

Introducing a Novel Method: Validating Overspending Measurements in Hungary

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Abstract

Preliminary research showed how the existing publications approach households' spending habits from a quantitative point of view. Questionnaires and their statistical evaluation by the appropriating software are the most commonly used in the reviewed studies. Analysing a family's overspending in Hungary was planned based on the available statistical data in the Hungarian Statistical Office (KSH). Checking the databases showed discrepancies; therefore, the inquiry of existing secondary data provides an alternate solution for describing the Hungarian situation. Two qualitative data analysis software were used to validate the two-level analysis. On the macro level, Research Rabbit provided data for structuring the sources on a timeline. On the micro level, an in-text analysis was carried out with the help of NVivo 14 Software based on the references from the Web of Science database. At the end of the paper, the conclusion was that a transdisciplinary approach is required to cover the reasons for families' overspending holistically. Calculating a Reference Budget will be a method that can be validated in Hungary to provide theoretical and practical implications.

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Introduction

This study builds upon a preliminary study (Vastag & Eisinger-Balassa, 2023) that identified a methodological gap in overspending and family budget research. Our analysis of over 700 papers confirms that these topics are predominantly approached from either a quantitative or a qualitative perspective, demonstrating the thoroughness of our research process.

A few approaches will be highlighted below to summarise the existing knowledge. Strömbäck et al., 2017 focused on self-control in understanding the various non-cognitive processes that control financial behaviour. They used the Financial Management Behaviour Scale to measure how often the respondents made financial decisions based on the same schemas. Their results demonstrated that self-control has a positive impact on general economic behaviour.

Another study (Aboagye & Jung, 2018), based on the National Financial Capability Study in 2015, asked the respondents to evaluate their financial behaviour on a 10-point Likert scale. The participants were demographically divided based on their age and education. The results show that only 17,4% overspent, but 42% experienced problems with expenditure management. Bossuyt et al., 2017 experimented to prove how disciplined are the controlled customers compared to the impulse decision-makers. They gave the participants undecked budget cards to give them the illusion that everybody owns the same budget. The budget was defined as 1,99 euros in the case of every person. After that, they were asked to choose between the products for 1, 2, or 3 Euros in a laboratory store. 51,61% of the participants in the impulse condition overspent, but only 28,57% in the steady state spent more than their budget. Psychological factors are also investigated in family budget research. Gillon et al. (2018) interviewed the property owners who bought or invested properties in a large-scale estate construction program. They hired the participants through letterbox advertisements and door-to-door inquiries for interviews. Their questions focused on the reason for buying a property, investing in its improvements and the perception of lifestyle. The output shows that having a property becomes an endless opportunity for development and strengthens the status. This is also supported by how easily the credits can get. Jedrzejczak and Pekasiewicz, 2020, described the impact of the Family 500+ program 2015-16 on income inequality. The program involved income distribution to help families come out of poverty. They used the Gini index, the most often used indicator of income inequality. The research shows that the rate of low-income families decreased from 38,9% to 16,7%. That means 16,000 families who could strengthen their lifestyle.

Given the topic's complexity and transdisciplinary nature (Hernandez-Aguilar, 2018), it seems necessary to find a combined method that helps to understand the real reasons for overspending on the family budget.

"Transdisciplinary research is viewed as a complex process that does not respect scientific disciplines' boundaries (Filipović, 2015)". Transdisciplinary research might be viewed as a GPS that needs to be set instead of the old paradigms. This approach leads the scientific and the general society to recognise the need for a new cultural model and way of thinking. (Hernandez-Aguilar, 2018) states that research might be called transdisciplinary research if the following requirements are fulfilled: "a) the problem being addressed, b) subjects that investigate, c) the Research process, and d) Impacts of research (Filipović, 2015)". The phenomenon of overspending is investigated from different disciplines' points of view, and its relationship with family budgets cannot be approached from only one direction. This research's central characteristic is that it benefits society and seeks to help marketers and the unique look behind the curtain, which behavioural patterns are responsible for overspending.

" Transdisciplinary research is needed when knowledge about a societally relevant problem field is uncertain when the concrete nature of problems is disputed, and when there is a great deal at stake for those concerned by problems and involved in dealing with them (Hernandez-Aguilar, 2018; p.431)." A transdisciplinary approach to the problem is necessary since it puts it into a scientific context and sheds light on its evolved relationships with the surrounding sciences. To get a whole picture integrating sociology, behavioural economics (Akerlof & Shiller, 2009), neuromarketing (Banker et al., 2021), psychology (Kahneman, 2011), cognitive anthropology (Filipović, 2015), econometric (More & Gochhait, 2020) and not leaving out the macroeconomic metrics (Penne et al., 2020) The complexity of the research domain acquires the attitude that can think outside of the box. "We are all sometimes teachers and sometimes students (Hernandez-Aguilar, 2018)". This attitude requires identifying and structuring the research problem; transdisciplinary research's life-world feature can be realised (Filipović, 2015).

Based on these results, statistical analysis of data from the Hungarian Statistical Office (KSH) seemed the most obvious; however, it did not meet expectations. More visits to the research room of KSH made it clear that the attitudes of consumers and the reasons behind overspending are not in the available data. The spending for the COICOP structure (United Nations, 2018) can be analysed with regional differences in different household types. Given the cumulated results of these household panel questionnaires, the data provides only a general picture of households' consumption. This recognition requires finding another way to measure overspending. This paper describes how the final methodology was found. A macro- and micro-level analysis was conducted. The macro-level analysis was carried out with the help of Rabbit Research Software, which facilitated seeing the relevant literature in a historical sequence. On the other hand, the micro-level analysis refined this filtering by looking for correlations between the sources found on the Web of Science.

After the macro- and micro-level investigations, a new methodology based on Penne et al.'s work (2020) was found. This combined methodology means a new, validated technique in Hungarian circumstances. It will hopefully answer the research question of whether Hungarians overspend or their monthly income does not reach the subsistence level.

The following section will present the research design, how the research was built, and which sequence was logically followed. After that, the methodology will be described, including the number of sources and straightforward working methods. The results explain the findings of the macro- and micro-level analyses and the brief content and methodology of the benchmark paper (Penne et al., 2020). The theoretical and practical contributions, such as the study's limitations and further steps, will be defined in the discussion.

Methodology

This study's structure is based on thematic analysis (Ketani, 2020). While processing the available literature on the topic, deductive reasoning was used to infer from the general to the special cases. This technique is also known as direct content analysis. It helps to understand the phenomenon through concrete cases, such as scientific papers (Braun & Clark, 2013).

Research Instrument

The relevant literature was found with the help of two well-known software supporting qualitative data analysis. The first step was to choose the first research for both keywords, and these were interpreted as the seed sources in Research Rabbit

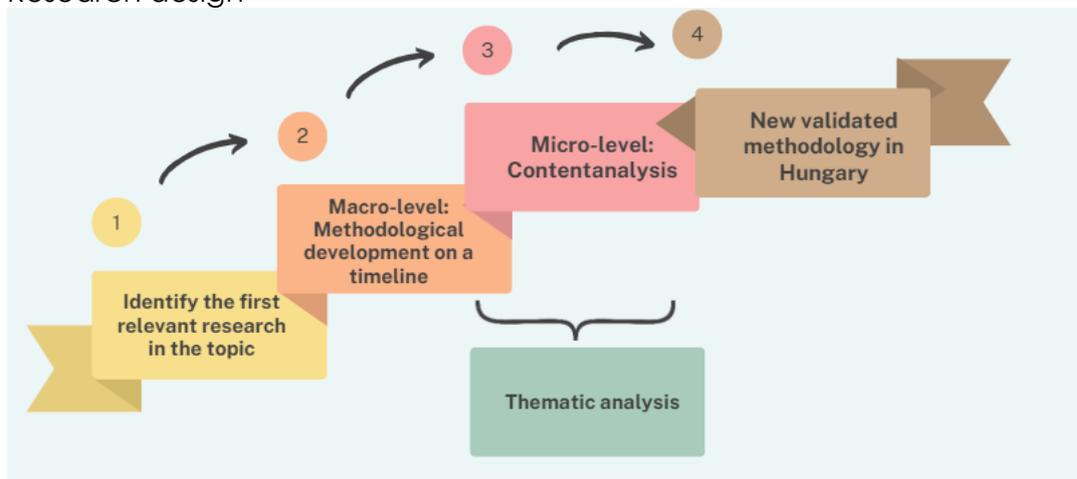
software. The Web of Science database was adopted as the second step to get the newest research and conduct the micro-level, in-text analysis.

Data

The Research Rabbit algorithm found the connecting papers, which provided the base of the methodological timeline. That provides the frame of the macro-level analysis, where the correlation between articles is illustrated in Tables 1 and 2.

Filtering criteria in Web of Science were having relevant articles between 2018-2023 in English. Searching keywords, overspending was found to be a total of 135 pieces, while in the case of the family budget, a total of 44 articles were found. Authors, title, source, and abstract were exported for further analysis. The exports were imported into NVivo 14 software (Müller-Bloch & Kranz, 2015). An in-text query was run, and the 100 most frequently, longer than five letter-long words were required to appear in Figure 2 and Figure 3. The intertextual analysis gave the micro-level of the research. Figure 1 summarises the different steps of the research.

Figure 1
Research design



Source: Author's illustration (made by Canva)

Results

Research Rabbit provided support in identifying the first research on the topic. As the study aims to present the development of methodologies in terms of overspending and family budget as the base of a new validated method, identifying the starting point was the first step. The filtering concept was the title analysis (Müller-Bloch & Kranz, 2015). If the research's title contained the keyword, it was chosen for further inquiry, such as abstract analysis (Müller-Bloch & Kranz, 2015). Table 1 summarises the results of the search for the family budget, and Table 2 contains the results of overspending. Beyond the methodological overview, the in-text correlations were illustrated in Figure 2 and Figure 3.

Family budget

Table 1 presents a timeline of the development of budget measurements with highlighted most important milestones.

Table 1

Timeline of development family budget measurements

When	What	How	Paper
1928	Understanding the effect of urbanisation through budget analysis.	budgetary analysis	The family budget as a tool for sociological analysis (Zimmerman, 1928)
1941	Measuring the demand for goods	income-elasticity and price elasticity	Family Budget Data and Price-Elasticities of Demand (Leser, 1941)
1970	Analysis of supply and demand of agricultural products	survey about the nutritional situation at different income levels	Food consumption in Brazil. Family budget surveys in the early 1960's. (Lopes, 1970)
1985	Mathematical analysis of the Soviet family budget survey	econometrical analysis based on interviews and income reports	The mathematical-statistical methodology of the contemporary Soviet family budget survey. (Shenfield, 1985)
2010	Summary of approaches to measuring budget in Britain	Budget standards and surveys	The Historical Development of Family Budget Standards in Britain, from the 17th Century to the Present (Deeming, 2010)
2018	Newly developed budget standard in Australia	Budget standards and surveys	New minimum healthy living budget standards for low-paid and unemployed Australians (Saunders & Bedford, 2018)
2020	Reference budget in Belgium	interviews, reports, and simulation	Reference Budgets as an EU Policy Indicator to Assess the Adequacy of Minimum Income Protection (Penne et al., 2020)

Source: Research Rabbit

Zimmerman (1928) first used family budget analysis to describe socioeconomic status. His research shed light on the correlation between urbanisation as an essential development process in history and families' financial situation. Leser (1941) presented income and price elasticity as explanatory factors of product demand. He used mathematical analysis to test his hypothesis. Lopez made an outlook in his study; he researched consumption habits in Brazil. He used a survey to measure households' budgets. Shenfield (1985) narrowed down the budget analysis to Soviet families. He conducted interviews and investigated official budget reports. Deeming (2010) found the same methodologies in terms of budgetary analysis of Great Britain. His work summarised the existing research on the topic. In the study of Saunders & Bedford (2018), the Australian equivalent of Shenfield's (1985) concept was developed. They used surveys instead of interviews to catch the families' opinions.

Most of the research used econometrical analysis that is based on the family budget and the outputs of official reports. In addition to the mathematical and statistical analysis, surveys were used as the primary data-gathering source. Qualitative methodology, such as interviews, was used only in two research (Shenfield, 1985; Penne et al., 2020). Both studies specialised in a national analysis of the family budget. Penne et al., 2020, were the only ones who used simulation to interpret the results of interviews and official budgetary reports. Figure 2 presents an in-text analysis of family budget research.

Table 3
Different stages of development of the sociological, psychological, and economic aspects of research methodologies

	20's	40's	70'	80's	90's	Nowadays
Sociological aspect	Urbanisation, correlations between the developing society and available budget	Industrialisation, urbanisation, the appearance of the different social layer	Appearance of middle class, mass consumption	Individual needs came into view	Digitalisation facilitated more sophisticated choices	Individuals are at the centre of consumption
Psychological aspect			The individual appears as an essential part of society	the appearance of studies that analyse the life quality damaging factors	overconsumption led to a refined analysis of personal traits	Individuals are at the centre of consumption
Economic aspect		Analysis of incomes and its measurement in prices of goods and services	Common usage of behavioural economics theory	Implementation of behavioural economics theories into financial decision-making	mathematical and statistical analysis of an individual's budget	Individuals are at the centre of consumption

Source: Author's illustration

Reference budget

The paper of Penne et al., 2020, popped up in searches of both overspending and family budgets. The authors investigated the family budget and the income level parallel. They developed a methodology and packed their research into a case study frame. They interviewed different types of households to identify the basic needs (products and services) necessary to reach the subsistence level in Belgium. They matched the goods and services at the available lowest prices on the market. Then, they defined it as a Reference budget. "Reference budgets are baskets of goods and services considered necessary to reach an acceptable standard of living for an individual household within a given country, region or city (European Commission, 2023)."

To compare, they gathered the minimal incomes, taxes, and social benefits from official reports. They put these data into the Hypothetical Household Tool (HhoT) simulation tool (Sutherland & Figari, 2013) and got the results as the entry-level incomes per household type. Penne et al. (2020) aimed to create an indicator that provides the adequacy of minimum income. In contrast, further study searches for the answer to the research question of Hungarians tend to overspend or do not reach the subsistence level that makes them overspend.

Discussion

The implications of the paper can be divided into two main sections. First, the theoretical part needs to be explored, as well as why the Reference budget and its combined methodology are required. The above-presented two-level analysis shows that a budgetary analysis should be considered. The timeline of research methodologies shows, in the case of both keywords, that it is essential to inquire about the budget of households if the aim is to reveal overspending. The in-text analysis also showed budget as the most frequently used word in the articles. Calculating a budget requires understanding international and national guidelines, as well as official reports

about income, taxes, and social support. Even the household types should be defined based on the official statistical categorisation. These steps need a quantitative approach. On the other hand, gathering data about the overspending of households calls for interviewing them.

As the Hungarian Statistical Office data represents cumulated results about the households' expenditure, focus group discussions need to be organised in more regions to get real-life information first-hand from the families.

The "Hungarian Food Basket" report was calculated in 2016, the last time in Hungary. It focused only on single persons, single women with two children and couples with two children. Their monthly budget was counted in Euros depending on whether they had a healthy diet or performed physical activity. Seven years have passed since this report; the dynamically changing economy affects consumer behaviour and preferences. It is time to recalculate the reference budget and determine the habits of Hungarians. Moreover, the Reference Budget makes it possible to research families' overspending in a complex frame, thanks to the topic's transdisciplinary nature.

Compared to the previous approach, it focuses not only on one perspective, like how personality traits impact financial decision-making. Education, such as income level, can be a sociological indicator of different perspectives that lead to various choices. The impact of the Anglo-Saxon world and globalisation defines how we should spend, how we perceive spending and the expectations from life (Filipović, 2015). The traditional cultural model interacts with globalisation; the market is built on social prestige.

In contrast, a holistic overview helps identify the triggers hiding in the background. It requires the methodological choice of different disciplines, such as interviews, surveys, and simulations. Is overspending a natural social phenomenon, or is it more complex? Further research will answer this question.

The second pillar of the discussion should be the evaluation of practical contribution. It can be elaborated in real-life situations. The market research industry identifies the family types by choice-based conjoint analysis (Harvard Business School Online, 2023). It helps marketers define the attractive products that can be offered to the different segmentations to inspire more customers to purchase. It brings the attached hopes occasionally, but it usually does not calculate with impulsive buying decisions and the need for momentary gratification.

The Reference Budget would serve as a theoretical frame for answering practical questions, like why families with two children can be attracted to advertisements and single parents with a child cannot. The choice of purchasing a product depends not only on the need or desire but also on the household's budget.

In this economic situation, it is not enough to rely on transactional data. The psychological, sociological, cultural, and geographical factors must also be researched. The behavioural patterns and brought schemas are only one side of the story. The change in financial behaviour of different family types can also be a phenomenon of exciting research. Which decisions or life circumstances can turn one family from saving to overspending? Divorce significantly reduces incomes, leading to instant behaviour changes, such as an unexpected illness or sharing the property with more generations.

Regarding the Polish example (Jedrzejczak & Pekasiewicz, 2020), policymakers can fight against poverty and facilitate a happier life for many families. Calculating the Reference Budget and the minimal income from it would be the first step in providing a better understanding of households' expenditures.

Conclusion

This paper's two-level analysis gave the same results when searching for both keywords. Analysing families' spending habits can only be approached by analysing their budget, and the process starts by catching their voice and then facing it with numbers. Minimal income, taxes, and social supports are legally regulated, not as necessary products to reach the subsistence level. The perfect combination of qualitative and quantitative methodology appears in the study of Penne et al., 2020.

I wish to interpret their methods in the Hungarian situation because a similar calculation was carried out in 2016 (European Commission, 2016). Meanwhile, the world faced the coronavirus and its consequence, high inflation.

This approach helps make the theoretical question (whether Hungarians overspend or do not reach the subsistence level) more understandable. The sociological and psychological aspects, as well as the real-life problems, could be explained. Which family types are affected and why? Is the income with social benefits enough, or is there something that policymakers could do?

The limitation of the study lies in the narrow source analysis. Further work is planned to describe the sociological, psychological and economic aspects of the development based on a broader range of sources. A previous study (Vastag & Eisinger-Balassa, 2023) already summarised the existing and relevant literature on the topic. The next step is to publish the data found in the Hungarian Statistical Office and work out the Reference Budget methodology in more detail. Definition of the different types of households and preparation of the focus group discussions with them, geographically differentiated to get accurate data about their preferences. Defining the necessary products for living with the help of focus-group interviews and finding the cheapest offers on the Hungarian market will be the basis for calculating the Reference Budget.

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