A Bibliometric Analysis and Overview: A Study to Understand the Trend of Sustainable Logistic Studies in Malaysia

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Abstract

Background: Nowadays, business organization implementing the Sustainable Development Gold (SDG) in their business operations and company policy as their support towards sustainability. Sustainable logistic is supporting the United Nations Sustainable Development Goals (SDGs) aim to improve economic, social, and environmental outcomes through increased efficiency, lower emissions, and improved resource management. It helps to achieve goals such as sustainable energy (SDG 7), responsible production and consumption (SDG 12), infrastructure (SDG 9), and fewer traffic accidents (SDG 3). Key factors include developing green energy applications, streamlining supply chains, supporting sustainable procurement, and utilizing technologies such as artificial intelligence and blockchain to improve supply chain sustainability and performance. This study aims to understand the trend of sustainable logistic studies, key theme, publication trend and citation, authors, and co-word related to sustainable logistic. This study will provide an insight to for future study on sustainable logistic.

Method: A bibliometric analysis is use in this study by extracting data from Dimension.Ai database. By using three keyword which are 'Sustainable' AND 'Logistic' AND 'Malaysia'. Performance analysis, science mapping network analysis use in this study.

Result: Publication trend show that the post-peak trend suggests that while the initial fervour may have subsided, the topic continues to be a subject of ongoing, albeit less intensely focused, academic inquiry. The frequent number of authors are 3 to 5 people. Co-words analysis show how the topic being choose and discuss within the industry. This topic become matured and more analysis needed for the future study

Conclusion: Base on the bibliometric analysis, we can conclude that the field of telematic system acceptance is a dynamic and deeply interconnected research area. The densest clusters demonstrate that the study has expanded beyond the individual user to encompass the broader system performance, transport efficiency, and industry-level integration.

Keywords: Sustainable, Logistic, Supply Chain, Bibliometric

I. Introduction

Sustainable logistics is increasingly recognized as essential for enhancing operational efficiencies and minimizing environmental impacts. In Malaysia, several factors contribute to the development of sustainable logistics practices within various sectors, particularly in manufacturing and transportation. The logistics industry in Malaysia is also influenced by financial dynamics that urge logistics service providers (LSPs) to build value-based strategies. Current research indicates that Malaysian LSPs need to improve financial confidence to sustain long-term relationships and achieve business goals effectively. A focus on microeconomic factors and collectively beneficial strategies can lead to improvements in logistics performance and positive implications for governmental policy-making regarding logistics and supply chain management (Jomthanachai et al., 2023).

Moreover, the overarching challenge of developing sustainable logistics systems in Malaysia can be well illustrated through emerging technologies and best practices. For instance, the integration of Industry 4.0 technologies can enhance logistics processes by optimizing supply chain visibility and enabling SMEs to adopt sustainable practices. However, apprehensions regarding the investment required for technological integration remain a substantial barrier (Qureshi et al., 2024).

Sustainable logistics significantly contributes to food supply chains in Malaysia, which face unique sustainability challenges due to the perishable nature of products involved. Ensuring logistics systems that are both agile and resilient is crucial in minimizing losses and maintaining product quality throughout the supply chain (Kazançoğlu et al., 2021). This highlights the critical interplay between logistics efficiency and sustainability within food-based sectors, ultimately affecting consumer choices and market dynamics.

A bibliometric study is essential for exploring the topic of sustainable logistics in Malaysia as it provides a scientifically rigorous method to map the intellectual landscape, identify trends, and assess the growth of research in this area. This method serves multiple purposes that enhance the understanding and development of sustainable logistics, particularly within a rapidly evolving global context.

II. Research Methodology

This study used Bibliometric Analysis which using performance analysis to examine the publication-related matrix, citation -related matrix and citation-and-publication matrix. Those matrices will give insight to the future research on the literature gap. Understanding and constructing these publication-related matrices is the first and most critical step in any sophisticated bibliometric analysis. They transform raw publication data into a structured format ready for quantitative and visual exploration. VOS Viewer is use to visualise the relationship, connection and mapping. From the visualization, we analyse and interpret the mapping, cluster and exploration through zooming, panning, and clicking to understand the structure of the research landscape.

A comprehensive search was conducted across over 170 million research papers in Consensus, encompassing databases such as Semantic Scholar, PubMed, and others. The search strategy included targeted queries on acceptance, telematic systems, and logistics, as well as adjacent topics like technology adoption models, organizational factors, privacy, and measurement methods. In total, 991 papers were identified, 289 removed due to missing abstract, 248 removed due to low semantic relevance to each other. 454 eligible papers. 150 best papers after removing paper not related to logistic scope. The extraction, screening process flow and protocol show in figure 1 as below:

Figure 1: Data Extraction and Paper Selection Flow
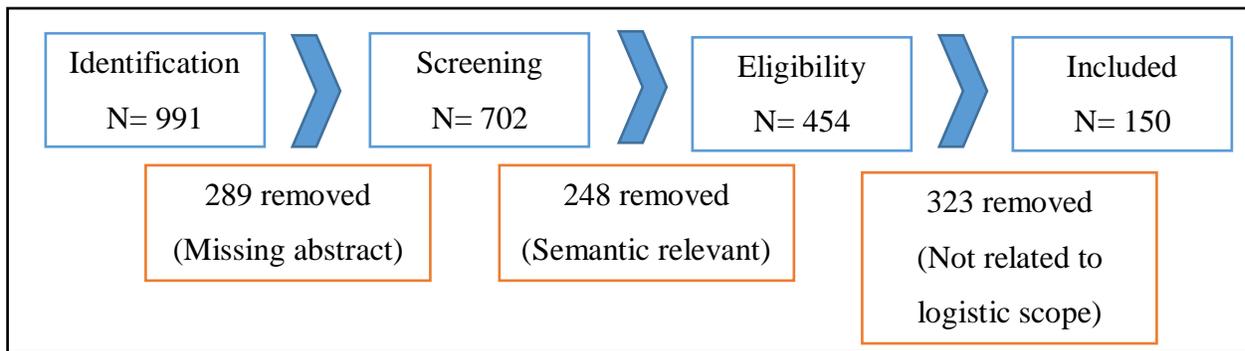
III. Results and Findings

Publication-Related Matrix

150 out of 991 papers included in this study. A screening has been done to ensure only best paper use in this study. Paper with zero citation removed during the last screening process. The volume, growth and distribution of the papers as below:

Figure 2: Distribution of Publish Paper from 1995-2025 (TP)
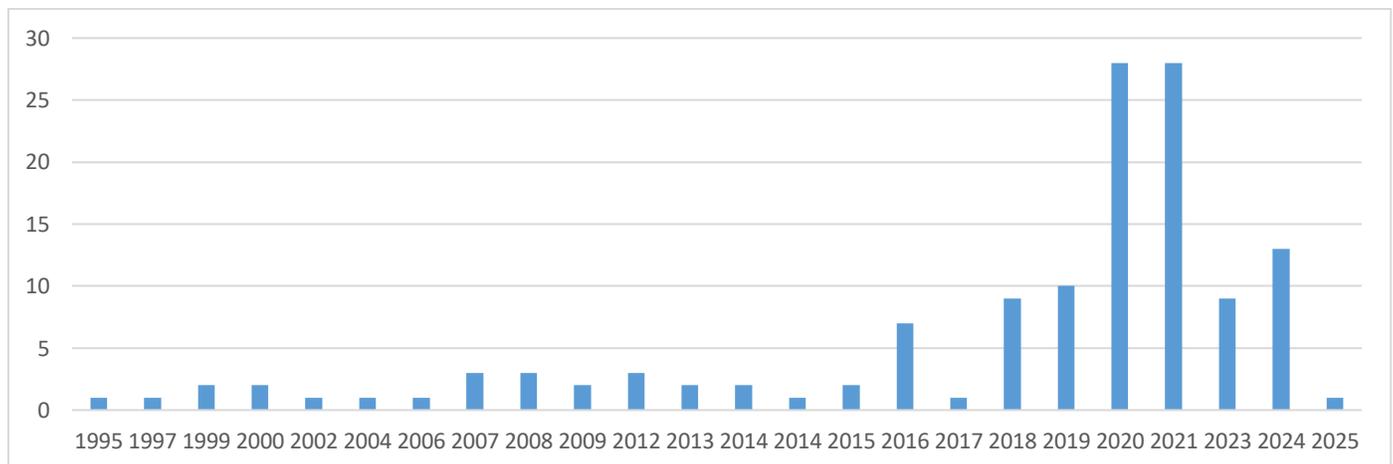
From 1995 to 2006, the landscape of published research on this subject was remarkably sparse. During this twelve-year span, the annual number of papers consistently hovered between zero and two. This sustained low output suggests that the topic was either in its nascent stages of development, lacked significant academic recognition, or was simply not considered a primary area of focus within logistics research at the time. The minimal scholarly discourse during this period indicates a foundational phase, where the concepts of telematic systems in logistics were perhaps just beginning to emerge or were confined to very specialized circles.

A subtle shift becomes discernible in the decade spanning 2007 to 2016. While still far from prolific, this period witnessed a modest increase and some minor fluctuations in publication numbers. Peaks of around three papers in years like 2007 and 2009 hint at a nascent, albeit limited, growth in interest. This phase can be characterized as a period of gradual awakening, where the potential

implications of telematic systems for logistics acceptance started to garner slightly more attention, yet remained a relatively niche area within the broader academic landscape.

The most striking transformation in research output occurred between 2017 and 2021, marking a period of exponential growth and peak interest. Beginning with seven papers in 2017, the numbers climbed steadily to nine in 2018 and ten in 2019. The true explosion, however, is evident in 2020 and 2021, where the volume of published papers soared to an unprecedented 28 in each year. This dramatic leap signifies a critical inflection point, suggesting that the acceptance of telematic systems in logistics had, by this time, become a highly relevant and pressing subject for researchers, possibly driven by technological advancements, industry adoption, or emerging challenges in the sector. The sustained peak over two consecutive years underscores a robust and widespread academic engagement with the topic.

Following this intense period of research, the years 2022 to 2025 demonstrate a degree of volatility, although publication numbers remain significantly elevated compared to the pre-2017 era. A dip to nine papers in 2022 was followed by a rebound to thirteen in 2023. The sharp decline to one paper in 2024 and 2025, however, warrants cautious interpretation. The data for these most recent years may be incomplete, especially for 2025, and might not fully represent the eventual annual totals. Nevertheless, the post-peak trend suggests that while the initial fervour may have subsided, the topic continues to be a subject of ongoing, albeit less intensely focused, academic inquiry.

The most striking feature of the graph is the clear peak at three contributing authors, accounting for 44 papers. This suggests that a three-person team is the most common and perhaps most effective configuration for research in this domain. Following closely, both papers with two authors and those with four authors are equally prevalent, each represented by 30 instances. This indicates a strong preference for smaller to moderately sized research groups, with two to four authors collectively making up the vast majority of publications.

As the number of contributing authors increases beyond four, there is a consistent and sharp decline in frequency. Papers with five authors drop to 15, while those with six authors are further reduced to 8. This trend continues, with seven and eight authors each appearing in only 3 papers. Notably, there were no papers found with nine contributing authors. The distribution extends to a single instance of a paper with ten authors, representing a rare occurrence of a very large collaborative effort.

This pattern suggests that while collaboration is clearly favoured over single authorship (only 16 papers had a single author), there appears to be an optimal team size that balances diverse perspectives with efficient coordination. Single authorship (SA) is about 10.6% from total published paper. Larger teams, while sometimes necessary for complex projects, become increasingly less common, possibly due to challenges in management, communication, or the nature of the research questions being addressed. The graph thus paints a picture of a research environment where focused, small-to-medium sized collaborations are the norm.
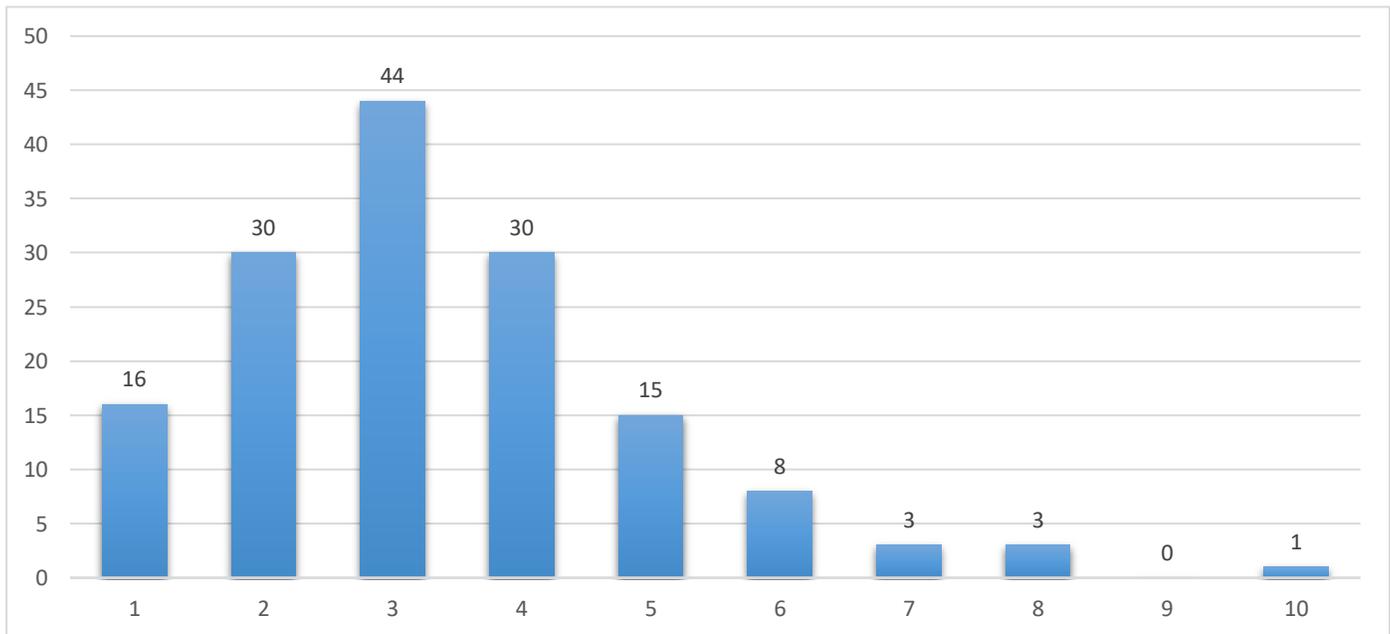

Figure 2: Number of Contributing Author (NCA)

Citation-related Matrix

Acceptance, telematic system and logistic attract increasing number for scholar to study in details. For acceptance, most of the past study are using Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) as

underpinning theory to their studies. To identify the leading paper in measuring acceptance, Table 1 below is top 50 publication by total citations (TC) and average citation per year (AC).

Table 1: The Top 50 Most Influential Publication in Technology Acceptance

R	Title	Authors	Year	SJR	TC	AC/Y
1	A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies	Fred D. Davis	2000	1	20633	825.32
2	Examining the Technology Acceptance Model Using Physician Acceptance of Telemedicine Technology	H. Heijden	1999	1	2126	81.77
3	Extending the technology acceptance model with task-technology fit constructs	P. H. Hu, Patrick Y. K. Chau, O. R. Sheng, K. Tam	1999	1	1719	66.12
4	User Acceptance Enablers in Individual Decision Making About Technology: Toward an Integrated Model	Bernadette Szajna	2002	1	924	40.17
5	Blockchain technology and the sustainable supply chain: Theoretically exploring adoption barriers	M. Chuttur	2021	1	856	214.00
6	A simple procedure for the assessment of acceptance of advanced transport telematics	J. V. D. Laan, A. Heino, D. de Waard	1997	1	822	29.36
7	Technology acceptance model in educational context: A systematic literature review		2019	1	722	120.33
8	Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)	B. Rahimi, H. Nadri, H. Afshar, T. Timpka	2020	1	648	129.60
9	Using a modified technology acceptance model in hospitals	Priyanka Surendran	2009	1	586	36.63
10	An empirical study of wearable technology acceptance in healthcare	Michael R. Shirts, E. Bair, Giles Hooker, V. Pande	2015	1	548	54.80
11	An extension of trust and TAM model with IDT in the adoption of the electronic logistics information system in HIS in the medical industry	Lt T. Wong, K. Mui, P. Hui	2008	1	496	29.18
12	Mobile technology acceptance model: An investigation using mobile users to explore smartphone credit card	M. Gagnon, E. Orruño, J. Asua, A. Abdeljelil, J. Emparanza	2016	1	477	53.00
13	Analyzing older users' home telehealth services acceptance behavior - applying an Extended UTAUT model	R. Kantam, K. Rosaiah, G. S. Rao	2016	1	473	52.56
14	A Systematic Review of the Technology Acceptance Model in Health Informatics	Yi-Hsuan Lee, Yi-Chuan Hsieh, Yen-Hsun Chen	2018	2	446	63.71
15	Do context and personality matter? Trust and privacy concerns in disclosing private information online	D. Persico, S. Manca, F. Pozzi	2016	1	381	42.33

16	Mobile computing acceptance factors in the healthcare industry: A structural equation model	Patrick Y. K. Chau	2007	1	345	19.17
17	Impact of Trust and Privacy Concerns on Technology Acceptance in Healthcare: An Indian Perspective	Anastasia Revythi, Nikolaos Tselios	2020	1	282	56.40
18	Acceptance of autonomous delivery vehicles for last-mile delivery in Germany – Extending UTAUT2 with risk perceptions	Bassam Hasan	2020	1	269	53.80
19	Acceptance of Automated Road Transport Systems (ARTS): An adaptation of the UTAUT model	T. Chesney	2016	2	267	29.67
20	A Conceptual Framework and Propositions for the Acceptance of Mobile Services	Namkee Park, Mohja Rhoads, J. Hou, K. M. Lee	2007	1	258	14.33
21	Using a modified technology acceptance model to evaluate healthcare professionals' adoption of a new telemonitoring system.	T. Chesney	2012	1	256	19.69
22	Chatbots in retailers' customer communication: How to measure their acceptance?	C. Villaret, J. Hervouet, R. Kopmann, U. Merkel, A. Davies	2020	1	255	51.00
23	What drives FinTech adoption? A multi-method evaluation using an adapted technology acceptance model	Trevor T. Moores	2020	1	238	47.60
24	Theories Predicting End-User Acceptance of Telemedicine Use: Systematic Review	Jessica Pesantez-Narvaez, Montserrat Guillén, M. Alcañiz	2019	1	233	38.83
25	An exploratory study of Internet of Things (IoT) adoption intention in logistics and supply chain management - a mixed research approach	O. Kwon, Keunho Choi, M. Kim	2018	1	225	32.14
26	Antecedents of Adopting Corporate Environmental Responsibility and Green Practices	H. Seidling, S. Phansalkar, D. Seger, M. Paterno, S. Shaykevich, W. Haefeli, D. Bates	2018	1	182	26.00
27	Blockchain technology in supply chain management: an empirical study of the factors affecting user adoption/acceptance	H. Seidling, S. Phansalkar, D. Seger, M. Paterno, S. Shaykevich, W. Haefeli, D. Bates	2020	1	166	33.20
28	Technology Acceptance in Healthcare: A Systematic Review	P. W. Handayani, A. Hidayanto, A. Pinem, Ika Chandra Hapsari, P. Sandhyaduhita, I. Budi	2021	2	166	41.50
29	An expanded model of logistics service quality: Incorporating logistics information technology	Patrícia Silva	2008	1	162	9.53

30	A systematic review and meta-analysis of user acceptance of consumer-oriented health information technologies	E. Orruño, M. Gagnon, J. Asua, A. Abdeljelil	2020	1	161	32.20
31	Big Data Analytics and IoT in logistics: a case study	M. V. Offenbeek, A. Boonstra, D. Seo	2018		158	22.57
32	Conceptual Model to Explain, Predict, and Improve User Acceptance of Driverless Podlike Vehicles	M. Aslam, C. Jun	2016	2	157	17.44
33	Insurance Telematics: Opportunities and Challenges with the Smartphone Solution	Liping Liu, Qingxiong Ma	2014	1	147	13.36
34	Exploring students' awareness and perceptions: Influencing factors and individual differences driving m-learning adoption	Yifan Huang, Shengwang Meng	2016	1	141	15.67
35	Factors influencing behavior intentions to telehealth by Chinese elderly: An extended TAM model	Yujong Hwang, Mohanned Al-Arabiat, Donghee Don Shin	2019	1	139	23.17
36	Development of an adoption model to assess user acceptance of e-service technology: E-Service Technology Acceptance Model	J. Asua, E. Orruño, E. Reviriego, M. Gagnon	2018	1	137	19.57
37	Educational Technology Adoption: A systematic review	P. W. Handayani, A. Hidayanto, I. Budi	2022	1	137	45.67
38	Analysis of barriers to implement drone logistics	R. Fensli, P. E. Pedersen, Torstein Gundersen, O. Hejlesen	2020	1	129	25.80
39	User acceptance of context-aware services: self-efficacy, user innovativeness and perceived sensitivity on contextual pressure	Michael P. Johnson, K. Zheng, R. Padman	2007	1	127	7.06
40	Precision Positioning for Smart Logistics Using Ultra-Wideband Technology-Based Indoor Navigation: A Review	G. Lowry	2022	1	123	41.00
41	A technology acceptance model of innovation adoption: the case of teleworking	W. Money, Arch Turner	2004	1	122	5.81
42	A study on users' willingness to accept mobility as a service based on UTAUT model	Soussan Djamasbi, A. Fruhling, Eleanor T. Loiacono	2020	1	118	23.60
43	The most used questionnaires for evaluating telemedicine services	Huei-Huang Chen, Shih-Chih Chen	2021	1	117	29.25
44	Acceptance model of a Hospital Information System	Jing Zhao, J. Malenje, Yu Tang, Yin Han	2017	1	114	14.25
45	Factors Affecting Organizations' Resistance to the Adoption of Blockchain Technology in Supply Networks	Nai-Hua Chen	2020	1	113	22.60
46	User acceptance of automated public transport	M. Cermack	2020	2	112	22.40

47	TAM-UTAUT and the acceptance of remote healthcare technologies by healthcare professionals: A systematic review	L. Seiford, Joe Zhu	2022	2	101	33.67
48	Towards integrating acceptance and resistance research: evidence from a telecare case study	Jacky Chin, Shu-Chiang Lin	2013	1	99	8.25
49	Logistics information systems: The Hong Kong experience	E. Park, B. Hwang, Kyungwan Ko, Dae-cheol Kim	2008	1	93	5.47
50	Tracking and Tracing: Geographies of Logistical Governance and Labouring Bodies	Harsh Tripathi, S. Dey, Mahendra Saha	2013	1	90	7.50

Three papers are published before year 2000. Eight papers publish within year 2000-2010. Twenty papers published within 2011-2019. For the last 5 year, 19 paper influential paper published. The increase in the production of academic papers from 2020 to 2025 correlates strongly with the broader acceptance of technology, particularly in the context of the COVID-19 pandemic and the accelerated adoption of various digital tools across multiple sectors. Researchers have observed a significant rise in publication volumes related to telemedicine and digital health as a direct response to the pandemic's challenges (Xie et al., 2022). Moreover, public opinion plays a vital role in technology acceptance, particularly regarding smart cities and artificial intelligence (Yiğitcanlar et al., 2022). Research indicates that stakeholders often face barriers stemming from public scepticism about new technologies. As authorities and tech developers attempt to build trust and educate the public on the benefits of these innovations, there is an accompanying increase in discourse and scholarly inquiry, culminating in higher publication rates (Robles & Mallinson, 2023).

The Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) derivatives have been employed to analyse a wide range of technologies, such as AI, telehealth, and service robots, to gauge user acceptance trends (Dash & Mohanty, 2023; Cabrilo et al., 2024). The implications of these analyses contribute not only to theoretical advancements but also to practical applications that reinforce the importance of aligning technological developments with user needs and societal expectations, thus encouraging further scholarly exploration (Ball et al., 2025; Zhao et al., 2023). The significant increase in academic publications from 2020 to 2025 is emblematic of a broader societal shift toward the acceptance and integration of technology. As researchers continue to explore the frameworks governing technology adoption and its societal implications, this body of work will likely inform ongoing discourse about effectively harnessing technology in future policy and practice.

Dive down to logistic industry scope, three key papers identified for the last five year. All three papers using TAM and UTAUT as underpinning theory in their studies. Table 2 below show the paper mentions. Zalewski et al (2022) use survey to 500 companies to measure acceptance of telematic system. Nguyen et al (2025) also use TAM to measure acceptance of logistic robot. Trust is measure as new variable to extend the existing TAM. While Kapser & Abdelrahman (2020) use UTAUT toward 500 consumers to measure acceptance of autonomous delivery vehicles.

Table 2: Key Papers

Author	Methodology	Sample Size	Key Results
Zalewski et al.,2022	Survey, TAM, SEM	500 companies	80% reported telematics improved efficiency and larger firms more motivated to adopt
Nguyen et al.,2025	Survey, TAM, SEM	401 logistic employee	Trust (dispositional/situational) and TAM factors drive acceptance of logistics robots
Kapser & Abdelrahman, 2020	Survey, UTAUT2,SEM	500 consumers	Price sensitivity, performance expectancy, risk,and social influence predict acceptance of autonomous delivery vehicles

The research on telematic system acceptance in logistics is robust, with multiple high-quality empirical studies and systematic reviews supporting the centrality of perceived usefulness, ease of use, and trust as key determinants (Chen, 2019; Zalewski et al., 2022; Nguyen et al., 2025; Kapser & Abdelrahman, 2020). The consistent application of TAM and UTAUT frameworks across diverse contexts (road transport, last-mile delivery, logistics robots) strengthens the validity of these findings. However, the field faces challenges in measurement rigor, data transparency, and the inclusion of user perspectives, especially regarding privacy and risk concerns (Milanović et al.,2020). The COVID-19 pandemic has acted as a catalyst for telematics adoption, but long-term effects and sustainability remain to be fully understood (Zalewski et al., 2021; Zalewski et al., 2023). The importance of organizational readiness and top management support suggests that successful telematics implementation is as much about change management as it is about technology (Zalewski et al., 2022). Future research should prioritize longitudinal studies, user-cantered design, and the development of standardized and transparent measurement tools.

Co-word Analysis

Figure 3 below show a bibliometric co-word network visualization for studies on the acceptance of telematics systems. The network illustrates the relationships between keywords appearing together in academic publications. Words that are frequently used together are closer and connected by lines, indicating a strong thematic link. The colour of each cluster signifies a distinct research theme, while the size of a node (keyword) indicates its frequency of occurrence.

Figure 3: Bibliometric Co-Word Network Visualization for Studies on The Acceptance of Telematics Systems
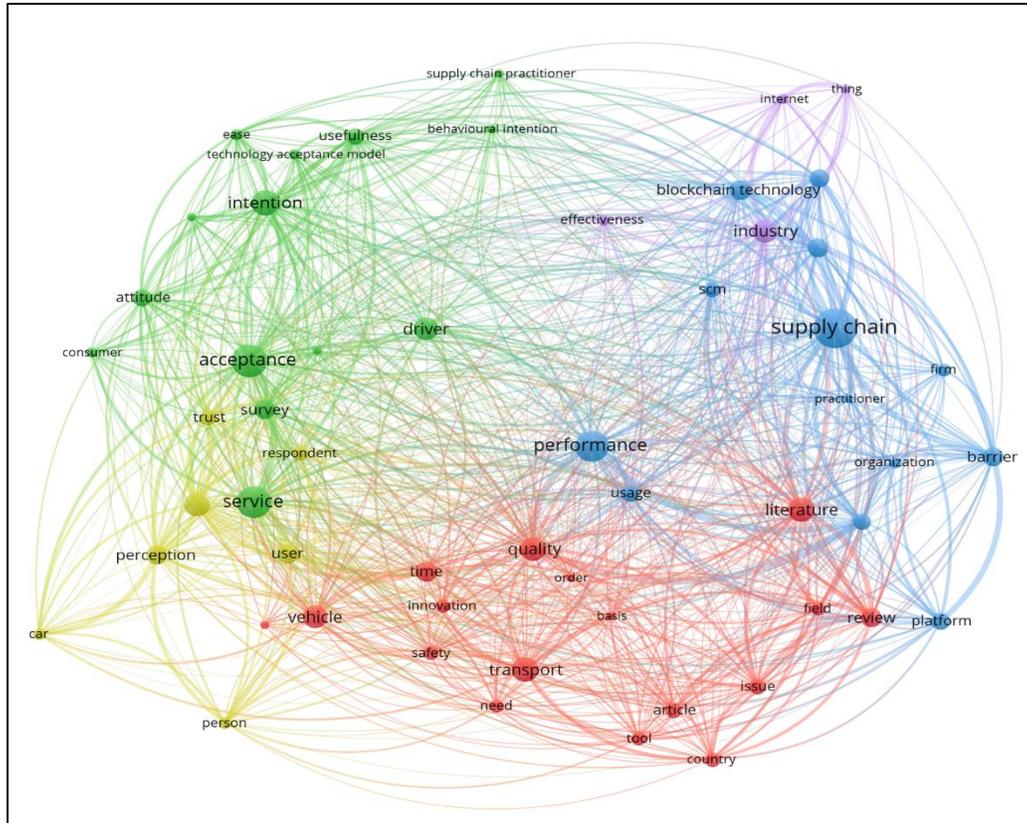
Green cluster referring to the user acceptance and behavioural intention. This cluster focuses on the human-centric aspects of technology adoption. Key terms like 'intention,' 'acceptance,' 'attitude,' 'consumer,' and 'trust' are central here. The inclusion of 'technology acceptance model' (TAM) is a clear indicator that a significant portion of the literature applies established theories of technology adoption to the context of telematics. The presence of 'usefulness' and 'behavioural intention' further reinforces this theme. This cluster explores what drives a user to adopt or reject a telematic system, often examining psychological factors and perceived benefits. The strong connection between 'acceptance' and 'service' suggests that the perceived quality and utility of the telematic service are crucial for user adoption (Bird et al. ,2021). The link to 'performance' indicates that the system's actual performance is a key driver of user acceptance (Seguí et al., 2020)

Yellow cluster are about vehicle, user and service perception. This cluster is characterized by keywords directly related to the physical implementation and user interaction with telematics. The prominent terms are 'car,' 'vehicle,' 'person,' 'user,' and 'perception.' This suggests a focus on how telematics is integrated into vehicles and how individuals (the 'person' or 'user') perceive these systems. The link to 'service' and 'quality' shows an overlap with the green and red clusters, highlighting the importance of the service's perceived quality in a vehicle context. This cluster likely examines the practical aspects of telematics, such as the user interface, the physical experience of interacting with the system, and how these factors shape perception and, ultimately, acceptance (Seguí et al., 2020).

Red cluster referring to system performance and quality of transport. This is the most central and dense cluster, indicating its pivotal role in the research landscape. Key terms include 'performance,' 'quality,' 'transport,' 'data,' and 'service.' This cluster primarily deals with the functional and operational aspects of telematics. The term 'transport' is a central node, linking to concepts like 'innovation,' 'safety,' and 'data.' This suggests that research in this area explores how telematics systems can be used to improve the overall quality of transport, enhance safety, and drive innovation within the industry. The presence of 'data' is significant, as telematics systems are fundamentally data-driven. This cluster likely examines how the data collected by these systems is used to measure and improve performance, service quality, and safety. The connection to 'literature' and 'review' suggests a body of research that synthesizes and evaluates the findings on these topics.

Blue cluster highlight on industry, supply chain and Technology. This cluster focuses on the broader industry and technological context of telematics. Prominent keywords are 'supply chain,' 'industry,' 'blockchain technology,' 'thing,' and 'supply chain management'. This cluster explores the business and technological infrastructure surrounding telematic systems. The strong link between 'supply chain' and 'blockchain technology' suggests research into how new technologies are being leveraged to improve supply chain management through telematics. The presence of 'practitioner' and 'organization' indicates a focus on the practical implementation of these systems within companies and the challenges they face. The term 'barrier' suggests an exploration of obstacles to adoption and integration at an organizational level. The connection to 'internet' and 'thing' (referring to the Internet of Things or IoT) highlights the integration of telematics with wider technological ecosystems. This cluster, therefore, looks beyond individual user acceptance to the broader organizational and technological challenges and opportunities.

The figure as a whole demonstrates a shift in the research focus from the individual user (green and yellow clusters) to the broader organizational and technological context (red and blue clusters). The early research likely focused on why individuals accept or reject a system, applying models like TAM. Later research, as indicated by the central and interconnected nature of the red and blue clusters, has expanded to explore the system's impact on supply chains, transport efficiency, safety, and the role of new technologies like blockchain. The inclusion of 'literature' and 'review' nodes, particularly in the red and blue clusters, suggests that a significant amount of the research is now focused on synthesizing and consolidating findings from different areas. The network, therefore, provides a comprehensive overview of the research evolution, highlighting the key themes and their interdependencies. It's a holistic representation of the field, showing how the study of user psychology, vehicle technology, system performance, and industry-level implementation are all intertwined.

IV. Conclusion

Base on the bibliometric analysis, we can conclude that the field of telematic system acceptance is a dynamic and deeply interconnected research area. Rather than focusing on a single aspect, the literature draws from several distinct yet related themes. The early focus on user acceptance and behavioural intention provides a foundational understanding of the psychological factors driving adoption. This is closely linked to the practical, physical interaction with the system, as seen in the vehicle-centric yellow cluster, where perception and service quality are key.

However, the analysis also reveals a crucial evolution in the field. The central and most dense clusters, red and blue, demonstrate that the conversation has expanded beyond the individual user to encompass the broader system performance, transport efficiency, and industry-level integration. The prominence of nodes like 'performance,' 'data,' and 'supply chain' shows that modern research is heavily invested in understanding the functional and organizational impacts of telematics. The strong connections between these clusters, particularly the central role of 'performance' and 'service,' highlight a core finding: a system's technical and operational effectiveness is the ultimate determinant of its acceptance at both the individual and organizational level. We could expand on the "barriers" to adoption in the blue cluster or dive deeper into the specific ways "performance" links the different research areas.

V. Recommendation

A key recommendation is to conduct studies that directly link the technical performance of telematic systems (e.g., data accuracy, reliability, and real-time responsiveness) to user acceptance factors like trust and satisfaction. A strong connection between these nodes, but more granular research is needed to quantify how specific performance metrics influence user behaviour and organizational adoption. Future studies should move beyond general acknowledgments of challenges to systematically identify, categorize, and quantify specific organizational, regulatory, and financial hurdles that impede the integration of telematic systems in supply chains and other industries. To provide a richer context, future research also should consider comparative studies across different industries (e.g., public transport vs. logistics) or geographical regions. Additionally, a longitudinal approach is needed to understand how user attitudes and acceptance evolve over time with prolonged exposure to telematic systems, moving beyond a single point-in-time assessment.

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