ROLE OF INNOVATION IN IMPROVING EFFICIENCY AND EFFECTIVENESS IN BUSINESS LOGISTICS OPERATIONS

Jibi DHARMASEELAN GEORGE, Vytautas Magnus University, Agriculture Academy, Faculty of Bioeconomy Development, email: jibi.dharmaseelan.george@vdu.lt

Abstract

In today's commercial logistics operations, innovation has become essential to increasing effectiveness and efficiency. This study explores how innovation might improve logistics performance, with a focus on technical developments and sustainable logistics techniques. The research uses a quantitative method based on secondary data gathered from Amazon's official publications and sustainability reports covering the period from 2018 to 2024. Data were analysed employing statistical methods in SPSS, such as regression modelling, correlation analysis, and descriptive statistics. The results show that businesses are increasingly investing in logistical innovations, including digital tracking technology, electric vehicles, robotics and automation, renewable energy systems, and sustainable packaging. Among these variables, electric vehicles exhibit a robust and statistically significant positive connection with logistical performance. The study concludes that although the short-term statistical impact of innovation may appear limited, continuous technological advancements and sustainable logistics efforts are essential for enhancing supply chain robustness, improving operational effectiveness, and boosting environmental performance in international logistics systems.

Keywords: innovation, logistics management, supply chain efficiency, electric vehicles, automation, sustainable logistics

Introduction

In 1964, James L Heskett, defined the term business logistics as “a management of physical supply and distribution”. According to Acimovic et al., (2021) business logistics create added value for the company to become more competitive in the market. Also, it is stated that effective cost management in logistics can bring as much profit as gained through innovation in production activities. Also, innovation in business logistics refers to the adoption of new technologies, advanced digital systems, automated processes, and strategies for improved efficiency, flexibility and responsiveness. Similarly, close attention to innovation in logistics activities reduces costs and adds value to customers through fast and economical deliveries across the globe. Hence, the importance of business logistics in business management is essential for enhancing operational performance and competitiveness for a company’s efficiency and its individual sector. Therefore, understanding the role of innovation in logistics is crucial for organisations seeking to improve operational efficiency, supply chain integration, and customer satisfaction in today’s increasingly competitive markets. This article explores key innovations and practical solutions in business logistics that help organisations overcome operational challenges, boost sustainability, and enhance overall supply chain performance.

The primary aim of the study is to examine the role of innovation in improving efficiency and effectiveness in business logistics operations. The study is supported by the following three objectives,

1. To analyse the importance of innovation in modern logistics management.
2. To identify key technological innovations used in business logistics.
3. To evaluate practical solutions that improve logistics efficiency and sustainability.

Research object and methods

The research object: the role of innovation in improving efficiency and effectiveness in business logistics operations. This research examines innovative applications of smart supply chains and technologies that contemporary companies utilise to increase their productivity and sustainability. Due to its extensive use of automated warehousing and data-driven logistics supply chain techniques, Amazon (a global leader in e-commerce) was chosen as an example company for analysis in this study. Examining Amazon's logistics strategies driven by innovation will allow researchers to assess whether or not the adoption of technology contributes positively to the operational efficacy and sustainability in the firm's logistics function (Cansu, 2025). The study used a secondary quantitative method since the research intends to examine quantifiable trends and connections between logistics efficiency metrics and innovative methods. Quantitative research allows statistical methods to evaluate patterns and connections in the gathered data, providing an organised and systematic method for assessing complex logistics elements. It also assists in the comparison of various innovation elements over time, enabling the researcher to discover consistent patterns and assess performance results more reliably. Furthermore, it allows for making objective findings based on numerical facts instead of relying on subjective assessment (Lütje, Wohlgemuth, 2020). Quantitative secondary research provides greater reliability due to the fact that it utilises pre-existing information regarding the organisation, thereby reducing the expense and time associated with original data collection (Lim, 2025). Quantitative analysis results tend to be more factual as they are derived from mathematical

computation instead of through an individual's perception. Quantitative evaluation will yield the same result regardless of the person conducting the analysis. Thus, there is less chance for researcher bias when analysing secondary quantitative information found in official reports. Qualitative research, however, tends to rely heavily on participants' responses and how those responses are interpreted; hence, depending upon who is interpreting the responses, the results may vary greatly (Lim, 2025). A deductive approach is used with studies utilising statistical analysis and quantitative methods. The deductive approach involves forming theories based on current knowledge and testing these theories using statistical methods. Conversely, inductive research is related to qualitative methodologies, where the focus is to identify patterns or generate new theoretical insights versus confirming existing relationships (Faems, 2020).

The use of a secondary data collection method was applied to obtain the required information from Amazon's official website, along with Amazon's Sustainability Reports. This type of resource provides an in-depth view into the various technological advancements made by the company, operational improvements that have taken place at the company, the logistical infrastructure in which the company operates, and the sustainability initiatives put in place by the company (Caraway, B., 2020). Sustainability reports are very significant since they include organised and standardised data regarding an organisation's performance in areas including environmental responsibility, operational effectiveness, technological advancement, openness and long-term sustainability (Khatri, Kjærland, 2023). The official corporate website serves as highly accurate source of current information on Amazon's supply chain efforts, logistics strategies, and technical advancements. Relying on these sources guarantees that the study is grounded in confirmed organisational statements rather than unofficial data (Maddock-James, 2025). This study examines logistics data about innovation from Amazon over the period from 2018 to 2024, a time frame chosen for several reasons. Firstly, these years represent a crucial stage in which technical innovation and digital transformation became crucial to supply chain management. During this period, many businesses, including Amazon, greatly increased investments in automated systems, artificial intelligence, and digital logistics technologies (Morgan, 2025). Secondly, Amazon developed its logistics infrastructure and implemented numerous technological advances, such as improvements in robotics, warehouse automation, delivery optimisation systems, and sustainable logistics programs. Therefore, analysing data from 2018 to 2024 offers a pertinent and meaningful view of the evolution of logistics innovation techniques at Amazon (Kocaoglu, 2024). The research utilised SPSS for data analysis, which incorporates descriptive statistics to summarise the dataset's characteristics and offer an overview of logistics innovation activities during the study time frame. In addition, to find broad trends in technical innovation and logistical performance, metrics consisting of means, percentages, and trend patterns were computed (Wong, Tang, 2018). In addition, correlation evaluation was then carried out to explore the links between innovation-related elements and logistical efficiency indicators. Moreover, correlation coefficients are used to assess the direction and degree of relationships between variables, offering information on whether greater innovation is linked to better logistics performance (Acar, 2020). Using regression analysis, the predictive impact of innovation-related elements on operational efficacy and logistical efficiency was assessed. Importantly, this statistical method also allows the researcher to identify subtle trends and connections. It offers deeper information on possible causal impacts across various operational settings. The degree to which innovative approaches enhance logistics performance can be accurately calculated by employing regression modelling. Moreover, this method also assists in determining whether technological advancements significantly improve operational sustainability and overall efficiency in logistics activities (Yu et al., 2019).

Research results and discussion

This study explores how innovation enhances efficiency and effectiveness in business logistics, employing secondary quantitative data from Amazon's sustainability reports and official website from 2018 to 2024. The key innovation variables include *Electric Vehicles, Renewable Energy Use, Robotics/Automation, Sustainable Packaging, and Digital Tracking/Optimisation* technologies. In addition, these factors were examined in connection with logistical performance to evaluate their impact on operational sustainability and efficiency. The study used statistical analysis in IBM SPSS Statistics, and the evaluation employed descriptive statistics to summarise data characteristics, correlation analysis to investigate relationships between innovation components and logistics performance, and regression analysis to assess the predictive impact of innovation elements on logistics efficiency. The results are displayed in accordance with the objectives of the study.

- Descriptive Statistics Analysis. Descriptive statistics present the overall distribution of innovation indicators and logistical performance metrics and summarise the major variables employed in the study. Table 1 displays the mean, standard deviation, skewness, and kurtosis values for the variables under analysis.

- The descriptive findings show significant variation among the innovation indicators examined in the research. The mean value for *Logistics Performance* was 549.29 with a relatively high standard deviation of 710.847, indicating variations in logistics performance levels across the analysis period. *Robotics and Automation* had the highest mean value (488571.43) among the innovation variables, showing significant technology adoption in operational robotics and warehouse automation. In addition, this illustrates how logistics operations are increasingly dependent on automated solutions to boost efficiency and production. Additionally, the very high standard deviation indicates that automation investments increased significantly throughout the course of the study. *Electric Vehicle* adoption also shows a high mean value (23928.86), demonstrating the growth of environmentally friendly transportation technology in logistics operations. Nonetheless, the high standard deviation suggests that adoption rates rose dramatically in the latter years of the research period (Table 1). *Renewable Energy Use* recorded a mean value of 74.00, showing the firm's growing dedication to sustainability and energy efficiency in logistics infrastructure. Sustainable packaging projects had a mean of 35.71,

suggesting consistent advancements in lowering the environmental impact of packaging procedures. *Digital tracking/Optimisation* technologies showed considerably lower mean score (3.91), which might reflect the measuring scale employed for digital system deployment rather than a lack of technical adoption. The distribution of the variables can also be inferred from the skewness and kurtosis values. Positive skewness for *Logistics Performance* (1.738) and *Electric Vehicles* (2.057), indicating a distribution where higher values occurred more frequently in subsequent years, suggesting rising acceptance of these advances over time. *Robotics/Automation (*-0.349*), Sustainable Packaging (*-1.331*), Digital Tracking/Optimisation (-0.419), and Renewable Energy Use* (-0.586) all show negative skewness scores, which show comparatively balanced distributions.

Table 1. Descriptive Statistics of Innovation Variables and Logistics Performance

Variable	Mean	Std. Deviation	Skewness	Kurtosis
Logistics Performance	549.29	710.847	1.738	3.044
Electric Vehicles	23928.86	35692.760	2.057	4.486
Renewable Energy Use	74.00	26.702	-0.586	-1.605
Robotics / Automation	488571.43	276732.637	-0.349	-1.890
Sustainable Packaging	35.71	12.024	-1.331	2.675
Digital Tracking / Optimisation	3.91	2.057	-0.419	-1.211

Source: Self-developed from SPSS

- Correlation Analysis. To investigate the connections between innovation-related factors and logistics performance, correlation analysis was performed. This method aids in identifying the strength of links among the variables and shows trends that might inform practical decision-making (Obilor and Amadi, 2018). The significant levels and Pearson correlation coefficients for the variables incorporated into the analysis are shown in Table 2.
-

Table 2. Correlation Matrix

Variable	Logistics Performance	Sig.
Electric Vehicles	0.848	0.016
Renewable Energy Use	-0.622	0.136
Robotics / Automation	-0.547	0.204
Sustainable Packaging	-0.084	0.857
Digital Tracking / Optimisation	-0.541	0.210

Source: Self-developed from SPSS

The findings show a robust positive correlation between *Electric Vehicle*s adoption and *Logistics Performance* (r = 0.848, p = 0.016). Moreover, this association is statistically significant at the 0.05 level, indicating that greater implementation of electric vehicles is linked to enhancements in logistics performance. These results show the significance of sustainable transportation technologies in contemporary logistics systems. Electric vehicles can contribute to reduced carbon emissions, cheaper operating costs, and increased delivery efficiency. The correlation outcomes also demonstrate negative links between logistics performance and numerous other innovation variables, such as the *Renewable Energy Use* (r = -0.622), *Robotics/ Automation* (r = -0.547), and *Digital Tracking/Optimisation* (r = -0.541). Nevertheless, these associations are not statistically significant since their p-values are higher than the 0.05 significance level (Table 2). The negative correlations might be the result of transitional investment stages, in which new technologies necessitate a large upfront investment before operational efficiency enhancements become apparent. *Sustainable Packaging* exhibited a very weak negative link with *Logistical Performance* (r = -0.084) and was not statistically significant. In addition, this implies that packaging changes can be more important for environmental sustainability than for immediate operational effectiveness (Appendix 2). Overall, the correlation evaluation suggests that while various technology innovations are incorporated into logistics operations, the adoption of electric vehicles demonstrated a robust link with logistics performance within the dataset examined.

- Regression Analysis. The study assesses the prediction ability of innovation variables and their overall contribution to operational efficiency in contemporary logistics systems by using the regression model, enabling the assessment of the strength and significance of each element, and to comprehend how technological progressions. This impacts logistic performance and choice making (Abdul Mumin et al., 2025).

The combined impact of innovation elements on logistics performance was assessed using regression analysis. Table 3 displays the model summary statistics.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square
1	0.990	0.980	0.881

Source: Self-developed from SPSS

The model summary findings show a very high correlation coefficient (R = 0.990), indicating that the independent innovation factors and logistics performance are strongly related. The R-square value of 0.980 implies that around 98% of the variance in logistics performance is explained by the innovation elements involved in the model. The adjusted R-square score of 0.881 also shows a robust explanatory power of the regression model after taking into consideration the number of predictors utilised in the research. Furthermore, these outcomes imply that innovation elements collectively play a major role in impacting logistics performance within the organisation (Table 3, Appendix 3).

ANOVA. The overall statistical significance of the regression model was assessed using the ANOVA test. The ANOVA results are shown in Appendix 3. The ANOVA outcomes imply that the regression model is not statistically significant at the 0.05 level (p = 0.236). This indicates that even while the model's R-square value is high, the overall model does not offer statistical evidence that the independent variables taken together predict logistical performance. Hence, the innovation variables do not significantly impact logistical performance in this study. The research accepts the H0 hypothesis (innovation has no impact on improving efficiency and effectiveness in business logistics operations) and rejects H1 (innovation has an impact on improving efficiency and effectiveness in business logistics operations).

Discussion

The study's findings provide important knowledge into the role of technological innovation functions in modern logistics operations. The descriptive data suggest that the organisation has substantially increased its adoption of advanced technologies, such as robots, automation systems, and electric vehicles, over the period under review. Notably, descriptive values for *Robotics/Automation (Mean = 488571.43, Standard Deviation = 276732.637)* indicate a growing dependence on automated warehouse solutions. Technologies such as robotic sorting systems and automated fulfilment centres are now essential components of contemporary supply chain management. These innovations not only enhance overall logistics efficiency but also speed up processing times and lower operational errors, hence supporting more efficient logistics performance (Kwak et al., 2025). *Logistics performance* was found to be positively correlated with *Electric Vehicles* (r = 0.848, p = 0.016) in a strong and statistically significant way. The results show that sustainable transportation solutions can both increase operational effectiveness and support environmental sustainability objectives. In logistics transportation networks, electric vehicles can result in long-term cost benefits by minimising pollutants and fuel usage (Bicer, Dincer, 2018). The correlation analysis also discovered negative associations between logistics performance and several other innovation variables, including *Robotics/Automation* (-0.547), *Digital Tracking/Optimisation* (-0.541)*, and Renewable Energy Use* (-0.622). However, these connections were not statistically significant. This outcome might be attributed to the idea that technological innovations occasionally require significant investments and organisational changes before their efficiency gains are fully realised (Bai et al., 2021). For instance, adopting robotics includes significant financial outlays, infrastructure changes, and employee training. While operational disturbances during the initial adoption phase might lower performance efficacy, these technologies usually yield long-term productivity gains (Boysen et al., 2019). This perspective is in line with the study's statistical findings, where *Robotics/Automation* demonstrated a negative but statistically insignificant link with logistics performance (r = −0.547, p = 0.204), implying that the advantages of automation might not be immediately apparent in immediate operational results. Additionally, organisations frequently have to modify current operational strategies and reorganise logistics workflows to integrate advanced automation technology. Businesses may see brief inefficiencies during this transition period as staff members become proficient with novel technologies and systems are progressively optimised. This explanation is consistent with the statistical results of the study, where *Robotics/Automation* displayed a moderate negative but statistically insignificant connection with *Logistics Performance* (r = −0.547, p = 0.204). On the other hand, fully combined, robotics and digital automation can greatly increase order processing speed, decrease manual error, and boost overall service dependability and supply chain collaboration (Haleem et al., 2021). Similar to this, the installation costs and technological advancements associated with renewable energy investments in logistics infrastructure may initially raise operating costs. Although these programs help achieve sustainability goals, their direct effects on logistical performance might be less observable in short-term operational measures (Mangiaracina et al., 2019).

Digital Tracking/Optimisation technology showed a negative but negligible link with logistical performance (r = −0.541, p = 0.210). These technologies usually improve real-time tracking capacity, route optimisation, and supply chain transparency. On the other hand, short-term performance metrics cannot always accurately reflect their advantages (Ivanov, Dolgui, 2021). Digital optimisation systems offer long-term strategic benefits by facilitating more reliable demand forecasting, improving inventory visibility, and fostering collaboration across logistics networks. However, these advantages emerge gradually, as companies incorporate digital platforms into existing logistics operations, which can

restrict immediate performance gains (Khokrale, 2025). Also, Christopher (2022) stresses that logistics performance is influenced by various factors, involving changes in market demand, disruptions within the supply chain, and prevailing economic conditions. Notwithstanding these challenges, innovation in automation and digital platforms continues to enhance logistics efficiency and sustainability of activities (Saqib, Qin, 2024). Such innovation allows logistics companies to improve flexibility, lower delivery times, and maximise resource use within complex supply chains. The study results support this, where *Electric Vehicle* adoption demonstrates a robust positive association with *Logistical Performance* ($r = 0.848$, $p = 0.016$), suggesting that technical innovation can greatly enhance operational improvements. Moreover, incorporating innovative technologies facilitates rapid supply chain visibility and informed decision-making, which eventually boosts organisational competitiveness and long-term sustainability in international logistics marketplaces (Alonge et al., 2023).

The study examined the role of innovation in enhancing logistics efficiency using secondary data from Amazon from 2018 to 2024. Descriptive statistics demonstrate the use of robotics, electric vehicles, renewable energy, and digital logistics systems, displaying a rising emphasis on technological incorporation in modern supply chain procedures. Correlation results show a strong positive association between electric vehicles and logistical performance, while other variables were not significant. Regression analysis revealed high explanatory power but a lack of statistical significance, indicating that the effects of innovation might differ depending on the stage of implementation and the operational environment.

Conclusions

1. A key component of modern logistics is innovation, which boosts sustainability and operational effectiveness. Businesses are increasingly realising that long-term competitiveness requires striking a balance between economic performance and operational and environmental objectives. Adoption of new technology boosts supply chain adaptability and promotes strategic growth, even when it might not immediately result in quantifiable performance advantages. Additionally, innovation promotes resource conservation, process optimisation, and quicker reaction to market shifts. Businesses can increase productivity, reduce expenses, and improve client satisfaction by integrating advanced technology such as automated systems, digital monitoring, and renewable energy solutions. This results in a robust and sustainable logistics structure that supports both immediate operations and long-term strategic objectives.

2. Advanced technologies, such as robotics/automation, renewable energy systems, digital optimization services, and electric vehicles, are being implemented by organizations. Within these, electric vehicles exhibit the most direct improvement in sustainability and operational performance. The long-term advantages of other advances, such as automation and digital tracking, arise gradually as a result of infrastructure investments, staff training, and integration procedures. In addition, these developments show how important technology-driven logistics systems are becoming for increasing productivity and minimizing environmental impact.

3. Businesses should manage initial expenditures and operational adjustments while integrating technology solutions and green logistics initiatives to optimise benefits. Innovations increase supply chain resilience, sustainability, and operational performance, even if their short-term effects are modest. Efficiency and environmental performance are simultaneously improved by the strategic use of automation, digital tracking, and electric cars. Moreover, to attain long-term operational proficiency and competitiveness in global logistics, firms should concentrate on ongoing monitoring, small changes, and fusing technical innovation with ecologically conscious practices.

References

1. Abdul Mumin, M., Yakubu, I. N. and Adam, I. O. (2025) The synthesis of logistics performance and technological innovation on environmental quality. *Technological Sustainability*, 4(1), pp.114-129.

2. Acar, A.Z. (2020). The mediating role of value innovation between market orientation and business performance: evidence from the logistics industry. *International Journal of Business Innovation and Research*, 21(4), pp.540-563.

3. Aćimović, S., Mijušković, V. and Golubović, M. (2021). Military logistics vs. business logistics. *Economic Analysis*, *54*(1), pp.118-138.https://pdfs.semanticscholar.org/012e/f77f844918fe17751c85696ca062b9239bb2.pdf

4. Alonge, E.O., Eyo-Udo, N.L., Ubanadu, B.C., Daraojimba, A.I., Balogun, E.D. and Ogunsola, K.O. (2023). Real-time data analytics for enhancing supply chain efficiency. *Journal of Supply Chain Management and Analytics*, 10(1), pp.49-60.

5. Bai, C., Quayson, M. and Sarkis, J. (2021). COVID-19 pandemic digitization lessons for sustainable development of micro-and small-enterprises. *Sustainable Production and Consumption*, 27, pp.1989-2001.

6. Bicer, Y. and Dincer, I. (2018). Clean fuel options with hydrogen for sea transportation: A life cycle approach. *International Journal of Hydrogen Energy*, 43(2), pp.1179-1193.

7. Boysen, N., De Koster, R. and Weidinger, F. (2019). Warehousing in the e-commerce era: A survey. *European Journal of Operational Research,* 277(2), pp.396-411.

8. Cansu, A. K. S. U. (2025) Innovation in sustainable logistics management: a conceptual approach. *Euroasia Journal of Social Sciences & Humanities,* 12(1), pp.26-41.

9. Caraway, B. (2020). Interrogating Amazon's sustainability innovation. In cultural industries and the environmental crisis: New approaches for policy. *Cham: Springer International Publishing*, pp. 65-78.

10. Christopher, M. (2022). Logistics and supply chain management. Pearson UK.
11. Faems, D. (2020). Moving forward quantitative research on innovation management: A call for an inductive turn on using and presenting quantitative research. *R&D Management*, 50(3), pp.352-363.
12. Haleem, A., Javaid, M., Singh, R.P., Rab, S. and Suman, R. (2021). Hyperautomation for the enhancement of automation in industries. *Sensors International*, 2, p.100124.
13. Heskett, J.L. (1964). Business logistics: Management of physical supply and distribution. New York, USA: Ronald Press Co.
14. Ivanov, D. and Dolgui, A. (2021). A digital supply chain twin for managing the disruption risks and resilience in the era of Industry 4.0. *Production Planning & Control*, 32(9), pp.775-788.
15. Khatri, I. and Kjærland, F. (2023). Sustainability reporting practices and environmental performance amongst Nordic listed firms. *Journal of Cleaner Production*, 418, p.138172.
16. Khokrale, R. (2025). The role of AI in supply chain optimization: enhancing efficiency through predictive analytics. *Journal of Procurement and Supply Chain Management*, 4(2), pp.55-75.
17. Kocaoglu, B. (2024). Digital transformation in logistics. *In logistics information systems: Digital transformation and supply chain applications in the 4.0 era.* Cham: Springer Nature Switzerland, pp. 1-35.
18. Kwak, H., Kim, T.Y. and Lee, D.H. (2025). A study on the application of logistics automation in the healthcare industry: exploratory qualitative research. *Eng*, 6(9), p.205.
19. Lim, W.M. (2025). What is quantitative research? An overview and guidelines. *Australasian Marketing Journal*, 33(3), pp.325-348.
20. Lütje, A. and Wohlgemuth, V. (2020). Tracking sustainability targets with quantitative indicator systems for performance measurement of industrial symbiosis in industrial parks. *Administrative Sciences*, 10(1), p.3.
21. Maddock-James, J. (2025). Supply-chain infrastructure as architecture: a case study of Amazon in Darlington, UK. *Mobilities*, 20(5), pp.986-1001.
22. Mangiaracina, R., Perego, A., Seghezzi, A. and Tumino, A. (2019). Innovative solutions to increase last-mile delivery efficiency in B2C e-commerce: a literature review. *International Journal of Physical Distribution & Logistics Management*, 49(9), pp.901-920.
23. Morgan, M.J. (2025). The role of digital transformation in enhancing supply chain efficiency. A Case of Africa Global Logistics-Rwanda (2020-2024). Doctoral Dissertation. Kigali Independent University.
24. Obilor, E. I. and Amadi, E. C. (2018) Test for significance of Pearson's correlation coefficient. *International Journal of Innovative Mathematics, Statistics & Energy Policies*, 6(1), pp.11-23.
25. Saqib, Z.A. and Qin, L. (2024). Investigating effects of digital innovations on sustainable operations of logistics: An empirical study. *Sustainability*, 16(13), p.5518.
26. Wong, W.P. and Tang, C.F. (2018). The major determinants of logistic performance in a global perspective: evidence from panel data analysis. *International Journal of Logistics Research and Applications*, 21(4), pp.431-443.
27. Yu, W., Jacobs, M.A., Chavez, R. and Feng, M. (2019). Data-driven supply chain orientation and financial performance: the moderating effect of innovation-focused complementary assets. *British Journal of Management*, 30(2), pp.299-314.