological approach, the kind of data being collected, sample characteristics, experiences, first results, if available, and (from an Open Science perspective) details about the eventual availability of data, together with modes of access.

In this special review section we present ongoing COVID-related research projects from Hungary and Serbia that use both qualitative and quantitative methodological approaches. Several aspects of understanding social realities are covered, including modeling of the spread of the epidemic through a survey of social interactions – one of the most important routes of transmission of COVID-19; perceptions about the virus and domestic arrangements created to cope with it; how families have been affected through an analysis of the social situation and mental health of mothers and contact between non-resident parents and their children during the pandemic; how the pandemic has affected special groups in a vulnerable situation such as international students and migrants; and how the pandemic has affected social and political participation when face-to-face contact was limited. Finally, we provide an overview of further COVID-related research projects that were presented at a dedicated section of the "Sociology at the Dawn of a Successful Century?" conference of the Centre for Social Sciences of the Hungarian Academy of Sciences Centre of Excellence, held in October 2020 in Budapest.

HUNGARY IN MASKS/"MASZK" IN HUNGARY

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INTRODUCTION

Social interactions represent one of the most important routes of transmission of COVID-19 as they influence the potential patterns of diffusion of infection throughout different segments of the population. Despite their utmost importance, the scientific community is currently lacking data collection methods that record social interactions dynamically and in detail, and in a privacy-respecting, representative way, even on an aggregated level. Here we summarize the motivation, methodology, and some early results of a coordinated process of data collection in Hungary designed to track the social mixing patterns of people in different age groups in real time during the pandemic. The Hungarian Data Provider Questionnaire (MASZK[7]) was released in late March 2020 during the initial phase of the COVID-19 outbreak in Hungary. This is an ongoing effort to anonymously collect age contact matrices of a voluntary population online. Moreover, it is accompanied with a nationally representative data collection campaign via telephone survey to ensure data quality. This unique process

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7 Acronym for Magyar Adatszolgáltató Kérdőív.

of combined data collection is an important step towards developing more precise modelling of the spread of the epidemic, and could thus contribute to the reduction of the medical and economic burden of the pandemic in Hungary.

As the first wave of the global COVID-19 pandemic reached Hungary in March 2020, early operative action was called for to analyze the epidemiological situation of Hungary and project potential outcome scenarios for decision makers. A working group called the COVID-19 Mathematical Modelling and Epidemiological Analysis Task Force was thus established. This multi-disciplinary group of experts involves researchers from most major universities and research institutions in the country who are working in various fields, including epidemiology, public health, medicine, health management, mathematics, network science, biostatistics, computer science, data science, and sociology. The task force has continuously worked together with the Ministry of Innovation and Technology during the pandemic, creating reports, analyses, and strategic documents, with the goal of providing expert advice to decision makers based on the best available scientific evidence. This joint effort was accompanied by an unprecedented wave of data sharing, whereby health authorities, major telecommunication companies, the Hungarian Central Statistical Office, and other data shareholders such as global online social networks (e.g., Facebook D4G,[8] and Google Community Mobility Report[9]) opened up their resources to help the fight the pandemic with data. Although these datasets provided precise descriptions about the demographic factors and the actual mobility of the population separately, they all fell short in terms of capturing the spatially, temporally, and demographically detailed age-mixing patterns of the country's population. In epidemiological models, such information is conventionally summarized using aggregated age contact matrices that code the average number of interactions between people of different age groups. Similar matrices were earlier estimated for Hungary (Prem et al. 2017), and have also been collected using contact diaries (Dávid et al. 2016), but related changes during the actual pandemic due to national lock-down and social distancing measures were entirely unknown. The Hungarian Data Provider Questionnaire (MASZK) was developed within the frame of the COVID-19 Mathematical Modelling and Epidemiological Analysis Task Force by scientists and software engineers,[10] specifically with the purpose of continuously monitoring changes in social mixing patterns. The survey anonymously collects demographic

8 Facebook – data for development – COVID-19: https://dataforgood.fb.com/docs/covid19/ (date of access 2020.09.28).

9 Google – community mobility report: https://www.google.com/covid19/mobility/ (date of access 2020.09.28).

10 https://covid.sed.hu/tabs/staff (date of access 2020.09.28)

information about respondents, as well as data about their domicile, education, health-, and family structure. Its primary goal is to record daily changes in age contact matrices. Furthermore, it also helps to monitor the level of compliance with recommended self-protection measures, and the social, physical, and mental well-being of individuals. Although the data collection is ongoing, as of now (October 2020), it has involved more than two percent of the population of Hungary, with the collection of over 320,000 questionnaires from more than 210,000 unique participants.

However, due to voluntary participation, the online sample has not provided a representative description of the Hungarian population: Young and middle-aged female adults with university degrees living in larger cities are over-represented compared to their number in the national census from 2011.[11] To overcome these biases, starting in April 2020 the same questionnaire has been conducted on a nationally representative sample of 1,500 people every month via telephone survey (CATI) by a market research company. Moreover, to validate the results of the traditional surveys, contact diaries (Dávid et al. 2016) were collected on a nationally representative sample of 1,000 people. Through a combined analysis of the representative and non-representative datasets, and also census data, we identified the most severe biases characterizing the online survey data and built a pipeline (Koltai et al. 2021) using iterative proportional fitting (Bishop et al. 2007) to weight the non-representative online matrices. As a result, we obtained close-to-representative contact matrices from the non-representative online data, while maintaining the advantages of the online data collection, such as scalability of size and observation time, and cost efficiency. In what follows, after a short summary of the questionnaire we summarize some first findings about the aforementioned contact matrices and provide a short discussion that elaborates on the significance and future directions of our study.

RESULTS

The MASZK questionnaire

The goal of the MASZK questionnaire was not the one-time screening of social mixing, but to record real-time, dynamic changes in contact patterns during the pandemic compared to the pre-COVID-19 reference period. To

11 http://www.ksh.hu/nepszamlalas/ (date of access 2020.09.28)

enhance engagement and minimize the turnover of respondents, the survey was designed in a modular way, so participants could provide data every day without being burdened. More specifically, we divided the survey into two parts: a static part of the questionnaire that was asked once – on the first occasion the respondent filled out the survey – that collected demographic information (age, gender, occupation, education), and identified the health profile (chronic/acute health conditions), and the household structure of the respondent. Furthermore, we asked about respondents' employment conditions, mobility, and commuting patterns, self-protection measures, and participants' attitude towards potential vaccination. In this part, we also recorded the age contact matrices of the participants concerning their typical weekdays and weekend during pre-COVID-19 times (before 13 March 2020). Such matrices were recorded by asking respondents to estimate the number of their social interactions with others of different age groups. Social interactions were defined as *proxy* contacts between people who had been closer to each other than two meters for longer than 15 minutes. Contact matrices for children (those aged under 18) were also collected, but only through the reporting of their parents, especially focusing on estimating the former's number of contacts at school and elsewhere.

The dynamic part of the questionnaire collected data about the participant's previous day. Respondents were asked to fill out this part of the questionnaire potentially every day. In this part, we asked about their contacts in different settings, such as outside of home, at work, or in the case of having visitors. Here we measured the number of contacts in two ways. In the first way, we used the above-described *proxy* definition, while we also asked about their *physical* contacts – i.e. if respondents had had skin-to-skin interaction without any protection (e.g. rubber gloves).[12] The same questions were asked about the under-aged children of the respondents.

Changes in contact patterns

The age contact matrices recorded on representative samples for the reference period and for two others during the pandemic are shown in Fig. 1a-c. Here, the reference period matrix (see Fig. 1a) revealed the expected structure, with a pronounced diagonal component indicating strong age-homophily effects,

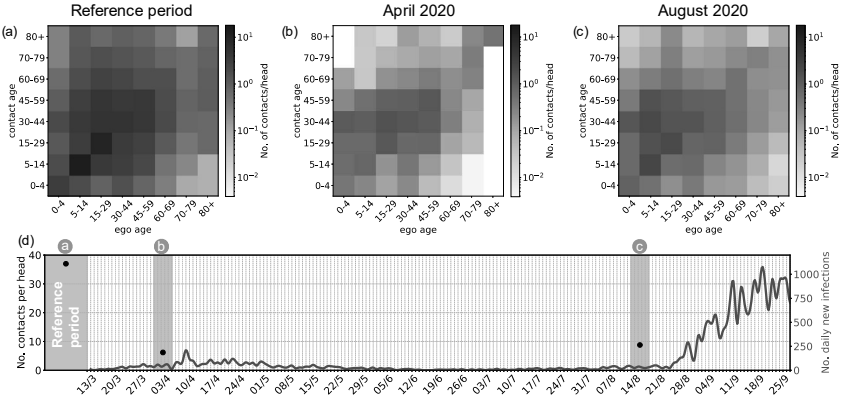
12 Surveillance definitions for COVID-19, European Centre for Disease Prevention and Control, https://www.ecdc.europa.eu/en/covid-19/surveillance/surveillance-definitions, (date of access 2020.09.28)

especially for children and young teenagers. However, young and middle-aged people appeared to be best connected to each other due to the age composition of families, and frequent contact between children, parents, and grandparents. Nevertheless, the oldest generation (80+) appeared to be the least well connected to very young children, as already observed in earlier studies (Mossong et al. 2008). The average number of social proxy connections per person was measured to be 36.985, as indicated by the black point in Fig. 1d during the reference period.

Following the emergence of the COVID-19 pandemic in Hungary, a two-month national lock-down was introduced to slow down and reduce the first wave of infections. This measure considerably reduced the number of social contacts of people, which are thought to be the main route of transmission of the disease. The compliance of individuals with these regulations is clearly reflected by the contact matrices recorded immediately after the start of the lock-down at the beginning of April 2020. As shown in Fig. 1b, the number of contacts radically decreased in every age group. This was moreover true for elderly people, who appeared to be the most vulnerable to the disease. Their number of contacts, especially with young children, declined by over an order of magnitude. Nevertheless, they still maintained contact with middle-aged people and others from their own age group. For society as a whole, the average number of contacts during this period decreased almost six-fold to 6.195, as indicated by the black point in Fig. 1d, corresponding to the April data collection period.

As in several other countries in Europe, a second COVID-19 infection wave occurred in Hungary at the beginning of September 2020, as was expected after the progressive relaxation of control measures (Röst et al. 2020). While the underlying reasons for the timing and the intensity of the second wave are not entirely understood, an increase in the number of social connections – which can be clearly seen from our data (see Fig. 1c) – may have contributed to this phenomenon. By the time of the observation in the middle of August 2020, the average number of social contacts had increased to 8.795 (see the black point in Fig. 1d in August). Moreover, mixing between different age groups had homogenized. The isolation of elderly people had declined and homophily was less observable due to the increase in mixing of the population. One reason for these more evenly mixed patterns may be the overlap with the vacation period – when people took holidays further from their homes, sometimes even abroad. These enhanced spatial mobility patterns, decay of social awareness, and increase in the number of social contacts may have induced or amplified the re-emergence of the pandemic in the Hungarian population, shown as the solid red line in Fig. 1d.

Figure 1: *Age contact matrices based on representative telephone survey data for (a) the reference period (before 13 March 2020); for (b) the early period of the COVID-19 pandemic; and (c) immediately before the second wave of the pandemic in Hungary. The X-axes of matrices indicate the age group of the participants, while Y-axes assign the age group of their proxy social contacts (for definition, see text). Color codes show (logarithmically) the average number of connections between age groups, normalized identically between the different matrices. Panel (d) shows the evolution of the number of daily infections in Hungary (red solid line) and the average number of contacts (black dots) during the observed periods (blue shaded rectangles).*



DISCUSSION

While Hungary is still facing the pandemic, just like almost every country on Earth, unprecedented efforts have been mounted to create a coordinated response to this crisis worldwide. The first wave of the COVID-19 outbreak was successfully suppressed in Hungary due to timely and strict interventions that resulted in a drastic reduction in the number of contacts (Röst et al. 2020). The resurgence of the virus in early fall made it evident that this pandemic will not only have medical consequences for humanity, but will also induce a long-lasting social and economic crisis (Fernandes 2020). There are several areas still associated with challenges and strong time pressure in relation to avoiding even more severe consequences thereof. These challenges include not only the development of an effective vaccination program, and the mitigation of the economic burden, but also precise and innovative solutions for modelling the spread of the disease that will generate insights into the processes governing

the dynamics of COVID-19. In relation to the dissemination of the disease, the scientific community is facing new and unknown scenarios on a daily basis, impacted by spatial, demographic, and even cultural effects. Our contribution may be important in the sense that it provides a methodology for dynamically observing social mixing patterns, stratified by age. Our results provide key inputs for epidemic models, thereby helping build forecasts on better assumptions and up-to-date information about the social mixing underlying the transmission of the disease.

The *limitations* of our voluntary online data collection process were clear from the very beginning. In response, we developed a methodology (Koltai et al. 2021) which may be useful for scaling non-representative age contact matrices to increase their approximations of reality, and thus to more accurately describe the underlying population. This methodology involves identifying those factors that affect the contact patterns of people on representative national samples, and weighting the online matrices using census data related to these factors. These preliminary results may lead to the adoption of similar data collection methods by the scientific community, increasing the accuracy of the modelling of the pandemic.

After completion of this project, data will be made available for further research purposes upon request.

Acknowledgements

The authors are very thankful to the MASZK COVID-19 development team led by Vilmos Bilicki from the Department of Software Development at the University of Szeged. This work was carried out within the framework of the Hungarian National Development, Research, and Innovation (NKFIH) Fund 2020-2.1.1-ED-2020-00003. The work of Júlia Koltai was funded by the Premium Postdoctoral Grant of the Hungarian Academy of Sciences. Gergely Röst was also supported by NKFIH FK 124016.

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CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 147-150. DOI: 10.14267/CJSSP.2020.2.10

ARRANGEMENTS, SEMIOTIC LINKS AND EVALUATIONS: PURIFYING FAMILIAR ENVIRONMENTS OF COVID-19 AMONG SERBIA'S YOUNG PROFESSIONALS

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Our research principally engages with the issue of encounters with COVID-19 within an everyday frame, underlining how the restoration of a "distorted" familiar environment occurs through gradual coping with such a mysterious non-human entity. The specific objective of our project was to discern how 20 young professionals from Belgrade (Serbia), whom we interviewed during the curfew, encountered, re-organized, and eventually re-settled into their common, everyday spaces and routines, while the virus was spreading in the background. Our examination first seeks to register how the distorted relationality of humans with a non-human entity – which the virus is – became distilled into everyday objectivity. More profoundly, we intended to seek understanding of what alternations the possibility of getting infected were associated with common, everyday arrangements, and how the actors pursued hygienic "purification" as a principal task. In this sense, we managed to unveil that – albeit this interplay with an invisible and rather mysterious non-human entity involved a number of confusing moments – the latter was ultimately stabilized within a specific evaluative and cognitive format that dictated the former's actions. Being highly appreciative of domestic familiarity and intending to quite reflexively purify potentially contaminated zones and objects, our respondents also pursued a specific moral frame. In conclusion, we underline how these "purifying" actions were substantially guided by a desire to maintain the domestic order of familiarity and immediate care.

The starting premise of our research develops from a novel sensibility that is aligned with speculative developments in philosophy; specifically, object-oriented-ontology (hereafter: o-o-o) and the intention to register the gigantic

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life of objects and their vivid, mobile, and vital, actant-like efficacy. For the adherents of this movement, the primary interest shifts from the anthropocentric trends that are found in most modern philosophy to the detection of the robust life of objects more closely, and their relationship with each being, whether human or non-human, whose existence is formed exactly through concatenation with others. The genuine ontological enigma that o-o-o unveils is both a non-relational weaving among the objects that occurs without human intervention and knowledge, and the eventual merging of gigantic objects that stick together and evolve into a radically trans-local network of habitation – exactly what the 2020 pandemic managed to do. In relation to the existence of objects – understood as every way of being dependent on a number of other objects – o-o-o advocates underline that each object has a "surplus" that is inaccessible directly. A major dilemma then becomes how to access such a complicated reality, when a number of objects are hidden from the human gaze. To a certain extent, this theory appears as a rather convenient guideline for understanding an uncanny phenomenological situation in which many humans across the planet have found themselves in relation to their deep engagement with the pandemic. However, perceiving only the mutating relationality that emerged when the virus inhabited the zones in which the humans are engaged typically sparks an experiential puzzle for which o-o-o seems particularly insufficient for resolving, as it remains blind to the points of access to a trans-local reality that are formed in everyday sites when a concatenated network of objects finds a way in.

Our take on these issues starts from the concept of arrangement, understood as a domestic regime ruling a familiar environment. Arrangement here indicates a relational framework sustained through specific modalities of identity, order, and positionality between human and non-human elements in a domestic environment, also involving a certain format of apprehension and ethical frame that evolves into a nexus of practices. Moreover, arrangements such as homes represent an enmeshement established by relata that emerge from rather vivid settings. Arrangements can thus be considered ways of access organized through fluxes of organic fluids, the coding of materials, and the overall process of sensing the immediate environment, deposited upon the specific politics of beings that *in situ* define the spatial and temporal scope and distribution of their movement. Because each arrangement faces the problem of demarcation (that is, how to "communize" with other beings and elements recognized either as foreigners or intruders), the topic of hygiene here appears as a crucial practical operation. Its delicacy – particularly in terms of the 2020 pandemic – further involves a re-direction of theory towards the semiotic confusion of locating the invisible virus and the "surplus" reality it brings; that is, its only partially accessible qualities. This hygienic "purifying," we assumed, was guided not only by a fear of being

contaminated, but also induced a rather vigilant mode of communication with the "intruder" who lacked referential stability. Accordingly, this distortion in the "regular" shape of familiar arrangements produced by such a viscous entity was distilled into delicate semiotic and evaluative operations of mutating the presence and the absence of the virus through shifts in the spatio-temporal nexus of hygiene and everyday practices. Ultimately, the purifying demarcation involves unique evaluative standards that involve a differentiation between the "good" that rules each arrangement. In other words, we assumed that actors also created an ethical apparatus which led their actions towards specific aims, and which developed around a judgmental frame which led to their departing from familiar arrangements in qualitative terms.

The methodological framework of our project was built upon a snowball strategy, involving finding 20 young professionals who were selected in such a manner as to expose the shift in their everyday lives that had been initiated by the pandemic. Most of them had relocated their work obligations to the home environment, and our intention in the interviews (which we conducted through platforms such as Skype during the very moments of the curfew in Serbia), included thoroughly examining the 1) zoning of home spaces and alternations of everyday practices, and 2) ways of coping and apprehending the risk of being infected with the virus.

Results largely indicate an abrupt distortion of everyday lives due to the non-human entity, which evoked confusion due to the lack of stable, cognitive references about the foreign object and eventually led to adaptation to the uncertain, mutating, and acting traits of the "other." In most cases, we noted initial confusion that distorted familiar, domestic arrangements, after which the actors deployed different "devices" to cope with the invisible enemy: from exploring information on the performance of the virus to the micrological tracing of potentially infected areas in their homes and purifying them with disinfectant. More precisely, significant shifts in practices that encompassed the temporal and spatial conformity of arrangements were at first dictated by the presence of a "ghostly" object, before the former actors induced vigilant and reflective hygienic actions to solve the problem of demarcation. In this sense, the presence of the virus meant that the outdoors was comprehended as potentially risky territory. An entire hygienic scenario in all of the studied cases was grounded on recently produced references – such as official instructions about how to cope with the virus. This gradually evolved into the stabilized partition of demarcated areas in which there is no contamination, and those where the absent object becomes present.

All of the agencies working within the domestic regime developed a certain apprehension frame that also evolved into vigilant ethical work. Our findings

point once more to the issue of the evaluative background associated with specific domestic arrangements as different from other regimes of engagement. Thus, this "pandemic deontology" was deposited on a specific evaluative standard that involved a tense encounter with assumed "aberrations" that were perceived as capable of endangering the familiar environment – which included the excessive hoarding of goods, improper wearing of masks, or a lack of responsibility for others. Namely, our respondents multiply underlined that the motive for pursuing official measures against the spread specifically came from domestic attachments and familiar relationships. Against a general, civic deontology, we conclude that this purifying politics is rather narrow in scope and guided by different moral and cognitive frameworks in which actors indulged themselves in terms of situated, materialized endeavors in order to resolve the basic tension: how to protect and solidify familiar environments by drawing upon an ethical corpus of "taking care of the family."

CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 151-155. DOI: 10.14267/CJSSP.2020.2.11

QUALITATIVE RESEARCH ON HUNGARIAN MOTHERS' SOCIAL SITUATION AND MENTAL HEALTH DURING THE TIME OF THE COVID-19 PANDEMIC

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Due to the social distancing measures ordered as protection against mass infection during the 2020 COVID-19 outbreak, most Hungarian families were confined to home quarantine. Schools, kindergartens, and nursery schools were closed between 16 March and early June. Because grandparents belonged to one of the most vulnerable groups, families were asked not to involve them in childcare until the end of the pandemic in order to avoid their infection by younger family members. Companies switched to using the home office when possible, and the government asked the population not to leave their homes except for essential reasons. As a result, many parents worked from home and provided care for their children at the same time.

In families with school-aged children, facilitating home-schooling was also a task entrusted to parents, adding one more burden to their already busy days. Parents could not rely on their usual childcare methods, thus they needed to tend to home-schooling and work-related obligations within a limited timeframe. As all these changes happened overnight, and without a carefully planned transition to digital teaching methods, both teachers and parents were stressed by the new requirements. Given the deep gender segregation in the labor market and the traditional gender regime, women bore the majority of the burden in these areas. Being in full-time employment and doing the "second shift" (Hochschild, 2012) has been a familiar experience for Hungarian working women for several decades. However, it was a novel experience to be required to fulfil these sometimes conflicting responsibilities at the same time and in the same place.

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In our research project[5] we were interested in examining what toll this took on the social situation and mental health of working women; moreover, what strategies and tools they used to survive this period. We expected the high level of work-family conflict to be explained by time scarcity (due to the zero-sum nature of time); by the demands-and-resources approach (work demands deplete resources, which has an effect on private life, and vice versa); or by role incompatibility (Greenhaus & Beutell, 1985). Since work was essentially done at home, there was an elevated risk of the blurring of work-family roles as well. Based on earlier literature, it is known that the level of work-family conflict experienced by women and men has been converging. The reason for the closing gap may be that women find more effective ways of coping with the related stress, and that men exhibit more intensive fathering behavior, thus experiencing similar stress to women. Nevertheless, women and men typically choose different coping strategies (Geszler, 2020).

Based on earlier research findings and recent international reports, we formulated two different assumptions about the changes taking place in Hungarian dual-earner families who were raising small children in spring 2020. On the one hand, as women/mothers/caregivers were now at home and accessible full-time, the further re-traditionalization of norms and expectations may have occurred. On the other hand, as men/fathers/caretakers/main breadwinners were also at home full-time, and were more accessible than previously for family-related responsibilities, some de-traditionalization may have occurred (men could "help" more with children, housework, and elderly care). It was thus an exciting question how these patterns had changed, with special attention paid to mothers' lives and experiences. Based on the statements discussed above, the research was thus designed to explore changes in mothers' lives due to working using a home office, home schooling, and an intense family life, as perceived by Hungarian interviewees.

5 More information about the research is available on ResearchGate (https://www.researchgate.net/project/Mothers-during-the-COVID-19-quarantine) and on Zenodo.org (https://zenodo.org/communities/mothers-huro-covid19/?page=1&size=20&size=20).

THE QUALITATIVE RESEARCH FOCUSED ON THE FOLLOWING FOUR QUESTIONS

1. **How do mothers (families) usually cope with the dual and parallel burden of work and childcare?**

This involves the investigation of the challenges and difficulties women face connected to childcare and child-related tasks (past and present). We expected that mothers would seek to rise to the expectation of being good/perfect, intensive mothers. Thus, through "exploiting themselves" they would put even more effort into meeting these norms, relegating themselves and their own needs to the background.

2. **How does the situation in which parents work from home and provide childcare affect the household division of work between women and men?**

Here we focused on the performance of unpaid labor at home (past and present), with particular attention to changes in routines and their explanations. The ideologies behind the division of labor at home, and satisfaction with this situation, were crucial elements of the investigation. Because of the traditional gender regime at home, we expected that women would be completing the majority of these tasks, but we also they projected that they would report that fathers "helped" to reduce tension.

3. **How do working mothers experience and handle work-family conflict in this situation?**

Mothers' and fathers' previous and present work experience and work-life balance were the focus of this question. Mothers were expected to report attempting to resolve related conflicts by working more extensively, and always being online. We anticipated the expansion of mothers' working days, thus their permanent exhaustion.

4. **How does this situation affect the mental health of mothers?**

In our investigation of mothers' mental status, we were interested in exploring the presence of both negative and positive social, economic, and natural environmental factors during the pandemic. Anxiety connected to job loss, children's suboptimal academic progress, or perceptions of poor mothering could be accelerated by peer pressure disseminated on social media.

SAMPLE

We interviewed 52 Hungarian mothers who were residents of Hungary and Romania (with one exception, all Romanian interviewees were from Transylvania, and all of them were of Hungarian ethnicity), who were living in dual-earner households, were married or cohabitating, and were raising at least one child under the age of 15. Interviewees were recruited through social media ads, several dedicated on-line groups, and through the researchers' personal networks. In order to tackle the homogeneity of the sample, we also applied the snowball technique as a means of contacting additional interviewees. Regarding the layers of the sample, the fact that the mother's job was required to be carried out from home created a restriction. We aimed at reaching women in high-flexibility, independent, and creative jobs, related to which they had the everyday experience of working online, as well as other women who were undertaking more routine administrative work with limited flexibility. We also tried to avoid geographical bias and to interview women living in Budapest and in bigger cities and villages, as all semi-structured interviews were carried out via online platforms or phone. Interviews lasted around one hour, and all were recorded and typed up. Texts were analyzed with NVivo software. The Transylvanian sample is dominated by schoolteachers, which gave us an additional opportunity to analyze the special status of teachers during the pandemic.

PRELIMINARY FINDINGS

Mothers perceived the time spent in quarantine at home as an opportunity to be even more present in their children's lives. Home schooling, however, multiplied the burden on mothers with regard to ensuring the adequate progress of children in school.

The gender inequality in invisible and unpaid domestic work was not caused by COVID-19, but the epidemic-induced quarantine reinforced and deepened preexisting gender inequalities.

Our interviewees' lives had changed radically: the priority of mothers became caring for their children and supervising their school-related activity. In comparison, the lives of their spouses/partners changed much less.

Social distancing, working from home, permanent childcare, and homeschooling-related duties put women under significant pressure from several directions, negatively affecting their mental health.

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CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 157-161. DOI: 10.14267/CJSSP.2020.2.12

CONTACT BETWEEN NON-RESIDENT PARENTS AND THEIR CHILDREN DURING THE COVID-19 PANDEMIC IN HUNGARY

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Several studies have examined the factors that can influence contact between non-resident parents and their children (Goldberg & Carlson 2015, Skevik 2006). The distance between the place of residence of the non-resident parent and their child(ren) has been found to be important in terms of the frequency of in-person contact (Manning et al. 2003; Cheadle et al. 2010). The majority of research on this topic focuses on the frequency and quality of face-to-face visitation between non-resident parents and their children (Kalmijn, 2015, Köppen et al., Szalma & Rékai 2019). Although some studies have explored other types of contact such as overnight stays (Haux & Platt, 2020; King et al. 2004) and phone contact (Leite & McKenry, 2002; Meggiolaro & Ongaro, 2014), these remain marginal. Other types of communications between non-resident parents and their children might be under-researched because face-to-face contact is a condition for other types of contact (Schier 2016).

Based on earlier research findings, we addressed how forms of contact were influenced during the first wave of the COVID-19 pandemic (which can be dated to the spring of 2020) in Hungary. One of our research questions was whether face-to face contact patterns were still dominant, or whether the role of ICT had changed contact between non-resident parents and their children in Hungary due to COVID-19. Furthermore, we also examined the changes in the frequency of face-to face contact and the source of these kinds of changes.

In order to answer these questions, I and my colleague, Krisztina Rékai (a BA student at the University of Warwick), conducted 22 semi-structured telephone interviews between 24 March and 5 April with individuals from different

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geographical areas within Hungary. This period was a rather unique time, due to the partial curfew that lasted from 28 March to 11 April. Our selection criteria were parents who had at least one child under the age of 18 but did not live in the same household as the other parent. We managed to conduct 22 interviews. Our sample included 12 non-resident fathers and six parents who had shared custody arrangements, as well as fourresident mothers. This allowed us to obtain a fuller picture of the changes in contact between non-resident parents and their children during the pandemic.

Individual interviewees were easily recruited because most of them had participated in a previous piece of research by the authors that focused on how non-resident parents are involved in the lives of their children in different dimensions (Szalma - Rékai 2019). All the interviewees (i.e. those who had participated in the previous research and the new ones) were recruited through the snowball method. Thus, we already had lots of background information about the interviewees who had participated in our earlier research, so we could just focus on the changes due to the special circumstances. For this reason, most of our interviews with the latter lasted about 20 minutes, and interviews with newly involved interviewees lasted around 40 minutes. Before starting the interview process, we asked for interviewees' informed consent and explained that the data collection procedures were confidential and based on their voluntary participation. It was interesting that no one refused to participate. Indeed, respondents were eager to share their concerns about the pandemic situation. The interviews were tape-recorded, and the recorded interview material was first transcribed verbatim. Transcripts were then transformed into a code book by applying structural coding in an excel file.

Our results show that under special circumstances parental visitations were affected. Nine interviewees reported the complete suspension of visits during the pandemic. Six participants among the latter said that they had terminated personal meetings with their children because at least one or the other parents had evaluated the pandemic-related risk as too high for face-to-face visitation. This was surprising, because the partial curfew announced by the Hungarian government on 28 March stated that parental- and visitation rights should not be affected by the restriction-of-movement policy. In the other three cases, the cessation of encounters occurred due to the indirect effects of the virus, such as borders being closed and individuals being forced to stay in quarantine. Furthermore, six out of the twenty-two participants had significantly changed their meeting habits in some way, and only in seven cases were no kinds of change detected at the time of the interviews (Szalma – Rékai 2020).

As for the role of ICT, we found that it had increased because, when personal visitation did not take place, resident parents in all cases helped non-resident

parents to keep contact with their children via ICT. Julia, for example, did not support the use of a mobile phone between her eight-year-old son and his father, but she explained that at the time she had allowed it because it could help the latter remain in contact in the absence of in-person meetings. An earlier study (Rudi et al. 2015) found that those non-resident fathers who lived far away from their children highlighted the importance of online connections. We also noticed that social distancing could cause similar effects with regard to contact between non-resident parents and their children as the effects caused by significant (geographical) physical distance (Szalma – Rékai 2020).

While this research allowed us to obtain some insight into contact between non-resident parents and their children during the pandemic, it also revealed that most of the non-resident parents reported only temporary changes related to developments in the pandemic situation (Szalma – Rékai 2020). For example, Steven described the frequency of personal meetings with his daughter in the following way: *"It is hectic, because it depends on the mothers' feelings towards the virus at the time. Last week, for example, she decided that for some reason the child couldn't come to visit all week. Today she told me to come for the little girl right now."* Since we were only able to take a snapshot of the situation, I decided to continue the research. During the summer of 2020 (between 1 July and 30 August) I conducted follow-up research. Thus, I re-contacted all the interviewees and asked them to report whether they had maintained their original strategy during the whole period of the first wave of the COVID-19, or if any changes had occurred by the end of the first wave. My preliminary results show that were significant changes compared to the earlier snapshot.

The most notable changes in relation to visitation occurred with those parents who had earlier chosen not to permit any personal contact between their ex-partners and their children. For example, Julia reported that *"it was not feasible [to stop them seeing each other], because when I made the decision not to meet, I thought that they would be separated for a maximum of one-and-a-half months, and then it would be over. It is not normal that my son does not meet his father for months. I told him to follow the safety guidelines, apply strict hygiene – everything that was officially requested – and I allowed him to go back."* It seems that total isolation was not a feasible strategy, because all of the nine interviewees had changed their original strategy by the end of the first wave of COVID-19.

Additionally, some indirect effect of the pandemic – such as the introduction of home office work and online education – also required some rethinking of earlier plans. For example, John reported that he and his wife were not able to continue the physically joint custody because of the burden of online education, and that his child's grandmother had carried all the weight, and that both he

and his ex-wife had become "weekend parents" – and then only every two weeks. Furthermore, our follow-up revealed that, in addition to the pandemic's direct and indirect effects, other life events such as having new partnerships or moving to a new residence influenced the patterns of contact between non-resident parents and their children. Moreover, most of the interviewees reported that during the summer period they typically adopted a different schedule than during the school year. For example, Thomas said the following "*Of course, just like before the virus... We went back to face-to-face meetings, with no change."* Most of the interviewees also considered the summer period to be a "COVID-19 free" period.

I would like to continue this research, because the second wave of COVID-19 is probably having different effects on people's lives. Kindergartens and primary schools are still open, and there is no strict partial curfew, unlike during the first wave of COVID-19, although the number of deaths and infected persons is much higher in the second wave than it was in the first in Hungary. These facts may have a different effect on people's behaviors than we experienced during the first wave. However, as we learned from the previous research that parents' strategies were quite fluid during the first wave of COVID-19, I would like to wait with the second follow up until the end of the second (third) wave, then re(re)contact panel participants.

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COVID-19: AN INTERNATIONAL STUDENT WELL-BEING STUDY IN HUNGARY[1]

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BACKGROUND AND AIMS

The COVID-19 outbreak has had great psychological and social impacts, not just on the marginalized population but on the general population as well (Wang et al. 2020). Changing life circumstances and daily routines, job losses, an uncertain existence, etc. make people's lives more difficult. The COVID-19 outbreak is likely to have a notable impact on student life as well, as the latter have had to face many challenges (Sahu 2020) such as studying via e-learning methods, online exams, possibly losing their jobs, and financial problems (such as paying tuition fees). International students have moved back to their homeland or live in an isolated way in student hostels, maintaining social distance far away from their families and close friends. So far, only a few studies have been

1 This article is part of the COVID-19 International Student Well-Being Study (C19 ISWS). C19 ISWS is the result of a study design, study protocol, and questionnaire developed by a team at the University of Antwerp, Belgium (Van de Velde et al. 2020; Buffel et al. forthcoming)

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carried out to analyze how COVID-19 has affected students' lives (Sahu 2020, Wenjun et al. 2020, Wong et al. 2007).

Four Hungarian universities – Corvinus University of Budapest,[8] the University of Debrecen, the University of Miskolc, and the University of Szeged – participated in the COVID-19 International Student Well-Being Study (C19 ISWS) (Van de Velde et al. 2020, Buffel et al. forthcoming), organized and conducted by the University of Amsterdam (UA) to examine the effects of COVID-19 on student life, involving 27 countries. The research objectives (RO) are the following (Van de Velde et al. 2020:1-2.):

RO 1: Assess how the living conditions (physical and socioeconomic status) and workload of higher education students changed during the COVID-19 outbreak.

RO 2: Assess how changes in living conditions and workload are related to stress levels among higher education students during the COVID-19 outbreak.

RO 3: Assess how changes in living conditions, workload, and stress levels relate to well-being, mental health, and health behavior among higher education students during the COVID-19 outbreak.

RO 4: Assess how the associations described in RO 3 are mediated by stressors (fear of infection, boredom, frustration, inadequate information, etc.), social support, and COVID-19-related knowledge during the pandemic outbreak.

RO 5: Assess the variation in well-being and mental health among university students across participating universities and countries.

RO 5: Assess how the cross-university and cross-country variation in well-being and mental health in higher education students may be related to varying (a) university-level, and (2) national policy contexts.

METHOD

Questionnaire

The questionnaire was developed by the University of Antwerp (UA) based on an article by Brooks and colleagues (Brooks et al. 2020), which was translated into Hungarian by the Sociology Department of the University of Szeged. The questionnaire was adapted to the Hungarian context. The questionnaire was available to students both in English and Hungarian. All participating countries were allowed to add some national questions to the survey.

8 At Corvinus University, the coordinator of the international study is the MTA-BCE Social Epidemiology Research Group.

Data and sampling

An online survey was conducted in May 2020. All students registered for the 2020/21 academic year were invited to take part in the survey – both Hungarian and international/exchange students at bachelor, master and PhD level, as well as students of single-cycle programs and different specialized training courses.

Ethical approval

The research project was approved by the Ethics Committee for the Social Sciences and Humanities in Antwerp, and was approved by the institutional ethics committee/the vice-rector for research/the vice-rector for education at all participating universities in Hungary. The four universities received no financial support for conducting the survey.

Data collection and sample

The data collection procedure and sampling at each university were the following:

Corvinus University of Budapest

At Corvinus University, respondents were asked to participate in the survey via the following ways: a direct email was sent to the entire student population; an invitation to the questionnaire was included in the Corvinus newsletter; posted on Facebook; and posted on the Research Group's website[9]; and teaching staff were asked to inform students about the survey via Teams. The first invitation was sent out on 14 May, and data collection closed on 28 May. The questionnaire was not public, but was made available via an email sent to students in order to keep track of those students who had participated in the survey.

In 2019/2020, 11,574 students were enrolled at Corvinus University of Budapest, and 365 students participated in the survey. The low response rate (3.2%[10]) may be due to the fact that during the period of quarantine Corvinus

9 www.devianciakutatas.hu

10 There is no data about the response rate among international students.

students received lots of emails and invitations asking them to participate in COVID-related (or other) surveys.

The majority of the respondents were female (76.4%, male 23.3%) and enrolled in a BA program (60.3%), followed by an MA program (29.6%), single-cycle program (0.8%), and doctoral program (7.4%). The majority (86.6%) of students who completed the questionnaire were Hungarian; the rest (13.4%) were international. Most participants (81.6%) were studying social sciences, business and law, while 8.8% were studying science. An insignificant number of students from other fields completed the questionnaire.

University of Debrecen

The University of Debrecen conducted a survey in Hungarian and in English and reached both domestic and international students through the "Neptun" learning system. Students received the link within a closed system; it was not sent out in an e-mail, or publicly announced on any online platform. The letter we attached to the survey informed students about the research goals, the organization initiating the research, as well as a list of Hungarian universities participating in the research. We also included a data privacy statement in English and Hungarian.

Four hundred and sixty-three individuals completed the survey at the University of Debrecen. The response rate was 1.7%. Seventy-four per cent of respondents were Hungarian citizens, and 26% international students. Women were more likely to respond (65%) – male respondents comprised about one-third of the sample. Half of the participants were enrolled in a BA program; individuals in MA and Doctoral programs participated in almost equal proportions (16.8 and 15.3%, respectively). The rest (one-tenth of the sample) were studying on professional programs such as medicine and law and various other majors.

Nearly all of the 14 Schools at the University of Debrecen were represented in the survey, but the field of medicine was best represented (28.5%). Response rates were also relatively high in the area of sciences (16.6%), social and behavioral sciences (15.3%), and pedagogy (15.1%). Students from pedagogy, information and communication technology, as well as engineering, also had a response rate of over 10%.

University of Miskolc

All the registered students of the University of Miskolc were invited to take part in the survey via the "Neptun" Student Administration System through the students' personal e-mails. After a week of data collection, an additional invitation was sent out, and the link to survey was made available on the university Facebook page for some days. Participation was voluntary and no financial incentives were given for participation. The survey was open from 15 to 28 May. At this time, students had already been in confinement for 4-6 weeks.

A total of 695 students provided data, of whom 87.9% were Hungarian citizens, 1.6% were permanent residents, 1.6% temporary residents for one year or less, and 9.4% temporary residents who had been enrolled at the University of Miskolc for more than one year. (0.3% or respondents provided no data.) The response rate was 8.61% (65.0% female: 34.4% male: 0.6% other). The majority of students were studying on BSc programs (59.6%), 15.4% on MSc programs, 10.8% in single-cycle programs, 8.1% on PhD programs, and 6.2% attended other specified programs. The majority of students were majoring in business and administration, engineering and engineering trades, or health sciences. Almost one-quarter (24%) of investigated students were in their first year.

University of Szeged

The students of the University of Szeged were contacted to take part in the COVID-19 International Student Well-Being Survey through the "Neptun" educational platform. Therefore, the entire student population of the university received an invitation via direct e-mail at the e-mail addresses registered on this platform. The first invitation was sent out on 18 May, followed by a reminder one week later on the 25 May. Most answers were registered on the days of receiving both the first and the second invitation.

From the University of Szeged, a total of 1,808 students completed the survey, which represents almost one-tenth (9.71%) of the entire student population (18,613 individuals) at the university enrolled in the second semester of the term 2019-2020. Therefore, the response rate at the University of Szeged can be considered quite high – the highest among the four participating Hungarian universities.

More than two-thirds of the respondents (70.7%) were female, and less than one-third (29.3%) male. The sample consisted mostly of students of Hungarian citizenship (83.9%). Students temporarily resident in Hungary for more than

a year accounted for 12.1%, while only 2.6% had temporary residence for less than a year and just a few students (1.4%) in the sample were permanent residents. With regard to the study program, students of bachelor programs were represented in the highest proportions (53.6%), followed by students enrolled in single-cycle programs (22.5%). Another 12.1% were studying on masters programs and 8.2% were PhD students. Only 3.6% opted for study programs other than those listed here. The three main fields of study of the respondents were health and welfare (29%), social sciences, business and law (21.5%), and science (19.3%). The proportion of students studying humanities and arts was somewhat larger than one-tenth (12.4%). The latter were followed by students engaged in engineering, manufacturing and construction (7.2%), as well as students enrolled in educational studies (6.2%). Only a few students answered the survey from the study fields of agriculture, services, or other fields (1.5% each).

DATABASE AND ANALYSIS

The data will be made accessible through an online data repository[11] for other researchers who will be free to use the data for their own purposes without co-authorship requirements (Van de Velde et al.2020). The cross-country database will be available circa 2021 May.

PUBLICATION PLAN

The MTA-BCE Research Team at Corvinus University of Budapest will analyze how COVID-19 affects students' risk behaviors. We also want to find out which psycho-social factors can play a role in this change.

Publications by our colleagues of the Sociology Department of the University of Szeged are planned that will involve conducting an investigation of the factors influencing coronavirus-related worries, changes in housing situation, effects on subjective well-being during the coronavirus outbreak,

11 There is no information yet about which one. More information about the international survey can be found at the following link: https://www.uantwerpen.be/en/research-groups/centre-population-family-health/research2/covid-19-internation/ On this site, you will find up-to-date information about data accessibility as well. The questionnaire and (preliminary) research results are accessible through the Zenodo portal: https://zenodo.org/communities/c19-isws/?page=1&size=20

changes in satisfaction with different areas of life, the role of social capital on subjective well-being and health behavior, and students' attitudes towards the shift to digital education – old and new forms of vulnerability.

A research team at the University of Miskolc will analyze changes in smoking, alcohol, and drug consumption, as well as in moderate and vigorous physical activity before the outbreak of COVID-19 and during the period of social isolation; the predictors of students' well-being 4-6 weeks following the pandemic outbreak; and the socio-psychological satisfaction of students before and after the COVID-19 outbreak.

During future data analysis the research team in Debrecen will explore differences in social standing, social capital, regional variations, and study majors, along with changes in educational and labor force opportunities, and how the everyday lives, social bonds, and satisfaction levels of students have shifted in various areas of life since the start of the pandemic.

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CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 173-176. DOI: 10.14267/CJSSP.2020.2.14

THE INTERNATIONAL MOBILITY OF SERBIAN CITIZENS AT THE OUTBREAK OF THE COVID-19 PANDEMIC

Anđelka Mirkov, Dunja Poleti Ćosić[1]

INTRODUCTION

Research into the characteristics of the international mobility of Serbian citizens who found themselves abroad at the outbreak of the COVID-19 pandemic was carried out by the Institute for Sociological Research of the University of Belgrade – Faculty of Philosophy. The main goal of the research was to explore the effects of the global health crisis on the international mobility of Serbian citizens from their own perspective. In particular, the research aimed to contribute to a better understanding of the reasons and modes of return to the home country, experiences and problems during obligatory self-isolation, as well as attitudes towards national responses to the pandemic.

The topic has proved important for several reasons. The emerging health crisis has shaken up globalized international flows of people, goods, and services, leading to the fact that by the end of March 2020, as many as 91% of the world's population were living in countries whose national borders were fully or partially closed (Connor 2020). According to Serbian state officials, during the aforementioned days over 300,000 Serbian citizens returned to the country from infected areas, thus endangering the rest of the population living within state borders (Stojanovic 2020). Sensationalist media reporting about infected citizens arriving from abroad and spreading disease throughout the country contributed to the moral panic about "returnees."

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RESEARCH METHODOLOGY

In order to answer the main research question – which categories of Serbian citizens crossed the border to return just before or immediately after the outbreak of the COVID-19 pandemic – the researchers distinguished between four types of internationally mobile citizens: a) "regular cross-borderers" – those who live in border settlements and enter the territory of the neighboring country almost every day; b) "travelers caught abroad" – those who happened to be out of the country during short journeys for various purposes (tourist, business, educational, and other); c) "temporary and circular migrants" – those who were staying abroad temporarily, such as seasonal workers and exchange students; d) "mobile emigrants" – those citizens who have permanent residency in another country (people who work or study abroad, their extended family members, beneficiaries of foreign pension funds, etc.).

The time frame of the research was defined according to the global and national epidemiological situation and related restrictions on international mobility. Serbian citizens who temporarily or permanently lived abroad and decided to return to their home country were eligible for the survey if they had entered Serbia after 21 February 2020, as the new coronavirus had already spread at that moment in countries with a large Serbian diaspora. The rest of the citizens, living in Serbia, were eligible if they happened to be abroad during the health crisis and had returned to the country after 6 March 2020, the date when the first case of COVID-19 in Serbia was reported.

An online survey was the most convenient and feasible method for data collection during the lockdown in Serbia. The online questionnaire was created on the LimeSurvey platform and was active from 14 April 2020 to 24 May 2020. Since the application of random probability sampling was impossible due to the absence of a sampling frame, the information about the research and the link to the survey questionnaire were published on the official website of the Institute for Sociological Research[2] and then sent out to the target group via social networks, including Facebook groups of Serbian diaspora. Reactions among the potential respondents were mostly positive, although a number of comments indicated that some people perceived international mobility during the pandemic as a sensitive topic.

The 10-minute online survey began with two introductory questions regarding the type of international mobility and the age of respondents (the eligibility criterion required the latter to be at least 18 years old). The main body of the questionnaire was divided into six groups of questions. Three groups covered the specific

2 http://isi.f.bg.ac.rs/

research questions about the modes of return to the home country, experiences with obligatory self-isolation, and attitudes towards national responses to the pandemic. The questionnaire also included two groups of questions designed only for respondents living abroad for a period of time, covering specific research questions about the practical aspects of living in a foreign country and motives for returning. The socio-demographic characteristics of respondents were identified through the final group of questions.

PRELIMINARY RESULTS

A total of 305 submitted forms were completed by eligible respondents. The gender distribution in the sample is quite close to the ideal one (48.8% of male and 51.2% of female respondents). The age distribution in the sample seems to be biased in favor of young and younger middle-aged people (33.8% of respondents were between 18 and 30 years old and 47.5% of respondents between 31 to 45 years old). The structure of respondents' education is biased in favor of highly educated people (47.9% of respondents have a college or bachelor degree and 21.3% of respondents have a master's or doctoral degree). Every second respondent (49.8%) temporarily or permanently resides in the metropolitan area of the City of Belgrade, which exceeds the expected figure in terms of territorial distribution. The online method of data collection obviously caused the sample skewness, with clear domination of active internet users.

According to the type of international mobility, one half of respondents were actually "travelers caught abroad" (51.2%). There were still significant shares of "mobile emigrants" (25.2%) and "temporary and circular migrants" (19%) and, as expected, the smallest category were "regular cross-borderers" (4.6%). Mobile citizens arrived in Serbia from different parts of the world. Their places of departure included the European countries popular among Serbian labor migrants – Germany, Austria, Switzerland, France, and Italy (33.1%), as well as other Schengen states (28.8%). Departures from neighboring countries were strongly represented in the sample (19.9%) and the same is true for the former Yugoslav republics (15.9%). A significant number of Serbian citizens returned from all other countries in the world (23.8% of respondents came from the United Arab Emirates, Turkey, the United Kingdom, the United States of America, India, etc.).

The most frequent means of transport for those who organized the return on their own were planes (45.3%), cars (32.5%), and buses (17.5%). Upon arriving in Serbia and learning of mandatory self-isolation, some respondents were unsure

what exactly was expected of them (the rules were absolutely unclear to 6.5% and partly unclear to 24.9%). Almost two-thirds of respondents (65.4%) estimated that the measures applied in Serbia during the COVID-19 pandemic were strict. According to the same share of respondents (66.9%), state borders should not have been closed because citizens have the right to enter their own country.

When it comes to the situation of respondents who lived abroad, one-third of "temporary and circular migrants" (32.7%) and almost one-sixth of "mobile emigrants" (15.3%) confirmed that their employment status had changed due to the outbreak of the COVID-19 pandemic. Although work was the dominant motive for leaving Serbia, job loss was only one of the reasons for returning to the home country. When the pandemic is over, 82.7% of those respondents plan to return to the receiving country rather than remain in Serbia.

The thorough analysis of data collected in this online survey will surely create significant answers to the specified research questions, although conclusions should be drawn carefully due to the limitations of the sample. Since very little is known about this subject, the research findings will be used as a benchmark for the further examination of the international mobility of Serbian citizens, thus enabling evidence-based improvements in the management of international mobility during pandemics.

DATA AVAILABILITY

The anonymized data collected in the survey could be made available through scientific collaboration approved by the Institute for Sociological Research of the University of Belgrade – Faculty of Philosophy (http://isi.f.bg.ac.rs/en/).

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CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 175-177. DOI: 10.14267/CJSSP.2020.2.15

POLITICAL PARTICIPATION AND VOLUNTEERING DURING THE COVID-19 PANDEMIC IN HUNGARY

Dániel Mikecz, Dániel Oross[1]

THE PROJECT'S OBJECTIVES

The COVID-19 pandemic has had massive, global-scale impacts. For the realization of policy goals, the pandemic calls for citizen co-production. Since most policies are voluntary, levers for encouraging compliance with them oblige public servants to find ways to activate residents' civic sense of duty. Such efforts are likely to be more effective if they harness the popular legitimacy of intermediaries – from civic organizations to for-profit companies – that can exert normative pressure for compliance. With the aim of the management and reduction of health, economic risks, and damages, several initiatives have been organized in Hungary. Initiators included political parties, registered NGOs, companies and informal groups and communities.

In our research, we seek to answer the question to what extent the emergence of the COVID-19 pandemic has changed previous trends in Hungarian social and political participation. Is the participation of high-status people still typical, and has the role of online participation in the political participation of Hungarian society increased? Have new participants appeared or become identifiable?

RESEARCH QUESTIONS/HYPOTHESES

We suggest that the COVID-19 pandemic has increased the significance of

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those civil initiatives and democratic innovations that are online based. After a shock, civic organizations were able to adapt to the new situation and organize collective action online.

As several studies confirm, women are more exposed to the risks of the pandemic, as their everyday workload has increased significantly (Azcona, Bhatt and Love, 2021). Other studies have shown that the proportion of women and their participation in civil responses to global challenges is greater (Wahlström et al. 2019). Therefore, it is essential to examine the intertwined roles of women as agents both in climate movements and in pandemic-related networks. By interconnecting the COVID-19 responses with the climate movement, we can obtain broader insight into social reactions to crisis situations.

SAMPLE CHARACTERISTICS, DATA COLLECTION, SURVEY

Data were collected by the IDEA Institute from April 20-26, 2020 using a social-media-based questionnaire. The representativeness of the data was ensured by applying a quota to the data collection process, which was also supplemented by multi-weighted correction based on the latest available demographic data from the Hungarian Central Statistical Office. Furthermore, iterative weighting (raking) with other variables was also used. The result is that the study is representative of the adult population of Hungary in terms of gender, age, education, and type of settlement. The margin of error of the 2000 sample is at most +/- 2.2 percentage points for the basic distributions. In weighting the data collection, the researchers also took into account how much time respondents spent and how active they were on Facebook, and the proportion of different social groups (by age group and gender) using social media.

The survey contained 27 questions. Four questions related to political participation in the last 12 months (signing petitions, attending lawful demonstrations, being active in civil society organizations, contacting politicians) and two to participation since the pandemic (signing petitions, and contacting politicians). The focal areas of the questionnaire were voluntary activities since the pandemic. We asked respondents if they had participated in one of the following activities: sewing face-masks, volunteering at healthcare institutions, helping with shopping, donating, transporting donations, participating in distance teaching from home, online caring for lonely people, sharing, and writing pandemic-related content on social media. We also asked who organizes these activities (friends, a Facebook group, a civil organization,

a religious group, municipality, healthcare institution, or other state institution). A final question asked if the respondents had joined a Facebook group or movement that advocated staying at home.

FIRST RESULTS

With regard to the traditional and direct forms of political participation we examined, the data show a remarkably high level of activity. In addition, during the coronavirus pandemic, pandemic-related volunteering exceeded the level of voluntary commitment under normal circumstances. Hence, both political participation and volunteering have increased since the outbreak of the coronavirus.

DATA ACCESS

The database will be accessible from June 2021 at the repository of the Library of the Hungarian Academy of Sciences.

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CORVINUS JOURNAL OF SOCIOLOGY AND SOCIAL POLICY VOL. 11 (2020)2, 179-186. DOI: 10.14267/CJSSP.2020.2.16

SOME PANDEMIC REFLECTIONS FROM THE "*SOCIOLOGY AT THE DAWN OF A SUCCESSFUL CENTURY?*" CONFERENCE

Márta Kiss[1], *Éva Perpék*[2]

The Centre for Social Sciences (Hungarian Academy of Sciences Centre of Excellence) held a conference entitled *Sociology at the Dawn of a Successful Century?* on October 8-9, 2020 in Budapest. The concept of the conference was built around Dénes Némedi's 20-year-old article and its updates. The ambitious goal of the organizers was nothing less than to review the state of Hungarian sociology and its latest research results. In this spirit, the plenary speaker, Károly Takács (Linköping University and CSS-RECENS, Centre for Social Sciences), first approached this complex subject from the perspective of teaching sociology, and then – among other things – argued for a reflexive sociology.

The review of the current state of science inevitably had to focus on the COVID-19 epidemic and its social impacts as well. Accordingly, out of a total of 24 sections and more than a hundred talks, two separate sections and ten presentations were explicitly devoted to analyzing the social implications of the coronavirus. The presentations were commented on by invited speakers, and there was vibrant scientific dialogue in both panels.

It should be noted that although we give an overview of the papers from these two particular sections only, various reflections on the coronavirus definitely appeared in further panels and presentations as well. Some examples of the research topics analyzed in the context of the epidemic were: concerns about the virus; the impact of the pandemic on different social segments; the social care system; the social economy; experimenting as a scientific method; the health-damaging behaviors of students; online demonstration, etc.

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The epidemic also had a significant influence on the preparation and implementation of the conference. The challenges posed by the new situation were addressed by the organizers in a hybrid, personal, and online conference format, which proved to be both lecturer- and participant-friendly.

The presentations in the first block discussed the social impacts of COVID from various different perspectives and approaches. In most cases, changes in family roles, relations and responsibilities received a lot of emphasis, among which the duties related to online education were determining. As well as coping strategies, the psychological effects and employment consequences of the epidemic proved to be important topics, and gender differences were also outlined in several presentations. In two cases, the need for a territorial, country-specific approach was emphasized, and one reported a change in the mental burden associated with elderly care during the COVID period. The structure of the first section was based on the principle of "individual to general": presentations moved from micro-level qualitative research to large-sample quantitative analyses.

The first two lectures were about the coping strategy of families and the rearrangement of their relationships through different approaches. The focus of Krisztina Rékai's (joint researcher Ivett Szalma) presentation was the changing relationship between parents who had separated and their children during the COVID outbreak (see current issue for more details). Based on 22 longitudinal semi-structured interviews, the researchers found that the epidemic caused a change in the nature of their contact, despite the fact that the restrictions on movement did not apply to personal contact between separated parents and their children. One-third of families reported a suspension of face-to-face meetings, and a further one-third reported a change in the frequency or manner of encounters. Online communication channels became more valuable, although the parents who typically communicate often via the internet or telephone are those who also communicate regularly in person. After the spring epidemic season, reorganization was rapid in most families, but most of the missed encounters were not made up for. Overall, the researchers found that no conscious or mature strategies were applied by the families during the first wave of the pandemic, thus ad hoc responses were typical of the emerging situations that were greatly influenced by the official regulations and restrictions in force at the time.

Nikolett Somogyi and her colleagues (Beáta Nagy, Réka Geambașu, and Orsolya Gergely) interviewed 52 highly educated female members of dual-earner families in Transylvania and Hungary who worked from home during the first COVID wave (see current issue for more details). Based on the interviews, many of the negative effects that were outlined stemmed from working from home and the blurring of the border between work and private life. Such is the

case with the constant remorse that resulted from the feeling that the former had been unable to perform perfectly in all fields (teaching children, housekeeping, and their own work). However, respondents also mentioned the positive benefits of flexible work at home: families spent more time together, their lives were characterized by a calmer tempo, and so on. This group of highly educated women can also be characterized by the use of both conscious and less conscious coping strategies, including framing difficulties as "I'am lucky because…". The comparison between Transylvania and Hungary lead to the recognition of an important difference: the conditions and expectations about education in the neighboring country were less strict, so there was much less pressure on parents. Overall, research showed that barriers were easier to overcome when respondents were able to work in flexible jobs and the working environment was supportive, while having sufficient space and good technical conditions were mitigating factors.

Like the previous one, the presentation by Júlia Koltai (and Fodor Éva, Gregor Anikó, and Kováts Eszter) based on representative research that used a large sample (1900 people) also showed the importance of flexible work: many people saw this as the key to resolving the tension between work and private life. However, data show that two-thirds of respondents worked flexibly, but only three out of ten people were able to work from home, and these individuals typically had a higher level of education. People were also very much looking forward to the reopening of educational institutions, which is fully understandable due to the fact that time spent caring for children increased by 30% in general during the first period of the epidemic. This resulted in an exceptionally large number of hours per week spent on child-care related duties, especially for women (12 hours/week more than men). The exceptional increase in the burden on women was interpreted by researchers as part of the "gender gap." Based on the representative research, the presenters also painted a detailed picture of the labor and material consequences of the first wave of COVID in Hungary. Among other factors, it was highlighted that a quarter of workers were forced into paid or unpaid leave, which mainly affected low-skilled people (especially women with less than eight years of general education), and one-third of respondents felt that their financial situation had worsened during the COVID period (here, skilled workers were overrepresented).

The growing burden on women was also shown by a study of Anett Tróbert, Márton Bagyura, and Zsuzsa Széman that was conducted among people who care for the elderly. The online survey reached more than a thousand people, 96% of whom were women. According to the data, the burden of caring increased in particular for those who care for elderly persons with dementia. This is partly because they had a greater burden before the pandemic, and because they are

more reliant on the services of the health care system (such as home caregiving), to which they had less access in the epidemic period. Using the COPE index method,[3] the researchers also found that those who had a harder time in terms of the effects of the epidemic situation felt that the task of caring was also a greater burden, and that caring-related duties were less valuable. In addition to restrictions and care-related difficulties, the greatest burden on caregivers was mental and psychological pressure, which was partly because recipients of care also required more emotional and mental support, and because they had bad experiences with the related constraints. In addition, many of them also had financial and work-related problems, which were further exacerbated by their lack of recreation and opportunities for recharging, which they especially need.

Gyöngyi Schwarcz and Zsombor Csata spoke about the results of a large-scale online survey and netnographic research conducted in the Carpathian Basin by the National Strategy Research Institute for Hungarians. They highlighted two topics: the results of the research on resiliency, and a narrative analysis of the coronavirus. The resilience study showed, among other things, that the economic crisis caused by the epidemic affected Transcarpathian Hungarians in the most unfavorable way (a decrease in income, loan repayment difficulties, border closure, etc.) while Slovakian Hungarians were considered the most resilient of the examined groups (higher income level and reserves, daily commuting, etc.).

Regarding the patterns of orientation derived from the media, Zsombor Csata said that it is becoming increasingly typical that Transylvanian Hungarians consume mainly Hungarian media content and keep in touch only with Hungarians (only 12-15% mentioned that they have Romanian friends). Regarding the perception of danger, he emphasized that the monitoring of Hungarian media content had a negative effect on the perception of health, income, and personal safety of viewers. In general, there is a tendency for those who are more informed to have a higher sense of fear, more distrust, and be more liable to be involved in searching for scapegoats – of course, this picture may be made more nuanced by involving additional analytical aspects.

The second COVID-related section of the conference focused on the educational consequences of the pandemic from several angles. The series of presentations exploited empirical evidence in the field of primary, secondary, and tertiary education. The research covered a wide array of target groups (from marginalized to privileged levels) and perspectives (students, parents, teachers, other educators, and non-governmental actors). The research was based on non-representative samples and concentrated on perceptions related to the digital era

3 The Carers for Older People in Europe Index contains 15 items and 3 subscales (negative aspects of caring; positive values of caring; quality of support).

of COVID-19 and mainly presented the learners' perspective, while teaching aspects were also embodied therein. The main research instrument was the questionnaire in four of the five cases, and an online audio-visual focus group in one case. In some cases, in-depth or orienting interviews were also used as complementary methods. The vast majority of data collection was undertaken during the time when curfews were being applied, while one survey was conducted in the summer.

Ágnes Kende and Vera Messing's presentation focused on the lower strata. Their research explored the perception of several stakeholders about the transition of disadvantaged / Roma students to a digital curriculum. They involved teachers (mainly from primary schools), after-school club instructors, and representatives of Roma and pro-Roma organizations in their survey. Families' insights were incorporated through phone or chat platforms. Those teachers working in segregated schools (i.e. where the disadvantaged/Roma pupils are over-represented) reported that around two-thirds of their pupils were able to become involved in digital education. However, their participation often happened through offline tools. The main hindering factors were the lack of material and non-material resources such as ICT devices, weak digital literacy, a limited internet connection, inappropriate space for study, weak capability to study independently, and lack of family support. In addition, overcrowded homes, as well as existential and other uncertainties, weighed on families as an additional burden, which also decreased students' school performance. Despite several difficulties, some teachers and after-club instructors reported more personal treatment and closer relationships with children or their families as positive outcomes of the extraordinary situation.

Another piece of research focused on a more privileged group of primary school students –, those willing to be enrolled in "small high schools" after the fourth or sixth grade. Eszter Berényi's study fits into the theoretical discourse of early selection – including self-selection – and tracking. The panel study compared the experiences of families during the period of preparation for "small high school" admission and the digital curriculum. The results indicate that preparation is a several-month-long, costly, time- and energy consuming process, and that shadow education plays a major role in it. Another lesson from the analysis of the pandemic is that affluent families also encountered a number of difficulties during distance learning, although both the extent and nature of these problems differed from those of disadvantaged families. Parents reported that their children were more relaxed after the enrolment exams, whilst they (the parents) felt even more tired (but less nervous and anxious) during the digital semester. As these families were well equipped in terms of both ICT devices and family support, they worried most about the

unpreparedness of the education system and the lack of an appropriate online methodology on the side of schools.

In the panel, Zsuzsanna Szvetelszky and Éva Sztárayné Kézdy's paper was about the high school age group, or more precisely, about graduates and their perceptions. The novelty of the research was that it was interpreted as a kind of natural experiment. The authors learned valuable methodological lessons about the use of VCP (Virtual Communication Platform) tools in focus group research. The study took place on an online platform (Zoom), in relation to online education and the baccalaureate, and the age of the university student moderators was close to the age of the target group. Some results of the research may be instructive in the future in relation to dealing with similar distance learning situations. With regard to online education, it can be emphasized that the lack of standardization in terms of online platforms and the use of parallel channels, as well as the uncertainties surrounding graduation, created extra burdens for students. In retrospect, however, it was considered a good decision to maintain the written graduation exam, and to cancel the oral one. In the field of social and societal contact, the graduates suffered significant losses, as conventional events and transitional rites were cancelled or transformed. However, the efforts of teachers and school management were appreciated by students in all fields. According to the graduates, the experiences of the COVID pandemic can also be incorporated into the preparation period for graduation in the future (graduation-centric preparation, distance learning, VCP, and personal consultations).

Two papers from the panel were dedicated to higher education. Out of these, Andrea Lukács and Emőke Kiss-Tóth scrutinized the well-being of university students and the factors influencing it, while Andrea Szabó and Eszter Szabó examined the digital preparedness of universities and teachers from the perspective of students. The first piece of research was conducted in the framework of the 27-country COVID-19 International Student Well-being Study (see current issue for more details). The results were derived from the database of the University of Miskolc. In the study, student mental well-being was measured using eight items of the CES-D (Center for Epidemiological Studies Depression Scale) Questionnaire. Conclusions were formulated based on a four-level hierarchical regression analysis. Factors related to the pandemic were included in the fourth level of the analysis. The variables included if students were concerned about their own or their acquaintances' infection with COVID or serious illness, as well as deficiencies in the health care system. The researchers (Andrea Lukács, Emőke Kis-Tóth) found that, except for leisure time, the students' living conditions had worsened in every area. The results showed that students were more concerned about others than themselves, and

that anxiety about the virus did not significantly affect their mental well-being. Factors that increased well-being included a positive vision, satisfaction with their lives, better subjective health, and more free time.

The second piece of research concerning university students and online education was based on a study conducted in the summer of 2020. The results show that students expressed that the universities of Budapest were somewhat better prepared to deal with the challenges of digital education than rural ones. However, significant shortcomings in terms of the diversity of online teaching tools were reported by respondents, who received a notable proportion of teaching material only in a written from some of their professors, instead of taking advantage of various audiovisual tools. One of the hypotheses of the study was that students improved their academic performance during distance learning, but this was not clearly confirmed by the results. One of the notable aspects of the research was that the students were asked to characterize and evaluate distance learning in their own words. Like graduates, the majority of respondents reported that they missed the traditional form of education and their peers a lot. Distance learning did not seem to be attractive to them in the long term, while they also highlighted the convenient and frugal/economical nature of the online approach.

SUMMARY

Overall, presentations reported a wide range of consequences and impacts of COVID regarding various social groups. More research reported that barriers were easier to overcome when respondents were able to work at flexible jobs and the working environment was supportive. However, data show that two-thirds of respondents worked flexibly, but only three out of ten people were able to do their work from home (those who typically had a higher level of education). However, working from home was important in that the time spent caring for children significantly increased. Highly educated women working from home, despite the increase in duties and constant remorse, reported several positive consequences too. However, large sample surveys show that less well-educated people (especially women) were more affected by forced leave and a worsening financial situation.

Regarding education-related research, it can be seen that distance learning increased the burden on all actors in the education system, but that burden varied across different segments of society. Online education caused the most significant difficulties for the lowest strata, amplifying the disadvantage-

mediating role of schools. However, adaptation mechanisms were put in place too, through which some of the benefits of online education (time and cost savings, individual learning, personal treatment, more leisure time) were reflected in the research results.