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Review of the doctoral thesis
Silvia Dewi Sagita ANDIK, MA
in the field of social sciences, in the discipline of economics and finance
entitled: "Food Waste at the Early Stage of Family Life in Urban Areas: A Case Study of
Bogor City and Regency, West Java, Indonesia"
prepared under the academic supervision of
Dr Joanna Rakowska, Professor at the Warsaw University of Life Sciences (SGGW)

1. Formal basis for the review

The formal basis for this review is Resolution No. 25/EIF-2025/2026 of the Economics and Finance Discipline Council of the Warsaw University of Life Sciences, adopted on 24 March 2026, concerning the appointment of a reviewer for the doctoral thesis by Ms Silvia Dewi Sagita ANDIK, MA, entitled: 'Food Waste at the Early Stage of Family in Urban Areas: A Case Study of Bogor City and Regency, West Java, Indonesia'.

In accordance with the statutory requirements for doctoral theses, they should present an original solution to a scientific problem, and the candidate should demonstrate general theoretical knowledge in the relevant scientific discipline as well as the ability to conduct independent scientific research. With this in mind, in assessing the doctoral thesis of Ms Silvia Dewi Sagita ANDIK, I applied the following criteria: the significance of the chosen topic, the clarity of the formulation of research objectives, questions and hypotheses, the methodology and source material, the structure of the thesis and its technical quality, and the summary and conclusions.

2. Basic information about the thesis

The thesis submitted for review comprises a total of 181 pages, including 4 pages of appendices. It consists of 7 substantive chapters, preceded by an abstract in Polish and English and an introduction. The thesis concludes with a , conclusion, recommendations and limitations. The thesis draws on 401 references, totalling 26 pages. It includes 7 tables and 23 figures.

It is worth noting that the author drew on a very extensive body of literature and conducted empirical research using structural equation modelling via the Partial Least Squares Structural Equation Modelling (PLS-SEM) method.

3. Assessment of the significance of the topic addressed

The subject matter addressed in the doctoral thesis by Silvia Dewi Sagita Andik, MA, falls within a group of particularly topical and multifaceted research issues in contemporary economics and finance. The issue of food loss and waste is currently one of the key global economic challenges, closely linked to the efficiency of resource allocation, the functioning of consumer goods markets and the stability of food systems. At the same time, this issue remains a focus of interest for international organisations, public institutions and academic circles representing the fields of economics, management sciences, public policy and environmental economics.

The choice of topic deserves high praise, as it fits directly within the research tradition on sustainable consumption, resource efficiency and the economic consequences of household behaviour. The author rightly points out that food waste is not merely an environmental or ethical problem, but above all an economic one, generating significant social, financial and infrastructural costs. In economic terms, it represents a loss of economic value throughout the entire supply chain – from production to consumption – which translates into the inefficiency of market mechanisms and an increase in social and environmental costs. From the perspective of household finances, this problem is directly linked to sub-optimal management of disposable income, a reduction in living standards and a decline in the efficiency of consumer decisions.

In the economic literature, the issue of food waste is increasingly analysed in the context of: the economics of consumption, behavioural economics, household finance, the economics of sustainable development, urban economics, food policy and the circular economy. This peer-reviewed thesis fits very well within these research strands. Particularly noteworthy is the skilful combination of the economic perspective with an analysis of household consumption practices. The author aptly points out that households are key economic agents responsible for decisions concerning the purchase, storage, preparation and disposal of food. Thus, the level of

food waste can be interpreted as a manifestation of inefficient resource management and limited economic rationality.

It is worth emphasising that this issue is currently of particular significance in light of global challenges linked to a range of diverse phenomena and processes, including: rising inflationary pressure, rising food prices, energy crises, climate change, food security, urbanisation and changing consumption patterns.

The author correctly situates the research problem within the context of the implementation of the UN Sustainable Development Goals, particularly Goal 12.3 on reducing food loss and waste. It should be emphasised that this issue is currently of strategic importance also from the perspective of the economic policies of many countries, and its implementation requires the design of effective economic, regulatory and educational instruments.

Of particular significance is the focus of the research on households at an early stage of family life, which is identified in the economic literature as crucial for shaping long-term patterns of consumption and financial behaviour. This is a group that has received relatively little attention in the economic literature, even though it is precisely during this period that shopping habits, resource management practices and attitudes towards saving and waste become entrenched. An analysis of this group of households therefore allows not only for the diagnosis of current inefficiencies, but also for the identification of the mechanisms through which these are reproduced in the long term, which is of significant importance for consumer choice theory, behavioural economics and household economics.

The author rightly notes that previous research on food waste has focused primarily on: highly developed countries, aggregate analyses or households in general, environmental aspects, or technological and logistical issues.

Relatively little attention, however, has been paid to the microeconomic determinants of this phenomenon in households operating within rapidly urbanising developing economies, particularly in South-East Asia. There is also a lack of in-depth analyses taking into account the local and cultural context, which can significantly influence consumer behaviour.

Another significant strength of this work is that it situates the research within an urban context, which, in light of contemporary urbanisation processes, constitutes a key environment for shaping economic behaviour. Urban areas are characterised by greater availability of goods, higher consumption levels, and specific institutional and infrastructural conditions that may foster both the rational use and the waste of resources.

In this context, the choice of Indonesia, and in particular the city and regency of Bogor, should be regarded as highly appropriate. Indonesia is one of the largest countries in South-East

Asia, characterised by a rapid pace of urbanisation, the growth of the middle class and dynamic changes in consumption patterns. These processes have a direct impact on food consumption levels and the scale of food waste. Bogor, meanwhile, presents an interesting case study due to its high rate of urbanisation and the socio-economic diversity of its residents.

From the perspective of economics and finance, this thesis fits within several key research areas, such as consumer economics, behavioural economics, development economics, household economics and public policy. At the same time, it addresses an issue of clear practical and applied significance. The research findings may serve as a basis for:

- designing policies to reduce food waste,
- developing consumer and financial education programmes,
- supporting the rational management of household budgets,
- developing circular economy strategies,
- the development of urban policies related to sustainable consumption.

Identifying the determinants of food waste at the household level may contribute to the design of more effective instruments to reduce economic losses and support the rational management of resources.

In summary, the topic under consideration is of high scientific and practical value, is well-grounded in current research trends in economics and finance, and addresses significant gaps in the literature on the subject. In my view, the choice of research topic should be regarded as highly appropriate, timely and fully justified from the perspective of the disciplines of economics and finance.

4. Assessment of the research problem, objectives, research questions and hypotheses

The author correctly identifies the research problem, focusing on the determinants of sustainable food waste management in households at an early stage of family development. The research problem is situated within the literature on both consumer behaviour and economic theories relating to consumption and resource management.

The objectives of the thesis have been formulated clearly and logically. The main objective of the thesis is to analyse the relationships between socio-demographic factors, the urban context, food consumption management practices and sustainable food waste management in households during the early stages of family life. The specific objectives include, amongst other things, identifying the extent and causes of food waste, assessing the relationship between socio-economic determinants and food management practices, and analysing the impact of practice theory on consumer behaviour.

The link between the research objectives, the literature review and the theoretical model adopted deserves positive recognition. The author demonstrates an awareness of the complexity of the phenomenon under study and the multidimensional nature of the determinants of food waste.

The research questions remain consistent with the research problem and the scope of the analysis. The study also formulates twelve research hypotheses relating to the influence of socio-demographic variables, factors derived from the theory of practice, and characteristics of the urban environment on the management of food consumption and the level of waste.

The hypotheses have been formulated correctly in logical and methodological terms. They are falsifiable and verifiable using the adopted research methods. The attempt to integrate various theoretical perspectives, in particular the Theory of Planned Behaviour (TPB) and Practice Theory, is also commendable.

However, the relatively large number of variables and relationships analysed simultaneously within the research model raises some concerns. In some cases, the theoretical justification for some of the hypotheses could be further developed, particularly with regard to the mechanisms through which selected socio-demographic characteristics influence food consumption management practices. It may also be noted that some of the hypotheses are rather broad and descriptive in nature, which at times makes it difficult to interpret cause-and-effect relationships unambiguously.

Despite these observations, it should be emphasised that the formulation of the research problem, the objectives and the research hypotheses form a coherent and logical research framework.

4a. Assessment of the theoretical foundations of the thesis

A key element of the thesis under review is the theoretical section, in which the author attempts to integrate various approaches used in research on consumer behaviour and food waste. The wide range of literature consulted and the ability to situate the research problem within several complementary theoretical frameworks deserve a positive assessment. The author draws upon, amongst others, the Theory of Planned Behaviour, Social Cognitive Theory, Practice Theory, Household Production/Consumption Theory, the concept of the circular economy, and the theory of sustainable consumption.

Such a broad theoretical framework should be regarded as ambitious and indicative of the author's high level of methodological awareness.

Particularly interesting is the attempt to combine the Theory of Planned Behaviour with Practice Theory. In economic and behavioural literature, these approaches often operate in parallel, whilst they are less frequently integrated into a single analytical model. The Theory of Planned Behaviour allows for the analysis of behavioural intentions, social norms, perceived behavioural control, and the influence of attitudes on consumer decisions.

Practice Theory, on the other hand, shifts the focus from individual decisions to everyday social practices, competencies, materiality and the routines of daily life.

The author rightly notes that food waste cannot be analysed solely as a result of individual consumer preferences, but should be considered within the broader context of social practices, the organisation of family life and urban conditions. This approach should be regarded as modern and in line with current trends in research on sustainable consumption.

At the same time, it should be noted that the integration of various theoretical perspectives has not always been fully explored analytically. In some parts of the work, one gets the impression that certain theories serve a more descriptive than strictly explanatory function.

This applies in particular to the relationship between household capabilities, consumption practices, social structure and food management behaviours.

The author could have discussed the interrelationships between economic and behavioural determinants in greater depth and more clearly defined the hierarchy of factors influencing the level of food waste. The limited discussion of behavioural economics also leaves something to be desired. The issue of food waste is closely linked to bounded rationality, purchasing heuristics, consumer impulsivity, the effects of overconsumption, information asymmetry and planning errors.

These elements could have been emphasised more strongly in the theoretical section of the thesis.

Despite the comments made, the theoretical section deserves high praise. The author has demonstrated a good knowledge of the international literature and an ability to situate the research problem within current trends in the economics of consumption and research on sustainable development.

4b. Assessment of research methodology and source material

The thesis employs a mixed-methods approach, combining quantitative and qualitative research. The choice of methodological triangulation should be viewed positively, as it allows for a more comprehensive understanding of the complexity of the phenomenon under analysis.

The quantitative part was based on a questionnaire survey conducted amongst households in the city and regency of Bogor. The author employed non-probability sampling, using the purposive sampling technique. Ultimately, the study covered 350 respondents.

The sample selection was justified by the specific nature of the population under study; however, it should be noted that the use of purposive sampling limits the possibility of fully generalising the results to the entire population of households in Indonesia. The author is aware of this limitation and highlights it in the concluding section of the thesis.

The sample size of 350 respondents may raise certain methodological concerns, particularly in the context of a relatively complex analytical model and the large number of latent constructs and structural relationships analysed. In studies based on structural equation modelling, sample size is of significant importance for the stability of parameter estimates and the generalisability of results. It should be noted, however, that the use of the PLS-SEM method partially mitigates this problem, as the variance-based approach is less restrictive in terms of sample size requirements than covariance-based modelling (CB-SEM). Methodological literature indicates that PLS-SEM can also be effectively applied in studies based on moderate sample sizes, particularly in exploratory and predictive models.

Nevertheless, given such a complex research model, it would be appropriate to provide a more detailed justification for the adequacy of the sample size, for example by referring to a power analysis or the rules applied in PLS-SEM studies. This would enhance the methodological transparency of the thesis.

The limited sample size and the use of non-probability sampling also mean that the results obtained should be interpreted with caution, primarily as relating to the analysed population of households in the city and regency of Bogor.

The detailed specification of the criteria for selecting respondents, including, amongst other things, the family life stage, place of residence and the economic situation of households, deserves a positive assessment. This helps to increase the homogeneity of the study group under analysis.

The variables were correctly operationalised in the study. Latent constructs were defined on the basis of the relevant literature, and the measurement indicators used correspond to the nature of the phenomena analysed. The author employed a five-point Likert scale, which should be regarded as a standard and appropriate approach for this type of research.

The author presents selected indicators used to measure latent constructs, including in Table 5 concerning the respondents' culinary competences and skills, as well as other variables relating to consumption practices, food management and household behaviour. It should be

noted, however, that the thesis does not include the full survey questionnaire or a detailed description of the response coding procedure. This limits the possibility of a full assessment of the operationalisation of variables and the transparency of the measurement process, which is of particular importance in research utilising PLS-SEM modelling.

In the thesis abstract and in section 4.4, 'Evaluation of the Research Feasibility', the author indicates the use of data from the Central Bureau of Statistics of Indonesia (BPS) and Bappenas. However, an analysis of the main empirical section of the thesis does not allow for a clear determination of how these data were utilised in the analytical process or what impact they had on the interpretation of the results. In practice, the analysis is based almost exclusively on primary data from the author's own research. This results in a certain inconsistency between the source material declared and that actually used. A clearer indication of the role of BPS and Bappenas data, or their more extensive use in the empirical analysis, would enhance the methodological transparency of the work.

Consequently, the analysis is based primarily on primary data derived from surveys and interviews. Whilst this approach is methodologically sound, a more in-depth integration of secondary data into the empirical analysis could further strengthen the socio-economic context of the research and enhance the comparative value of the thesis.

The qualitative section is based on in-depth interviews with selected respondents. It provides a valuable complement to the quantitative findings and enables a better understanding of food management practices.

The author states that she has adopted a mixed-methods approach and used in-depth interviews as a key element of the research process. Information on the qualitative component is presented primarily in Chapter 4, particularly on pp. 94–98, where the design of the in-depth research, the selection of respondents and the role of interviews in the research process are discussed. Furthermore, in section 4.4, 'Evaluation of the Research Feasibility', the importance of the qualitative component in complementing the quantitative analyses is highlighted. It should be noted, however, that in the main empirical section of the thesis (Chapter 5, pp. 100–146), no separate presentation of the qualitative research findings has been provided. The analysis focuses almost exclusively on the quantitative results and the PLS-SEM model. What is missing, however, is:

- ✓ a systematic presentation of the results of the in-depth interviews,
- ✓ analytical categories,
- ✓ a procedure for coding qualitative data,
- ✓ quotes from respondents,

- ✓ a summary discussion of the results of the qualitative component.

Consequently, the actual role of the qualitative component in the thesis remains limited and is not reflected in the presentation of the research findings. This means that the reader is unable to assess whether the qualitative findings were in fact used in the interpretation of the quantitative results and in the formulation of the final conclusions. Consequently, the declared mixed-methods approach remains largely underutilised at the level of the presentation of the research findings.

A more in-depth integration of the qualitative findings with the quantitative analysis could significantly enrich the interpretation of the results obtained and enhance the methodological coherence of the work.

A significant shortcoming of the thesis is the failure to include, in the appendix, the full version of the questionnaire used in the quantitative study. This omission is particularly noticeable in the context of the PLS-SEM modelling employed, as it prevents a full assessment of how individual latent constructs were operationalised and how indicators were assigned to theoretical variables. It also hinders the replication of the study by other researchers. This limits the possibility of fully assessing the operationalisation of variables, the design of the research instrument, and the validity of the adopted measurement indicators. In doctoral theses based on survey research, the inclusion of the complete research instrument is an essential element of methodological transparency. Similar reservations apply to the qualitative part of the research. The thesis does not present the full structure of the in-depth research, including the interview script, the scope of the research questions, or a detailed description of the procedure for analysing the qualitative data. This makes it difficult to assess the consistency of the qualitative part with the adopted research model and limits the possibility of a more thorough verification of the research process. In my view, supplementing the thesis with the indicated elements would enhance its methodological transparency and improve its documentary value.

4c. Assessment of the statistical analysis and the application of the PLS-SEM method

One of the most important elements of the thesis under review is the application of structural equation modelling using the Partial Least Squares Structural Equation Modelling (PLS-SEM) method. The choice of this method should be viewed positively, as it is appropriate both to the nature of the research problem and to the structure of the theoretical model, which encompasses numerous latent variables and mediating relationships.

The author utilised PLS-SEM to analyse the relationships between socio-demographic factors, components of practice theory, the urban context, food consumption management and the level of sustainable food waste management.

The choice of a variance-based approach should be considered justified for several reasons: the model is multidimensional and relatively complex; the study is partly exploratory in nature; the constructs analysed are latent; survey data based on Likert scales were used; the sample is not random; and the study focuses more on identifying predictive relationships than on strictly testing the theory.

In the context of the PLS-SEM model employed, the sample size can be considered acceptable, although with such an extensive structural model, a more detailed justification of the statistical power of the analyses would be advisable. In particular, it would be useful to refer to power analysis or methods for determining the minimum sample size recommended in the methodological literature on PLS-SEM.

It should be emphasised that the author has demonstrated a good understanding of the basic procedures of PLS-SEM analysis and correctly interprets most of the statistical parameters obtained.

Another aspect deserving of positive recognition is that the statistical analysis was not limited solely to the presentation of numerical results. The author attempts to provide an economic interpretation of the relationships identified, highlighting, amongst other things, the importance of financial literacy, culinary skills, purchasing practices and physical infrastructure in reducing food waste.

It is worth noting that the use of PLS-SEM made it possible to capture relationships between variables that would be difficult to analyse using simpler statistical methods. This applies in particular to mediating relationships, multidimensional dependencies, the influence of latent constructs, and the integration of social, economic and behavioural factors.

This is a strength of the thesis and a testament to the author's methodological ambition.

The empirical section of the thesis contains extensive statistical data as well as numerous tables and charts illustrating the research findings. It should be noted, however, that the interpretation of some of the data remains at times overly descriptive and does not always lead to an in-depth economic analysis of the phenomenon under study. This applies in particular to the results relating to the structure of food waste, the frequency of losses and household purchasing practices.

Certain interpretative uncertainties arise, in particular, with regard to Chart 6 (p. 104) and Table 4 (p. 105), which present the quantities of food waste by product category. The study

does not explain with sufficient precision how the data were aggregated or the unit of measurement for the values presented. It remains particularly problematic to reconcile the data presented in the chart as the weekly amount of waste for the entire sample ($n=350$) with the information contained in Table 4, where the notation ' $n=1$ ' appears. It is not entirely clear whether the values presented refer to the average per household, per respondent, or whether they are aggregated figures for the entire sample.

Furthermore, the analysis lacks information on data variability, such as standard deviations or the distribution of values for individual product categories, which makes it difficult to assess the actual extent of variation in food waste between the households surveyed. Consequently, the interpretation of the results presented in Figure 6 and Table 4 remains partially methodologically ambiguous.

Furthermore, some of the analyses could have been more firmly grounded in the literature on behavioural economics and consumption theory, which would have allowed for a better explanation of the mechanisms underlying the observed behaviours of respondents. Consequently, some of the results, despite their significant cognitive value, were presented in a more descriptive rather than analytical and explanatory manner.

At the same time, several points open to debate should be highlighted. Firstly, the rationale for choosing PLS-SEM over the covariance-based approach (CB-SEM) could have been presented in greater detail and with more depth. The study lacked a more detailed discussion of: the predictive nature of the model, limitations related to the data distribution and the impact of sample size, and the methodological rationale for favouring the variance-based approach.

Secondly, in the methodological section, the issues of the discriminant validity of constructs and the potential problem of multicollinearity were discussed only to a limited extent. In PLS-SEM studies, these elements are of significant importance for the quality of the model.

Thirdly, the very large number of analysed relationships and latent constructs raises some concerns. Whilst an extensive model does increase the analytical potential of the analyses, it may at the same time hinder the unambiguous interpretation of relationships and increase the risk of overfitting the model.

It may also be noted that some of the relationships were discussed rather briefly, whilst their economic significance could have been explored in greater depth. This applies in particular to the relationship between financial literacy and practices aimed at reducing food waste.

Despite these comments, it must be unequivocally stated that the use of PLS-SEM should be viewed positively. The author has demonstrated a good understanding of multivariate

analysis methods and the ability to utilise advanced statistical tools to address a complex research problem.

The use of PLS-SEM modelling should be viewed positively, and the author has demonstrated a grasp of the basic procedures for structural equation modelling. At the same time, the analysis was conducted primarily at the level of basic model quality indicators, without utilising some of the more advanced procedures developed in contemporary methodological literature on PLS-SEM. Including a broader assessment of discriminant validity, multicollinearity, mediating effects or the issue of common method bias could significantly strengthen the methodological framework of the thesis.

In the thesis, the author uses the term 'SEM-PLS', whereas in the current methodological literature on structural equation modelling, the term 'PLS-SEM' (Partial Least Squares Structural Equation Modelling) is used much more frequently and precisely. This observation is primarily of a terminological and technical nature; however, in a doctoral thesis it is advisable to maintain consistency in terminology in line with prevailing methodological standards.

5. Assessment of the thesis's structure and technical aspects

Although the thesis is generally well-organised, its structure is not always entirely clear and consistent. Particular difficulties in interpretation arise in the relationship between Chapters 3 and 4, where issues concerning the conceptual model, research hypotheses, the operationalisation of constructs and research methodology partially overlap. As a result, the boundary between the theoretical, conceptual and methodological layers is not always clear-cut, which at times makes it difficult to follow the logic of the argument and undermines the clarity of the thesis's structure. One gets the impression that some of the issues have been presented in an overly scattered manner, whilst certain sections are somewhat repetitive.

In my view, it would be methodologically more coherent to combine the elements relating to the research framework, hypotheses and empirical methodology into a single comprehensive methodological chapter. This would allow for a clearer link between the theoretical foundations, the construction of the research model and the procedure for the empirical verification of hypotheses.

These comments do not undermine the substantive value of the thesis, but they do point to certain shortcomings in the organisation of the material and the editorial quality of the work.

5a. Critical and debatable comments

The reviewed thesis is of high academic and methodological value; however – like any research work – it is not without certain limitations and points open to debate.

Methodological comments

The first issue requiring comment is the use of non-probability sampling. Although the author correctly justifies the choice of purposive sampling on the basis of the specific nature of the group of respondents analysed, this approach nevertheless limits the possibility of fully generalising the results. In studies concerning household behaviour, the following factors are of significant importance: socio-economic diversity, cultural context, level of urbanisation and income structure. Consequently, the results obtained should be interpreted primarily as relating to the study population of the city and regency of Bogor.

A second point requiring discussion is the use of self-reported data based on respondents' own descriptions. In studies on food waste, there is often a problem of underreporting of waste levels, the social desirability effect, respondents' memory errors, and the self-reported nature of behaviour.

The author could have addressed the potential impact of these limitations on the results in greater detail.

Comments on PLS-SEM

Whilst the use of PLS-SEM should be viewed positively, the methodological section could have been expanded in several respects.

In particular, there was no broader discussion of common method bias; the potential problem of endogeneity was not addressed; the analysis of sample heterogeneity was presented in a limited manner; and the discriminant validity of the constructs was discussed relatively briefly. The study could also have considered mediation and moderation analyses, an analysis of differences between groups of respondents, and a more in-depth analysis of indirect effects.

The application of such procedures could enhance the model's explanatory power.

The relatively large number of latent constructs analysed simultaneously may also raise some concerns. Complex models increase explanatory power, but at the same time may make it more difficult to interpret the results.

Interpretative comments

The author correctly interprets most of the results obtained; however, in places one might get the impression that some of the relationships have been presented in a more descriptive than analytical manner.

This applies in particular to the significance of religion, the influence of the culture of food sharing, and the relationship between financial literacy and consumption practices. In some cases, it would be worthwhile to relate the research findings more broadly to the international literature and to deepen the discussion regarding the cultural specificity of Indonesia.

Areas for further research

The thesis opens up interesting avenues for further research. In particular, it would be worthwhile to extend the analyses to other regions of Indonesia, to include rural households, conducting longitudinal studies, making international comparisons, utilising actual measurements of food waste volumes, analysing the impact of food inflation and price changes on waste levels, and deepening research into the relationship between financial awareness and consumption behaviour.

These comments are intended to stimulate discussion and do not call into question the scientific value of the thesis.

6. Assessment of the validity of the conclusions

The author formulates her conclusions in a manner that is essentially sound and consistent with the research findings. Consistency has been maintained between the research problem, the methodology employed, the results of the analyses and the final conclusions.

The author's interpretative caution and awareness of the limitations of the research deserve praise. The thesis highlights, amongst other things, the limitations relating to the geographical scope of the research and the nature of the sample selection.

The author correctly interprets the impact of socio-demographic factors, consumption patterns and household capabilities on the level of food waste. The conclusions relate to economic, social and environmental aspects alike.

Some reservations may be raised by the at times overly far-reaching suggestion of causal relationships based on cross-sectional data. It should be borne in mind that the research methodology employed does not allow for full confirmation of cause-and-effect relationships. This observation does not, however, undermine the overall soundness of the reasoning process.

It is worth emphasising that the author attempts to put the research findings into practice by formulating recommendations for public policy and educational initiatives. This demonstrates the applied nature of the thesis.

7. Assessment of the thesis's contribution to the discipline of economics and finance

The thesis makes a valuable contribution to the disciplines of economics and finance, particularly in the areas of household economics, consumption economics, behavioural economics and research into sustainable consumption.

It should be emphasised that the issue of food waste is increasingly appearing in contemporary economic literature as a key element of analyses concerning the efficiency of resource management and the rationality of consumer decisions. The thesis under review forms part of this research trend, whilst expanding it to include the perspective of households operating in a developing economy.

The most significant achievements of the thesis include:

1. Theoretical contribution

The author addresses an issue that has received relatively little attention in the economic literature, focusing on households at an early stage of the family life cycle. This group is particularly significant from the perspective of household economics, as it is during this period that lasting patterns of consumption, budget management methods and food management practices are formed.

The thesis expands our understanding of the determinants of food waste in the rapidly urbanising economies of South-East Asia. In this sense, the work has clear international significance.

2. Theoretical contribution

The author attempts to integrate various theoretical perspectives, in particular the Theory of Planned Behaviour, Practice Theory, the concept of sustainable consumption, and approaches relating to household behaviour.

The attempt to combine economic, social and behavioural determinants within a single analytical model deserves praise.

The author rightly points out that behaviours associated with food waste cannot be explained solely by income levels or expenditure patterns, but require consideration of everyday practices, competencies, infrastructure and social norms.

3. Methodological contribution

An important achievement of the thesis is the application of PLS-SEM modelling to analyse the multidimensional relationships between socio-economic determinants and household consumption behaviour.

In economics and finance, research into food waste still relatively rarely utilises advanced structural models that integrate latent variables. Thus, this thesis provides a valuable example of the application of modern analytical methods to the study of consumer behaviour.

4. Practical implications

This work has significant practical implications. The findings can be utilised in the design of policies to reduce food waste, in educational initiatives on household budget management, in the development of programmes supporting sustainable consumption, in urban policies relating to waste management, and in strategies related to the circular economy.

In particular, the findings concerning the importance of financial literacy, culinary skills, shopping planning practices, physical infrastructure and the lifestyle of urban residents appear to be of particular value.

5. Significance for the discipline of economics and finance

The thesis is clearly rooted in the discipline of economics and finance. The author analyses the behaviour of households as economic agents, consumer decision-making processes, the determinants of resource management efficiency, the economic consequences of food waste, and the relationship between economic literacy and consumption practices.

The thesis demonstrates strong links to the economics of consumption and behavioural economics. At the same time, it has an interdisciplinary dimension, which should be viewed positively.

In my view, the thesis makes an original and valuable contribution to research on the economic determinants of food waste in households.

8. Conclusion

The doctoral thesis submitted for review by Silvia Dewi Sagita Andik, MA, entitled **Food Waste at the Early Stage of Family in Urban Area: A Case Study of Bogor City and Regency, West Java, Indonesia**, addresses a topical and significant research issue of clear relevance to the disciplines of economics and finance. The subject matter of the thesis aligns with contemporary research trends in the economics of consumption, behavioural economics,

household finance and sustainable development, whilst simultaneously addressing significant research gaps concerning the determinants of food waste in households operating within developing economies.

The author has demonstrated a thorough knowledge of the relevant literature and the ability to identify an important scientific problem. The conduct of her own empirical research and her attempt to apply structural equation modelling () using PLS-SEM to analyse the relationships between socio-economic factors, consumption practices and the level of food waste deserve particular praise.

The thesis also has practical value. The results obtained may form the basis for formulating recommendations for public policy, consumer education and measures aimed at reducing food waste and promoting the rational management of resources in households.

At the same time, the thesis is not without certain methodological and technical limitations. These relate primarily to:

- the limited clarity of the thesis's structure,
- the partial overlap in the content of the theoretical and methodological chapters,
- insufficient use of the stated qualitative component of the research,
- limited transparency of the research procedure,
- the absence of the full questionnaire and the in-depth interview script,
- an ambiguously presented role of secondary data from BPS and Bappenas, despite their stated use in the thesis,
- as well as certain simplifications in the analysis and interpretation of the PLS-SEM results.

Furthermore, in the empirical section, there is a noticeable tendency to present the results in a more descriptive rather than analytical and explanatory manner, and certain elements of the statistical analysis could have been explored in greater depth in accordance with current methodological standards for PLS-SEM research. Three methodological limitations of the thesis deserve particular emphasis. Firstly, neither the full survey questionnaire nor a detailed description of the response coding has been included, which limits the transparency of the measurement process. Secondly, despite the stated use of secondary data from BPS and Bappenas, their actual role in the empirical analysis has not been presented in a sufficiently clear manner. Thirdly, despite adopting a mixed-methods approach, neither the results of the qualitative research nor the in-depth interview script have been presented, which makes it impossible to assess the actual contribution of the qualitative component to the research process.

These limitations do not negate the academic value of the thesis, but they do significantly reduce the level of methodological transparency of the work.

The comments made are, however, primarily of a discursive and critical-methodological nature. They do not call into question the author's research independence or the overall academic value of the thesis. The work constitutes an independent solution to a scientific problem and makes a valuable contribution to research on the economic and behavioural determinants of food waste in households.

I hereby confirm that the doctoral thesis by Ms Silvia Dewi Sagita Andik, MA, meets the requirements set out in Article 187 of the Act of 20 July 2018 on Higher Education and Science (Journal of Laws, as amended) for doctoral theses in the discipline of economics and finance.

I move that Ms Silvia Dewi Sagita Andik, MA, be admitted to the subsequent stages of the doctoral procedure.