BEHAVIORAL EXPERIMENTS IN PUBLIC SECTOR

Mária Murray Svidroňová[1], Nikoleta Jakuš Muthová[1]

[1] Department of Public Economics and Regional Development, Faculty of Economics, Matej Bel University in Banská Bystrica, Tajovského 10, 975 90 Banská Bystrica, Slovakia

ABSTRACT

In this paper we present preliminary results of a research project aimed at mapping the preferences of young people in the areas of public sector such as housing, employment and commuting. To do so we will employ methods of behavioral economics and experiments. First of all, we did a bibliometric analysis of studies dealing with behavioral experiments in the selected areas to reveal a gap for future research. We focused on a time period of 2010–2023. For mapping we used VosViewer and data from the Web of Science database. Results indicate that even there are some experiments done in the areas of housing, employment or commuting, there is no methodology based on behavioral economics to reveal the preferences of young people in these areas.

Keywords: behavioral economics, experimental research, preferences of young people, housing preferences, employment preferences, transportation preferences

JEL Code: H41, C91, C93

1 INTRODUCTION

American-style suburbs are popping up in all Central and Eastern Europe countries and have become a popular option for many. It is assumed that a better definition of the spatial relations of cities and towns will be based on 1) an understanding of movement patterns in a defined area and 2) home ownership as a dominant factor defining social status – home ownership becomes more important than employment (Conn, 2014). The project will therefore map preferred commuting patterns based on the so-called sleep-space /work-space concepts – where people sleep (that is, live) versus where they work. The COVID-19 pandemic made it possible to operate in the so-called home office mode, working from home became a common thing and commuting to work changed to 3–4 days a week from the original 5. Commuting to work is not about distance (number of km), but about time (hours spent commuting), that is home office fundamentally changes preferences about housing, employment and mobility.

Giddens (1991) claims that everyone is constantly searching for his own life story, in which the living space plays an important role. He states that "a person's identity should not be found in their behavior, nor in the reactions of others – however important that may seem,

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but in their ability to keep a particular 'story' going." He refers to this as an "ongoing story of the self." Individuals try to live their "life story" based on choices. These possibilities allow them to achieve material satisfaction, but also social status. This life story can also be referred to as the so-called "diary of self". Taking this point of view into account, it is precisely rural areas that can provide various details for the life fulfillment of individuals and influence their preferences also in terms of housing and employment. A Gallop (Newport, 2018) survey of 1.499 respondents representing randomly selected adults found a gap between their desires and reality, as only 15% of Americans actually live in small rural towns, while 27% of respondents said they would like to live there to live.

A survey by Eurofound (2019) in the European Union found that a higher proportion of rural residents than urban residents feel a strong sense of belonging in their community. The survey, on the other hand, pointed to the negatives of rural life, the financial difficulties of rural areas were more pronounced in southern and eastern Europe, especially compared to their urban counterparts. However, Noronha et al. (2013) found that the old concept of the rural environment as a place with insufficient amenities and lower education of people is gradually disappearing. In addition to population density and environmental amenities, the gap between urban and rural areas is rapidly closing in many countries, as the gap in lifestyle, education, availability of services and access to information and communication technologies is also shrinking significantly. Cole et al. (2020) during a 10-year study of Slovak students from the Matej Bel University in Banská Bystrica found that generation Z (Gen Z) indicated the place in which they want to live, to a greater extent, is outside a big city. The previous generation of millennials often described their need to travel abroad, at least for short period of time, but this is no longer applied to Gen Z to such an extent. It should be noted that the unemployment rate in Slovakia dropped from 15% at the beginning of 2010 (during the 2008 financial crisis) to 4.9% in December 2019 (before COVID-19) i.e., travel for Gen Z was no longer necessary to earn money to bring home. Many students describe their jobs in the city center, but with their own houses in a small town (suburbs), When it is necessary to own a car – commuting by car is not perceived negatively. A very small number of students (around 5%) described their preferences for living in the center of a big city with a description of luxury or loft apartment.

From the above, it is clear that it is important to map young people's preferences in areas such as housing, employment and transport mobility, including new points of view to the usual definitions of urban and rural environments or social status. Therefore, a research project has started in co-operation of four Slovak universities to create and test a methodology based on the principles of behavioral economics to determine the preferences of young people in the areas of housing and employment and based on these findings, to formulate recommendations for the creation of strategic documents of housing policy, employment policy and regional development. The first step of the research is to conduct bibliometric and systematic analysis to map the current status of BE use in given public sector areas, mostly on behavioral experiments and methodologies for revealing youth preferences. Bibliometric analysis has become a popular method for researching individual issues during the last few years (Slyvkanyč and Glova, 2023).

This paper's objective is to systematically examine the conceptual approach to use of behavioral economics in public sector, namely housing, employment and commuting (public transport) in the period 2010 to 2023.

2 BEHAVIORAL ECONOMICS IN PUBLIC SECTOR

No preference can be precisely quantified when assessing young people's ideas about their future lives. In such a situation, it is difficult to create a test that measures preference based on an action. To circumvent this problem, the knowledge of behavioral economics (BE) can be used. BE which focuses on the individuals with limited rationality, revealing what really

influences their decisions and actions. The very importance of BE lies in its contribution to understanding the causes of irrational behavior of individuals and finding ways to push individuals to make better decisions. Behavioral economics tries to bring a psychological dimension to economics.

Behavioral economics knowledge can be perceived in advertisements for various goods and services. However, the use of behavioral and experimental approaches is also increasingly popular in public administration, and their use can be found not only in the context of tax and fee collection (Hallsworth et al., 2017; Cranor et al., 2020; Gillitzer and Sinning, 2020; Sloboda et al. 2020) or saving energy and water (Chabé-Ferret et al., 2019), but also in the context of performance evaluation, effectiveness of audits (Avis et al., 2018; Belle, 2015; Engel et al., 2017), motivation of managers in the public sector (Belle & Cantarelli, 2014) or perceptions of the quality of public services (Chetty, 2015). Behavioral experiments aimed at young people found application, e.g. in employee recruitment and work habits (Kadric, 2015; MINDWORX, 2017; Pawar, 2016), financial behaviour (Thaler, Sunstein, 2010; Harris, 2017), lifestyle (Goldstein, 2011) and health care (Linkenbach and Perkins, 2003); Thornton, 2008). Based on the study of almost 1.000 studies and researches, we can conclude that regarding housing preferences, we found only publications aimed at revealing the degree of discrimination, e.g. whether a person is willing to live near marginalized communities (it was mostly about the context of the USA, that is, it mainly concerned the issue of race, e.g. Kuklinski et al., 1997), or the publications focused on migration policy (Hainmuller et al., 2014) but not on housing issues as such, not to mention the complexity of the connection to young people's preferences regarding employment and commuting. At the same time, it can be stated that this type of data regarding the preferences of young people is absent in Slovakia, data collection is currently underway at the employment, social affairs and family offices, but again this only concerns rental housing, not a complex issue.

Chetty (2015) claims that BE is also related to the use of the methodological apparatus of behavioral science (e.g., experiments), which allow better estimation of the effects of interventions (public policies) not only in terms of effectiveness, but also in terms of the effects on the well-being of individuals. More precisely estimating effects naturally has the potential to improve the ability of policymakers to identify optimal public policy. Experimental testing therefore appears to be the most appropriate method.

According to Aab (2005), consumer preferences can be determined in two ways. The first, indirect method, is based on the observation of the consumer's market behavior. Economic models are used to explain the relationship between consumer behavior (revealed preferences) and the value of non-market goods, and thus also to determine the value of the good itself. Indirect methods work with revealed preferences of individuals. The second, direct way of finding out the preferences of individuals is the method of direct questioning of a certain set of individuals. With this method, the individual states, or contingently (conditionally) values its preferences (stated preferences) on the hypothetical market, i.e., the willingness to pay for the good (determining the maximum price that one is willing to pay for the good – willingness to pay – WTP) or the willingness to accept compensation for the loss resulting from the production of a certain good (determines the minimum compensation due to the impossibility of consuming the given good – willingness to accept – WTA) . Unlike the indirect method, which reflects only explicit values, the direct method reveals the total value of the collective good, including its explicit and implicit value of benefits and costs (Stejskal et al., 2013).

Truc (2022) using bibliometric analysis has documented that while individual BE articles have become less intensely related to psychology, the growing number of BE articles in economics as a whole has intensified the overall interdisciplinarity between economics and psychology. There has been a rise in the importance of management studies, as well as a variety of other disciplines in the social and natural sciences, as behavioral economists have diversified their interdisciplinary relationships since the 2000s. In 2008, behavioral experiments started to use incentives for individuals' choices with foreseeable outcomes but without exclusion of alternative choices or reliance on financial stimuli. These so-called nudges have been applied in many fields to influence decision-making of individuals.

3 METHODOLOGY AND DATA

This paper aims to systematically examine the conceptual approach to use of behavioral economics in housing, employment and commuting (as fields of public sector) in the period 2010 to 2023. To fulfill the goal, we formulated following research questions (RQ):

- RQ1: What is the number of articles published in the given topic?
- RQ2: What are the research areas and categories in the given topic?
- RQ3: What is the keyword occurrence in the analyzed articles?

The main database used in this study is Clarivate's Web of Science (WoS). WoS is a popular database used by researchers for its extensive coverage of scientific literature in various fields. Using WoS, we filtered the submissions to ensure a relevant and representative sample. The use of WoS and filters ensured reliable and relevant sources for our analysis. The data used was collected on January 5, 2024. In Table 1, we present the data collection process according to individual criteria.

VOSviewer software was used to perform bibliographic analyses. VOSviewer is free software for constructing and visualizing bibliometric networks from journals or individual publications. Data can be constructed based on citation relationships, bibliographic links, co--citations or co-authorship. The software offers a text mining function that can be used to visualize co-occurrence networks of important information from the scientific literature. This software connects keywords using the power of association (by default). Association strength is used to normalize the strength of links between items. (DeGroote, 2023).

Criteria	Results found
Keywords in the Title of the article	"Behavioral economics" or "behavioral economics methods (methodology) and laboratory experiment" or "experimental research" or "preferences of young people" or "housing (living) preferences" or "employment preferences" or "transport (mobility) preferences" or "preferences of generation" or "generation nudge" or "nudge" or "generation behaviours" or "generation preferences" or "gender differences" or "generations differences" **Total number of documents: 116,387**
Criterium 1	WoS categories: "Economics", "Management", "Public Administration", "Regional Urban Planning", "Urban Studies", "Political Science", "Family Studies", "Psychology Social", "Psychology experimental", "Behavioral Sciences", "Social Issues", "Demography", "Transportation", "Transportation Science Technology", "Social Science Interdisciplinary", "Multidisciplinary Sciences", "Social Sciences Mathematical Methods", "Mathematics Interdisciplinary Applications" AND exclude all others **Total number of documents: 23,806**
Criterium 2	Years 2010-2023 **Total number of documents: 17,756**
Criterium 3	Language: "English" **Total number of documents: 17,453**
Criterium 4	Type of the document: "Article", "Open access" **Total number of documents: 7,500**
Criterium 5	WoS Citation topics: "Economics", "Management", "Social Psychology", "Economic Theory", "Political Science", "Transportation", Public Administration", "Regional Urban Planning", "Urban Studies", "Behavioral Sciences", "Transportation Science Technology", "Social Science Interdisciplinary", "Multidisciplinary Sciences", "Social Sciences Mathematical Methods", "Mathematics Interdisciplinary Applications" **Total number of documents: 2,389 = final sample**

Tab. 1 Sequence of data collection

4 RESULTS

In the monitored period of 2010–2023 we can observe an increasing number of publications dealing with the topic of behavioral experiments in public sector. The drop in 2023 can be explained by a simple fact that not all articles published in 2023, have been indexed in WoS yet.

The following Figure 2 captures the overview of the most active authors in the analyzed field of research.

Based on the research area, the analyzed publications cover the following topics (Figure 3).

To compare, we also present topics based on WoS categories (Figure 4). The most overlapping topics are (Business) Economics, Psychology (Social), Transportation, Public Administration, Behavioral Sciences and Operations Research Management Science. Based on this results,

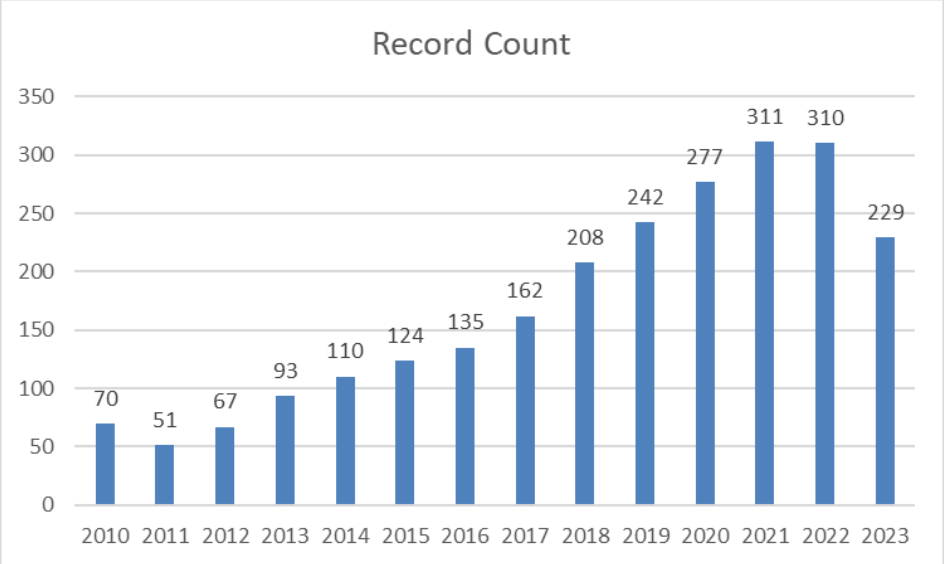

Fig. 1: Number of publications on behavioral experiments in public sector

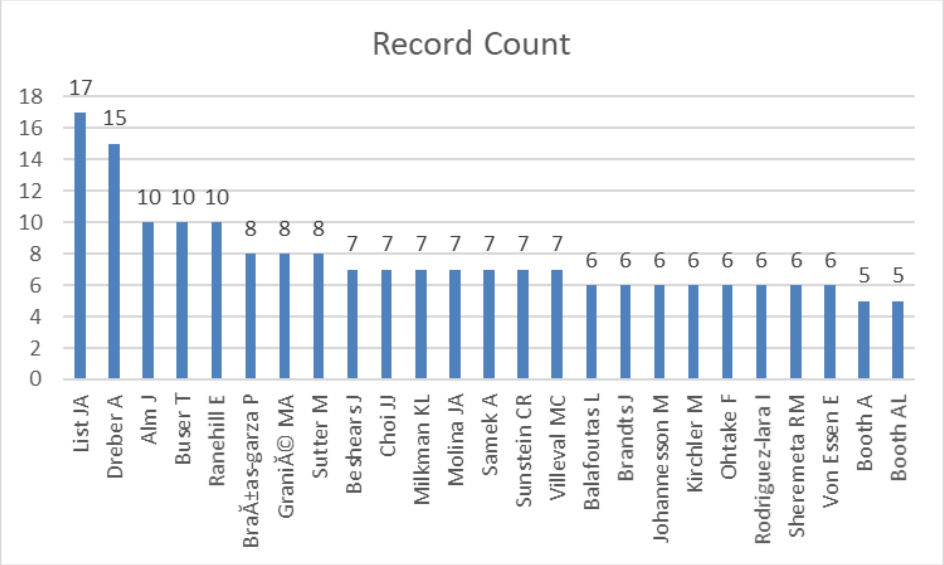

Fig. 2: Top 25 most active authors in the field of behavioral experiments in public sector

Fig. 3: Top 15 researched areas

we can already see that research criterium 1 should have contained also WoS category "Operations Research Management Science". According to the results of the co-occurrence analysis, the keywords were divided into eight different clusters, which represented 213 links and a total link strength of 372. This cluster is shown in Figure 5.

From the occurrence analysis it is clear that the analyzed studies using behavioral experiments include risk preferences, but not living preferences or methodology for preferences of (young) people. Some studies focus on life satisfaction and/or job satisfaction but from the Figure 5 it is not clear whether these studies directly use a behavioral experiment. The issue for further investigation shall focus on the use of behavioral experiments in identifying preferences of (young) people in the areas of transportation, employment and living preferences. To do so, a scoping review can be applied, i.e. based on the bibliometric analysis, the relevant articles will be downloaded, read and categorized using PRISMA method.

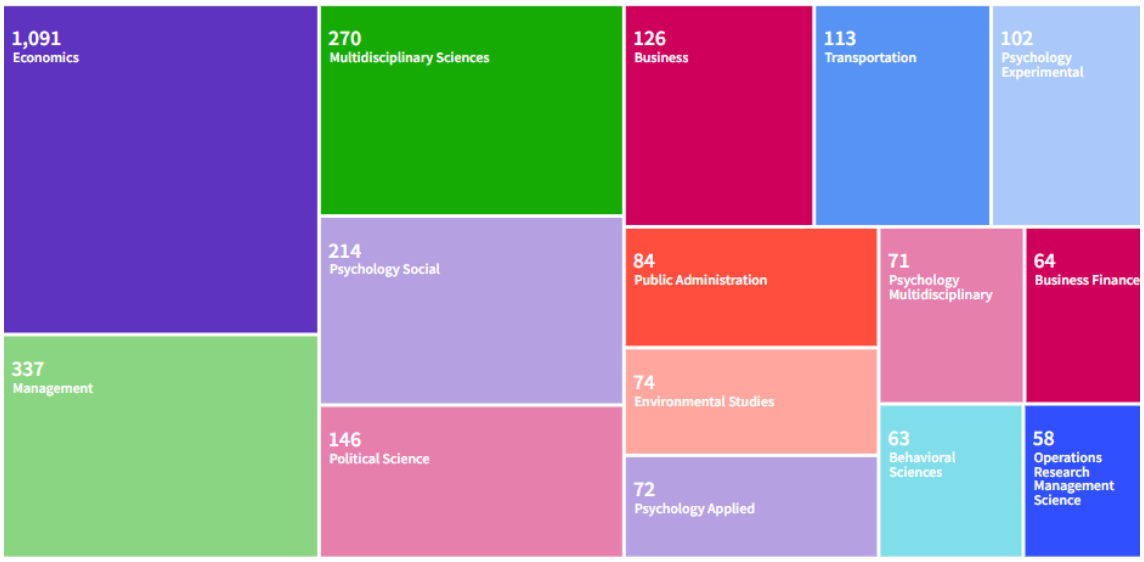

Fig. 4: Top 15 Web of Science Categories

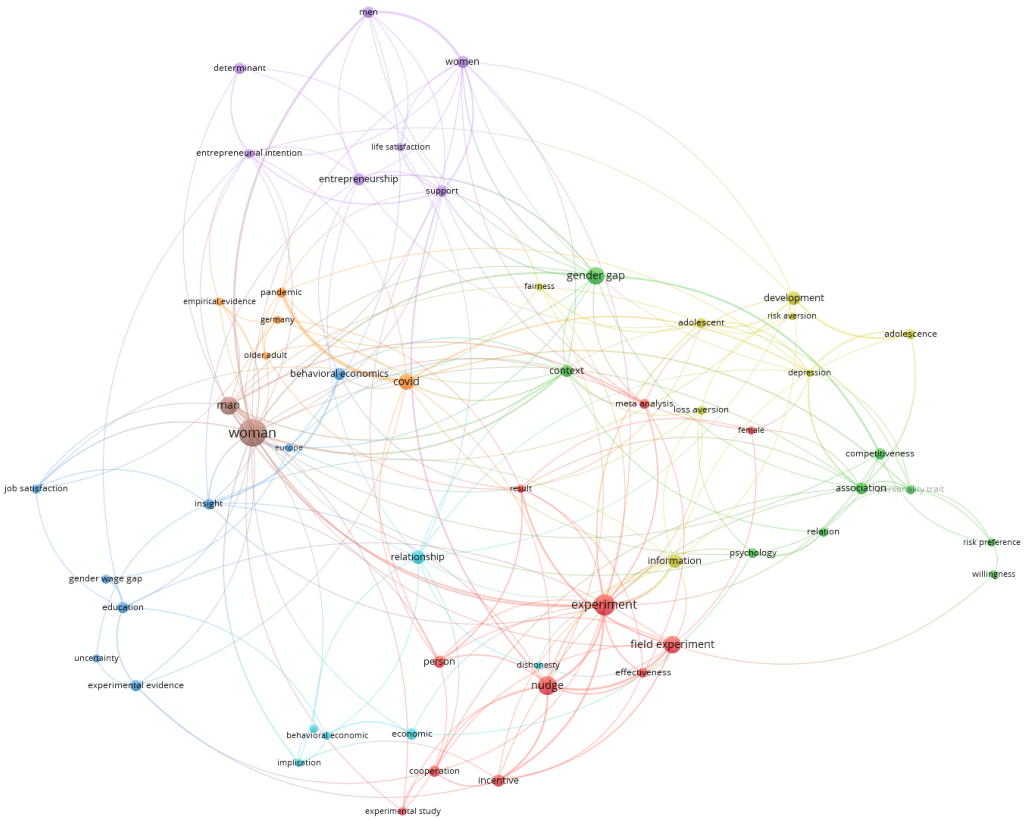

Fig. 5: Keyword occurrence analysis

5 DISCUSSION AND CONCLUSIONS

Jia and Mustafa (2022) conducted a bibliometric analysis of the existing literature related to the investigation and application of nudge by analyzing 1.706 publications retrieved from Web of Science. The results indicated that (a) being a relatively newly developed theory, interest in nudge in academia has expanded both in volume and disciplines, mostly by Western scholars and behavioral economists; (b) future studies in nudge-related fields are expected to consolidate its current frontiers in individual behaviors while shedding light on new territories such as the digitalized environment. Rawat (2019) focused his research on behavioral studies using behavioral experiments in public policy. He stated that so far behavioral interventions linked to public policy have withheld any overhauling changes to the existing setup. Instead, they have concentrated on how information is presented to the actors (individuals), its salience, the convenience of different options and what actors know about others´ decisions. This is also reflected in academic writing on the subject, i.e. no methodology to reveal preferences of individuals in any area of public sector or public services has been documented based on the bibliometric analysis.

This paper presents a bibliometric overview of studies using behavioral experiments in the selected areas of public sector, namely in the areas of housing, employment or commuting (public transport). For mapping we used VosViewer and data from the Web of Science database. Results indicate that even there are some experiments done in the areas of housing, employment or commuting, there is no methodology based on behavioral economics, that is using behavioral experiments, to reveal the preferences of young people in these areas.

This study also has its limitations. The Web of Science database is a comprehensive database, but it does not cover all existing works on behavioral experiments in given areas of public sector. Our results apply for Web of Science documents but may differ for other databases. Also, one must not generalize the results because the bibliometric analysis analyzes titles, keywords and abstracts of published studies, this method does not analyze entire documents.

Despite the limitations, bibliometric analysis offers a comprehensive overview of the field of interests (in our case it is the area of behavioral experiments in selected areas of public sector). Study points out current trends in research that can serve as inspiration for other researchers. Based on bibliographic analysis, we have identified gaps that we will try to cover in future research. In particular, we shall use also other databases, e.g. SCOPUS and Science Direct, which could be completed with databases of publishing houses like Wiley, Emerald and Sage. Next, we shall include also WoS category/research area "Operations Research Management Science". Most of all, the research shall continue with so-called scoping review, where not only abstracts but full-texts are analyzed.

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Contact information

Mária Murray Svidroňová: e-mail: maria.murraysvidronova@umb.sk
Nikoleta Jakuš Muthová: e-mail: nikoleta.jakusmuthova@umb.sk