



UHASSELT

KNOWLEDGE IN ACTION

School of Transportation Sciences

Master of Transportation Sciences

Master's thesis

Increasing Truck Drivers' Compliance, Retention and Long-Term Engagement to E-Health & Mobile Applications: A Prisma Systematic Review

Rocel Tadina

Thesis presented in fulfillment of the requirements for the degree of Master of Transportation Sciences, specialization Traffic Safety

SUPERVISOR :

Prof. dr. Kris BRUJS

CO-SUPERVISOR :

dr. Hélène DIRIX



UHASSELT

KNOWLEDGE IN ACTION

www.uhasselt.be
Universiteit Hasselt
Campus Hasselt:
Martelarenlaan 42 | 3500 Hasselt
Campus Diepenbeek:
Agoralaan Gebouw D | 3590 Diepenbeek

2024
2025



School of Transportation Sciences

Master of Transportation Sciences

Master's thesis

Increasing Truck Drivers' Compliance, Retention and Long-Term Engagement to E-Health & Mobile Applications: A Prisma Systematic Review

Rocel Tadina

Thesis presented in fulfillment of the requirements for the degree of Master of Transportation Sciences, specialization
Traffic Safety

SUPERVISOR :

Prof. dr. Kris BRIJS

CO-SUPERVISOR :

dr. Hélène DIRIX

ACKNOWLEDGEMENTS

To my supervisors, *Prof. dr. Kris Brijs* and *Dr. Hélène Dirix*,

Thank you for entrusting me with a meaningful thesis topic and for your insightful input throughout this research. Your guidance, critical feedback, and continuous support have shaped this work in many ways. I am truly grateful for the opportunity to learn from you and work under your supervision.

To the *UHasselt IMOB* department and the *VLIR community*,

Thank you for fostering an environment that encouraged learning, growth, and collaboration. I am especially grateful to the VLIR community for the scholarship that made it possible for me to study and live in Belgium. This opportunity has been life-changing, both academically and personally.

To my loving and supportive parents, *Papa Ruino* and *Mama Jocelyn*,

Thank you for being my source of strength, my motivation, and my constant guardians. Your unwavering support throughout my master's journey has meant the world to me and is one of the main reasons I've made it this far. Without your love, I wouldn't be where I am today. I love you both dearly. I wholeheartedly dedicate this thesis to you.

To my beautiful sisters – *Rowena*, *Camille*, and *Racquel* – who are also my best friends in the whole world,

Thank you for being my listeners, my protectors, my angels on earth, and my greatest supporters. I love you all more than words can express.

To my loving partner and mentor, *Richard Dean*,

Thank you for being my guiding light and my constant source of warmth. Your presence has added profound meaning to my life. I truly believe that we were meant to be together and that God brought you into my life so I could face every milestone – including this master's journey – with joy and courage.


Because of you, my life is so full of love and happiness that negativity rarely finds a place – and when it does, it barely lingers. You may not have helped me 'literally' with this thesis, but your constant presence and support gave me the strength and motivation to see it through. Thank you, love. You already know the rest.

And to the *One and only God of heavens and earth*,

You alone have seen everything – every moment, from beginning to end – on this incredible journey. You were with me through every high and low, guiding me with Your grace, wisdom, and strength.

As I write this acknowledgement, my heart is full. I'm overwhelmed with gratitude that I am about to finish this master's degree. I owe everything to You, my dearest God.

Sincerely,


Rocel G. Tadina
June 5, 2025

SUMMARY

Truck drivers represent a high-risk occupational group with elevated vulnerability to non-communicable diseases, mental health issues, fatigue, and lifestyle-related health risks. Despite the growing availability of mobile health (mHealth) technologies and digital interventions, very few are specifically designed for the complex, mobile, and time-constrained nature of truck driving. The MILESTONE project aims to bridge this gap by developing a digital health tool that promotes sustained engagement and behaviour change in this unique workforce. However, there remains a need for an evidence-based foundation that identifies the behavioural, technological, and contextual determinants that influence user engagement among truck drivers.

This thesis presents a systematic review of the literature following the PRISMA 2020 protocol, examining digital health interventions involving truck drivers with a focus on determinants of compliance, retention, and long-term engagement. A structured search strategy and screening process were applied, ultimately including six studies that met the predefined inclusion criteria. These studies were analysed using thematic synthesis and interpreted across three domains of theories: (1) technology acceptance models, including the Unified Theory of Acceptance and Use of Technology (UTAUT2) and Multi-level Model on Automated Vehicle Acceptance (MAVA); (2) behavioural change models, including the COM-B model, Self-Determination Theory (SDT) and Health Belief Model (HBM), and; (3) Persuasive Systems Design (PSD) principles.

The review revealed that successful interventions were characterised by features such as self-monitoring, real-time feedback, behavioural goal-setting, and coaching support. Simplicity, usability, and flexibility were consistently important in enabling sustained use, especially when tools were compatible with drivers' mobile routines. In contrast, barriers to engagement included technological complexity, lack of digital literacy, concerns about privacy and surveillance, and poor alignment with occupational demands such as long hours, unpredictable schedules, and limited rest periods.

Privacy, trust, and autonomy were particularly salient concerns. Interventions perceived as employer-driven or intrusive were less likely to retain user engagement. Instead, applications that supported user control, data transparency, and voluntary participation were associated with more positive outcomes. Psychological needs related to autonomy, competence, and relatedness were frequently reflected in higher engagement levels, reaffirming the relevance of SDT in digital health tool design for occupational users.

To consolidate these insights, an integrative framework was developed that mapped key behavioural determinants across the identified theoretical models. This framework provides a practical and theory-informed structure for understanding and designing for long-term engagement in mobile health contexts.

This study also identifies gaps in the literature, including the underuse of theory-based intervention planning, the lack of longitudinal outcome tracking, and the limited diversity in geographic and demographic study populations.

The results of this synthesis inform several targeted recommendations. These include designing interventions that offer contextual fit for drivers' work routines, using proven behaviour change techniques, integrating persuasive design features such as gamification and reminders, and addressing trust through clear data practices. Importantly, these recommendations are established to guide the design and implementation of the MILESTONE project. Engaging truck drivers in co-design processes, supporting flexible and low-effort interaction, and embedding optional social support features are expected to enhance usability and behavioural relevance.

Beyond the project-specific implications, the findings of this thesis offer broader guidance to digital health developers, occupational health planners, and policymakers in the transportation sector. They emphasise the need for user-centred, evidence-based, and contextually aware approaches to e-health deployment among high-mobility worker populations.

In conclusion, this thesis contributes a structured understanding of what drives or hinders engagement with digital health tools among truck drivers. It bridges theoretical models with practical applications, offering actionable insights that support the development of more effective, acceptable, and sustainable digital health interventions for one of the most underserved workforces in public health innovation.

Keywords:

PRISMA, Technology Adoption, e-Health, Truck Drivers, Systematic Review

Table of Contents

ACKNOWLEDGEMENTS	I
SUMMARY.....	II
LIST OF FIGURES	VII
LIST OF TABLES	VIII
LIST OF ABBREVIATIONS	IX
1 INTRODUCTION	1
1.1 Background of the study	1
1.2 The MILESTONE Project	2
1.3 The Role of Technology in Occupational Health Interventions	3
1.4 Rationale.....	4
<i>1.4.1 Vital Role of Truck Drivers in the Transportation Sector</i>	<i>4</i>
<i>1.4.2 Health-Related Challenges and Their Impact on the Safety and Productivity of Truck Drivers 5</i>	
<i>1.4.3 Advantages and Opportunities of Using E-Health and Mobile Applications.....</i>	<i>6</i>
<i>1.4.4 Barriers to Adoption and Challenges in Using E-health and Mobile Applications.....</i>	<i>6</i>
<i>1.4.5 Limitations of Existing E-Health and Mobile Health Applications for Truck Drivers</i>	<i>7</i>
<i>1.4.6 Addressing the Research Gap: Compliance, Retention, and Engagement with E-Health and Mobile Applications</i>	<i>8</i>
<i>1.4.7 Research Contribution to the MILESTONE Project</i>	<i>8</i>
1.5 Research Objectives	8
<i>1.5.1 General Objective of the Study</i>	<i>8</i>
<i>1.5.2 Specific Objectives of the Study</i>	<i>9</i>
1.6 Research Questions	9
1.7 Thesis Outline.....	9
2 THEORETICAL FRAMEWORKS.....	11
2.1 Introduction	11
2.2 Technology Acceptance Models	11
<i>2.2.1 Unified Theory of Acceptance and Use of Technology</i>	<i>12</i>
<i>2.2.2 Multi-Level Model on Automated Vehicle Acceptance</i>	<i>14</i>
2.3 Behaviour Change Models	15
<i>2.3.1 Self-Determination Theory</i>	<i>15</i>
<i>2.3.2 COM-B Model of Behaviour Change.....</i>	<i>16</i>
<i>2.3.3 Health Belief Model</i>	<i>17</i>

2.4	Persuasive System Design Model.....	18
2.5	Summary of Theoretical Frameworks.....	19
3	METHODOLOGY	21
3.1	Systematic Literature Review Approach.....	21
3.1.1	PRISMA Protocol for Study Selection.....	21
3.1.2	PRISMA 2020 Flow Diagram.....	22
3.2	Search Strategy	23
3.2.1	Eligibility Criteria.....	24
3.2.2	Information Sources.....	24
3.2.3	Keywords and Search Terms	25
3.3	Data Extraction and Analysis	26
3.3.1	Data Categorisation Framework.....	26
3.3.2	Screening Phases	29
3.3.3	Ethical Considerations.....	30
3.3.4	Quality Assessment of Selected Studies.....	30
3.4	Use of AI Tools	33
4	RESULTS	34
4.1	Summary of Identified Studies	34
4.1.1	PRISMA 2020 Flow Diagram: Study Selection.....	34
4.1.2	Characteristics of Included Studies	35
4.2	Article Exclusion Summary Across Screening Stages.....	39
4.2.1	Studies Excluded After Full-Text Review – Partially Relevant Studies	40
4.2.2	Studies Excluded After Full-Text Review – Non-Relevant Studies	40
4.3	Analysis and Synthesis of the Included Studies.....	41
4.3.1	Mapping of Included Studies to Research Questions.....	42
4.3.2	Mapping of Included Studies to Theoretical Frameworks	51
4.3.3	Cross-Study Summary of Determinants Influencing Compliance, Retention, and Engagement.....	54
4.3.4	Integrative Framework Linking Theory and Empirical Determinants Influencing Truck Drivers' Behaviour.....	59
5	DISCUSSION	62
5.1	Overview of the Findings	62
5.1.1	Insights from Study Screening and Exclusion Patterns.....	62
5.1.2	Reflections on Included Study Characteristics and Design.....	62
5.2	Discussion of Synthesized Results.....	63

5.2.1	<i>Determinants of Compliance, Retention, and Engagement in Context</i>	63
5.2.2	<i>Occupational Constraints as Engagement Barriers</i>	64
5.2.3	<i>User Readiness, Technology Simplicity and Usability</i>	65
5.2.4	<i>Social Identity and Autonomy in Health Interventions</i>	65
5.2.5	<i>Organizational and Policy-Level Influence</i>	65
5.2.6	<i>Theoretical Coherence of the Integrated Framework</i>	66
5.2.7	<i>Summary</i>	66
5.3	Certainty and Strength of Evidence	66
5.4	Limitations and Potential Biases	67
6	RECOMMENDATIONS	69
6.1	General Implications for E-Health and Mobile Application Design	69
6.2	Project-Specific Implications: Recommendations for the MILESTONE Project	70
6.3	Broader Implications for the Transportation Sector	70
6.4	Directions for Future Research	71
7	CONCLUSION	73
	BIBLIOGRAPHY	74
	APPENDIX I – PRISMA 2020 CHECKLIST	88
	APPENDIX II – DATA EXTRACTION TABLES – SCREENING	89
	APPENDIX III – DATA EXTRACTION TABLES – FULL-TEXT REVIEW DETAILS	112
	APPENDIX IV – QUALITY ASSESSMENT OF THE INCLUDED STUDIES	119
	APPENDIX V – AI LOGBOOK	135

LIST OF FIGURES

FIGURE 1 Technology Acceptance Model (TAM) framework (Gupta et al., 2016).....	12
FIGURE 2 Integration of eight TAM-based theories to UTAUT (Al-Okaily et al., 2019).....	12
FIGURE 3 Unified Theory of Acceptance and Use of Technology (UTAUT2) model (Venkatesh et al., 2012).....	13
FIGURE 4 Multi-level model to explain and predict automatic vehicle acceptance (MAVA) (Nordhoff et al., 2019).....	14
FIGURE 5 Self-Determination Theory (SDT) model (Legault, 2017; Ryan & Deci, 2017)	15
FIGURE 6 The COM-B model of behaviour (West & Michie, 2020)	16
FIGURE 7 Health Belief Model (HBM) (Nelson et al., 2021).....	17
FIGURE 8 Persuasive Systems Design (PSD) model phases (Oinas-Kukkonen & Harjumaa, 2009) ..	18
FIGURE 9 Structured 10-step study selection process based on the PRISMA 2020 protocol (Own elaboration).....	22
FIGURE 10 PRISMA 2020 flow diagram template (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).....	23
FIGURE 11 Tabs of the customised Excel file used for study screening and data extraction (Own work)	28
FIGURE 12 Summary tab: Overview of screening and data extraction progress (Own work).....	28
FIGURE 13 PRISMA 2020 flow diagram for study selection on truck driver's compliance, retention, and long-term engagement with e-health and mobile applications (Own work based on (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021))	34
FIGURE 14 Summary of study exclusions across screening phases and categories (Own work)	39
FIGURE 15 Logic model of the synthesis process in Section 4.3: Conceptual pathway to the integrated framework (Own work)	42
FIGURE 16 Integrated conceptual framework linking theoretical frameworks and empirical determinants influencing truck drivers' behaviour on long-term engagement, compliance, and retention in using e-health and mobile applications (Own work)	61

LIST OF TABLES

TABLE 1 Summary of theoretical frameworks and their applications to this study (Own elaboration)	19
TABLE 2 Pre-determined variables extracted from Zotero after initial database searches and screening (Own elaboration).....	27
TABLE 3 Extracted variables based on full-text review for data extraction and analysis (Own elaboration based on (Hoque et al., 2020; Indra et al., 2024; Ng et al., 2015)).....	27
TABLE 4 Reasons for study exclusion across screening phases and their corresponding codes (Own elaboration).....	29
TABLE 5 Ethics approval categories for included studies in full-text screening (Own elaboration)....	30
TABLE 6 Appraisal tools applied according to study design (Own elaboration)	31
TABLE 7 CASP scoring system (Own elaboration)	32
TABLE 8 MMAT scoring system (Own elaboration)	32
TABLE 9 Study inclusion and interpretation based on quality assessment (Own elaboration)	32
TABLE 10 Summary of characteristics of the included studies on digital health interventions and adoption for truck drivers (Own elaboration).....	36
TABLE 11 Specific insights from excluded partially relevant studies (Own elaboration).....	40
TABLE 12 Specific insights from excluded non-relevant studies (Own elaboration).....	41
TABLE 13 Mapping of included studies to RQ1 (Own elaboration)	43
TABLE 14 Mapping of Included Studies to RQ2 (Own elaboration)	45
TABLE 15 Mapping of included studies to RQ3 (Own elaboration)	46
TABLE 16 Mapping of Included Studies to RQ3.1 (Own elaboration)	49
TABLE 17 Mapping of Included Studies to RQ4 (Own elaboration)	50
TABLE 18 Mapping of included studies to theoretical frameworks (Own elaboration)	52
TABLE 19 Cross-study summary of determinants on compliance, retention, and long-term engagement of truck drivers to e-health and mobile applications (Own elaboration).....	57

LIST OF ABBREVIATIONS

AI	Artificial Intelligence
CASP	Critical Appraisal Skills Programme
COM-B	Capability, Opportunity, Motivation – Behaviour model
ELD	Electronic Logging Device
HBM	Health Belief Model
HGV	Heavy Goods Vehicle
IRU	International Road Transport Union
ITF	International Transport Forum
JBI	Joanna Briggs Institute
MA	Meta-Analysis
MAVA	Multi-Level Model on Automated Vehicle Acceptance
MILESTONE	MobILe and tEchnological SoluTions for OccupatioNal drivErs
MMAT	Mixed Methods Appraisal Tool
NS	Not Significant
OECD	Organisation for Economic Co-operation and Development
OR	Odds Ratio
PEOU	Perceived Ease of Use
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PSD	Persuasive Systems Design
PU	Perceived Usefulness
RQ1-RQ4	Research Questions 1 to 4
SDT	Self-Determination Theory
SHIFT	Safety and Health Involvement For Truckers
STTZ	Stress Tolerance Zone
TAM	Technology Acceptance Model
TRID	Transport Research International Documentation
UTAUT	Unified Theory of Acceptance and Use of Technology
UTAUT2	Extended Unified Theory of Acceptance and Use of Technology

1 INTRODUCTION

1.1 Background of the study

Truck drivers play an essential role in the logistics and transportation sector, facilitating the efficient and reliable movement of goods that sustain local economies and global supply chains (Anthony, 2025; ATOS-MA, 2024). Given their crucial position and the increasing pressure from the industry's reliance on timely, just-in-time deliveries, truck drivers encounter numerous occupational challenges that significantly impact their physical health, mental well-being, and job performance (Clemes et al., 2022; Garbarino et al., 2018). These challenges include fatigue, physical strain, chronic illness, mental health risks, environmental stressors, and socio-organisational pressures. Because of these, the profession is consistently recognised as one of the unhealthiest, most physically demanding and hazardous occupations (Hege et al., 2019), characterised by extended work hours, limited access to social and organisational support, low control over work conditions, prolonged isolated driving, intense and irregular schedules, work-life strain, and elevated risks of traffic-related accidents (S. E. Peters et al., 2021).

One of the most pressing health concerns among occupational drivers is chronic fatigue, stemming from irregular sleep patterns and insufficient rest (Caldwell et al., 2019; Cunningham et al., 2022; Jeong et al., 2018). The globalisation of supply chains and the increasing reliance on just-in-time delivery models (Hesse & Rodrigue, 2004) have intensified pressures on drivers to meet tight deadlines, often at the expense of adequate rest and personal health. This substantial pressure imposed on truck drivers to meet strict delivery deadlines leads to frequent disrupted and inadequate sleep (Amoadu et al., 2023; Garbarino et al., 2018). This perpetual cycle of sleep deprivation significantly impairs cognitive function, reaction time, and decision-making abilities, thereby increasing the risk of crashes and collisions, which poses severe safety threats to drivers themselves, as well as other road users (Amoadu et al., 2023; Useche et al., 2022; Zhou et al., 2020). Further worsening these issues, drivers commonly adopt unhealthy coping mechanisms and reliance on energy drinks, increasing their vulnerability to chronic health conditions (Apostolopoulos et al., 2014; Bscheiden et al., 2019). Moreover, the predominantly sedentary nature of driving, combined with limited access to nutritious food options on the road, further heightens drivers' risks for obesity, musculoskeletal disorders (MSKs), and metabolic diseases (Hege et al., 2016; Varela-Mato et al., 2019; Virgara et al., 2024).

Additionally, long-haul drivers often endure extended periods away from their families and communities, leading to significant social isolation and emotional strain, which further worsens mental health risks such as stress (Pritchard et al., 2023; Williams et al., 2017).

In addition to these individual health challenges, occupational drivers must also navigate numerous environmental and operational stressors inherent in their daily responsibilities (Adam-Poupart et al., 2013; Amoadu et al., 2024; Chirico & Taino, 2018). The psychological and physical stress of the job is significantly amplified by adverse weather conditions (Mohamad, 2022), heavy traffic congestion (Bitkina et al., 2019), unpredictable behaviour from other road users (Mathern, 2019), and poor road infrastructures (Anwar et al., 2022; Mohamad, 2022), which further escalates the risk of crashes and injuries. Moreover, advancements in mobile and communication technologies, while beneficial in navigation and operational coordination, introduce new forms of distraction and cognitive load, challenging drivers' ability to remain attentive and safe on the road (Beer & Mulder, 2020). Additionally, drivers experience increased stress and operational uncertainty due to limited access to parking facilities and the constant need to adjust schedules to meet the variable demands of shippers (Smith & Solomon, 2023; Useche et al., 2018). Inadequate parking options also force drivers to rest in

poorly lit or high-risk areas, exposing them to additional personal safety threats during their rest periods (RUAN, 2017; Stephen, 2025).

These cumulative stressors not only compromise occupational drivers' health and safety (Apostolopoulos et al., 2013; Crizzle et al., 2017) but also impact the overall efficiency, sustainability, and flexibility of the transportation network (Hege et al., 2019; McKinnon, 2010). Increased absenteeism, reduced workforce productivity, and placing additional burdens on healthcare systems, ultimately affecting the functioning of transport operations and compromising the safety of other road users (Hege et al., 2019).

Compounding these existing occupational and environmental challenges is a pervasive culture of machismo within the trucking industry, which often discourages drivers from acknowledging health problems or seeking necessary help, particularly for mental health and stress-related issues (Apostolopoulos et al., 2010). This stigma prevents drivers from addressing their unhealthy lifestyle patterns, increasing their risk of significant health problems, including a higher prevalence of depression, anxiety, co-morbid health conditions, and ultimately, a reduced life expectancy (Mozafari et al., 2015; Sekkay et al., 2018; Varela-Mato et al., 2019).

Thus, there is a critical and urgent need for holistic, accessible, and culturally responsive interventions that address the immediate occupational hazards and the factors that encourage unhealthy lifestyles among truck drivers. Effective interventions should not only promote healthier behaviours, but also enhance overall job satisfaction, safety, and retention rates within the trucking sector, thereby improving it in alignment with broader transportation safety goals and economic necessities (Crizzle et al., 2017).

However, the availability of interventions alone is not sufficient to achieve sustained health improvements. Evidence from digital health research indicates that long-term user engagement is a critical factor in determining the practical effectiveness of these tools. Without consistent engagement, even well-designed digital interventions may fail to produce meaningful behavioural change (Valentine et al., 2025). Therefore, addressing the factors that influence the continued usage of truck drivers to these interventions is essential for achieving lasting positive health outcomes among them (Lipschitz et al., 2023; Valentine et al., 2025).

1.2 The MILESTONE Project

Given the urgent need for holistic and accessible interventions for occupational drivers, the MILESTONE project, or MobILe and tEchnological SoluTions for OccupatioNal drivERs, emerges as a multidisciplinary Flemish research initiative dedicated to addressing the complex health and safety challenges faced by professional truck drivers (MILESTONE, 2024). The project recognizes that occupational drivers represent an underserved, high-risk group, who face unique demands due to the varying, unpredictable, and high-pressure nature of their profession (MILESTONE, 2024).

The MILESTONE project is structured around three primary objectives. First, it investigates how personal physiological states (i.e., fatigue, stress, sleepiness, and thermal discomfort) and external stressors (i.e., environmental conditions and traffic situations) influence driving behaviour and safety outcomes. Second, it aims to develop an individualised intervention to keep drivers within their Stress Tolerance Zone (STTZ), which is a physiological and psychological safe range, by using wearable technologies and delivering personalised feedback through a mobile application based on user-centred design principles, including gamification techniques. Third, the project evaluates the real-world effectiveness of the intervention across different categories of drivers (long-haul, short-haul, and local

delivery) and explores how variations in feedback modalities impact user outcomes (MILESTONE, 2024).

The primary intervention involves a mobile-based application integrated with wearable devices capable of continuously monitoring truck drivers' physiological and mental states. This system delivers modified feedback aimed primarily at helping drivers remain within their STTZ by proactively managing stress levels. It does so by addressing key contributing factors such as sleep quality, physical activity, and thermal discomfort, which not only influence stress but also promote overall health and resilience in demanding work environments. The intervention is designed to operate on two levels: *real-time feedback*, which provides immediate alerts during driving when acute stress or fatigue is detected, helping drivers avoid risky states on the road; and *post-trip feedback*, which offers personalised insights and behavioural recommendations after work shifts, supporting long-term lifestyle adjustments through customised guidance (MILESTONE, 2024).

Aligned with the core vision of the MILESTONE project, this thesis seeks to contribute valuable insights toward enhancing the design and implementation of its mobile health interventions. Specifically, it focuses on identifying the behavioural, motivational, and contextual factors that influence drivers' compliance, retention, and long-term engagement with e-health and mobile applications. By conducting a systematic literature review following the PRISMA protocol (see [Chapter 3 – Methodology](#)), this study aims to uncover evidence-based strategies to strengthen user adoption and long-term engagement with digital health tools, thereby supporting MILESTONE's ultimate goal of creating a sustainable, healthier, and more resilient occupational driver workforce (MILESTONE, 2024).

1.3 The Role of Technology in Occupational Health Interventions

Mobile health (mHealth) technologies, which have become a rapidly growing focus of research in recent years, have revolutionised health promotion efforts by offering mobile-based innovations that support individuals in adopting healthier lifestyles (Ganesan et al., 2016; Y.-P. Lin et al., 2025; Zainal et al., 2025). It is a subset of electronic health (eHealth) and refers to the use of mobile devices to advance clinical care and public health initiatives (eHealth, 2011; Y.-P. Lin et al., 2025; Zainal et al., 2025). These mobile technologies include smartphones, tablets, computers, and other wireless devices. Among the most widely adopted mHealth tools are digital health applications and wearable technologies, which are increasingly used to manage health behaviours and support the delivery of high-quality healthcare services (Hicks et al., 2023; Hoque et al., 2020; Nahum-Shani et al., 2018). These mHealth platforms provide new opportunities for clinicians, community health workers, and researchers to improve healthcare accessibility, especially for populations traditionally facing barriers within conventional health systems (McCool et al., 2022; Zainal et al., 2025). Historically, digital health interventions have evolved from simple SMS-based health reminders to sophisticated smartphone applications, wearable technologies, and AI-driven personalised health systems available today (Dobson et al., 2024; Liu et al., 2025; Yeung et al., 2023).

Beyond clinical settings, mHealth technologies have expanded across diverse industries, including occupational health, wellness, insurance, and transportation (Istefanian & Woodward, 2016; Malvey & Slovensky, 2014; Rossi, 2021). In occupational environments, digital interventions support workers by promoting physical activity, improving mental resilience, and monitoring occupational stressors (Indra et al., 2024). Specifically, in the transportation sector, mHealth applications are increasingly leveraged to monitor driver fatigue, encourage healthier lifestyle choices, and enhance overall safety and well-being among truck drivers (Greenfield et al., 2016; Ng et al., 2015). Recent technological advancements, such as artificial intelligence (AI) integration, real-time data analytics, and

personalised feedback systems, have enhanced the capabilities of mHealth interventions and allowed for more adaptive health solutions (Chaturvedi et al., 2025; Junaaid et al., 2022). However, ensuring sustained engagement with mHealth tools remains a significant challenge despite these innovations (Tsirozidis et al., n.d.). Recent studies highlight the importance of embedding design elements that actively promote user engagement, such as persuasive system design features, to maximize behavioural outcomes and mitigate early disengagement (Valentine et al., 2025).

While mHealth interventions offer notable advantages, such as enhanced accessibility, cost-effectiveness, personalisation, and scalability (Kowalski et al., 2024), digital health interventions also face persistent barriers (Khan et al., 2025). Common disadvantages include data privacy and security concerns (Deniz-Garcia et al., 2023; Tian et al., 2025; Tsirozidis et al., n.d.), variability in clinical validation (Gomis-Pastor et al., 2024), ethical issues (Tian et al., 2025), and digital literacy barriers among users (Livieri et al., 2025; Madanian et al., 2023). Particularly among occupational drivers, sustaining long-term user engagement with mHealth technologies remains a significant challenge (Kowalski et al., 2024; Mohd Johari et al., 2025; Mustafa et al., 2022). Although many drivers may initially express interest in using health applications, sustaining regular interaction with these tools often proves difficult due to factors such as technology fatigue (Hilty et al., 2022), lack of personalisation (Ammenwerth et al., 2023; Biemans, 2023), or mismatch between app features and real-world working conditions (Mumtaz et al., 2023).

Therefore, understanding the barriers and motivators that influence drivers' continued engagement with mHealth technologies is essential for designing effective, sustainable interventions, which is a core focus of this research. Moreover, researchers increasingly recommend that mHealth tools articulate their theoretical and design foundations clearly, as doing so strengthens user engagement and aligns intervention strategies with evidence-based behavioural frameworks (Valentine et al., 2025).

1.4 Rationale

The rationale for this thesis stems from the urgent need to address the persistent health challenges faced by truck drivers and the growing potential of digital health interventions, particularly e-health and mobile applications, to deliver effective and scalable interventions, with the ultimate goal of sustaining user engagement.

This section outlines the justification for the study by first establishing the critical role of truck drivers within the transportation sector and highlighting the occupational and health-related risks that impact their safety, productivity, and well-being. It then examines the emerging opportunities offered by e-health and mobile applications, alongside the practical and technological barriers that hinder their adoption in this unique workforce. Following this, the discussion addresses the limitations of existing interventions and identifies key research gaps, particularly regarding compliance, retention, and sustained engagement. Finally, the section concludes with the contribution of this thesis to the MILESTONE project, situating the research within a broader initiative aimed at improving occupational health through innovative mobile solutions.

1.4.1 Vital Role of Truck Drivers in the Transportation Sector

Truck drivers serve as the backbone of the transportation sector, playing a vital role in ensuring the secure and efficient movement of goods across domestic and international supply chains (Anthony, 2025; ATOS-MA, 2024). The indispensable role of truck drivers extends beyond logistics and supply chain management, as they act as key agents in facilitating trade and commerce, contributing to economic growth and development in both local and global contexts (FasterCapital, 2024; World Bank & IRU, 2016).

In this context, maintaining a healthy, engaged, and supported driver workforce is not just a labour issue, but also a strategic obligation for transportation sustainability and economic competitiveness. However, the industry faces an increasingly urgent challenge: a growing shortage of qualified drivers across Europe and globally (IRU, 2023; Keating, 2024). This shortage has economic implications, contributing to supply chain disruptions, increased freight costs, and delays in goods delivery (Meller, 2024). Addressing this workforce gap requires not only recruitment but also targeted support to retain existing drivers and ensure their long-term well-being and productivity.

In addition to their role in long-haul logistics, truck drivers are central to urban freight systems and last-mile delivery operations (ITF, 2024). These last-mile logistics processes, which involve moving goods from distribution centers to their final destinations, are crucial for supporting e-commerce, retail markets, and essential services, especially in densely populated areas where demand for quick deliveries is rising (ITF, 2024; Liu & and Hassini, 2024). As urban populations grow and online shopping continues to expand, freight drivers are increasingly responsible for meeting complex delivery schedules under tight deadlines, navigating congested city streets, and adapting to the demands of time-sensitive distribution (Fernhay Solutions Ltd., 2025). This pressure on truck drivers to perform reliably and responsibly is further intensified by the fact that last-mile logistics is often the most costly and inefficient segment of the supply chain, despite being vital (Pourmohammadreza et al., 2025).

Despite technological advancements in automation and digital logistics, the complexity of certain routes, customer interactions, and variable delivery conditions still require the expertise, adaptability, and decision-making skills of human drivers. As such, they remain an irreplaceable workforce in the transportation community, especially in scenarios where human judgment, customer service, and safety oversight are crucial (Levy, 2022; Sgarbossa et al., 2020).

1.4.2 Health-Related Challenges and Their Impact on the Safety and Productivity of Truck Drivers

Truck drivers face significant health-related challenges due to the demanding and often unpredictable nature of their work. These challenges include extended hours on the road, irregular sleep patterns, limited access to nutritious food, and chronic exposure to stress, which contribute to widespread issues such as physical inactivity, poor dietary habits, and mental strain (Smith & Solomon, 2023; Useche et al., 2018). These conditions contribute to a range of lifestyle-related issues such as physical inactivity, poor dietary habits, and ongoing mental strain. The challenges are further aggravated by time pressures, traffic unpredictability, tight delivery schedules, and social isolation, all of which elevate the risk of physical and mental health deterioration (Amoadu et al., 2023; Garbarino et al., 2018).

These combined factors result in a disproportionately high prevalence of obesity, hypertension, musculoskeletal disorders, and mental health issues such as depression and anxiety among truck drivers (Mozafari et al., 2015; Sekkay et al., 2018; Varela-Mato et al., 2019). Many drivers are aware of the long-term consequences of their lifestyle and express a desire to make positive changes. However, these habits are often perceived as an unavoidable part of the profession, making long-term behaviour change particularly difficult (Greenfield et al., 2016).

Cultural stigma also plays a role in preventing drivers from seeking help. In male-dominated work environments, particularly within the trucking industry, a culture of machismo often discourages individuals from acknowledging mental or physical health struggles, leading to underreporting and untreated conditions (Apostolopoulos et al., 2010).

The implications of these health issues extend far beyond individual well-being. Fatigue and sleep-related impairment are major contributors to road crashes, particularly during nighttime operations (Boynukalin, 2021). Chronic stress, impaired cognitive function, and physical discomfort increase the

likelihood of operational errors, thereby putting both drivers and other road users at risk (Amoadu et al., 2023; Useche et al., 2022; Zhou et al., 2020). From an organizational perspective, the impact of poor driver health includes increased absenteeism, reduced work efficiency, and elevated healthcare and insurance costs. Furthermore, high turnover rates and diminished job satisfaction associated with chronic health stressors contribute to ongoing driver shortages, adding strain to an already stretched workforce (Boeijinga et al., 2017; Hege et al., 2019).

1.4.3 Advantages and Opportunities of Using E-Health and Mobile Applications

The mobile and unpredictable nature of long-haul trucking, which is characterized by irregular schedules, limited healthcare access, social isolation, and extended periods away from home, makes digital health technologies an appealing option for supporting the well-being of occupational drivers (Heaton et al., 2017). In such settings, mHealth interventions offer flexible, remote solutions that can be integrated into drivers' routines without requiring constant physical presence or regular appointments (Bidargaddi et al., 2020; Kumar et al., 2023).

E-health and mobile applications provide a range of functions including real-time health monitoring, behavioural support, self-assessment tools, and personalized feedback (Chaturvedi et al., 2025; Junaid et al., 2022). These platforms are particularly well-suited to the transport sector because they are accessible, scalable, and adaptable to users' changing environments (Kowalski et al., 2024). In logistics and freight industries, mHealth innovations such as fatigue-monitoring apps, digital diet trackers, and mindfulness tools have demonstrated the potential to improve drivers' health behaviours while reducing stress and promoting early detection of warning signs (Greenfield et al., 2016; Indra et al., 2024; Ng et al., 2015).

In addition, the use of smart mobile applications presents significant benefits, particularly for automobile travel, by potentially reducing travel time, operational costs, and vehicle emissions, thereby contributing to safer travel and promoting healthier and more sustainable urban environments (Elassy et al., 2024; Siuhi & Mwakalonge, 2016).

These technologies offer promising benefits, but their effectiveness in real-world settings hinges on addressing key implementation and adoption challenges, which are further discussed in the following section.

1.4.4 Barriers to Adoption and Challenges in Using E-health and Mobile Applications

Despite the benefits, the effectiveness of mobile health applications depends heavily on sustained usage, personalization, and contextual relevance. The challenge lies in designing applications that drivers will consistently use and benefit from (Giebel et al., 2021; Mumtaz et al., 2023). Drivers may struggle to maintain regular engagement with these tools if the applications are poorly designed, not user-friendly, or fail to reflect the realities of their daily routines (Ammenwerth et al., 2023; Biemans, 2023; Mumtaz et al., 2023). Furthermore, older drivers or those with limited digital literacy may be hesitant or resistant to adopting such technologies (Livieri et al., 2025; Madanian et al., 2023). Fleet operators in some regions, like third-world countries, may also lack the infrastructure or incentive to support these tools at scale (Aboye et al., 2024).

In addition to technical and behavioural barriers, there are significant safety risks associated with the use of mobile applications during driving, including manual, visual, and cognitive distractions that can interfere with attention to the road and increase the likelihood of unsafe behaviours, placing users and others at heightened risk (Cuentas-Hernandez et al., 2024). The risk of digital distraction is particularly concerning in high-risk environments such as highways and congested urban areas (Misokefalou et al., 2016; Morgenstern et al., 2020).

To mitigate these difficulties, targeted road safety education and public awareness programs are essential, emphasising the dangers associated with applications that encourage inattentive driving or walking. Informing the public through mobile applications about the importance of focused behaviour in transit can have substantial benefits for overall road safety (Schroten et al., 2020). Moreover, concerns about data privacy, clinical validation, and ethical design persist, particularly when applications collect sensitive health or location data. Further research is needed to assess the accuracy of various applications and to develop guidelines to help users choose applications that best align with safety-focused transportation practices (Siuhi & Mwakalonge, 2016).

1.4.5 Limitations of Existing E-Health and Mobile Health Applications for Truck Drivers

The current e-health and mobile health interventions often fall short of addressing the unique needs of this high-risk group, despite growing interest in leveraging mobile technologies to improve the health of occupational drivers. Numerous health promotion efforts, including cognitive-behavioural therapy, mindfulness programs, and workplace-based health campaigns have been introduced, but many fail to produce long-term behavioural change or demonstrate sustained effectiveness in real-world driving environments (Sendall et al., 2016; Varela-Mato et al., 2019).

A critical issue lies in the limited methodological quality of existing research. Several studies examining health interventions for truck drivers suffer from weak research designs, including small sample sizes, lack of control groups, or inadequate follow-up periods, which make it difficult to draw strong conclusions about their long-term impact (Clemes et al., 2019; Ng et al., 2015). This limits the generalizability of findings and contributes to the slow adoption of validated strategies across the transportation industry.

Another key limitation is the underutilization of mobile technology and personalized feedback mechanisms in existing interventions. Many programs remain anchored in traditional delivery formats, which are often incompatible with the mobile, time-restricted, and autonomous nature of truck drivers' work routines. As a result, these programs struggle to maintain driver engagement and fail to integrate seamlessly into daily life on the road (Sendall et al., 2016).

Moreover, existing mHealth applications for drivers tend to focus narrowly on individual-level behaviour change, such as encouraging exercise or healthier eating, without addressing the broader organizational and environmental stressors that contribute to poor health. These include long shifts, inconsistent schedules, and a lack of access to healthy food or rest facilities. For instance, Hege et al. (2019) explored how job stress, poor sleep, and limited organizational support affect work-life conflict, revealing the systemic nature of these health barriers. Similarly, Ng et al. (2015), in their review of truck driver health promotion interventions, found that most programs emphasized individual behaviour modification while neglecting workplace-level changes, which are essential for long-term impact in this profession.

Furthermore, existing interventions may address physical health but often neglect mental health aspects such as stress and fatigue, which are critical for overall well-being (Useche et al., 2018).

Lastly, although there are mobile applications aimed at fatigue monitoring, physical activity, or wellness tracking, few are designed with direct input from drivers or evaluated for usability in transport environments. This disconnects results in poor adoption and low retention, as many drivers disengage once they perceive the tools as irrelevant or difficult to incorporate into their dynamic routines.

1.4.6 Addressing the Research Gap: Compliance, Retention, and Engagement with E-Health and Mobile Applications

As discussed in previous sections, e-health and mobile applications have advantages which offer valuable tools to support the health of occupational drivers (see Section [1.4.3](#)), yet challenges in long-term user engagement persist (see Sections [1.4.4](#) and [1.4.5](#)). Despite their potential, there remains a critical need to understand the underlying determinants that influence occupational drivers' compliance, retention, and sustained engagement with these interventions (Buckingham et al., 2019).

Research indicates that initial adoption is often followed by disengagement, driven by barriers such as technology fatigue, poor digital literacy, lack of motivational design, and a mismatch between app features and drivers' mobile work routines (Kowalski et al., 2024). These challenges can weaken the effectiveness of otherwise promising interventions.

Recent meta-analytic evidence on mobile health interventions underscores the complexity of promoting user engagement. A systematic review of 92 randomized controlled trials found that while mental health apps frequently demonstrated clinical effectiveness, their real-world engagement rates were inconsistent and often underreported (Valentine et al., 2025). The study revealed that over 25 unique engagement indicators were used across studies, and nearly one-quarter failed to report any engagement data at all, highlighting a lack of standardized metrics in assessing user retention. Moreover, there was no consistent link between persuasive features and sustained app use, suggesting that surface-level design strategies are insufficient (Valentine et al., 2025). These findings emphasize the need for deeper investigation into the behavioural and contextual drivers of engagement especially in high-risk and underrepresented populations such as truck drivers.

This study aims to fill that gap by identifying the underlying determinants that shape the long-term use of eHealth tools among truck drivers. Focusing on sustained engagement or continuance intention offers insight into how digital interventions can be better designed and implemented to meet the real-world needs of drivers, ultimately contributing to more impactful and lasting health outcomes (Lipschitz et al., 2023).

1.4.7 Research Contribution to the MILESTONE Project

This study aligns with and supports the MILESTONE project that aims to improve truck drivers' health and safety through mobile and technological interventions (as discussed in [Chapter 1.2](#)). Rather than focusing on tool development, this study contributes by synthesising existing evidence on what drives or hinders sustained engagement with e-health interventions in occupational contexts. These findings can inform the design refinement and implementation strategies of the MILESTONE intervention, helping to ensure that it resonates with users, integrates into daily routines, and delivers its intended health and safety outcomes over time.

1.5 Research Objectives

1.5.1 General Objective of the Study

To address the stated challenges, this study aims to increase truck drivers' compliance, retention, and long-term engagement with e-health and mobile applications in the transportation sector by identifying the determinants influencing the users' behaviour. This requires integrating insights from relevant disciplines, including user experience design, psychology, behavioural interventions, environmental and organisational factors, and technology acceptance research.

Through a systematic literature review guided by the PRISMA protocol, the study will analyse existing interventions and influencing factors that impact truck drivers' continued use of e-health tools. The insights from this study will contribute to the development of more effective and sustainable digital health interventions like the MILESTONE project, ultimately improving truck drivers' well-being, productivity, and road safety outcomes.

1.5.2 *Specific Objectives of the Study*

To meet the general objective of the study, the following specific research objectives will be addressed:

1. The study aims to determine the factors significantly influencing users' compliance, retention, and long-term engagement with e-health and mobile applications in the transportation sector.
2. The study aims to assess the impact of user demographics, preferences and needs on mobile application adoption and usage patterns.
3. The study aims to identify the key barriers and challenges hindering user acceptance of e-health and mobile applications in the transportation sector, including examining variations across different user groups and contexts.
4. The study aims to investigate how technological advancements, including user interface design, personalisation, gamification, and data security, can be utilised to optimise user experience and promote sustained usage of e-health and mobile applications in the transportation sector.

1.6 Research Questions

The study seeks to enhance professional drivers' compliance, retention, and long-term engagement with e-health and mobile applications in the transportation sector. This will be achieved by addressing the research questions outlined below.

1. What factors highly influence users' compliance, retention, and engagement with e-health and mobile applications in the transportation sector?
2. How do user demographics, preferences, and needs affect mobile application adoption and usage patterns?
3. What are the key barriers and challenges that prevent users from accepting e-health and mobile applications in the transportation sector?
 - 3.1. How do these barriers and challenges vary across different user groups and contexts?
4. How can advancements in technology, such as user interface design, personalisation, gamification, and data security, be leveraged to enhance user experience and encourage long-term usage of e-health and mobile applications in the transportation sector?

1.7 Thesis Outline

This thesis is structured to follow the logic of a systematic literature review based on the PRISMA 2020 protocol, ensuring transparency, methodological accuracy, and replicability in identifying and analysing the literature. To enhance conceptual depth and support the interpretation of findings, an additional section (Chapter 2) is provided to introduce key theoretical frameworks relevant to digital health adoption and behaviour change.

- *Chapter 1 – Introduction* presents the research background, the rationale for the study, and the relevance of the MILESTONE project. It also outlines the research objectives, questions, and significance of addressing digital engagement among truck drivers.

- *Chapter 2 – Theoretical Background* reviews six theoretical frameworks relevant to digital health adoption and behaviour change. These models are grouped into technology acceptance, behaviour change, and persuasive design domains and provide the conceptual basis for the systematic review, support the interpretation of results, and guide practical recommendations for the MILESTONE project.
- *Chapter 3 – Methodology* details the systematic literature review design, including the search strategy, inclusion/exclusion criteria, PRISMA 2020 screening stages, and data extraction protocols used to identify, assess, and synthesise relevant studies.
- *Chapter 4 – Results* presents the findings from the literature review, including the PRISMA flow diagram, characteristics of the included studies, and articles exclusion summary. It also maps key findings from included studies to the research questions and theoretical frameworks introduced earlier. Moreover, it presents a synthesis of determinants influencing user compliance, retention, and engagement with e-health and mobile health technologies and further integration with the theories presented in Chapter 2.
- *Chapter 5 – Discussion* interprets the findings in relation to the research questions and theoretical frameworks, evaluates the strength of the evidence, and discusses limitations and potential biases.
- *Chapter 6 – Recommendations* outlines practical strategies for enhancing digital health design, including targeted suggestions for the MILESTONE intervention. It also offers broader implications for researchers, policymakers, and stakeholders in the transportation sector, and suggests directions for future research.
- *Chapter 7 – Conclusion* summarises the key contributions of the study, focusing on the determinants of long-term e-health engagement among truck drivers.

2 THEORETICAL FRAMEWORKS

2.1 Introduction

Understanding digital health adoption requires a strong theoretical foundation. Theories and models from technology acceptance, behaviour change, and persuasive system design provide structured explanations for how and why individuals adopt and engage with digital technologies, particularly in the context of e-health applications. These frameworks highlight key theoretical constructs or factors, which are essential for understanding user behaviour and designing effective interventions.

In the case of truck drivers, where unique barriers such as irregular schedules, social isolation, and work-related fatigue affect health behaviours, applying these frameworks helps to explain compliance, retention, and long-term engagement with digital tools. Rather than merely describing adoption trends, this chapter integrates relevant theories to provide a conceptual foundation for analysing the drivers' sustained use of mobile health applications.

This section presents six widely recognised frameworks across three key domains: (1) *technology acceptance models* (UTAUT, MAVA), (2) *behaviour change models* (SDT, COM-B, HBM), and (3) *persuasive system design* (PSD). These theoretical frameworks are selected based on their documented relevance and frequent application in digital health research and behavioural studies. TAM and UTAUT have been widely employed in health technology acceptance studies, with systematic reviews confirming their robust predictive value across e-health interventions, particularly in identifying factors influencing user intention and behaviour (Rouleau et al., 2024). SDT has been extensively applied to assess the effect of intrinsic and extrinsic motivation on personal behaviour (Wang et al., 2024). COM-B is one of the widely recognised and most frequently used behaviour change models (West & Michie, 2020). Similarly, HBM has acquired popularity and acceptance in the community, as evidenced by systematic evaluations analysing the usefulness of this framework applied to interventions (Anuar et al., 2020; Jones et al., 2014). The PSD model has also been validated through meta-analytic evidence showing its impact on engagement and efficacy in digital health interventions, particularly in mobile mental health apps (Valentine et al., 2025). Although MAVA is relatively recent and not yet widely reviewed, it provides a novel multi-level framework that accounts for micro- and meso-level contextual factors relevant to mobile health and driver-focused technologies (Nordhoff et al., 2019).

While this list does not include every possible framework available in the field, it still provides a strong conceptual foundation for analysing digital health adoption and engagement. These frameworks are discussed in detail in the following sections of this chapter, with a summary provided in [Section 2.5](#).

These frameworks will also be revisited in the Results (see [Section 4.4](#)) and Discussion chapters (see [Section 5.2](#)) to help interpret the findings of the systematic review and to generate practical recommendations for enhancing the MILESTONE project's intervention strategies.

2.2 Technology Acceptance Models

Technology Acceptance Models (TAM) provide a foundational framework for understanding how users come to accept and use new technologies. The original TAM, introduced by Davis (1993), identifies two key determinants of technology adoption: perceived usefulness (PU) and perceived ease of use (PEOU). PU is the belief that using technology will improve job performance, while PEOU is the belief that the system will be free of effort (F. D. Davis, 1993).

These two constructs influence users' attitudes toward using the technology, which in turn shape their behavioural intention to use it. Eventually, this intention is a key predictor of actual system usage. PEOU can also influence PU directly, suggesting that a system perceived as easier to use is also more

likely to be seen as useful. This pathway highlights the importance of intuitive and user-friendly interfaces, especially in occupational contexts where users may lack technical expertise. To provide more clarity, the TAM framework is illustrated in Figure 1.

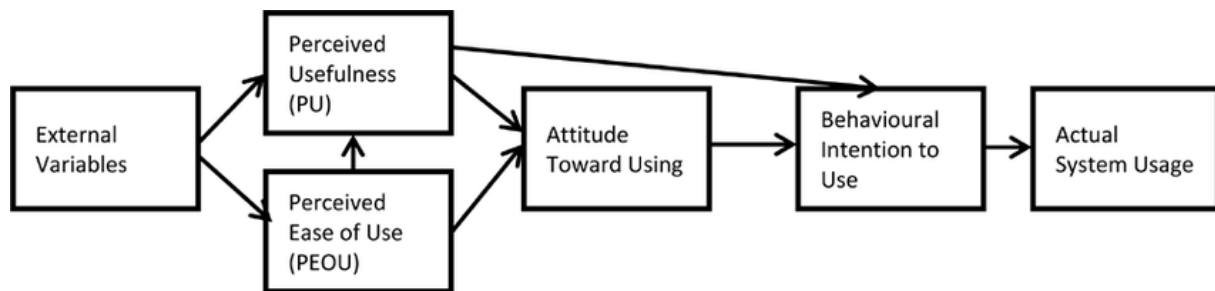


FIGURE 1 Technology Acceptance Model (TAM) framework (Gupta et al., 2016)

These concepts have influenced the development of extended and more refined models such as UTAUT and MAVA, which are discussed in the following sections. In the context of this study, TAM-based models are relevant because they help explain whether truck drivers are likely to adopt and consistently use e-health and mobile applications. If drivers perceive these tools as beneficial for their health and productivity, and easy to integrate into their daily routines, their likelihood of long-term engagement increases, which is an essential factor for the success of the MILESTONE project's intervention.

2.2.1 Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003), builds upon TAM and integrates elements from eight prominent technology acceptance models. These models are Theory of Reasoned Action (TRA), TAM, Motivational Model (MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). It aims to provide a comprehensive framework for understanding user intentions and actual usage behaviour across various technologies (Venkatesh et al., 2003). See Figure 2 below.

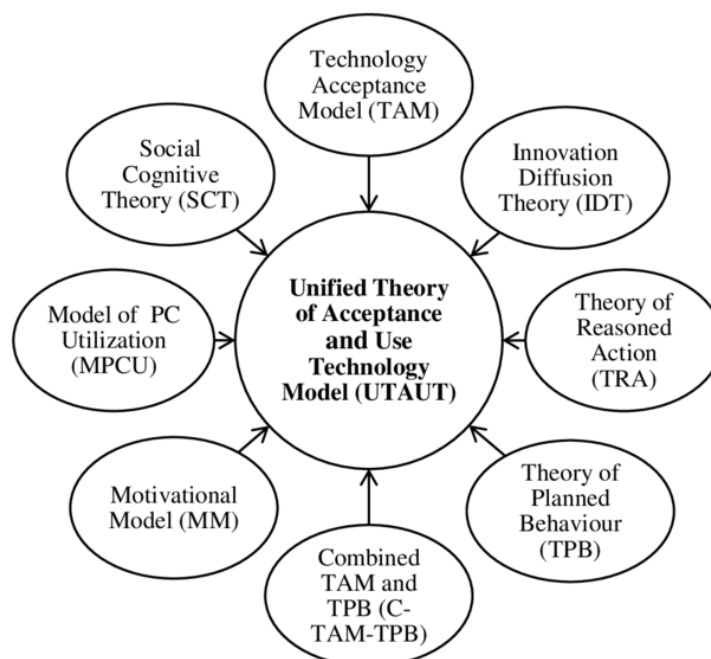


FIGURE 2 Integration of eight TAM-based theories to UTAUT (Al-Okaily et al., 2019)

UTAUT identifies four core determinants of technology acceptance: *performance expectancy* (a belief that using the technology will lead to gains in performance), *effort expectancy* (perceived ease of use), *social influence* (perceived social pressure to use the technology), and *facilitating conditions* (availability of organizational and technical infrastructure to support use) (Venkatesh et al., 2003).

In 2012, UTAUT2 was introduced to address consumer technology adoption by adding three new constructs: *hedonic motivation* (the enjoyment derived from using technology), *price value* (the perceived benefit relative to cost), and *habit* (the extent to which behaviour becomes automatic) (Venkatesh et al., 2012). Individual characteristics such as age, gender, and user experience were recognized as influential factors that can shape how these constructs affect a person's intention to use technology and their actual usage behaviour. These moderating variables help explain the variability in technology adoption across different user groups (Venkatesh et al., 2012). This revision, as shown in Figure 3, made the model more applicable to individual users, as it emphasized a more user-centred approach.

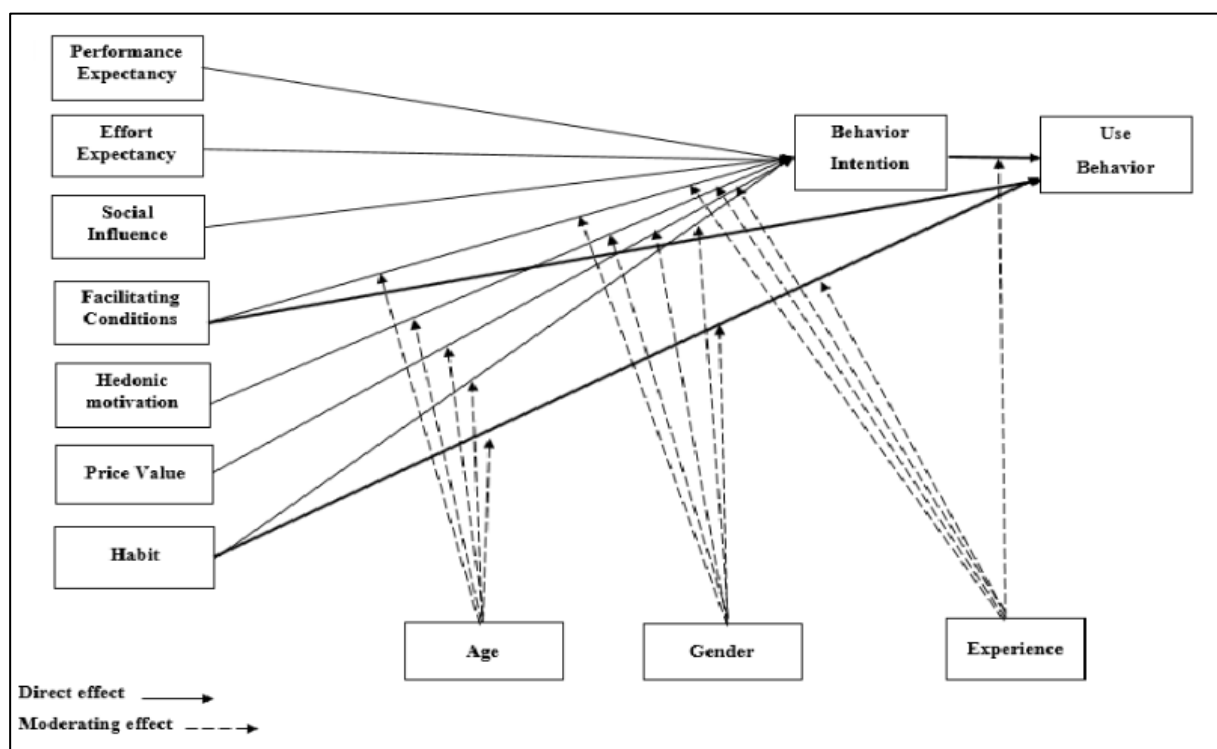


FIGURE 3 Unified Theory of Acceptance and Use of Technology (UTAUT2) model (Venkatesh et al., 2012)

Further refinements in 2016 (Venkatesh et al.) introduced the Unified Theory of Acceptance and Use of Technology: A Comprehensive Synthesis and Integration (UTAUT-C), which aimed to provide even broader applicability by integrating more behavioural theories and expanding the model's contextual adaptability. The UTAUT-C framework builds upon UTAUT2 by introducing a layered perspective on technology acceptance, distinguishing between individual-level contextual factors (e.g., individual traits, task characteristics, events, and technological features) and higher-level contextual factors (e.g., organizational environment, geographical location, and broader external conditions) (Venkatesh et al., 2016).

UTAUT, particularly its extended form, UTAUT2, offers a valuable framework for understanding the factors that influence occupational drivers' acceptance and use of mobile health applications. UTAUT2 expands on the original model by incorporating variables such as hedonic

motivation, price value, and habit, which are critical in predicting sustained user engagement with voluntary health technologies. Although the recent UTAUT-C iteration further refined the model for consumer contexts, UTAUT2 remains the most widely applied in digital health research and serves as a practical foundation for this study's objectives.

2.2.2 Multi-Level Model on Automated Vehicle Acceptance

The Multi-Level Model on Automated Vehicle Acceptance (MAVA) was developed to capture the complex factors influencing users' acceptance of automated driving technologies, but its structure is also relevant to other emerging systems, such as mHealth tools used by occupational drivers. MAVA builds conceptually on UTAUT-C (see [Section 2.2.1](#)) and Car Technology Acceptance Model (CTAM), integrating a layered framework of individual (*micro-level*) and contextual (*meso-level*) factors (Nordhoff et al., 2019).

MAVA is grounded in a four-stage decision-making process: (1) exposure to the technology, (2) evaluation of its features, (3) intention to use, and (4) actual use (Nordhoff et al., 2019). This decision-making process is illustrated in Figure 4. This staged process acknowledges that acceptance is not a single event but rather a dynamic journey influenced by both personal evaluations and external conditions (Nordhoff et al., 2019).

It organizes 28 acceptance factors into seven thematic categories, distributed across two key levels:

1. **Micro-level** (18 factors): Socio-demographic characteristics (7 factors), personality traits (4 factors), and travel behaviour (7 factors).
2. **Meso-level** (10 factors): Exposure (1 factor), Domain-specific factors (5 factors), symbolic-affective factors (2 factors), and moral-normative factors (2 factors).

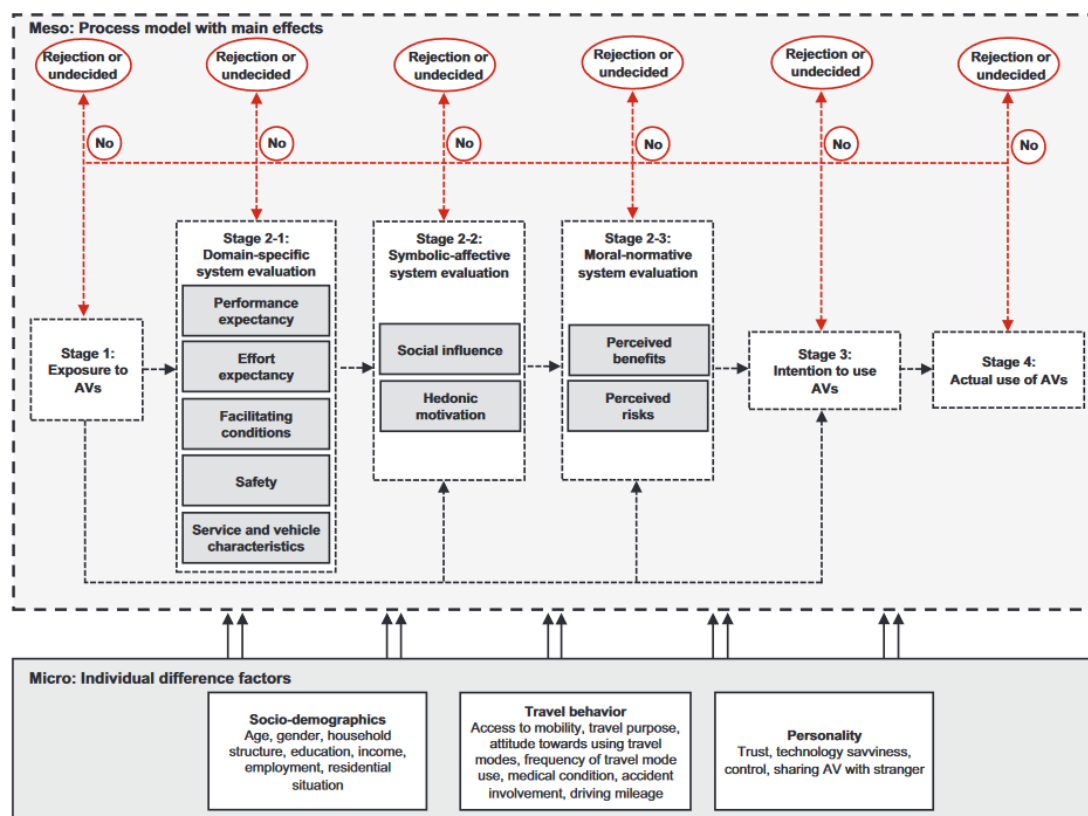


FIGURE 4 Multi-level model to explain and predict automatic vehicle acceptance (MAVA) (Nordhoff et al., 2019)

This layered structure allows MAVA to account for not only whether a person is likely to accept technology, but also why a person is going to since it considers a range of social, emotional, and environmental influences alongside traditional cognitive ones (Nordhoff et al., 2019).

In the context of occupational drivers, MAVA is useful for evaluating how individual traits (e.g., trust, digital literacy) and external conditions (e.g., organizational support, job constraints) influence sustained engagement with e-health technologies. For example, a driver's *micro-level* traits, such as digital literacy or prior technology use, may shape how they evaluate an app's ease of use or trustworthiness. Simultaneously, *meso-level* factors, such as organizational policies, peer attitudes, or fleet management strategies, may either encourage or hinder their continued use. MAVA is particularly important for technologies like fatigue-monitoring systems and wearable health trackers that require both trust and routine integration.

2.3 Behaviour Change Models

To design e-health interventions that are not only adopted but sustained over time, it is essential to understand the psychological and environmental mechanisms that drive human behaviour. Behaviour change models offer structured approaches for analysing how personal motivation, contextual factors, and perceived health risks influence long-term behavioural engagement. These models are particularly relevant in the context of truck drivers, whose health behaviours are shaped by high job demands, unpredictable schedules, and limited support systems. Not only this, but these models include determinants that probably will shape the compliance, retention, and engagement with e-health apps.

This section introduces three prominent frameworks that are frequently applied in digital health research: Self-Determination Theory, which focuses on intrinsic motivation and autonomy; the COM-B Model, which links behaviour to capability, opportunity, and motivation; and the Health Belief Model, which explains how perceived risks and benefits influence preventive health actions.

2.3.1 Self-Determination Theory

Self-Determination Theory (SDT) is a psychological framework that explores how individuals initiate, sustain, and internalize behaviours based on varying degrees of motivation. Developed by Deci and Ryan, SDT differentiates between *intrinsic motivation* and *extrinsic motivation*. Intrinsic motivation means engaging in an activity for its inherent satisfaction, while extrinsic motivation means being driven by external incentives such as rewards or pressures (Deci, 1971; Deci & Ryan, 1985). Central to the theory are three fundamental psychological needs: *autonomy* (feeling in control of one's behaviour), *competence* (feeling effective and capable), and *relatedness* (feeling connected to others) (Deci & Ryan, 2014; Legault, 2017; Ryan & Deci, 2017). See Figure 5 below.

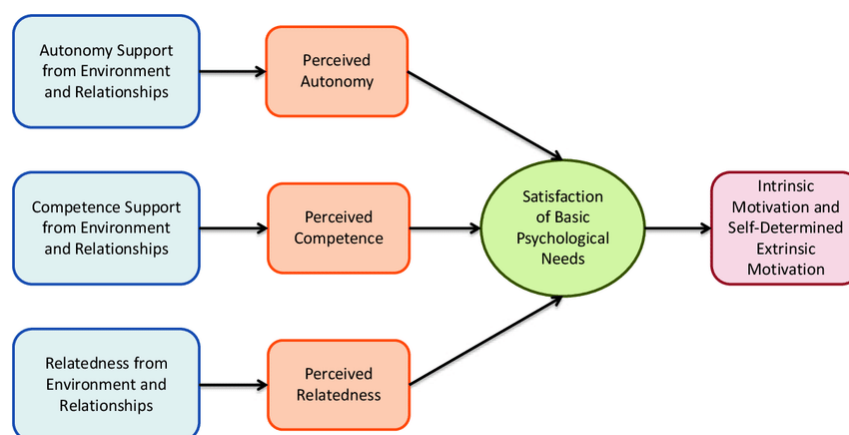


FIGURE 5 Self-Determination Theory (SDT) model (Legault, 2017; Ryan & Deci, 2017)

In the context of this study, SDT can provide insights on how to assess whether occupational drivers engage with health technologies due to personal health goals or external factors such as employer mandates or reward systems. For sustained engagement, interventions should aim to enhance drivers' sense of autonomy, promote feelings of competence in using the technology, and foster a sense of social connection, especially given the isolation commonly experienced in their work.

In line with this, applying SDT in the design of digital health tools can inform strategies that promote *internalized (autonomous) motivation*, which has been associated with more enduring behavioural change compared to purely extrinsic incentives (Deci & Ryan, 1985). However, extrinsic motivation (e.g., reminders, social incentives, or performance-based feedback) can also play a crucial role, particularly in the early stages of behaviour change. For occupational drivers, whose engagement with mobile health apps may initially be driven by external prompts, such as employer encouragement or system alerts, a well-designed intervention can gradually support the shift toward more intrinsic forms of motivation by enhancing users' sense of autonomy, competence, and relatedness.

2.3.2 COM-B Model of Behaviour Change

The COM-B Model provides a comprehensive framework for understanding behaviour as the result of an interaction between three essential components: **Capability**, **Opportunity**, and **Motivation** (COM-B) (West & Michie, 2020). Specifically, it suggests that behaviour change will only occur when individuals:

- Have the **capability** to perform the behaviour, which includes both physical capability (e.g., physical strength, coordination) and psychological capability (e.g., knowledge, mental skills, understanding),
- Are presented with the **opportunity** to perform the behaviour, which is influenced by physical opportunity (e.g., access to mobile devices and internet, availability of safe rest stops) and social opportunities (e.g., supervisor encouragement, co-worker support),
- Are sufficiently **motivated**, either through automatic motivation (e.g., habits, impulses) or reflective motivation (e.g., conscious goals and intentions).

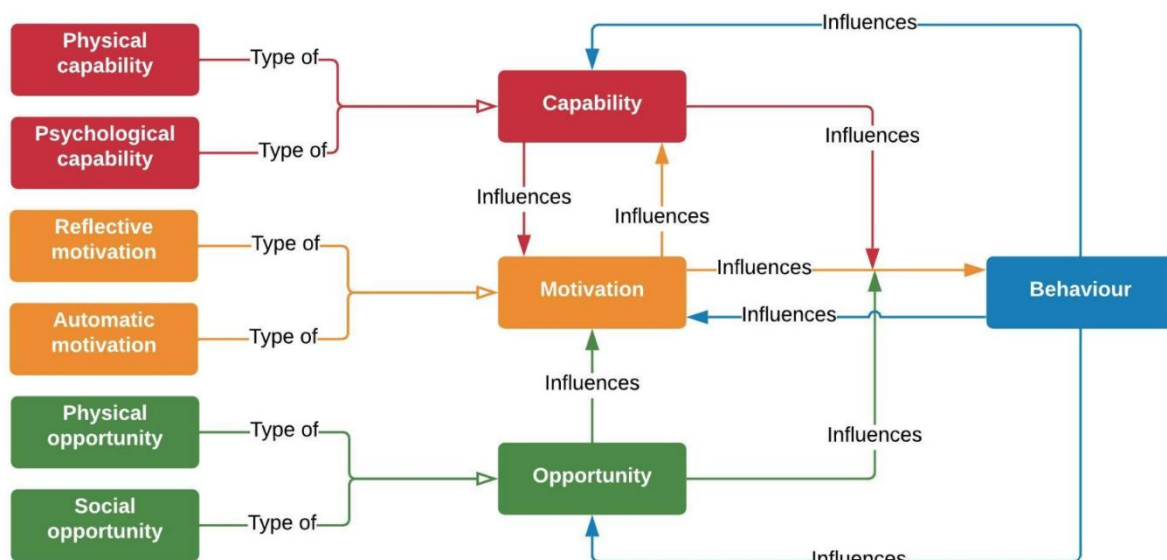


FIGURE 6 The COM-B model of behaviour (West & Michie, 2020)

In Figure 6, behaviour arises from the dynamic interaction between capability, opportunity, and motivation, all of which exert mutual influence. Capability and opportunity not only directly affect behaviour but also shape an individual's motivation. For instance, having the necessary skills or a

supportive environment can enhance one's willingness to act. Motivation, in turn, influences whether a person develops or utilises their capability and whether they seek or respond to opportunities. These interactions are bi-directional, which means engaging in a behaviour can reinforce or modify one's motivation, capability, or environmental context.

This model is particularly relevant in the context of truck drivers, who may face capability constraints such as low health literacy or digital inexperience, opportunity barriers like poor internet connectivity or limited time due to long shifts, and motivation challenges, including lack of perceived benefit or app fatigue.

In e-health interventions, the COM-B framework helps identify the root causes of non-adoption or disengagement and supports the development of targeted design strategies. For instance, if drivers struggle with application complexity, improving usability (capability), adding offline functionality (opportunity), or including gamification and rewards (motivation) can directly address these behavioural barriers.

2.3.3 Health Belief Model

The Health Belief Model (HBM) was developed in the 1950s by United States Public Health Service (USPHS) social psychologists: G. M. Hochbaum, I. M. Rosenstock, S. S. Kegels, and H. Leventhal. It remains one of the most widely used frameworks in health behaviour research. It was originally designed to explain why individuals fail to participate in disease prevention or screening programs, and has since been applied extensively to understand engagement in a variety of health-related behaviours, including technology-based interventions (Alyafei & Easton-Carr, 2024; Anuar et al., 2020; Nelson et al., 2021).

As shown in Figure 7, HBM is built around six key cognitive constructs: *perceived susceptibility* (belief in the likelihood of acquiring a condition), *perceived severity* (belief in the seriousness of the consequences), *perceived benefits* (belief in the effectiveness of taking action), *perceived barriers* (beliefs about the obstacles to taking action), *cues to action* (triggers or reminders to act), and *self-efficacy* (confidence in one's ability to perform the behaviour) (Alyafei & Easton-Carr, 2024; Nelson et al., 2021).

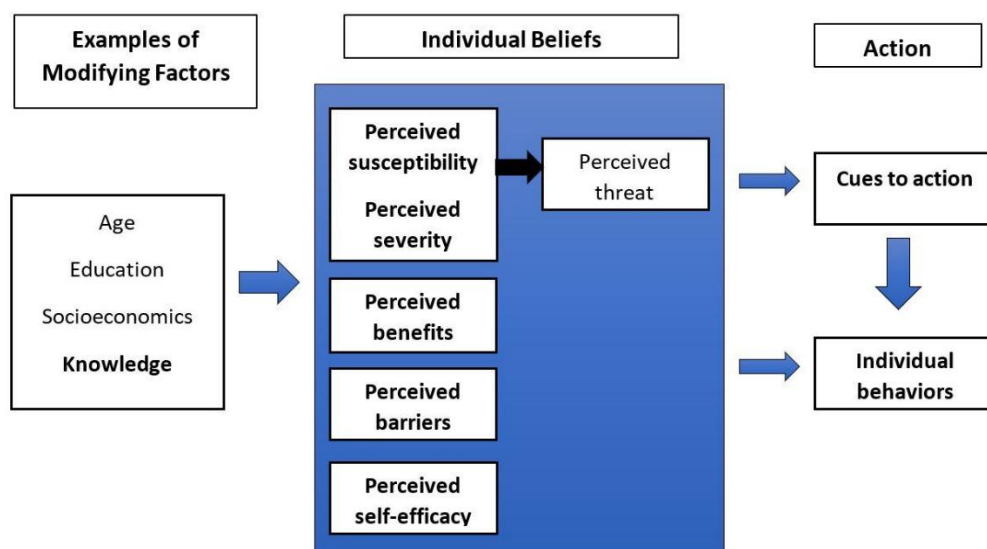


FIGURE 7 Health Belief Model (HBM) (Nelson et al., 2021)

The HBM diagram illustrates how individual health behaviours are influenced by a combination of background factors, belief constructs, and external cues. At the foundation are modifying factors such as age, education, socioeconomic status, and health knowledge. These variables do not directly cause

behaviour but influence how a person forms their health beliefs. Central to the model are the five individual belief constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and perceived self-efficacy. The first two constructs together determine the level of perceived threat. When this perceived threat is high, and individuals also believe that taking action will yield meaningful benefits that outweigh the barriers (and they feel capable of performing the action), they are more likely to be motivated. However, motivation alone is often not enough; the presence of cues to action, such as health campaigns, advice from others, or app notifications, serves as a trigger that converts motivation into actual behaviour (Nelson et al., 2021).

In relation to this thesis, these constructs are particularly useful in identifying why some individuals choose to adopt or avoid digital health interventions. For example, truck drivers who do not perceive themselves to be at risk for health issues (perceived susceptibility) may see little value in using an e-health application (perceived benefits), while others may be deterred by concerns over data privacy (perceived barriers), lack of trust in technology (perceived barriers), or limited confidence in their ability to use digital tools (self-efficacy). If these perceptions are identified and addressed, the interventions can be enhanced to effectively motivate engagement and encourage sustained use.

2.4 Persuasive System Design Model

The Persuasive System Design (PSD) model provides a structured framework for understanding how information systems can be intentionally designed to influence users' attitudes or behaviours without coercion or deception (Oinas-Kukkonen & Harjumaa, 2009). Originally developed to guide the creation of systems that support behaviour change, the PSD model is particularly relevant for digital health applications, where user engagement and sustained interaction are critical.

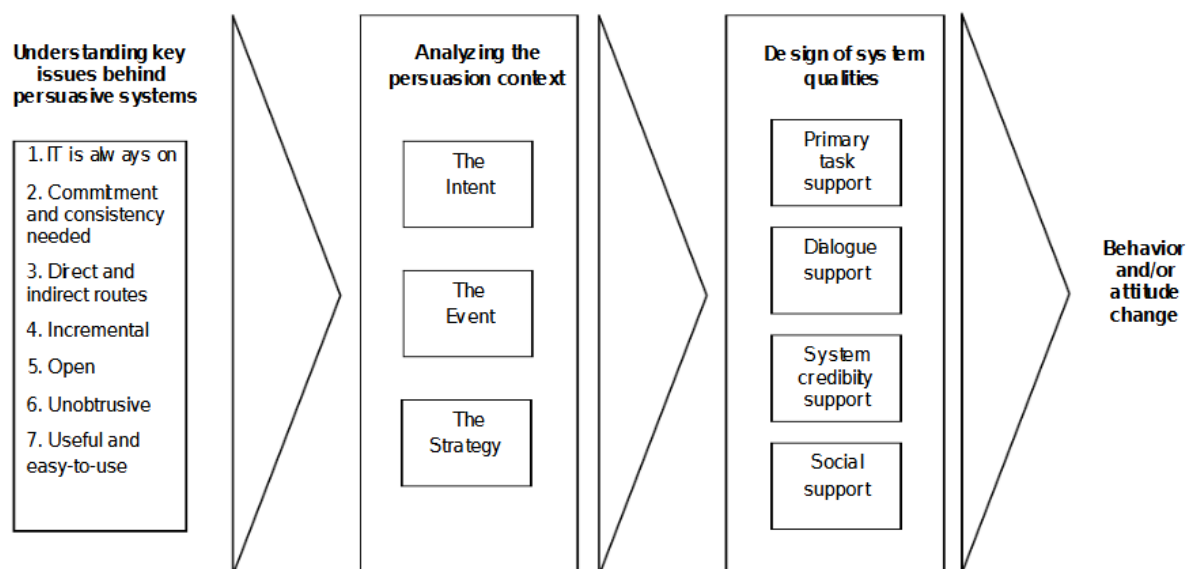


FIGURE 8 Persuasive Systems Design (PSD) model phases (Oinas-Kukkonen & Harjumaa, 2009)

The model, as presented in Figure 8, is structured around three core phases. The first phase involves understanding the foundational issues behind persuasive systems, recognising that such systems are always accessible (“always on”), require user commitment and consistency, and rely on both direct and indirect persuasion. Persuasion in these systems tends to be incremental, transparent (open), unobtrusive, and simple to use. The second phase focuses on analysing the persuasion context, which includes clarifying the intent of the system (who is persuading whom and for what purpose), the event or situation in which the system is used, and the strategies employed to deliver persuasive content.

Finally, the third phase emphasises the design of system qualities categorised into four major groups: *primary task support* (e.g., self-monitoring, tailoring, reduction), *dialogue support* (e.g., reminders, praise, rewards), *system credibility support* (e.g., trustworthiness, expertise), and *social support* (e.g., social comparison, cooperation, social facilitation) (Oinas-Kukkonen & Harjumaa, 2009). When these elements are aligned with user needs and context, they can drive meaningful behaviour or attitude change through the digital interface itself.

In the context of mobile health applications for occupational drivers, the PSD model helps explain how persuasive features such as habit tracking, gamification, push notifications, and personalized feedback can enhance user motivation and promote consistent app usage. For instance, integrating badges or streak counters for stress management exercises or offering personalized health tips based on user data can encourage sustained engagement among drivers, particularly those working in isolated or high-pressure conditions.

2.5 Summary of Theoretical Frameworks

This section presents a comparative summary of the six theoretical frameworks used in the study. Each framework contributes to understanding different dimensions of digital health adoption and sustained user engagement, particularly in the context of truck drivers. The models vary in scope from explaining initial technology acceptance to addressing motivation, behaviour change, and design features that influence long-term use. Collectively, they provide a structured foundation for identifying determinants of compliance, retention, and engagement with e-health and mobile applications.

The core concepts, theoretical constructs, and relevance to the study of each framework are summarised in Table 1.

TABLE 1 Summary of theoretical frameworks and their applications to this study (Own elaboration)

<i>Framework</i>	<i>Key Concepts</i>	<i>Key Constructs/ Factors</i>	<i>Contribution/ Relation to the Study</i>
UTAUT2	Technology acceptance based on user expectations and external support	1. Performance expectancy 2. Effort expectancy 3. Social influence 4. Facilitating conditions 5. Hedonic motivation 6. Price Value 7. Habit	Explains drivers' likelihood to adopt mobile health apps based on usability and support
MAVA	Technology acceptance influenced by multi-level contextual factors; model rooted in UTAUT-C and Car Technology Acceptance Model (CTAM)	1. Micro-level - individual traits - demographics personality - travel behaviour 2. Meso-level - exposure - domain-specific - symbolic-affective - moral-normative	Considers external and contextual variables relevant to driver environments and routines
SDT	Motivation as intrinsic or extrinsic, shaped by psychological needs	1. Autonomy 2. Competence 3. Relatedness	Informs design of interventions that promote autonomous motivation and engagement

<i>Framework</i>	<i>Key Concepts</i>	<i>Key Constructs/ Factors</i>	<i>Contribution/ Relation to the Study</i>
COM-B	Behaviour influenced by capability, opportunity, and motivation	1. Physical/psychological capability 2. Social/physical opportunity 3. Automatic/reflective motivation	Identifies barriers and enablers for behavioural change among occupational drivers
HBM	Health behaviour shaped by beliefs and perceived risks	1. Perceived Susceptibility 2. Perceived Severity 3. Perceived Benefits 4. Perceived Barriers 5. Cues to Action 6. Self-efficacy	Explains health perception and readiness to adopt health interventions among drivers
PSD	User engagement driven by persuasive system features	1. Primary Task Support 2. Dialogue Support 3. System Credibility Support 4. Social Support	Supports app design strategies that maintain long-term engagement and motivation

3 METHODOLOGY

3.1 Systematic Literature Review Approach

Given the specificity of the research questions, which aim to identify determinants, analyse barriers, and synthesise evidence-based strategies for enhancing user engagement with digital health applications in the transportation sector, a systematic literature review was deemed the most appropriate approach. Compared to other types of literature reviews, such as scoping or narrative reviews, a systematic literature review offers a structured, transparent, and replicable process to identify, evaluate, and synthesise existing research evidence (J. Davis et al., 2014; Snyder, 2019).

Unlike a scoping review, which broadly maps the available literature on a topic without assessing the included studies' quality (Colquhoun et al., 2014; Levac et al., 2010; M. D. J. Peters et al., 2015), a systematic review focuses on answering specific research questions with a rigorous evaluation of study quality (Munn, Peters, et al., 2018). Given that the objective of this thesis is not only to map existing interventions but also to critically assess the determinants influencing compliance, retention, and long-term engagement with e-health applications, the systematic review method ensures that the analysis is built on high-quality, peer-reviewed evidence, as it is widely recognised as the highest standard for evidence synthesis (Uttley et al., 2023).

Furthermore, using a systematic review aligns well with the goals of the MILESTONE project by providing strong and evidence-based insights that can inform the design and improvement of digital health interventions specifically designed for occupational truck drivers (Munn, Peters, et al., 2018; Munn, Stern, et al., 2018).

The study framework that will be conducted in this thesis is a systematic literature review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 Protocol (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021) to comprehensively identify the key determinants that highly influence professional drivers' compliance, retention, and long-term engagement with e-health and mobile applications in the transportation sector.

3.1.1 PRISMA Protocol for Study Selection

PRISMA is a globally recognised evidence-based set of guidelines designed to improve the clarity and transparency of systematic reviews. Originally developed in 2009 and updated in 2020, the PRISMA 2020 guidelines reflect advances in systematic review methodology and emphasise rigorous reporting standards across all stages of the review. The framework outlines a 27-item checklist covering key aspects such as the rationale, eligibility criteria, information sources, search strategy, study selection, data collection, and synthesis methods (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).

Several frameworks and tools are available to guide systematic reviews, including the Critical Appraisal Skills Programme (CASP) checklist, the Joanna Briggs Institute (JBI) Checklist for Systematic Reviews, the Cochrane Risk of Bias Tool for randomised studies, and the Delphi method for consensus building. However, the PRISMA 2020 Protocol was selected as the primary framework for this review because it provides a comprehensive, transparent, and standardised methodology for reporting systematic reviews (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021). Unlike appraisal tools such as CASP or JBI, which primarily assess the quality of individual studies (Hilton, 2024; Singh, 2013), PRISMA focuses on enhancing the overall reporting quality, transparency, and replicability of the entire systematic review process, from study identification to data synthesis (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021). Similarly, while the Delphi method is suitable for building expert

consensus, it does not provide a structured reporting system for synthesising published literature, which was the primary objective of this review (Fink-Hafner et al., 2019; Okoli & Pawlowski, 2004).

For this thesis, the structure and content of the review followed the PRISMA 2020 Item Checklist (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021) to ensure methodological consistency and transparency. See [Appendix I](#) for the complete PRISMA checklist applied in this review.

This thesis' methodological steps for study selection followed a structured 10-step process aligned with the PRISMA protocol, as shown in the figure below.

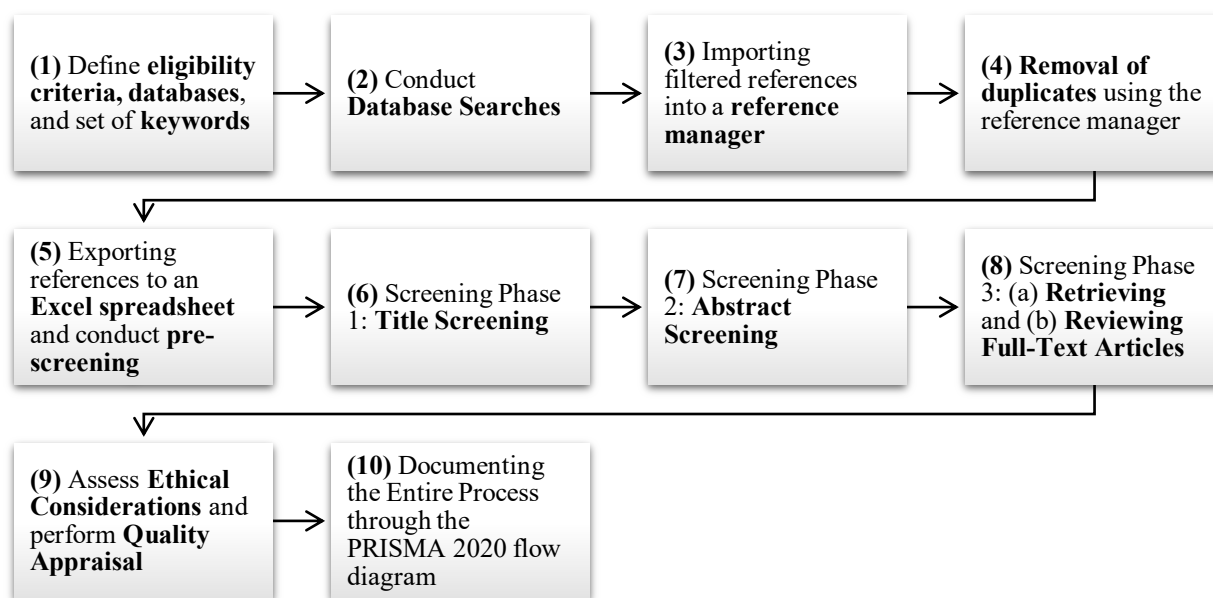


FIGURE 9 Structured 10-step study selection process based on the PRISMA 2020 protocol (Own elaboration)

The figure illustrates the sequential process used to guide study selection in this review, beginning with establishing eligibility criteria and progressing through database searches, reference management, duplicate removal, and multi-phase screening. Ethical assessment and methodological quality appraisal were incorporated prior to final inclusion decisions. The process concludes with the formal documentation of results following the PRISMA 2020 standards, ensuring transparency and replicability.

3.1.2 PRISMA 2020 Flow Diagram

Following the PRISMA 2020 Checklist, this systematic review adheres to a structured study selection process, beginning with the total number of records identified through comprehensive database searches and concluding in the final set of included studies. The entire screening and inclusion process will be visually summarised using the PRISMA 2020 flow diagram (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).

This flow diagram will clarify each stage of the systematic review process, contributing to the methodology's overall transparency, accuracy, and reproducibility. In accordance with PRISMA 2020 Item 16a, the flowchart will be presented in the [results](#) section. The complete PRISMA checklist is provided in [Appendix I](#).

The flow diagram outlines how information progresses through the various stages of the review, from the initial identification of records to their final inclusion or exclusion. It presents the total number

of records retrieved, screened, excluded (with reasons), and ultimately analysed. PRISMA provides specific templates depending on the type of review and the sources used. In this study, the version for “new systematic reviews based on database and register searches only” template will be utilised, which is outlined in Figure 10.

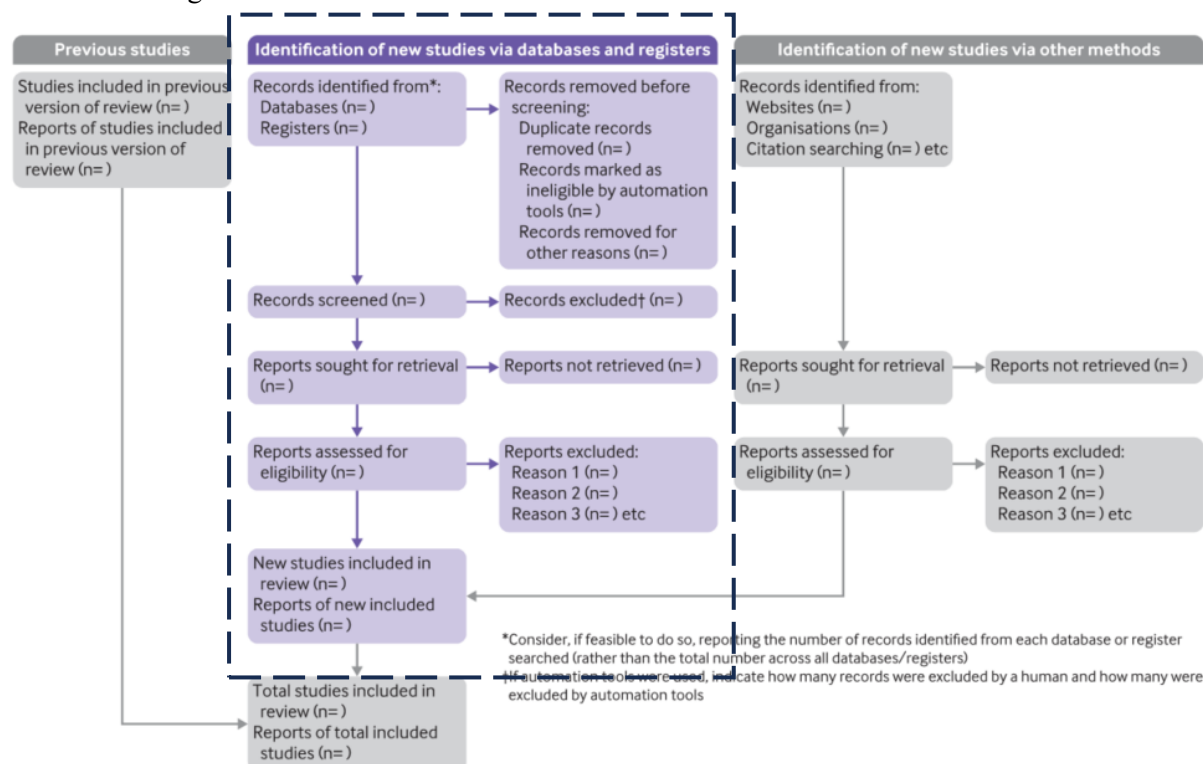


FIGURE 10 PRISMA 2020 flow diagram template (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021)

As part of the study selection process, all search results were exported from their respective databases and imported into Zotero, an open-source reference management tool. Zotero was used to organise citations, store full-text documents, and identify and remove duplicate records prior to the screening phases, corresponding to Steps 3 and 4 of the 10-step structured process outlined in the previous section. This method aligns with the deduplication process recommended under the PRISMA 2020 protocol.

Following deduplication, Steps 5 to 9 of the structured process, involving title screening, abstract screening, full-text screening, ethical assessment, and quality appraisal, were conducted using a customised Excel spreadsheet, as further detailed in [Chapter 3.3](#). The transition from Zotero to Excel ensured a transparent and traceable workflow throughout the systematic review process.

3.2 Search Strategy

A structured search strategy was strategically developed to identify, screen, and select relevant studies for inclusion in this review, which is a process in accordance with the PRISMA 2020 protocol. The search process was based on (1) clearly defined eligibility criteria, (2) multiple information sources, and the application of (3) comprehensive keywords and search terms. By combining these three elements, the search strategy ensured the retrieval of high-quality, relevant literature aligned with the research objectives while maintaining transparency and reproducibility throughout the review process. Each element is further discussed in the succeeding sections.

3.2.1 Eligibility Criteria

Specific eligibility criteria were established to determine the inclusion and exclusion of studies and ensure a focused and high-quality review. These criteria were designed to refine the search results and ensure that only relevant, peer-reviewed literature addressing digital interventions for trucks drivers in the transportation sector was considered.

Studies were included if they met the following criteria:

- They focused on digital health interventions (e-health, mHealth, telemedicine) for truck drivers within the transportation sector.
- They were peer-reviewed journal articles to ensure the credibility and reliability of the findings.
- They were published in English to maintain consistency in data analysis and avoid language barriers.

Studies were excluded if they:

- Focused on digital interventions for non-occupational drivers or general transportation users rather than truck drivers.
- Did not involve digital health technologies or lacked a connection to compliance and user adoption in the transportation sector.
- Were conference papers, books, book chapters, editorials, or retracted articles, as these sources do not always undergo rigorous peer review.
- They were not published in English.

3.2.2 Information Sources

Multiple reputable databases were selected as information sources for this review, given their recognised suitability for systematic literature searches (Gusenbauer & Haddaway, 2020). Their relevance to the research topic guided the choice of databases, their coverage of peer-reviewed studies, and their strengths in capturing multidisciplinary work across health, transportation, and occupational research. Advanced search strategies were developed for each database to ensure consistency in search terms while tailoring the syntax to match the unique search functionalities of each platform. The following databases were used:

a. PubMed

PubMed was selected for its extensive indexing of biomedical and health-related literature, including studies focused on digital health interventions (Ossom Williamson & Minter, 2019). It offers a robust, controlled vocabulary system (MeSH terms) and reliable peer-reviewed content. Advanced searches were conducted using a combination of MeSH terms and keywords, applying the [All Fields] tag to maximise coverage of both indexed and newly published articles (Richter & Austin, 2012).

b. Scopus

Scopus, acknowledged as the largest abstract and citation database for scientific literature, was included for its broad coverage of scientific, technical, and social science literature, providing access to peer-reviewed journals, conference proceedings, and books (Meho & Yang, 2007; Schotten et al., 2017). The advanced search strategy employed in Scopus utilised Boolean operators to combine key concepts. It targeted all searchable fields rather than restricting the search to specific sections such as titles, abstracts, or keywords. This approach ensured a comprehensive retrieval of studies relevant to digital health interventions within the transportation sector.

c. Web of Science (WoS)

Web of Science, the oldest citation index for the sciences, was chosen due to its multidisciplinary indexing of high-quality peer-reviewed studies across health sciences, social sciences, and engineering (Birkle et al., 2020). The advanced search function used topic searches (TS=) to locate relevant studies based on titles, abstracts, author keywords, and Keywords Plus. The platform's filtering options for document type, language, and research area ensured alignment with the inclusion criteria.

d. Transport Research International Documentation (TRID)

TRID was selected for its specialised focus on transportation research. According to the TRID website, it is a unified database that merges records from the Transportation Research Board's (TRB) Transportation Research Information Services (TRIS) Database and the International Transport Research Documentation (ITRD) Database maintained by the OECD's Joint Transport Research Centre (TRB, n.d.). Given the review's focus on occupational drivers within the transportation sector, TRID's subject indexing allowed precise targeting of technical reports and studies relevant to freight and road transport. Similar to the other databases, searches were structured using title keywords and subject terms to capture the most relevant studies.

3.2.3 Keywords and Search Terms

As previously stated, an advanced search strategy was employed across [multiple databases](#) to conduct a comprehensive literature search. A combination of keywords and Boolean operators (AND, OR) was utilised to construct and refine the search queries, ensuring a systematic retrieval of relevant studies. The application of filters, such as language and document type restrictions, was aligned with the eligibility criteria, as discussed in [Section 3.2.1](#).

Because the search aimed to identify relevant studies examining compliance, retention, and engagement with digital health technologies within the transportation sector, specifically among truck drivers, the search strategy was structured around the following key concepts: compliance, retention, user engagement, e-health, transportation sector, and truck drivers. To ensure comprehensive coverage of the literature, the initial development of the search string was supported by the use of an AI tool (ChatGPT), which helped generate a broad list of potential keywords and Boolean combinations. A detailed explanation of how AI was used in the methodology is provided in Section 3.4, [Use of AI Tools](#).

The resulting search string was subsequently refined and assessed by the author to ensure relevance, accuracy, and alignment with the study's objectives. The final search string was as follows:

(compliance OR conformity OR observance OR commitment OR retention OR continuation OR engagement OR participation OR involvement OR motivation OR user adoption)

AND

(e-health OR digital health OR telemedicine OR mHealth OR online health OR virtual health OR electronic health)

AND

(transportation sector OR transportation OR transport sector OR transport OR mobility OR transit OR traffic systems OR traffic)

AND

((truck OR heavy vehicle OR freight OR commercial OR long-haul OR professional OR logistics OR delivery) AND (driver OR operator*))*

All databases used Boolean operators, phrase searching using quotation marks, and field-specific searches targeting titles, abstracts, or subject areas. Additionally, all databases offer filtering options, such as publication date, document type, and language, to refine search results. However, there are still minor differences in how each database executes advanced searches.

3.3 Data Extraction and Analysis

This section outlines the procedures used to manage, screen, evaluate, and interpret the literature included in this review. It begins with the development of a data categorisation framework, detailing how studies were organised and what variables were extracted ([Section 3.3.1](#)). This is followed by a description of the multi-phase screening process used to determine study eligibility ([Section 3.3.2](#)). Assessing ethical considerations related to the included studies is discussed in [Section 3.3.3](#). Finally, [Section 3.3.4](#) introduces the quality assessment approach, which evaluates the methodological robustness of each study to support transparent and meaningful synthesis. These components form the foundation for the subsequent interpretation and analysis of findings.

3.3.1 Data Categorisation Framework

A data categorisation framework was developed as part of the review process to ensure a structured and transparent approach to managing the filtered literature from chosen databases. After removing duplicates in Zotero, the remaining studies were exported to an Excel spreadsheet, which served as the main tool for managing the screening process, recording inclusion and exclusion decisions, and organizing data for analysis. The use of Excel allowed for systematic monitoring of each study across the different phases of screening: (1) title screening, (2) abstract screening, and (3) full-text screening, ensuring that decisions were consistently applied at every stage. It also includes the processes of ethical approval, quality assessment, and final data extraction.

Information about the screening process is further discussed in [Section 3.3.2](#), while details on the categorisation criteria (extracted variables) and how they are organized in the Excel spreadsheet are presented in the succeeding sub-sections.

3.3.1.1 Categorisation Criteria

The selected studies were organised within the Excel spreadsheet according to a structured set of categorisation criteria. These criteria were developed to capture essential information at different stages of the review systematically and to maintain consistency throughout the data extraction process. To reflect the stages of study processing, the variables were divided into two groups: (1) variables automatically extracted by Zotero during the initial screening phase and (2) variables manually extracted during full-text review.

Table 2 presents the pre-determined variables automatically extracted from Zotero after initial database searches and screening. These Zotero-extracted variables represent common bibliographic elements typically embedded in citation metadata and are automatically captured by most reference management systems. As such, they do not follow a specific methodological framework or theoretical basis but rather reflect standard fields used in citation indexing. Zotero offers a wide range of metadata fields, but the researcher selected only those considered most relevant to the title and abstract screening process and data synthesis. This selection was guided by professional judgment and the practical needs of the review, such as tracking source origin, verifying eligibility criteria (i.e., language and publication type), and organizing records consistently across databases.

TABLE 2 Pre-determined variables extracted from Zotero after initial database searches and screening (Own elaboration)

<i>Field/Column</i>	<i>Description of Importance</i>
Study ID	A unique number/code assigned to each study for tracking and referencing
Title of the Study	Useful for identification and quick review
Item Type	Determines the reference type (e.g., journal, etc.)
Year of Publication	Assesses the recency and relevance of the study
Author(s)	Helps identify the study and cite it correctly
Publication Title	Identifies where the reference is published
Abstract Note	Useful for abstract screening
Language	Helpful in verifying if the study meets the language criteria
Database Source	To track where the study was taken

Table 3 outlines the variables extracted during the full-text review phase, which took place only after studies passed all prior screening steps (i.e., title and abstract screening). These studies were considered eligible for full-text review and were therefore subjected to more detailed data extraction. The selected variables reflect key study characteristics that were critical for interpretation, appraisal, and synthesis, such as study design, population, country, intervention type, outcomes measured, and theoretical framework.

The choice of these variables was informed by established practices in systematic review methodologies (i.e., Hoque et al., 2020; Indra et al., 2024; Ng et al., 2015), where similar parameters are often used to organize and compare complex evidence across diverse studies. Each field was chosen based on its relevance to understanding the context and applicability of the included studies in relation to the research objectives of this review.

TABLE 3 Extracted variables based on full-text review for data extraction and analysis (Own elaboration based on (Hoque et al., 2020; Indra et al., 2024; Ng et al., 2015))

<i>Field/Column</i>	<i>Description of Importance</i>
Study Design	To identify the appropriate appraisal tool, for assessing the quality of the study and level of evidence for additional transparency
Country	To identify the study's geographic context, relevant for understanding regional differences
Population	Description of participants
Sample Size	Helps assess the strength and validity of findings
Intervention Type	Type of digital health intervention applied in the study
Comparison Group	If any; Relevant for evaluating outcomes
Study Duration	Timeframe of the study; helps assess sustainability and exposure
Setting	Workplace, on-road, clinical, remote, etc.; context for how the intervention was implemented
Data Collection Methods	Helps assess validity
Digital Platform/Tool Used	Names/Types of tools used
Theoretical Framework	Any behavioural or health theory used (see Chapter 2); Useful for conceptual mapping
Peer-Reviewed	Final checking to ensure that the inclusion criteria are met
Funding Source	Reveals potential bias or conflict of interest
Limitations Noted	To acknowledge weaknesses in the study; helps in quality appraisal
Ethical Consideration	See Section 3.3.3 .
Key Findings	Summary of main results; forms the basis for synthesis
Outcomes Measured	Primary outcomes (e.g., engagement, compliance, retention, health indicators)

3.3.1.2 Data Extraction Tables

The parameters outlined in [Section 3.3.1.1](#) served as the foundation for constructing the data extraction tables. Each study was assigned a single row, while each column reflected a specific parameter outlined in the categorisation criteria. The tables were designed to facilitate the consistent tracking of study characteristics, screening outcomes, eligibility decisions, ethical assessments, and quality appraisal results and to organise the necessary information to fill out the PRISMA Flow Diagram. Excel was selected as the data management tool due to its flexibility in sorting, filtering, and updating information throughout the screening and analysis phases (Pernsley, 2016). The data extraction table was progressively updated as the review advanced through its stages, ensuring transparency and traceability in decision-making.

A snapshot of the Excel file data extraction table tabs is presented below to illustrate the organisation of information across studies and how the author conducted the systematic review.

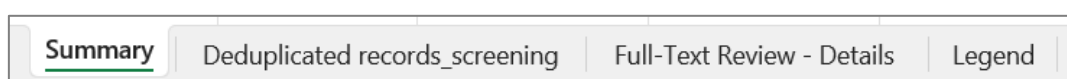


FIGURE 11 Tabs of the customised Excel file used for study screening and data extraction (Own work)

As seen in Figure 11, the data extraction and screening processes were managed through a customised Excel workbook containing multiple organised sheets, each serving a distinct function:

- **Summary:** This sheet provides an overview of the screening and data extraction progress. It compiles key figures needed for the PRISMA 2020 flow diagram, such as the number of records identified, screened, excluded, and included. See Figure 11 for the snapshot of the content of this sheet.

					Based on Eligibility Criteria	
	DATABASES	No. of Filtered Literature (Initial)	Removed Duplicates (within Multiple Databases)	Pre-Screening	(1) For Title Screening	(2) For Abstract Screening
1	PubMed	99	7	647	644	26
2	Scopus	505				
3	Web of Sciences	42				
4	TRID	8				
	Total	654	Removed Records =	3	618	9

Based on Eligibility Criteria				Based on Quality		
(2) For Abstract Screening	(3a) Reports Sought for Retrieval	(3b) For Full-Text Screening	Studies included in Review for Data Analysis	(1) CASP for Quantitative Studies	(2) CASP Qualitative Checklist	(3) MMAT
26	17	16	6	3	1	2
9	1	10				

FIGURE 12 Summary tab: Overview of screening and data extraction progress (Own work)

- **Deduplicated records_screening:** This sheet contains all the extracted bibliographic information imported from Zotero. It served as the main working file for title screening, abstract screening, retrieval availability checks, and full-text screening. The full content of this sheet is provided in [Appendix II](#), and the details of the screening process are discussed in [Section 3.3.2](#).

- **Full-Text Review – Details:** Studies that passed the title screening, abstract screening, and retrieval availability were transferred to this sheet. It was used to extract detailed study characteristics from the entire article, including the ethical considerations (see [Section 3.3.3](#)), to assess the full text according to the eligibility criteria, and to perform quality assessments (see [Section 3.3.4](#)) using appropriate critical appraisal tools. The full content of this sheet is provided in [Appendix III](#).

During the full-text extraction, an AI tool (ChatGPT) was also used to assist in summarizing and organizing key study details; however, all critical decisions (i.e., assessing eligibility, assigning quality ratings, and interpreting content) were made by the researcher. See [Section 3.4](#), [Use of AI Tools](#) for more information about how AI was used in the methodology of this thesis.

- **Legend:** This sheet provides a quick reference guide listing all exclusion reasons (E0–E9) (see Table 4 in [Section 3.3.2](#)), categories for ethical approval (see Table 5 in [Section 3.3.3](#)), and the corresponding appraisal tools (see Table 6 in [Section 3.3.4](#)) selected based on the type of study design.

3.3.2 Screening Phases

The screening process was conducted in three sequential stages: title screening, abstract screening, and full-text screening (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021). Each stage progressively refined the pool of identified studies to ensure that only those meeting the eligibility criteria advanced to the next phase. Prior to the title screening, the researcher conducted a pre-screening to double-check whether the studies extracted from Zotero meet the basic criteria, such as the language and document type (if peer-reviewed article).

During title screening, studies were excluded based on clear mismatches in population focus, sector relevance, or intervention type. Abstract screening allowed for a more detailed evaluation of study relevance based on intervention focus, target outcomes, and study population. Full-text screening provided the most comprehensive assessment, confirming eligibility against all predefined criteria, including methodological quality assessment.

A set of exclusion codes was applied consistently across all screening stages to document the specific reasons for study removal.

TABLE 4 Reasons for study exclusion across screening phases and their corresponding codes (Own elaboration)

<i>Code</i>	<i>Reason for Exclusion</i>	<i>Applies at Phase</i>
E0	Not eligible based on basic criteria (e.g., not peer-reviewed, language not in English, not published, conference abstract, retracted)	Pre-Screening
E1	The population is not truck drivers (e.g., young drivers, old drivers, regular car drivers)	Title, Abstract, Full-Text
E2	The study focuses on other transport sectors (e.g., aviation, maritime) or not the transportation sector; the target population is not clear.	Title, Abstract
E3	No digital health intervention	Title, Abstract, Full-Text

<i>Code</i>	<i>Reason for Exclusion</i>	<i>Applies at Phase</i>
E4	Not focused on compliance, adoption, engagement, or usage of digital tools	Abstract, Full-Text
E5	Outcomes not relevant (e.g., unrelated health aspects or hardware-only monitoring)	Abstract, Full-Text
E6	Insufficient methodological detail / No access to full text	Full-Text
E7	Wrong publication type (e.g., editorial, comment, protocol, letter)	Full-Text
E8	Not a research study (e.g., introduction to special issue, commentary, opinion)	Full-Text
E9	Duplicate content is still detected manually (e.g., duplicate entry or dual publication)	Full-Text

Screening decisions and corresponding exclusion codes were recorded systematically in the data extraction table.

3.3.3 Ethical Considerations

For additional information, the ethical approval status was recorded for all included studies that underwent full-text screening. The purpose of documenting the ethics approval was to assess the ethical integrity of the studies and to provide a clear account of research practices involving human participants, even though it was not used as a basis for exclusion. Because ethical approval was not part of the original inclusion and exclusion criteria, studies were not excluded solely based on the absence of an ethics statement. This means studies without explicit proof of ethical approval were still eligible for inclusion in the review.

Documenting the ethics approval status served two key functions. First, it enabled a more transparent and responsible evaluation of the quality and credibility of included studies, particularly when assessing the handling of human data. Second, it allowed the researcher to reflect on and report potential ethical gaps across the body of literature. This contributes to the broader discussion about research standards in the field and highlights areas where ethical reporting needs to be improved in future studies. In this way, even though ethics approval did not directly influence inclusion, recording it added value by strengthening the review's integrity and offering insights into ethical practices in digital health and transport-related research.

Table 5 outlines the classification categories for recording the ethics approval status across the reviewed studies.

TABLE 5 Ethics approval categories for included studies in full-text screening (Own elaboration)

<i>Ethics Approval</i>	<i>Notes</i>
Yes	Approved by an Institutional Review Board (IRB) or equivalent ethics committee
No	No mention of ethics approval
Waived	Ethics approval was waived due to the use of anonymised or publicly available data
Unclear	Ethics approval status is not specified in the full text.

3.3.4 Quality Assessment of Selected Studies

Each included study was critically appraised using appraisal tools appropriate to its design to assess its methodological soundness. This section begins by identifying the appraisal tools used across different

study types ([Section 3.3.4.1](#)), followed by an explanation of the scoring system applied to interpret appraisal results ([Section 3.3.4.2](#)). The final subsection ([Section 3.3.4.3](#)) describes how these quality ratings informed inclusion decisions and guided the interpretation of evidence in the synthesis phase.

See [Appendix IV](#) for the results of the quality assessment for the included studies.

3.3.4.1 Appraisal Tools

Critical appraisal tools are structured checklists or frameworks designed to assess the methodological quality, credibility, and risk of bias in research studies. They help reviewers systematically evaluate the reliability of study findings by focusing on aspects such as research design, data collection, and the measures taken to reduce potential biases (Katrak et al., 2004; Munn et al., 2015).

Depending on the study design, a specific appraisal tool was applied. These tools were selected due to their widespread use in evidence synthesis, adaptability across diverse research designs, and ability to provide a structured and transparent assessment of study quality (Hong et al., 2019; Long et al., 2020).

The CASP (Critical Appraisal Skills Programme) checklists were selected as the appraisal tool for quantitative and qualitative studies to maintain consistency and standardisation across the review process. Using CASP ensured that all necessary checklists came from a single, accessible source (i.e., (CASP, n.d.)), removing the need to search for multiple appraisal tools. CASP was also chosen because it is easy to use, clearly structured, widely available, and accepted in evidence-based research for evaluating the methodological quality of different study designs (Long et al., 2020).

However, in the case of mixed-methods studies, the MMAT (Mixed Methods Appraisal Tool) was applied due to its integrated approach in assessing both qualitative and quantitative components (Hong et al., n.d., 2019).

The assignment of appraisal tools according to study type is summarised in Table 6.

TABLE 6 Appraisal tools applied according to study design (Own elaboration)

<i>Study Design</i>	<i>Examples</i>	<i>Appraisal Tool</i>
Quantitative	Randomised controlled trials (RCTs), interventional trials	CASP
Qualitative	Interview-based studies, focus group research, thematic analysis studies	CASP
Mixed Methods	Combined quantitative and qualitative studies	MMAT

Specific assessment criteria varied depending on the selected appraisal tool, as each instrument targets different methodological fields relevant to the study design under evaluation. In line with this, this thesis will not discuss the assessment criteria in detail.

3.3.4.2 Scoring System

Each included study was assessed across relevant domains, such as clarity of research aims, appropriateness of methodology, recruitment strategy, data collection, ethical considerations, and robustness of findings. Studies were rated as **high**, **moderate**, or **low quality** based on the degree to which they met the appraisal criteria.

The purpose of the ratings was to allow clearer categorization of the evidence base and to help contextualize the credibility and weight of individual study findings within the broader review, making the synthesis and interpretation more manageable and meaningful than relying on numerical scores alone.

Since each appraisal tool is designed with different assessment criteria and structures, their scoring systems follow slightly different approaches. The CASP checklists consist of approximately 10–13 questions, depending on the study type. On the other hand, the MMAT includes five (5) core criteria. For simplicity, a standard scoring system was applied based on the number of “Yes” responses.

Tables 7 and 8 show the scoring approach that was used in CASP and MMAT, respectively.

TABLE 7 CASP scoring system (Own elaboration)

<i>Quality Level</i>	<i>Criteria</i>
High	8–10 (or 10-13) “Yes” answers, no serious concerns
Moderate	5–7 (or 6-9) “Yes” answers, some limitations but still usable
Low	Fewer than 5 (or 6) “Yes” answers, significant concerns about rigour or bias

TABLE 8 MMAT scoring system (Own elaboration)

<i>Quality Level</i>	<i>Criteria</i>
High	Meets all 5 criteria (5/5 Yes)
Moderate	Meets 3–4 criteria
Low	Meets 2 or fewer criteria

3.3.4.3 Inclusion Decision Based on Quality

Similar to the treatment of ethical approval status, quality assessment ratings were documented for all included studies but were not used as exclusion criteria during study selection. This approach was consistent with the goal of ensuring comprehensive coverage of the available evidence.

Rather than serving as a filtering mechanism, the quality assessment contributed to the review by informing the level of confidence placed on individual studies during synthesis. High- and moderate-quality studies were interpreted in relation to their methodological strengths, with noted limitations acknowledged in the analysis. This strategy supported transparency while allowing meaningful differentiation in the weight assigned to each study's findings.

Documenting study quality also added value by highlighting patterns of methodological strength across the included literature. This not only enabled a more nuanced synthesis but also helped identify areas where future research design and reporting could be further strengthened.

Table 9 summarizes how the quality ratings were used to guide the interpretation of studies during the synthesis phase.

TABLE 9 Study inclusion and interpretation based on quality assessment (Own elaboration)

<i>Quality Level</i>	<i>Scenario</i>	<i>Inclusion Decision & Interpretation</i>
High	High-quality studies with no major concerns; Meets nearly all quality criteria; robust methodology and reporting.	<u>Included</u> Findings considered reliable with no major concerns
Moderate	It meets many criteria with some minor limitations in methodology or reporting; it still provides valuable insights.	<u>Included</u> Findings considered valid, but note minor limitations
Low	Notably, several quality criteria were missing; with significant limitations or potential bias.	<u>Included</u> Interpret findings with caution due to limitations

3.4 Use of AI Tools

To support the research and writing process, a limited number of AI-based tools were used in accordance with ethical research standards and institutional guidelines. These tools served as aids to assist with specific technical or organizational tasks but did not replace or substitute the author's intellectual contribution.

ChatGPT (OpenAI, 2024) was used during various stages of the thesis for the following purposes:

1. Assist in the formulation and refinement of the search string for advanced database queries;
2. Help summarise full-text articles during the data extraction phase; and
3. Suggest improvements in sentence structure, clarity, and flow for better academic writing.

It is important to emphasize that the comprehensive literature review, full-text screening, data synthesis, analysis, interpretation, and all critical decisions were conducted by the author. The AI tool was used only as a supportive assistant for organizing and refining existing ideas and content, not for generating original academic work or replacing human judgment.

Additionally, Grammarly (2024), an AI-based language editing tool, was used to check grammar and spelling throughout the thesis. It also supported plagiarism detection for quality control (Grammarly, 2024).

All prompts and outputs exchanged with ChatGPT were documented in an AI logbook, which is included in [Appendix V](#) as required by institutional policy.

4 RESULTS

4.1 Summary of Identified Studies

4.1.1 PRISMA 2020 Flow Diagram: Study Selection

The PRISMA 2020 flow diagram below shows how the systematic literature review and study selection was conducted in this thesis.

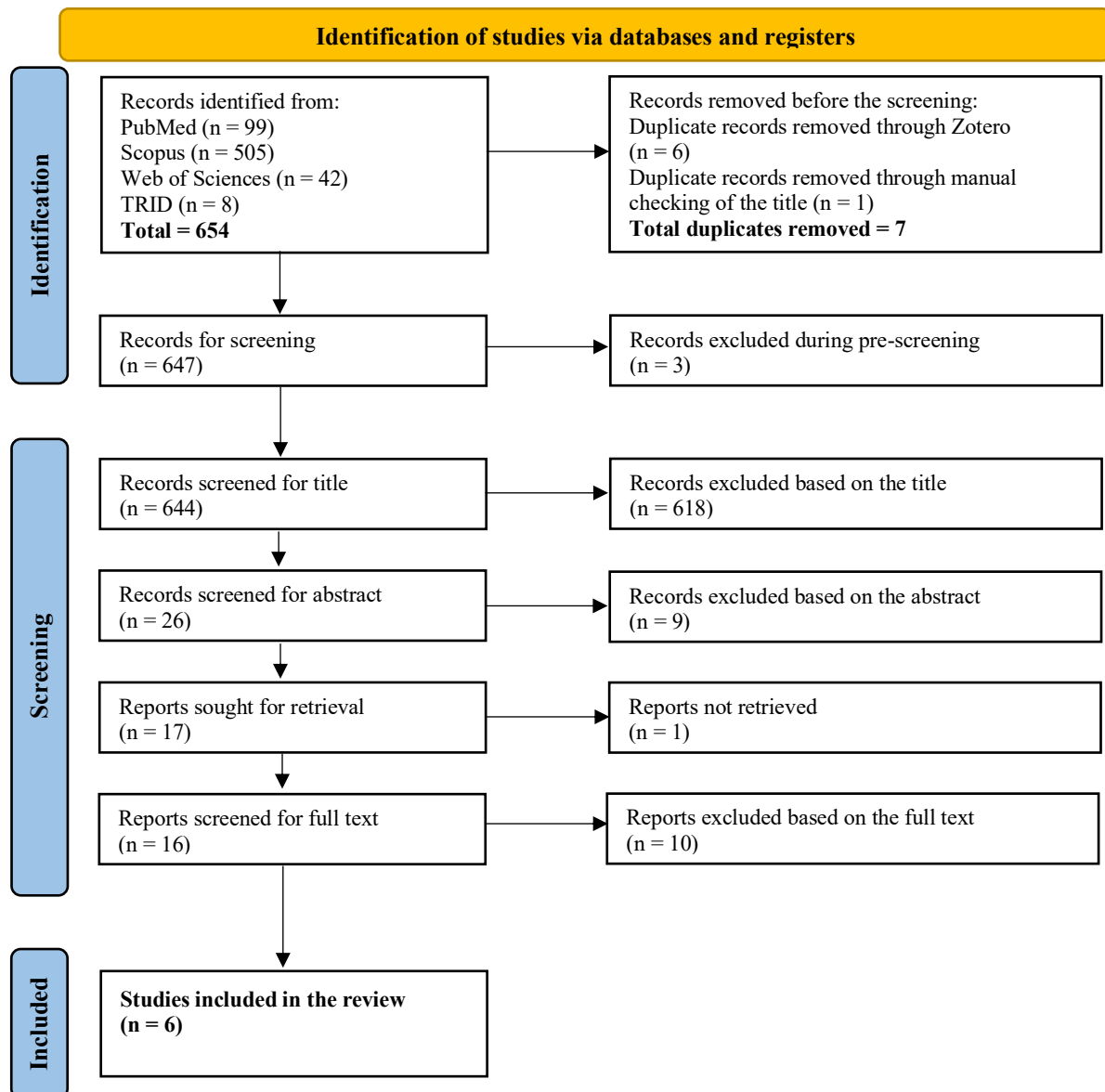


FIGURE 13 PRISMA 2020 flow diagram for study selection on truck driver's compliance, retention, and long-term engagement with e-health and mobile applications (Own work based on (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021))

A total of 654 records were identified through database searching. After removing seven (7) duplicates via Zotero and manual checking, 647 records were screened by title and abstract, leading to 17 full-text articles sought for retrieval. Only one of the articles was not retrieved, which arrived at 16 studies assessed for full-text eligibility assessment. The ethical considerations of the 16 studies were also checked upon full-text review. Of these, ten (10) studies were excluded for irrelevance to the population, intervention, or outcomes. A final set of six (6) studies was included in this systematic

review, in which characteristics are further discussed in the next section. The quality of the six studies was also assessed for additional transparency.

4.1.2 *Characteristics of Included Studies*

This section summarizes the key characteristics of the six studies included in this systematic review. These studies met the eligibility criteria focusing on digital health interventions targeting truck drivers, published in English, and appearing in peer-reviewed journals.

The included studies reflect a range of study designs and methodological approaches. Three studies were quantitative, including a non-randomized controlled trial, a cluster-randomized trial, and a cross-sectional analysis. One study used a qualitative design based on focus group discussions, while two studies adopted mixed methods approaches, combining quantitative measures with qualitative data collection and analysis. Although the included studies varied in scope and scale, they shared a focus on digital platforms designed to influence health behaviour, monitor fatigue or risk, or support lifestyle improvements among truck drivers.

The studies were conducted across diverse geographical contexts, including the United States, Canada, and the United Kingdom, with one study examining online trucker forums that spanned multiple regions. Sample sizes ranged from small, focused studies such as a qualitative investigation with 34 participants to large-scale analyses involving thousands of data points, including over 11,000 logged trips in a fleet management dataset and 1,760 forum posts. These differences in population and context provided rich variation in perspectives and intervention settings, although generalizability remains limited due to the narrow sampling frames and reliance on convenience samples.

The interventions explored in the included studies involved a range of digital health tools. These included mobile health programs incorporating self-monitoring, educational modules, and motivational interviewing; wearable drowsiness detection devices based on physiological sensors; real-time mobile feedback applications designed to reduce risky driving behaviour; and online communities serving as informal platforms for health-related exchange. Most interventions were short to medium-term in duration, typically ranging from four weeks to twelve months, with several studies lacking long-term follow-up data.

Some of the studies were exploratory or naturalistic in design, while some studies incorporated a formal comparison group or control condition. Four of the six studies explicitly reported receiving ethical approval, particularly in cases where primary data collection involved human participants. Across studies, theoretical frameworks varied, with only a few explicitly drawing on established behavioural or technology acceptance models, suggesting an opportunity for greater integration of theory into future intervention design.

All six studies were assessed for methodological quality using appropriate critical appraisal tools. Five studies were rated as high quality, and one study received a moderate-quality rating. Common strengths across high-quality studies included well-defined research questions, clear articulation of digital interventions, and alignment between outcomes and research objectives. The moderate-quality study demonstrated relevance and sound methodology but had limitations in reporting or representativeness that reduced its overall appraisal score.

Table 10 provides a detailed overview of the included studies, summarizing their design, population, intervention type, methodological process, ethical consideration, quality, outcomes measured, and key findings.

TABLE 10 Summary of characteristics of the included studies on digital health interventions and adoption for truck drivers (Own elaboration)

<i>Study No.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Title of the Study	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Mobile apps and employee behaviour: An empirical investigation of the implementation of a fleet-management app	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Mixed-method analysis of truck driver health knowledge using an online forum
Year of Publication	2019	2016	2017	2019	2022	2018
Author(s)	Wipfli et al.	Greenfield et al.	Heaton et al.	Levi-Bliech et al.	Crizzle et al.	Versteeg et al.
Study Design	Quantitative Process evaluation of a previously conducted cluster-randomized controlled trial	Qualitative Phenomenological qualitative study using four semi-structured focus groups	Quantitative Cross-sectional quantitative study	Quantitative Using real-world app usage and behavioural data from drivers over 11,805 trips (Poisson regression)	Mixed methods paired quantitative survey and qualitative interviews	Mixed methods combines qualitative coding of forum content with quantitative analysis of post-engagement
Country	USA	UK	USA	UK and USA	Canada	Canada
Population	U.S. truck drivers (predominantly male, average age ~49) who were overweight or obese (BMI ≥ 27), employed at 5 trucking companies	34 male professional truck drivers (UK-based, average age 42.2), recruited from one logistics company	106 long-haul truck drivers (mostly White married males), recruited at trade shows and via companies in the U.S.	109 professional drivers from a large engineering firm, operating fleet vehicles in the UK and US	Canadian long-haul truck drivers (LHTD); primarily male (95%), mean age 53 years	Truck drivers participating in an open-access online health forum (The Truckers Report Health Forum) across multiple regions
Sample Size	134 participants	34 participants	106 participants	11,805 trips logged from 109 drivers	59 LHTD completed both the survey and interviews	1,760 forum posts were analyzed; 150 posts were selected randomly for systems-level coding
Intervention Type	Multicomponent mobile-delivered program: web-based training, weight loss competition, self-monitoring, and motivational interviewing	Not an intervention study – explores perceptions of wearable health technology and health promotion	Not an intervention study – examined Internet usage patterns among truck drivers	Not an interventional trial; observed behaviour based on the use of a fleet-management mobile app	Not an intervention study; assessed impact and perceptions of using electronic logging devices (ELDs)	No intervention; study explores health knowledge and perceptions via online forum analysis
Comparison Group	No direct comparison in this article (the focus was	None – not applicable in qualitative design	None	Indirect – comparison between those using real-time notifications	ELD users vs. non-users	None – analysis is descriptive, though

<i>Study No.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
	only on intervention completers)			and those not using them in the early deployment phase		themes are compared across categories
Study Duration	6 months (intervention period)	Conducted over a period of several weeks (focus groups in Nov–Dec 2014); no long-term follow-up	One-time survey – snapshot cross-sectional design	5-month period in early 2016	Conducted from August to November (year not explicitly repeated in body, implied 2021)	Data collected from 2006 to October 2016 (10-year span).
Setting	Posts from 2006 to 2016 were analyzed retrospectively	Focus groups held at a logistics company in the UK	Trucking trade shows and company sites across the U.S.	Real-world commercial driving conditions (UK and US)	7 truck stops across Alberta and Saskatchewan, Canada	Online forum – The Truckers Report Health Forum
Data Collection Methods	Self-monitoring logs, motivational interviewing records, training module completions, and pre/post measurements (weight, activity, diet)	Audio-recorded focus groups, transcribed verbatim; thematic content analysis	Paper and pencil surveys with questions on demographics, health, work, and Internet usage; analyzed using SAS software	App usage logs, driving incident data (14 risky behaviours), analyzed with mixed-effects Poisson regression	Structured survey (adapted from US and Canadian tools), semi-structured interviews, statistical analysis, and thematic coding using NVivo	Forum scraping and qualitative coding by researchers; quantitative metrics include posts per code, views, replies, engagement ratios
Digital Platform/ Tool Used	SHIFT web platform, cTRAIN learning software, and mobile coaching calls	Discussions centred on wearable health tech (e.g., Fitbits, apps), though no specific brand/device was used	Laptops, smartphones, and tablets used by participants; study explores potential of mobile health (mHealth) tools	Fleet-management mobile app with real-time notifications and pre-drive feedback features	Electronic Logging Devices (ELDs) – specific models not named	The study platform was an online forum, but specific health technologies were discussed (e.g., DOT regulations, fitness advice, diet tools)
Theoretical Framework	Based on the Ecological Perspective, Social Cognitive Theory of Self-Regulation, and Operant Theory, and aligned with the Total Worker Health (TWH) approach	Based on the Ecological Perspective, Social Cognitive Theory of Self-Regulation, and Operant Theory, and aligned with the Total Worker Health (TWH) approach	No formal theoretical framework applied	Based on feedback theory and Experiential Learning Theory (Kolb); pre-driving feedback and real-time feedback were studied as behavioural modifiers	Phenomenological approach used for qualitative analysis; no formal behavioural theory	Applied Rasmussen's Risk Management Framework to assess systems-level awareness

<i>Study No.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Limitations Noted	Non-random sample (only those who completed intervention), no comparison group in current analysis, limited generalizability beyond study completers	Single-organization sample, limited generalizability, volunteer bias, low prior exposure to wearables among participants	Cross-sectional design, potential recall bias, limited generalizability (recruited at trade shows), no objective usage tracking	Single organization, non-random sample for real-time feedback group, possible underreporting of trips, lack of demographic variables	Small sample, convenience sampling, lack of longitudinal crash/fatigue data, no identification of specific ELD devices	Lack of moderation, no demographic data, possible misclassification of posts, small sample for systems analysis (150 posts), and possible misinterpretation of forum tone
Ethical Consideration	✓	✓	✓	✗	✓	✗
Appraisal Tool	CASP Randomised Controlled Trial Checklist	CASP Qualitative Checklist	CASP Cross-Sectional Studies Checklist	CASP Cohort Study Checklist	MMAT	MMAT
Quality Score	10 out of 13	9 out of 10	7 out of 11	10 out of 12	5 out of 5	5 out of 5
Quality Rating	High	High	Moderate	High	High	High
Key Findings	body weight (with intervention) = -3.31 kg, $p < 0.001$ Web-based self-monitoring of behaviours and weight was the strongest predictor of weight loss. Motivational interviewing contributed to changes in diet (particularly fruit and vegetable intake).	Drivers were aware of their unhealthy lifestyles and interested in health changes. Most were open to wearable devices, motivated by prevention or health fears, but concerned about employer surveillance (privacy concerns).	Truckers used the Internet more for job-related tasks than health; Younger, less experienced drivers used the Internet more. The Internet is used more for maps, dispatch work, and social connectivity than for health. Usage for health/wellness was relatively low.	Pre-driving app use significantly reduced risky driving behaviour; this effect was mitigated by real-time notifications and amplified with app usage experience	ELD use was associated with reduced fatigue, improved sleep quality, and lower stress, but also concerns about reduced income, parking access, and learning curve.	Truckers demonstrated health awareness (e.g., about diet, sleep, chronic conditions) but lacked deep knowledge. High self-blame, low awareness of systemic factors affecting health.
Outcomes Measured	Dietary changes: Behavioural self-monitoring, computer-based training, and health coaching Physical activity changes: behavioural and body weight self-monitoring	None quantitatively; thematically explored drivers' perceptions, attitudes, motivations, and barriers regarding wearable health technologies and workplace health promotion	Frequency of Internet use (personal vs. job), including health/wellness information; device types used, associations with demographics and work history	Counts of risky driving behaviour incidents (accelerating, braking, turning, lane changing, illegal speeding, forbidden speeding)	Sleep quality, fatigue, stress, ease of use, compliance, and perceived income impact	Engagement (post frequency views, replies) with health topics (quantified), thematic codes of health knowledge, awareness and knowledge of health topics; understanding of systems-level health influences.

4.2 Article Exclusion Summary Across Screening Stages

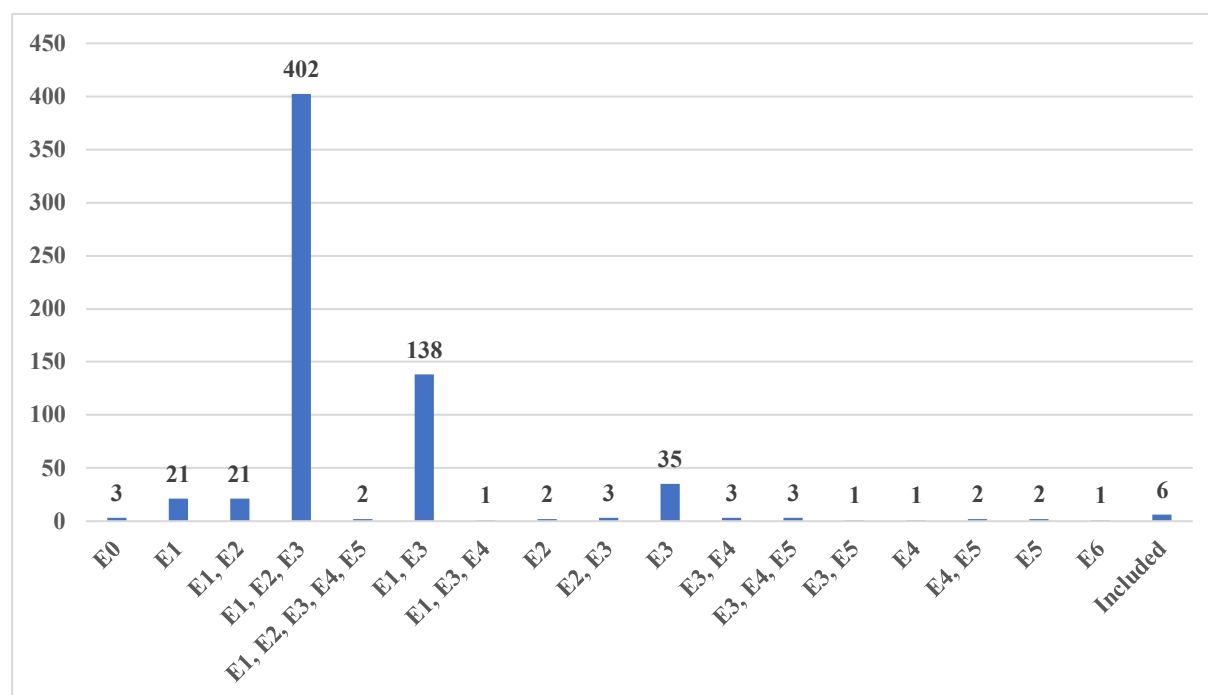


FIGURE 14 Summary of study exclusions across screening phases and categories (Own work)

A total of 647 records were screened, of which 641 were excluded, leaving only 6 studies included for full-text review and synthesis. As shown in Figure 14, the most frequent exclusion category was the combined set E1, E2, and E3 ($n = 402$), representing studies that failed to meet the core eligibility criteria: type of population, sector, and intervention relevance. These were largely studies focused on general populations, drivers outside the road freight sector, or transport research unrelated to e-health. The second largest exclusion group was E1 and E3 ($n = 138$), which combined target population (truck drivers) mismatch and lack of e-health intervention.

Single-category exclusions also reveal important patterns. Exclusions under E1 ($n = 21$) highlight the abundance of eHealth-related research conducted in general or non-professional driver populations, but the scarcity of studies focusing specifically on truck drivers. Exclusions under E2 ($n = 2$) reflect the presence of intervention research within other transport sectors (e.g., aviation or maritime), indicating limited cross-sector applicability to the road freight context. Exclusions under E3 ($n = 35$) show that while many studies explore interventions for truck drivers, the majority do not involve digital health or e-health components.

In several cases, studies passed the basic eligibility criteria but were excluded at later stages due to outcome or focus misalignment, as represented by E4 (not focused on compliance, adoption, or engagement) and E5 (irrelevant outcomes), as well as their combinations. These exclusions indicate that although some studies examined digital interventions among truck drivers, they did not address the key outcomes relevant to this review, namely user adoption, engagement, or retention.

Other exclusion categories also played minor roles. E0 ($n = 3$) reflects studies that failed to meet basic eligibility, such as being non-peer-reviewed, not published in English, or being retracted. E6 ($n = 1$) represents a methodological issue where access to full text was lacking, preventing meaningful appraisal or synthesis.

This exclusion analysis provides additional transparency and helps contextualize the scope and limitations of the review, which will be further explored in the [Discussion](#) section.

4.2.1 Studies Excluded After Full-Text Review – Partially Relevant Studies

Eight studies were excluded at the full-text review stage as partially relevant. While they did not meet the core inclusion criteria, they still offer useful background that can inform aspects of the research questions. Specifically, these studies provide insights on behaviour change strategies, health risks, technology acceptance, fatigue management, and demographic differences, which may indirectly inform the design, adoption, and implementation of e-health and mobile interventions for truck drivers.

Although these eight studies were excluded from the main synthesis, they provide valuable contextual insights that align with or indirectly inform several of the objectives in this review. Table 11 summarizes their potential contributions.

TABLE 11 Specific insights from excluded partially relevant studies (Own elaboration)

<i>Study</i>	<i>Specific Insights/Contributions</i>
Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention (Garbarino et al., 2018)	Highlights the health risks truck drivers face, especially poor sleep and mental health; offers context for why digital health interventions are urgently needed.
The effect of weight loss interventions in truck drivers: Systematic review (Pritchard et al., 2022)	Shows that multicomponent interventions (diet, exercise, support) work best; offers guidance on combining features in mobile health apps for drivers.
The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions (Wolkow et al., 2020)	Provides evidence that drivers comply with and benefit from fatigue monitoring devices, offering lessons on acceptance and compliance with digital safety tools.
Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States (Olson et al., 2016)	Demonstrates that weight loss programs can be effective for truck drivers; provides behavioural insights useful when designing digital versions of such programs.
Effectiveness of health promotion programmes for truck drivers: A systematic review (Ng et al., 2015)	Shows that health promotion programs improve driver health but often struggle with engagement, highlighting the need for better engagement strategies in digital tools.
Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis (Virgara et al., 2024)	Identifies behaviour change techniques (goal setting, self-monitoring) that improve health outcomes; suggests these can inform e-health interventions.
Facilitating adoption of virtual communities through emotional connection in the global logistics industry (C.-C. Lin et al., 2025)	Provides insights on emotional connection, perceived usefulness, and ease of use as key drivers of technology adoption; relevant for e-health app design and engagement.
Exploring the challenges faced by Dutch truck drivers in the era of technological advancement (de Winter et al., 2024)	Shows how driver attitudes toward technology vary with experience and context (e.g., advanced driver-assistance systems), which is useful for segmenting e-health users.

4.2.2 Studies Excluded After Full-Text Review – Non-Relevant Studies

Two studies were excluded as non-relevant because they fell entirely outside the scope of health or behavioural research among truck drivers. Although these studies examined organizational and system-

level technology adoption, they do not address any individual-level behavioural determinants, health outcomes, or e-health engagement.

Callefi et al. (2022) focused on organizational-level logistics technologies such as IoT and blockchain without addressing driver-level health, behaviour, or e-health engagement, while Rathore et al. (2022) investigated organizational barriers to adopting technologies like autonomous vehicles and drones using expert input without including driver-level or health-related outcomes.

These two studies were excluded as non-relevant and do not address individual-level determinants, but they offer limited background context at the organizational or system level, which may indirectly contextualize certain challenges related to technology adoption in the transportation sector. The table below outlines these potential connections.

TABLE 12 Specific insights from excluded non-relevant studies (Own elaboration)

<i>Study</i>	<i>Specific Insights/Contributions</i>
Technology-enabled capabilities in road freight transportation systems: A multi-method study (Callefi et al., 2022)	Highlights system-level and operational barriers to adopting new technologies in logistics; indirectly informs upstream adoption challenges.
Identification and analysis of adoption barriers of disruptive technologies in the logistics industry (Rathore et al., 2022)	Identifies management-level and organizational barriers to technology adoption; provides background context for broader implementation challenges in the sector.

4.3 Analysis and Synthesis of the Included Studies

Section 4.3 presents the core analytical and synthetic process of this review, culminating in the development of an integrated conceptual framework. The structure follows a layered logic: beginning with the mapping of included studies to the research questions ([Section 4.3.1](#)), followed by the alignment of findings with established theoretical frameworks ([Section 4.3.2](#)). These two analytical layers form the basis for the cross-study synthesis of behavioural determinants influencing compliance, retention, and engagement with digital health interventions ([Section 4.3.3](#)). Finally, the identified determinants and their theoretical relevance are brought together into a consolidated, theory-informed framework ([Section 4.3.4](#)), which serves as the central output of this review.

This progression reflects both an evidence-driven and theory-informed synthesis. The mapping to research questions establishes empirical relevance, while the mapping to frameworks ensures conceptual grounding. The cross-study summary draws out patterns across diverse study contexts and methodologies, identifying both core and conditionally influential determinants. The final integrative framework (illustrated in Figure 16) links these determinants with theoretical constructs from models such as UTAUT2, MAVA, SDT, COM-B, HBM, and PSD, offering a structured lens for understanding and designing digital health interventions tailored to the occupational context of truck drivers.

The structure and logic of Section 4.3 are visually summarised in Figure 15, which illustrates the analytical progression from the included studies, through research question and theoretical mapping, toward an integrated, theory-informed framework. The figure demonstrates how the review triangulates three core elements: (1) empirical findings from the included studies, (2) thematic alignment with the predefined research questions, and (3) conceptual grounding in behavioural and technology acceptance theories. Determinants identified through empirical analysis are connected with theoretical constructs, allowing for a multi-dimensional synthesis that concludes in the development of a consolidated framework presented in [Section 4.3.4](#).

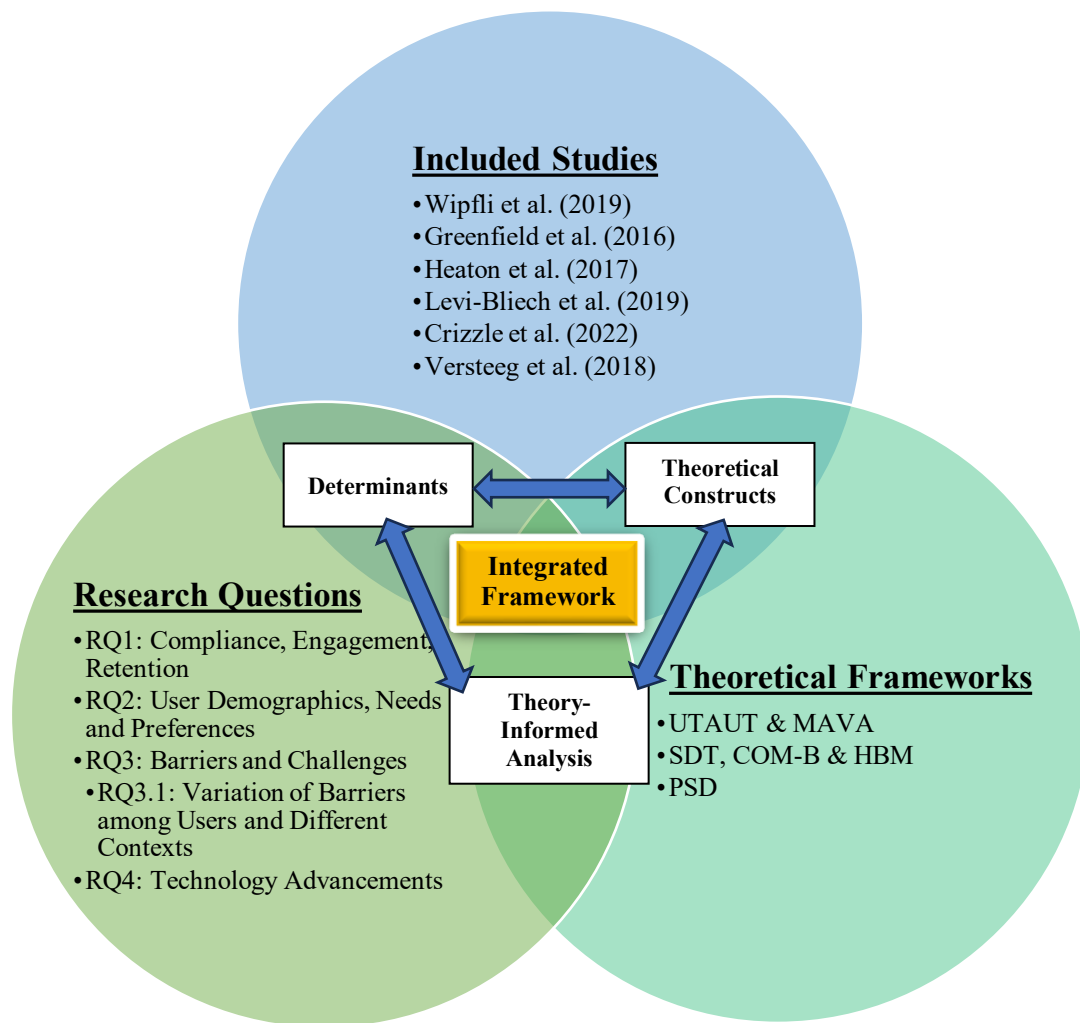


FIGURE 15 Logic model of the synthesis process in Section 4.3: Conceptual pathway to the integrated framework (Own work)

4.3.1 Mapping of Included Studies to Research Questions

Building on the characteristics of the included studies, this section maps each study's contributions to the five predefined [research questions](#) guiding this review, allowing for a targeted synthesis of evidence across key thematic areas. This mapping provides the analytical basis for cross-study comparison and the development of broader themes in the following sections.

The aim is to understand how each study informs the central issues of digital health adoption among truck drivers, particularly in relation to engagement, compliance, and retention (RQ1); the influence of user demographics, preferences, and needs (RQ2); the barriers and challenges to technology acceptance (RQ3); variation in these barriers across user groups and contexts (RQ3.1); and the role of technological advancements in improving long-term usage and user experience (RQ4).

Relevant findings were interpreted based on context and study design where direct responses to the research questions were not available.

Summary tables illustrating the distribution of evidence are provided for all research question topics, which are further explored in the sub-sections of this chapter.

4.3.1.1 Determinants Influencing Engagement, Compliance, and Retention (RQ1)

Across the six included studies, several key determinants emerged that influenced engagement, compliance, and retention with digital health tools among truck drivers.

Engagement was most commonly facilitated through features such as self-monitoring, real-time feedback, and peer-based support. Drivers were more inclined to engage when tools aligned with their work routines or responded dynamically to their behaviour. However, engagement was often short-lived, with some studies showing early participation followed by decline.

Compliance was supported by motivational strategies such as health coaching, real-time feedback, and job-related incentives like passing medical exams.

Retention was closely tied to perceived value and usability (i.e., tools that were easy to use, automated, or incentivized had higher sustained use), while complex or time-consuming tools deterred continued participation.

Overall, the findings emphasize the importance of simplicity, contextual relevance, and motivational design in maintaining driver engagement over time. Table 13 presents a summary of how each included study addressed factors influencing engagement, compliance, and retention with digital health and mobile applications among truck drivers.

TABLE 13 Mapping of included studies to RQ1 (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
1	Wipfli et al. (2019)	<p><u>Engagement</u>: Supported by self-monitoring tools that allowed drivers to track their weight and behaviours in real time.</p> <p>- Most engagements occurred during the first three weeks, suggesting challenges in maintaining long-term participation.</p> <p><u>Compliance</u>: Improved through motivational interviewing and personalized goal setting, which helped drivers stay aligned with health objectives.</p> <p><u>Retention</u>: Boosted by certification incentives and social competition features like squad rankings.</p> <p>- Access to laptops and mobile platforms enabled consistent use across work settings.</p>
2	Greenfield et al. (2016)	<p><u>Engagement</u>: Primarily driven by drivers' personal motivation to improve health, particularly in response to health scares and preventive concerns.</p> <p><u>Compliance</u>: This is likely to be higher when technology is simple, easy to use, and compatible with irregular trucking schedules.</p> <p><u>Retention</u>: Threatened by complexity. Participants stated that if a tool was difficult or time-consuming, they would quickly stop using it.</p>

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
		- Solutions needed to be adapted to the realities of non-traditional work hours and limited flexibility on the road (lifestyle-aligned design).
3	Heaton et al. (2017)	<p><u>Engagement</u>: Generally high for job-related tasks, as most drivers accessed the internet regularly using laptops and smartphones. Engagement with health-related content was low, with drivers only accessing wellness information about two days per week on average. Health engagement was incidental rather than intentional or routine.</p> <p><u>Compliance and retention</u>: Appeared limited, particularly among older and less-educated drivers, suggesting demographic differences in sustained usage.</p>
4	Levi-Bliech et al. (2019)	<p><u>Engagement</u>: Encouraged through the voluntary use of pre-driving feedback, allowing drivers to review and learn from past behaviour. Real-time notifications provided in-ride cues, reinforcing immediate awareness.</p> <p><u>Compliance</u>: Improved over time, as repeated interaction with the app was associated with reduced risky behaviours.</p> <p><u>Retention</u>: Appeared linked to ongoing experience with the app, which strengthened the effect of voluntary use and supported behaviour change through cumulative learning.</p>
5	Crizzle et al. (2022)	<p><u>Engagement</u>: Supported by the automation of ELDs, which simplified tracking and reduced the burden of manual logging.</p> <p><u>Compliance</u>: Improved as drivers were prompted to follow hours-of-service regulations, leading to better rest and reduced stress.</p> <p><u>Retention</u>: Aided by the perceived usefulness of ELDs in streamlining routines and inspections, especially for drivers who were digitally comfortable. Sustained use likely depended on how intuitive and user-friendly the system felt to individual drivers.</p>
6	Versteeg et al. (2018)	<p><u>Engagement</u>: Driven by peer-to-peer support and a shared interest in practical, job-compatible health strategies, such as in-cab exercises and sleep tips.</p> <p><u>Compliance</u>: Often motivated by the need to pass mandatory DOT medical exams, linking health behaviour to job security.</p> <p><u>Retention</u>: Limited, as forum activity showed that while drivers sought help and shared advice, follow-through and sustained participation were low, highlighting a need for structured, guided support beyond peer forums.</p>

4.3.1.2 Impact of User Demographics, Preferences, and Needs on Adoption (RQ2)

The findings revealed that user demographics, preferences, and needs played an influential role in shaping the adoption and usage patterns of digital health tools among truck drivers.

Younger, more educated, and less experienced drivers tended to use technology more frequently and with greater ease. In contrast, older drivers or those with lower digital literacy faced usability challenges that impacted engagement. Preferences consistently leaned toward tools that were simple, quick to use, and tailored to the realities of mobile work.

Health interventions that aligned with drivers' routines, such as in-cab exercises or flexible formats, were better received. Although subgroup analyses were limited, several studies indicated that perceived complexity, lack of relevance, or insufficient personalization could reduce adoption.

These insights point to the importance of designing interventions that are accessible across age and experience levels, and that account for the practical and personal needs of users in a demanding occupational setting. Table 14 outlines how user demographics, preferences, and needs were reflected in the adoption and usage patterns of digital tools across the included studies.

TABLE 14 Mapping of Included Studies to RQ2 (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
1	Wipfli et al. (2019)	<p><u>Demographics</u>: Most participants were middle-aged, male, and had high school education.</p> <p><u>Preferences and Needs</u>: No subgroup analysis was done; the intervention reflected user needs by offering content tailored to truckers' schedules, environment, and learning preferences, such as in-cab exercises and flexible digital formats.</p>
2	Greenfield et al. (2016)	<p><u>Demographics</u>: Participants were all male, middle-aged, and experienced drivers.</p> <p><u>Preferences</u>: Leaned toward simple, tailored tools compatible with their work demands.</p> <p><u>Needs</u>: No subgroup analysis was conducted; drivers expressed a need for personalized, practical solutions, such as dietary guidance, and noted that stress, long hours, and tight schedules made health management difficult.</p>
3	Heaton et al. (2017)	<p><u>Demographics</u>: Younger, less experienced, and more educated drivers used the internet more frequently.</p> <p><u>Preferences and Needs</u>: Not deeply explored; the findings suggest that age, experience, and education influenced the adoption and usage patterns of digital tools.</p> <p>- The study lacked qualitative data to understand motivations or usability needs in depth.</p>
4	Levi-Bliech et al. (2019)	<p>No subgroup analysis was conducted, and user preferences were not explored qualitatively. The sample included 109 professional drivers from the UK and the US. Interaction with the app required manual login, suggesting that ease of access may have affected</p>

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
		usage. The study did not examine how demographics or user needs influenced adoption or engagement.
5	Crizzle et al. (2022)	<p>Although no subgroup analysis was conducted, the findings highlighted differences in adaptability based on age and tech familiarity.</p> <p><u>Demographics:</u> Older drivers and those less tech-savvy struggled with ELD use, citing frustration with system complexity and reliability.</p> <p><u>Preferences:</u> Some drivers found the tools easy and efficient, suggesting that digital literacy influenced user preferences and experiences.</p>
6	Versteeg et al. (2018)	<p><u>Demographics:</u> Composed of predominantly older male drivers with limited formal education.</p> <p><u>Preferences:</u> Posts revealed a preference for simple, accessible health strategies, such as in-truck workouts and walkable areas, indicating a need for low-complexity, practical interventions.</p> <p><u>Needs:</u> No demographic analysis was conducted, but the content pointed to consistent needs for convenience and relevance to on-the-road lifestyles.</p>

4.3.1.3 Identified Barriers and Challenges in E-Health Adoption (RQ3)

The reviewed studies revealed a wide range of barriers and challenges that affected drivers' willingness or ability to adopt digital health tools.

Occupational demands were a dominant theme, with long shifts, irregular schedules, and limited rest opportunities making it difficult to consistently engage with interventions. Physical and environmental constraints, such as lack of access to healthy food or safe parking, further limited behavior change. Technological barriers also played a role, particularly when systems were perceived as complex, unreliable, or time-consuming to use. Some drivers faced login friction or experienced frustration when devices failed, while others were discouraged by rigid system structures that clashed with personal routines. Psychological and organizational concerns added another layer of resistance. Fears of employer surveillance, job loss, or being judged for personal health conditions reduced trust in the tools. In some cases, misinformation and stigma, particularly around mental health, further inhibited open participation.

These findings highlight the need for interventions that are flexible, context-sensitive, and designed to minimize both logistical and psychological barriers. Table 15 summarizes the barriers and challenges identified in each study that hindered the adoption and sustained use of e-health and mobile applications among truck drivers.

TABLE 15 Mapping of included studies to RQ3 (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
1	Wipfli et al. (2019)	<u>Low participation rate:</u> Only 25.4% of drivers completed the full intervention, limiting the potential impact.

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
		<p><u>Physical environment constraints</u>: Drivers had limited access to grocery stores and space to store healthy food in their cabs.</p> <p><u>Mobile and remote work structure</u>: The dispersed nature of truck driving made it difficult to deliver traditional health interventions effectively.</p> <p><u>Declining digital engagement</u>: Most engagements occurred within the first three weeks, indicating challenges in sustaining interest over time.</p>
2	Greenfield et al. (2016)	<p><u>Long, irregular shifts</u>: Drivers reported limited sleep and extended work hours, making sustained engagement difficult.</p> <p><u>Physical and mental fatigue</u>: High stress and exhaustion reduced the likelihood of continued use of health technologies.</p> <p><u>Mismatch with work demands</u>: Drivers felt that traditional fitness expectations were unrealistic given their long, demanding shifts.</p> <p><u>Employer surveillance concerns</u>: Participants were uncomfortable with employers having access to stress and fatigue data.</p> <p><u>Job security fears</u>: Some drivers are worried that using health-tracking tech could expose conditions that might threaten their employment.</p>
3	Heaton et al. (2017)	<p><u>Time constraints</u>: Long driving hours left little opportunity for drivers to engage with digital health tools.</p> <p><u>Competing demands</u>: Drivers prioritized essential tasks like eating and sleeping over online health activities.</p> <p><u>Low health engagement</u>: Despite regular internet access, health-related usage remained low, highlighting limited motivation or perceived value.</p>
4	Levi-Bliech et al. (2019)	<p><u>App usage dependence on login</u>: The app required manual logins, which may have discouraged consistent use, especially during busy or rushed periods.</p> <p><u>Voluntary behaviour needed</u>: Drivers had to actively choose to engage with the app pre-drive, making usage inconsistent across individuals.</p> <p><u>Lack of mandatory tracking</u>: Some trips may not have been recorded, particularly when drivers were pressed for time, limiting data completeness.</p> <p><u>Organizational limitations</u>: The study was conducted within a single company, which may have influenced behaviour due to specific internal practices.</p> <p><u>Reduced motivation due to real-time feedback</u>: Receiving real-time alerts during driving may have discouraged drivers from reviewing their data pre-trip.</p>

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
5	Crizzle et al. (2022)	<p><u>Difficulty finding parking</u>: Limited parking options forced drivers to sleep in unsafe areas, leading to potential legal or safety issues.</p> <p><u>Technological barriers</u>: Errors with ELDs required drivers to stop and contact dispatch, adding frustration and workflow interruptions.</p> <p><u>Pressure to violate</u>: Some drivers admitted to knowingly exceeding legal limits when unable to find safe places to stop.</p> <p><u>Reduced flexibility</u>: The rigid structure of ELDs often conflicts with natural sleep patterns and personal rhythms.</p> <p><u>Impact on sleep</u>: Drivers were forced to rest on schedule rather than when their body required it, undermining sleep quality.</p> <p><u>Financial pressure</u>: Inflexible regulations created stress about income loss if drivers couldn't reach the next stop.</p> <p><u>Inflexible timing structure</u>: Once the ELD timer began, it continued without accommodating real-world delays or needs.</p>
6	Versteeg et al. (2018)	<p><u>Knowledge gap</u>: Although drivers discussed health topics, their understanding was often superficial and lacked depth.</p> <p><u>Misinformation or poor-quality advice</u>: Many posts promoted unverified or harmful strategies, such as fad diets and quick fixes.</p> <p><u>Low engagement with occupational safety</u>: Discussions about workplace hazards were minimal, suggesting low awareness or perceived relevance.</p> <p><u>Stigma and underreporting of mental health</u>: Few posts addressed mental health, possibly due to stigma and discomfort in discussing such issues.</p> <p><u>Lack of systemic understanding</u>: Drivers often blamed themselves for poor health outcomes, showing limited awareness of broader structural or occupational influences.</p>

4.3.1.4 Variation in Barriers Across User Groups and Contexts (RQ3.1)

Findings across the studies suggest that barriers to e-health adoption and engagement vary depending on user characteristics and contextual factors.

Age, digital literacy, and work experience influenced how drivers interacted with digital tools, with older or less tech-savvy individuals experiencing more difficulty in adapting to new systems. Variations in work routines and driving schedules also shaped how drivers encountered time pressure, regulatory constraints, and usability challenges. Differences in engagement patterns were observed, such as early spikes in usage or a preference for passive versus active interaction, though these were not always formally analyzed. In some cases, drivers' own perceptions of health responsibility masked broader systemic influences, leading to the underrecognition of context-specific barriers.

These findings emphasize the importance of designing adaptable, inclusive digital interventions that account for variability across users and environments. Table 16 presents the differences in perceived barriers and usage contexts across studies, highlighting where variation was observed or inferred.

TABLE 16 Mapping of Included Studies to RQ3.1 (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
1	Wipfli et al. (2019)	<p>Only a quarter of drivers completed the full intervention, indicating that factors like individual motivation, access to technology, or terminal-level support may have influenced participation.</p> <p>Differences in how and when drivers engaged (e.g., early peak in training use) hint at variability in usage patterns that were not formally analysed.</p>
2	Greenfield et al. (2016)	<p><u>Contextual work constraints:</u> Drivers emphasized that most health technologies were designed for standard 9–5 workers, not those with irregular shift patterns. This could limit the perceived relevance and adoption of digital tools.</p>
3	Heaton et al. (2017)	<p>The findings indicated that <i>younger, more educated, and less experienced drivers</i> were more likely to use the internet regularly. This suggests that digital engagement barriers may be greater for older drivers or those with lower education levels, possibly due to lower digital literacy or confidence. The lack of targeted support for these groups may contribute to the unequal adoption of health-related digital tools.</p>
4	Levi-Bliech et al. (2019)	<p><u>User behaviour variation:</u> Because app use required manual logins, differences in individual motivation or routine likely influenced engagement. The weakening of pre-driving review, when real-time feedback was active, suggests that driver context (e.g., preference for passive vs active input) may have shaped how they interacted with the app.</p> <p><i>(Note: These differences were not formally analysed in the study.)</i></p>
5	Crizzle et al. (2022)	<p><u>Variation in drivers' age:</u> Older and less tech-savvy drivers struggled more with ELD use, while others found the technology easy and efficient.</p> <p><u>Variation in driving schedules and routines:</u> Influenced how drivers experienced time pressure, parking challenges, and regulatory constraints.</p>
6	Versteeg et al. (2018)	<p>Drivers tend to attribute health issues to personal behaviour rather than systematic factors (shows a lack of awareness about how barriers might differ by job type, company policy, or work environment).</p>

4.3.1.5 Role of Technology Advancements in Enhancing Engagement (RQ4)

Not all studies focused explicitly on the design of technology features, but several highlighted how advancements in interface design, automation, and feedback mechanisms influenced user engagement.

Personalized goal tracking, real-time feedback, and gamification were among the most promising strategies for sustaining motivation and interaction with technology. These features helped users visualize their progress, receive timely prompts, and align the experience with their behavioural goals. In contrast, studies that lacked such design elements showed limited evidence of engagement enhancement, instead pointing to a need for greater attention to usability and accessibility.

Simplicity, intuitiveness, and compatibility with commonly used devices were recurring preferences, particularly for mobile access. However, elements such as personalization, gamification, and data security were underexplored across most studies, suggesting a gap in the current application of persuasive and user-centred design strategies in occupational e-health tools.

Table 17 summarizes how each study addressed the role of technological features and system design in supporting engagement with digital health interventions.

TABLE 17 Mapping of Included Studies to RQ4 (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
1	Wipfli et al. (2019)	The SHIFT intervention used several technology-based features to enhance engagement including <i>real-time feedback tools</i> , <i>personalized goal tracking</i> , and <i>gamified elements</i> like squad rankings and certification progress. Visual displays (e.g., tachometer-style gauges and semi-truck graphics) were designed to be intuitive and appealing to drivers. These advancements helped support user motivation and interaction with the digital platform.
2	Greenfield et al. (2016)	Participants emphasized the importance of <i>simple and easy-to-use technology</i> , but the study did not explore specific advancements like personalization, gamification, or data security.
3	Heaton et al. (2017)	There was no discussion of features that could enhance long-term health engagement through technology. However, the study highlighted the potential of targeted mobile health messaging to connect drivers with health services and increase engagement if accessible through commonly used devices like smartphones and laptops.
4	Levi-Bliech et al. (2019)	<u>Behavioural feedback mechanisms</u> : This core technology feature utilized both <i>pre-driving summaries</i> and <i>real-time notifications</i> to influence driver behaviour. These feedback types aligned with learning and attention theories, enhancing the app's effectiveness. The study did not incorporate or assess gamification, personalization, or data security features.
5	Crizzle et al. (2022)	ELDs provided <i>automated tracking and alerts</i> , which helped reduce stress and improve compliance.

<i>Study No.</i>	<i>Study</i>	<i>Key Insights</i>
		The study did not explore advanced features like personalization, gamification, or user interface design, but it highlighted the need for better usability design of the technology.
6	Versteeg et al. (2018)	The study did not examine technology design or advancements directly. Technology use was limited to participation in online forums, with no discussion of interface features, personalization, gamification, or data security.

4.3.2 Mapping of Included Studies to Theoretical Frameworks

This section maps the synthesized findings from the included studies to the key theoretical frameworks outlined in [Chapter 2](#). Even though most studies did not explicitly use formal theoretical models, their findings can be interpreted through the lens of several behavioural and technology acceptance frameworks.

This mapping aims to highlight how truck drivers' engagement patterns, motivational factors, perceived barriers, and interaction with digital tools reflect core constructs within these frameworks. Doing so enhances the explanatory value of the findings and supports theory-informed insights for future intervention design.

Each theoretical framework contributes to the interpretation of findings across different research questions, offering varied but complementary perspectives:

- **UTAUT2** is most closely aligned with **RQ2** and **RQ4**, as it explains how user demographics (e.g., age, education, experience), expectations (e.g., ease of use, usefulness), and enabling conditions influence technology adoption and use. It also provides a structure to assess how interface design and system features (e.g., habit formation, facilitating conditions) affect sustained digital health engagement.
- **MAVA** supports analysis of **RQ2** and **RQ3**, particularly in studies where organizational context or employer-related concerns shaped technology acceptance. It adds an occupational lens to traditional adoption models, emphasizing the influence of system-level trust, perceived surveillance, and institutional support on user behaviour.
- **SDT** is applicable to **RQ1**, offering a framework to understand what drives long-term motivation, compliance, and engagement. It also contributes to **RQ4** by explaining how features like autonomy, competence, and relatedness can be embedded into digital tools to encourage intrinsic motivation.
- **COM-B** is one of the most cross-cutting frameworks, relevant to **RQ1**, **RQ3**, and **RQ3.1**. It helps explain how users' capability, opportunity, and motivation interact to influence engagement and how contextual barriers (e.g., fatigue, time, access) impact behaviour across different user groups and environments.
- **HBM** relates primarily to **RQ3** and **RQ3.1**, where it helps interpret how drivers' perceived susceptibility to health risks, perceived benefits of using digital tools, and perceived barriers (such as privacy concerns or job insecurity) influence their decision to engage or disengage.
- **PSD** is connected to **RQ1** and **RQ4**, as it focuses on the design of system features (e.g., feedback, reminders, gamification, social influence) that shape user engagement. PSD bridges

behaviour and design by explaining how digital tools can be built to persuade users to adopt, sustain, and benefit from healthy behaviours.

Table 18 summarizes the alignment of findings with UTAUT2, MAVA, SDT, COM-B, HBM, and the PSD model, based on the theoretical constructs most reflected in the study data.

TABLE 18 Mapping of included studies to theoretical frameworks (Own elaboration)

<i>Study No.</i>	<i>Study</i>	<i>Relevant Framework and its Alignment with the Study</i>
1	Wipfli et al. (2019)	<p><u>UTAUT2</u>: Several constructs are reflected: performance expectancy (health benefits), effort expectancy (web-based access), social influence, and facilitating conditions (equipment provision).</p> <p><u>SDT</u>: Motivational interviewing supported autonomy and competence by allowing drivers to set personal goals and reflect on progress, while team-based competition may have fostered relatedness.</p> <p><u>COM-B</u>: The intervention addressed all COM-B components: Capability through training and self-monitoring tools, Opportunity via digital access and incentives, and Motivation through coaching, feedback, and competition.</p> <p><u>PSD</u>: The digital platform featured primary task support (goal tracking), dialogue support (feedback), and social influence (team ranks), aligning with persuasive design principles.</p>
2	Greenfield et al. (2016)	<p><u>UTAUT2</u>: Findings reflect effort expectancy (drivers preferred simple, easy-to-use technology) and performance expectancy (health improvement as a motivating factor). Social influence was also evident, as peer experiences influenced openness to wearables.</p> <p><u>MAVA</u>: Participants expressed concerns about employer monitoring and job risk, reflecting organizational-level factors in technology acceptance, such as trust, data use, and surveillance.</p> <p><u>SDT</u>: Drivers' motivation to improve health was often tied to autonomy and personal values (e.g., fear of health scares). However, some lacked competence or confidence in technology.</p> <p><u>COM-B</u>: The findings highlight opportunity limitations (e.g., long shifts, fatigue) and capability gaps (limited tech familiarity), which affected motivation and behavioural follow-through.</p> <p><u>HBM</u>: Preventive motivation and fear of illness suggest perceived susceptibility and severity, while surveillance concerns and tech complexity point to perceived barriers.</p>
3	Heaton et al. (2017)	<p><u>UTAUT2</u>: Usage patterns varied by age, experience, and education, which links to habit and facilitating conditions. However, health-related internet use was limited, suggesting low performance expectancy for wellness tools.</p>

<i>Study No.</i>	<i>Study</i>	<i>Relevant Framework and its Alignment with the Study</i>
		<p><u>COM-B</u>: Opportunity limitations (time, competing demands) and low motivation for using health tools were evident, despite general digital access.</p> <p><u>HBM</u>: The limited health-related internet use suggests low perceived susceptibility or benefit, indicating a weak health belief activation.</p>
4	Levi-Bliech et al. (2019)	<p><u>UTAUT2</u>: Effort expectancy is reflected in the need for manual logins, which may have influenced usage. Performance expectancy is supported by the observed reduction in risky driving behaviours. Facilitating conditions were partly present, though variability in login behaviour suggests inconsistent support.</p> <p><u>SDT</u>: The app's pre-driving review feature encouraged autonomous motivation, allowing drivers to reflect on their behaviour voluntarily. Continued use and learning effects suggest growing competence over time.</p> <p><u>COM-B</u>: The intervention strengthened capability (through behavioural feedback) and motivation (via performance improvement), but the opportunity was limited by reliance on self-initiated use.</p> <p><u>PSD</u>: The app employed primary task support (behavioural summaries), real-time feedback, and learning reinforcement, which align with persuasive system principles.</p>
5	Crizzle et al. (2022)	<p><u>UTAUT2</u>: Drivers expressed mixed perceptions of effort expectancy and performance expectancy, wherein some found ELDs useful and easy, while others struggled due to tech complexity. Facilitating conditions varied by digital literacy and work context.</p> <p><u>COM-B</u>: The ELDs influenced opportunity by enforcing rest breaks and limiting driving hours. Motivation was affected both positively (reduced stress, improved routine) and negatively (frustration with inflexibility). Capability varied based on drivers' tech familiarity.</p> <p><u>HBM</u>: Drivers' behaviour changes reflected perceived benefits (improved safety, compliance) but also highlighted perceived barriers, such as parking challenges and loss of flexibility.</p> <p><u>SDT</u>: Autonomy was limited due to the rigid structure imposed by ELDs, leading to some resistance. However, those who adapted felt more in control and capable, touching on competence and autonomy depending on user experience.</p>
6	Versteeg et al. (2018)	<p><u>COM-B</u>: Drivers demonstrated motivation to improve health but often lacked capability (knowledge gaps) and opportunity (work-related constraints), which limited follow-through on health behaviours.</p> <p><u>SDT</u>: Posts reflected intrinsic motivation rooted in autonomy (self-driven desire to improve) and a need for competence, though lack of professional guidance often left drivers uncertain about their choices.</p>

<i>Study No.</i>	<i>Study</i>	<i>Relevant Framework and its Alignment with the Study</i>
		<u>HBM</u> : Discussions suggested awareness of health risks (perceived susceptibility), but also reflected barriers such as misinformation, lack of system-level support, and stigma around mental health.

4.3.3 Cross-Study Summary of Determinants Influencing Compliance, Retention, and Engagement

To synthesize findings across the included studies, this section identifies and consolidates key determinants that influenced user compliance, retention, and engagement with e-health and mobile applications in the road freight sector. These determinants were drawn from the thematic mapping conducted in [Section 4.3.1](#), covering insights related to engagement mechanisms (RQ1), user demographics and preferences (RQ2), barriers and contextual variation (RQ3 and RQ3.1), and the role of technological features (RQ4).

Based on the synthesis of findings across the six included studies, fifteen key determinants were identified that influenced truck drivers' compliance, retention, and long-term engagement with e-health and mobile applications. These determinants emerged through the mapping of study results to the research questions and reflect both individual- and system-level factors that shape user behaviour. The list below provides a brief description of each determinant, along with references to the specific studies (and related research questions) in which supporting evidence was found.

1. Self-monitoring and Behaviour Tracking – RQ1, RQ4

This determinant refers to the use of digital tools that allow users to log, monitor, or receive feedback on specific health or behavioural data such as weight, sleep, or driving habits. In Wipfli et al. (2019), participants tracked body weight and health behaviours through a logging interface. Levi-Bliech et al. (2019) allowed drivers to review driving behaviour before trips using app-based data logs. Similarly, Crizzle et al. (2022) examined the role of ELDs in capturing fatigue-related driving data.

2. Social Motivation and Incentives – RQ1, RQ4

This determinant refers to the use of group-based or reward-driven mechanisms such as rankings, competition, or recognition to enhance motivation. Wipfli et al. (2019) used squad-based competition and certification rewards to sustain engagement. Versteeg et al. (2018) highlighted informal social motivation, as drivers shared weight loss updates and fitness strategies through peer forums.

3. Health Coaching and Motivational Support – RQ1, RQ3

This determinant refers to the inclusion of guided behavioural support, such as coaching sessions or motivational interviewing, to strengthen user commitment. Wipfli et al. (2019) incorporated motivational interviewing to help drivers set and sustain goals. Versteeg et al. (2018) emphasized a lack of professional support, noting that drivers often relied on peer advice in the absence of structured guidance.

4. Work Schedule and Fatigue – RQ1, RQ3

This determinant refers to the occupational barriers caused by long hours, irregular shifts, and limited rest, which reduce time and energy for digital engagement. Greenfield et al. (2016) described how fatigue and time constraints hindered the use of health tools. Crizzle et al. (2022) and Versteeg et al. (2018) similarly noted that job demands disrupted consistent participation in health activities.

5. **Personalization and Goal Customization** – RQ1, RQ2, RQ4

This determinant refers to users' ability to set their own health goals or receive tailored content aligned with their needs or preferences. In Wipfli et al. (2019), participants selected which behaviours to track and which goals to pursue. Greenfield et al. (2016) reported that drivers wanted dietary guidance tailored to their specific lifestyles and routines. Levi-Bliech et al. (2019) allowed drivers to engage with app feedback voluntarily before driving.

6. **Feedback and Reminders** – RQ1, RQ3, RQ4

This determinant refers to the use of prompts or automated messages that encourage users to stay on track with behaviours or goals. Wipfli et al. (2019) provided digital feedback through progress gauges. Levi-Bliech et al. (2019) used pre- and post-trip summaries to reinforce behaviour. Crizzle et al. (2022) highlighted how ELDs sent real-time reminders about driving time limits. Versteeg et al. (2018) demonstrated that drivers also used forums to exchange informal health prompts.

7. **Gamification/Progress Visualization** – RQ1, RQ4

This determinant refers to the use of visual or competitive features that reinforce engagement, such as progress charts, badges, or rankings. Wipfli et al. (2019) incorporated squad rankings and visual trackers tied to certification progress. Levi-Bliech et al. (2019) used visual behaviour charts and app-based progress metrics to motivate safer driving behaviour.

8. **Real-Time Feedback and Responsiveness** – RQ1, RQ4

This determinant refers to the system's ability to adapt or respond immediately to user actions or conditions during real-time use. Wipfli et al. (2019) offered real-time progress gauges to monitor certification status and engagement. Levi-Bliech et al. (2019) provided real-time feedback during driving to flag risky behaviour. Crizzle et al. (2022) showed that ELDs automatically alerted drivers when they approached rest limits.

9. **Engagement Pattern over Time** – RQ1, RQ4

This determinant refers to how user engagement changes across the course of an intervention, often peaking early and declining later. Wipfli et al. (2019) found that training engagement was highest during the first three weeks. Levi-Bliech et al. (2019) noted reduced use of voluntary app features over time, despite initial high interaction rates.

10. **Technological Simplicity and Usability** – RQ2, RQ3, RQ4

This determinant refers to how easy or intuitive a system is to use, especially for users with low digital literacy. Greenfield et al. (2016) reported that overly complex systems discouraged usage. In Levi-Bliech et al. (2019), requiring manual logins created friction in engagement. Crizzle et al. (2022) noted that older drivers found ELDs difficult to navigate. Versteeg et al. (2018) revealed a preference for simple and practical interventions.

11. **Technology Access and Infrastructure** – RQ2, RQ3

This determinant refers to whether users had the hardware, software, and connectivity needed to access e-health tools. Wipfli et al. (2019) provided Wi-Fi-enabled laptops to drivers. Heaton et al. (2017) documented high internet access but noted that not all drivers used it for health purposes. Levi-Bliech et al. (2019) raised concerns about inconsistent app access. Versteeg et al. (2018) revealed a preference for accessible health apps.

12. **Relevance to Driver Context** – RQ2, RQ3

This determinant refers to how well the intervention fits the mobile, shift-based, and physically constrained environment of truck drivers. Wipfli et al. (2019) offered cab-based exercises and flexible formats. Greenfield et al. (2016) pointed out that most health technologies are designed for 9–5 workers and not for those with atypical schedules. Crizzle et al. (2022) and Versteeg et al. (2018) highlighted the need for tools that align with on-the-road lifestyles.

13. **Digital Literacy and Demographics** – RQ2, RQ3

This determinant refers to how factors such as age, education, and experience influence comfort with digital tools. Heaton et al. (2017) found that younger, college-educated drivers used the internet more frequently. Greenfield et al. (2016) and Crizzle et al. (2022) showed that older drivers or those less confident with technology faced greater barriers.

14. **Perceived Usefulness or Value** – RQ2, RQ4

This determinant refers to whether users believe that the digital tool helps them achieve health or safety outcomes. Wipfli et al. (2019) linked usage with actual weight loss and behaviour change. Heaton et al. (2017) reported low perceived value for health-related internet use. Levi-Bliech et al. (2019) showed that voluntary app use prior to driving was associated with safer behaviour, suggesting drivers recognized the tool's benefit. Crizzle et al. (2022) highlighted mixed perceptions of ELD value, in which some drivers appreciated the structure, while others saw it as restrictive. Versteeg et al. (2018) demonstrated that peer-driven forums were valued for their practicality and relevance in addressing health concerns.

15. **Privacy and Employment Concerns** – RQ3

This determinant refers to fears about how data might be used by employers or whether tool use might affect job security. Greenfield et al. (2016) reported that drivers feared being monitored or penalized. Crizzle et al. (2022) noted that some drivers resisted ELDs because of perceived surveillance and its implications for their work flexibility.

Table 19 presents a cross-study summary of these determinants that influenced compliance, retention, and long-term engagement with e-health and mobile applications among truck drivers, alongside a brief description and indicates which studies reported evidence related to each factor. These categories group similar patterns across studies, such as behaviour tracking, motivational supports, usability, and occupational barriers. The table shows which factors were identified in each study, either as present (✓) or conditionally influential (*), depending on the context (i.e., indirect implications such as when a factor was not the main focus of the study but emerged through secondary observations, participant feedback, or inferred from the study design, setting, or reported limitations).

This cross-study summary provides a broader view of the conditions that shaped drivers' interaction with digital health technologies and serves as a foundation for the thematic analysis presented in this chapter. This is also used in building up the integrated framework where the determinants are linked to theoretical frameworks and their constructs, which are presented in the next section of this chapter.

TABLE 19 Cross-study summary of determinants on compliance, retention, and long-term engagement of truck drivers to e-health and mobile applications (Own elaboration)

<i>Determinants</i>	<i>Description</i>	<i>Wipfli et al. (2019)</i>	<i>Greenfield et al. (2016)</i>	<i>Heaton et al. (2017)</i>	<i>Levi-Bliech et al. (2019)</i>	<i>Crizzle et al. (2022)</i>	<i>Versteeg et al. (2018)</i>
Self-monitoring & Behaviour Tracking	Use of tools to log, monitor, or receive feedback on behaviours (e.g., weight, sleep, driving)	✓			✓	✓	
Social Motivation & Incentives	Group-based competition, rankings, or rewards (e.g., certification, gift cards)	✓					✓
Health Coaching & Motivational Support	Use of goal-setting, interviews, or guided (external) support for behaviour change	✓					✓
Work schedule & Fatigue	Long shifts, irregular hours, and limited sleep affect the ability to comply or engage	*	✓			✓	✓
Personalization & Goal Customization	The ability for users to set personal goals or receive tailored content based on preferences or behaviour.	✓	✓		✓		
Feedback & Reminders	Prompts, progress updates, or cues that help users stay on track with tasks or health goals.	✓			✓	✓	✓
Gamification / Progress Visualization	Use of visual tools (e.g., rankings, badges, graphs) to reinforce progress and motivate engagement.	✓			✓		
Real-Time Feedback & Responsiveness	Immediate system responses or prompts based on user input or behaviour during real-time use.	✓			✓	✓	
Engagement Pattern over Time	Whether engagement is sustained, declines quickly, or varies by timing/context	*			*		
Technological Simplicity & Usability	Perception that the tool is easy or hard to use; the effort required to learn it		✓		✓	*	*
Technology Access & Infrastructure	Access to devices and health apps, Wi-Fi, app logins, or on-road digital tools	✓		✓	*		*
Relevance to Driver Context	Whether the tool fits trucker routines, cab environments, or mobile life	✓	✓			✓	✓
Digital Literacy & Demographics	Influence of age, education, or experience on ability or willingness to adopt tech		✓	✓		✓	
Perceived Usefulness or Value	Drivers' belief that the tool helps them (or doesn't) manage health or safety	✓		✓	✓	✓	✓
Privacy & Employment Concerns	Fears about employer surveillance, data misuse, or job risks		✓			✓	

Legend: ✓ = present * = conditionally influential

Among the most consistently reported challenges was *work schedule and fatigue*, cited in four of the six studies. Drivers described long shifts, limited rest, and irregular schedules as key barriers to sustained digital engagement. Another widely supported determinant was *self-monitoring and behaviour tracking*, with three studies showing that tools allowing users to log or monitor health data promoted autonomy and motivation, especially when combined with progress feedback. The determinant *perceived usefulness or value* was found in five studies, making it one of the most consistently reported facilitators. Drivers were more likely to adopt and continue using digital tools when they perceived a clear benefit to their health, safety, or work routines.

Several technology design-related determinants were also commonly observed. *Real-time feedback and responsiveness*, featured in three studies, played a key role in maintaining engagement by offering immediate prompts or adaptive responses based on driver behaviour. Other features such as *personalization and goal customization*, *feedback and reminders*, and *gamification or progress visualization* were highlighted in multiple studies as mechanisms that supported user motivation, aligned with behaviour change principles, and enhanced the relevance of the intervention. Additionally, *technological simplicity and usability* was reported in four studies, where users emphasized the importance of intuitive, easy-to-navigate systems. For drivers with limited time or digital familiarity, excessive complexity was noted as a barrier, while well-designed interfaces helped lower the threshold for engagement, which means when digital tools were easy to understand, navigate, and use, they reduced the effort, time or technical skill required for a user (i.e., truck drivers) to get started and continue using them..

Some determinants showed more conditional influence, depending on user characteristics or implementation context. *Digital literacy and demographics* shaped engagement across age and education levels, with older drivers or those less familiar with technology reporting more challenges. *Engagement patterns over time* were also important; two studies observed high early engagement that declined without reinforcement. *Technology access and usability* varied, with some drivers facing difficulties due to device limitations or complex interfaces, while others found tools straightforward and accessible.

Less frequently reported but conceptually important were determinants such as *social motivation and incentives*, *health coaching and motivational support*, and *privacy or employment concerns*. These factors were mentioned in only a few studies but may significantly influence user trust and long-term engagement. Similarly, the *relevance of interventions to the driver context* (i.e., alignment with mobile routines, cab environments, and non-standard work hours) was present in four studies and remains critical for real-world adoption.

Overall, the updated table illustrates that while some determinants, such as perceived usefulness, behavioral tracking, and occupational barriers, are well established in the literature, others, particularly those related to technology design and personalization, remain underexplored. This highlights the need for future interventions to adopt a ***user-centered, context-aware, and behaviourally informed approach***, ensuring that digital health tools are not only functional but meaningfully integrated into the lives of truck drivers. Addressing these determinants holistically is essential for creating sustainable, equitable, and effective occupational health interventions.

4.3.4 Integrative Framework Linking Theory and Empirical Determinants Influencing Truck Drivers' Behaviour

This section synthesises constructs from six theoretical frameworks (i.e., UTAUT2, MAVA, SDT, COM-B, HBM, and PSD) into four functional domains that collectively inform user behaviour change. These domains include: (1) individual beliefs and perceptions, (2) motivational and psychological drivers, (3) contextual enablers and barriers, and (4) design features that promote engagement. They represent key conceptual categories influencing behavioural compliance, retention, and engagement:

1. **Individual Beliefs and Perceptions**

This domain encompasses constructs that shape a user's cognitive and affective attitudes toward digital health interventions. These factors collectively address *why a user would consider adopting or rejecting a health technology* based on internal judgments and perceived needs.

Key constructs: UTAUT2/MAVA - Performance and effort expectancy; UTAUT2 – Price value; MAVA – Safety and service of technology, travel behaviour, socio-demographic, personality traits; HBM/MAVA – Perceived susceptibility/risks, perceived benefits; HBM – Perceived barriers, perceived severity, self-efficacy

2. **Motivational and Psychological Drivers**

This domain captures the psychological mechanisms that sustain engagement over time, beyond initial adoption. These constructs explain *what drives sustained behavioural action and user commitment*, particularly in demanding work environments such as long-haul trucking.

Key constructs: SDT - Autonomy, competence, and relatedness; COM-B- automatic/reflective motivation; UTAUT2/MAVA - Hedonic motivation; UTAUT2 - Habit

3. **Contextual Enablers and Barriers**

This domain reflects external and environmental factors that enable or constrain technology use in real-world conditions. It answers the question: *Under what circumstances can engagement occur, and what structural conditions hinder or support it?*

Key constructs: UTAUT2/MAVA - Facilitating conditions, social influence; COM-B – Physical/psychological capability, physical/social opportunity; MAVA – Exposure to technology; HBM – Cues to action

4. **Design Features That Promote Engagement**

This domain relates to system-level features and persuasive mechanisms built into the technology to encourage usage and interaction. This domain answers *how system design can nudge or sustain behaviour change* through motivational triggers.

Key constructs: PSD- Dialogue support, primary task support, social support, system credibility support

The framework, as shown in Figure 16, serves two purposes:

- (1) It offers a unified perspective for understanding the behavioural processes underlying user engagement with digital health tools; and
- (2) It overlays these theoretical constructs with empirically derived determinants identified through this study's systematic review, linking theory with real-world evidence from occupational health and transportation contexts.

It highlights the interplay between user intention, system usability, environmental context, and persuasive design elements in influencing compliance, retention, and long-term engagement with e-health interventions by categorising constructs based on their conceptual function rather than by framework origin.

All theoretical constructs from the six frameworks are represented in the figure; however, only those that were supported by findings from the included studies are paired with specific determinants. Constructs such as *travel behaviour*, *perceived severity*, and *system credibility support* are included in the conceptual structure but are not accompanied by determinants, as no relevant evidence for these was found in the six studies reviewed.

This integrative framework supports the study's analytical approach by demonstrating how behavioural, motivational, and technological factors converge to shape digital health adoption and continued use among truck drivers. It also offers a conceptual foundation for interpreting the determinants identified in the systematic review and informing the future design of user-centred mobile health solutions within the MILESTONE project.

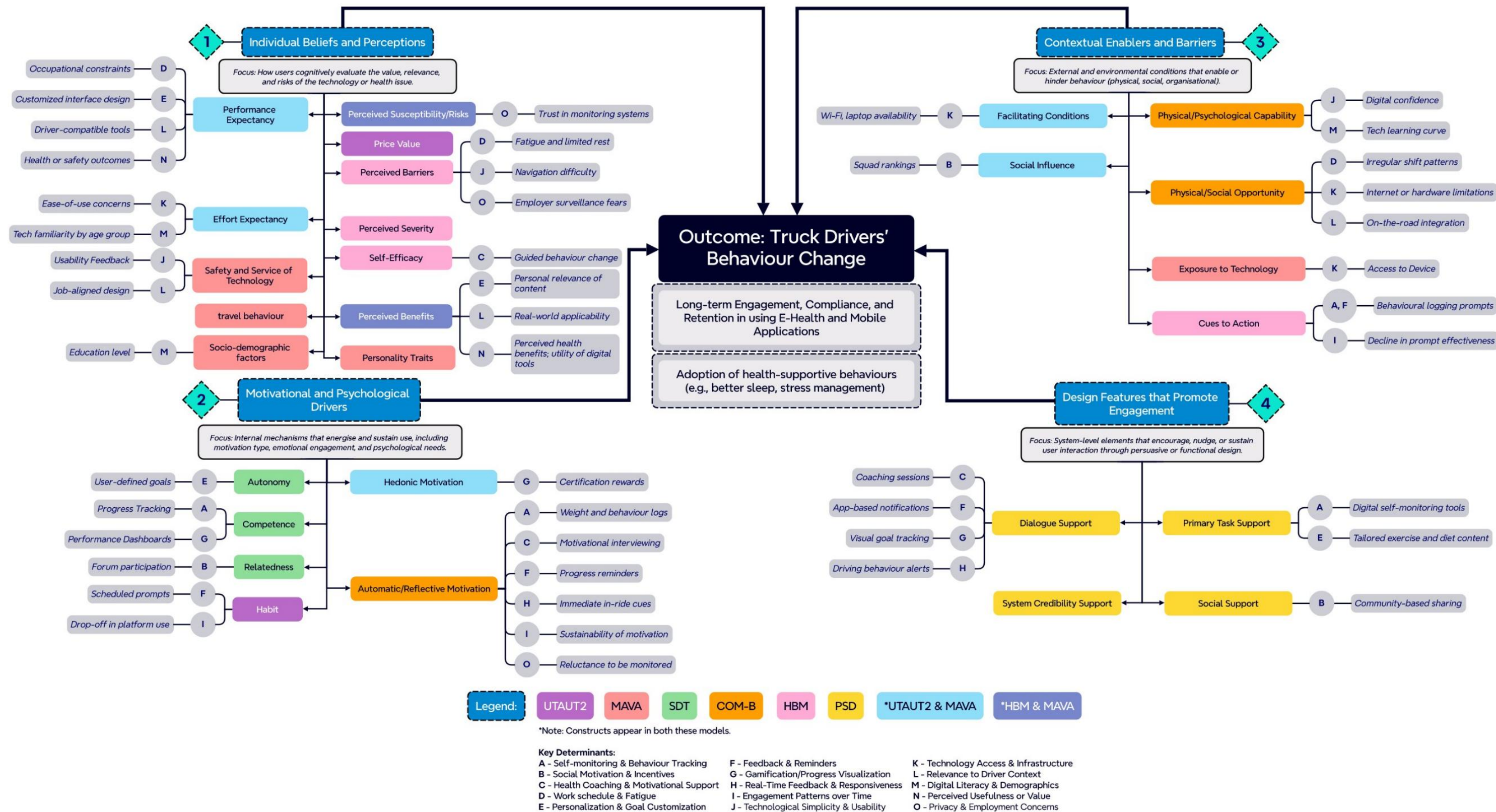


FIGURE 16 Integrated conceptual framework linking theoretical frameworks and empirical determinants influencing truck drivers' behaviour on long-term engagement, compliance, and retention in using e-health and mobile applications (Own work)

5 DISCUSSION

5.1 Overview of the Findings

5.1.1 *Insights from Study Screening and Exclusion Patterns*

The exclusion patterns observed in this review offer critical insights into current limitations in the literature on digital health interventions for truck drivers. A substantial proportion of exclusions fell under categories E1, E2, and E3, which largely reflect studies that addressed health, technology, or transportation independently, but not in an integrated manner. This aligns with the findings of Hoque et al. (2020), who noted that research on mHealth in developing contexts often lacks occupational specificity, particularly in mobile or logistically complex workforces such as commercial driving. Similarly, Ng et al. (2015) found that many workplace health promotion programs in transport settings lacked a digital component, reinforcing the limited convergence of health technologies and transport occupational contexts.

The high exclusion number under E3 and related combinations further emphasizes the scarcity of digital health-focused interventions designed specifically for truck drivers. Although various non-digital workplace programs have been piloted (Olson et al., 2016; Virgara et al., 2024), the transport sector continues to lag behind others, such as manufacturing or healthcare, in adopting digital health innovations (Callefi et al., 2022; Duganova et al., 2022). This lag may be explained by structural and logistical challenges specific to the transport industry, including mobile work environments, inconsistent schedules, and limited access to digital infrastructure (Rathore et al., 2022).

Smaller, yet still important, exclusions under E4 and E5 involved studies that met population and intervention-type criteria but failed to focus on behavioural or implementation outcomes central to this review. For instance, several studies included health-tracking tools without evaluating user compliance, retention, or long-term engagement. Valentine et al. (2025) noted a similar limitation in their meta-analysis, where studies frequently reported app efficacy but omitted sustained use metrics, which are critical for real-world adoption. These exclusions highlight an ongoing tendency in the literature to evaluate health technologies in terms of clinical outcomes while overlooking user behaviour and engagement in applied occupational settings.

Taken together, these exclusion trends point to a scarcity of targeted, high-quality evidence and highlight the need for more multidisciplinary and application-focused research. Addressing these gaps, particularly the integration of digital health tools with the real-world constraints and behavioural patterns of truck drivers will be essential for advancing both theory and practice in this field. As stated by Wolkow et al. (2020) and Olson et al. (2016), interventions that do not align with occupational contexts risk becoming technologically sound but practically irrelevant.

5.1.2 *Reflections on Included Study Characteristics and Design*

The studies included in this review varied considerably in their methodological approaches, participant populations, and intervention designs, which in turn influenced both the depth and applicability of their findings. Most of the reviewed research was conducted in North America and Western Europe, with a strong focus on long-haul or freight truck drivers. This regional concentration reflects trends identified by Indra et al. (2024) and Hoque et al. (2020), who noted a research bias toward high-income countries in digital health, despite the global nature of transport and logistics workforces. Broader geographic and occupational diversity is therefore needed in future research to improve relevance and generalizability.

Quantitative studies, such as those by Wipfli et al. (2019), Levi-Bliech et al. (2019), and Heaton et al. (2017), provided structured data on behavioural outcomes and usage metrics but often lacked contextual depth. In contrast, qualitative studies like Greenfield et al. (2016) and Versteeg et al. (2018) captured detailed narratives about user perceptions, intervention preferences, and workplace challenges, although their findings were limited by small and often non-representative samples. This aligns with observations by Valentine et al. (2025), who argued that both qualitative and quantitative limitations contribute to underdeveloped design practices in persuasive digital health tools.

Relatively few studies employed mixed-methods designs, and even fewer grounded their interventions in established theoretical frameworks such as COM-B, UTAUT2, or SDT. This lack of theoretical grounding limits the interpretability of outcomes and weakens the capacity to generalize behavioural mechanisms. Similar critiques were raised by Olson et al. (2016) and Virgara et al. (2024), who emphasized the need for more theory-based, participatory approaches in health interventions targeting mobile populations.

Only one intervention (Wipfli et al., 2019) included a multi-component digital health program (i.e., the SHIFT program) specifically designed to the truck driver population. This illustrates a persistent gap in purpose-built solutions that account for the mobility, occupational constraints, and lifestyle challenges of drivers. The majority of studies did not track user engagement beyond the pilot phase, making it difficult to assess continuance intention, long-term engagement, or retention, which is an issue previously noted in meta-analyses by Valentine et al. (2025) and de Winter et al. (2024). Similar limitations have been observed in other occupational health domains, where funding, study duration, and workforce turnover often limit the feasibility of long-term tracking (Olson et al., 2016; Virgara et al., 2024). Moreover, given the logistical challenges associated with mobile populations, particularly in the transport sector, short-term evaluations may serve as a practical starting point for iterative development and feasibility testing.

Additionally, digital literacy and access to infrastructure were often mentioned as influencing factors but were not directly measured in most studies. Although this represents a methodological gap, it also reflects the early stage of digital health integration within the trucking industry. Callefi et al. (2022) similarly noted that infrastructure readiness varies widely across regions and organizations, complicating standardized measurement efforts. However, the repeated mention of these variables, even if unreliable, highlights their perceived importance and suggests promising directions for more targeted measurement in future research.

Overall, the heterogeneity in study designs, the limited use of behavioural theory, and the scarcity of longitudinal data point to important directions for future research. A shift toward more integrated, user-centred, and longitudinal designs could enhance both the theoretical accuracy and practical relevance of digital health interventions for transport-sector populations.

5.2 Discussion of Synthesized Results

This section discusses the key findings of the synthesized results, particularly those from Sections 4.3.3 and 4.3.4, by comparing them with existing literature and relevant frameworks. The analysis focuses on interpreting the behavioural, technological, and occupational determinants that influence the engagement of truck drivers with digital health interventions, as well as the gaps between theoretical assumptions and practical application.

5.2.1 *Determinants of Compliance, Retention, and Engagement in Context*

The most frequently reported facilitators of engagement, namely self-monitoring, feedback, and personalization are consistent with behaviour change strategies found effective in other mobile health

studies. For instance, Valentine et al. (2025) identified self-monitoring and real-time feedback as core persuasive design elements that significantly contributed to short-term engagement in digital health applications, although their long-term effectiveness was limited due to the absence of sustained motivational reinforcements. These findings are echoed in the present synthesis, in which initial compliance frequently declined over time due to factors such as occupational fatigue, shifting schedules, and competing demands.

Pritchard et al. (2022) further observed that while behaviour change strategies (e.g., coaching, self-monitoring) yielded moderate to large effect sizes in weight loss interventions among truck drivers, dropout rates remained high. A likely explanation is that most interventions did not fully accommodate the mobile nature of the drivers' work, limited downtime, or job-related stressors, reflecting similar contextual barriers identified in this study. This trend was also evident in the SHIFT study by Olson et al. (2016), where a multi-component program led to significant reductions in body mass index but experienced attrition rates exceeding 40%. Although the intervention was theoretically sound, its implementation faced real-world friction when it failed to align with drivers' working conditions. Both studies reinforce the importance of motivation and environmental fit, indicating that without adapting to drivers' routines, such as extended time on the road and irregular schedules, even well-designed programs struggle to maintain engagement beyond the initial phase.

The synthesized findings in this thesis also highlight contextual constraints such as driver fatigue, time scarcity, and limited digital literacy, which further disrupted ongoing engagement. These findings align with those of Ng et al. (2015), who reported that even well-designed health interventions failed to achieve lasting behavioural change among truck drivers unless occupational stressors and environmental conditions were directly addressed.

Additionally, autonomy, competence, and relatedness, the core constructs of SDT, were found to underpin drivers' motivational engagement. Versteeg et al. (2018) and Crizzle et al. (2022) demonstrated that users were more likely to continue using digital health applications when they felt in control of their health decisions and capable of managing the technology. This supports the critique by Valentine et al. (2025) that persuasive design features alone are insufficient, and that digital tools must also fulfil users' psychological needs to sustain long-term retention.

5.2.2 Occupational Constraints as Engagement Barriers

As identified in Section 4.3.3, occupational and environmental barriers, such as fatigue, limited digital literacy, and time constraints, serve as significant inhibitors of sustained engagement. These constraints are reinforced by the findings of de Winter et al. (2024), who reported that Dutch truck drivers face considerable health-related challenges linked to their work environment, particularly chronic fatigue and restricted access to healthy food or exercise facilities. Similarly, Garbarino et al. (2018) demonstrated a strong association between poor sleep hygiene, mental health issues, and disengagement from health-related behaviour change. These findings correspond to behavioural barriers outlined in the COM-B model, particularly reduced physical and psychological capability.

Wolkow et al. (2020) provided further insight through a naturalistic trial involving heart-rate-based drowsiness monitoring devices. Although the wearable technology led to a measurable reduction in harsh braking events, its sensitivity in predicting real-time fatigue was limited. Notably, behavioural adjustments among drivers appeared to result more from the presence of the monitoring device than from the alerts themselves. This highlights the influence of perceived oversight and the psychosocial environment in shaping health-related behaviours among truck drivers.

5.2.3 *User Readiness, Technology Simplicity and Usability*

Technological simplicity emerged as a cross-cutting determinant of engagement, particularly among older or less digitally literate drivers. These users were frequently excluded from more complex tools, reflecting patterns observed in developing-country mHealth deployments, where demographic factors limited adoption even when tools were technically accessible. Simplicity and perceived ease of use appear to be prerequisites for successful adoption, especially for users with limited digital skills.

Callefi et al. (2022) offered a broader systems-level lens, describing 32 technology-enabled capabilities that have the potential to transform freight transportation. However, they emphasized that actual implementation is constrained by varying levels of user readiness and contextual feasibility. Many of the high-readiness technologies, such as real-time health or vehicle monitoring, were not employed in the behavioural studies reviewed. This gap between technological availability and behavioural adoption suggests that tools must be better aligned with drivers' competencies, motivational states, and the availability of organizational support. These findings support the synthesized results, which identified system usability and trust as critical engagement levers.

This aligns with findings that tools requiring frequent interaction or multitasking were generally less successful, even when they offered valuable health insights. For digital health interventions to be effective in trucking environments, usability must be adapted to both the cognitive load and ergonomic constraints faced by drivers.

Additionally, interventions that allowed flexible use, brief interactions, or integration into existing work systems, such as electronic logging devices (ELDs), achieved higher compliance rates. This reflects the conclusions of Hoque et al. (2020), which emphasized that mHealth success in low-resource or high-demand contexts depends on simplicity, offline functionality, and minimal user input.

5.2.4 *Social Identity and Autonomy in Health Interventions*

A critical insight from Virgara et al. (2024) concerns the framing of health interventions. Programs that emphasize health deficits, such as weight or fatigue, can inadvertently stigmatize drivers and undermine their motivation to engage. The synthesized findings of this review, particularly those relating to autonomy, competence, and relatedness, align closely with this perspective. When drivers perceive themselves as being in control of their health and capable of using the intervention effectively, they are more likely to participate. In contrast, interventions perceived as employer-enforced or punitive, such as those involving surveillance features or mandatory check-ins, may adopt resistance and distrust.

These observations further support the relevance of SDT within the integrative framework. By focusing on intrinsic motivational drivers, rather than relying on external control mechanisms, digital health interventions can more effectively encourage sustained behavioural engagement.

5.2.5 *Organizational and Policy-Level Influence*

Beyond individual determinants, the synthesized findings highlight the critical role of organizational culture and regulatory frameworks in shaping the success of digital health interventions. Rathore et al. (2022) identified several barriers to the adoption of digital innovations in freight companies, including fear of surveillance, lack of managerial support, and ambiguous data governance structures. These organizational challenges help explain why even well-designed health applications often face implementation difficulties. When digital interventions are perceived as tools for employer monitoring rather than as resources for personal benefit, drivers may disengage. This supports the theoretical implication that interventions perceived as intrusive or authoritarian can weaken relatedness and trust, thereby reducing retention.

Similarly, Callefi et al. (2022) emphasized that the deployment of technology-enabled capabilities is often constrained not by the technologies themselves, but by institutional inertia, unclear policies, and fragmented decision-making within the freight sector. The synthesis of theoretical models in this study offers a useful lens through which to interpret these systemic barriers, suggesting that effective digital health strategies must extend beyond user-centred design to include coordinated efforts across multiple stakeholders.

5.2.6 Theoretical Coherence of the Integrated Framework

The integrated framework presented in Section 4.3.4 demonstrates that combining theoretical models allows for a nuanced interpretation of behavioural determinants. For example, the *self-monitoring* determinant aligns with PSD's element of "primary task support" and simultaneously reflects cues to action from UTAUT2, automatic and reflective motivation from COM-B, and competence from SDT. Similarly, gamification and social incentives address hedonic motivation in UTAUT2 and the need for relatedness in SDT, respectively, reinforcing engagement through enjoyment and social connection.

However, several constructs included in the theoretical models, such as system *credibility support*, *travel behaviour*, and *perceived severity*, were not supported by evidence in the studies reviewed. This observation highlights a gap between theoretical frameworks and practical applications. It suggests that future research and intervention design should empirically assess the relevance of less frequently supported constructs before incorporating them into design guidelines.

5.2.7 Summary

These findings emphasize that sustained engagement with digital health tools among truck drivers depends not only on the presence of persuasive design features but also on the alignment between intervention design and occupational realities. The integration of behavioural theories helped to identify key determinants; however, practical implementation must also consider broader systemic, technological, and psychosocial constraints. Future research should explore co-designed interventions that balance personalization, simplicity, and autonomy, while also addressing the organizational and infrastructural barriers commonly present in the freight transport sector.

5.3 Certainty and Strength of Evidence

The overall certainty of the evidence synthesized in this review is moderate to high. Five of the six included studies were rated as high quality, and one as moderate, based on structured appraisal using the CASP and MMAT tools (see [Appendix IV](#)). These studies provided robust and credible insights, despite variations in methodology and outcome focus. However, several methodological limitations inherent to digital health research require a nuanced interpretation of the evidence.

Firstly, digital health interventions often evolve rapidly, making traditional evaluation methods like randomized controlled trials (RCTs) less feasible (Butt et al., 2024; Fernainy et al., 2024; Lopez-Alcalde et al., 2024). This misalignment can lead to reliance on observational studies or self-reported outcomes, which may introduce biases and affect the strength of evidence (Castillo et al., 2012; Deaton & Cartwright, 2018; Durmaz et al., 2020).

A common limitation across the studies was the lack of long-term follow-up to assess the sustainability of intervention effects. Without extended observation periods, it is challenging to determine the enduring impact of digital health interventions on behaviour change and health outcomes (Mumtaz et al., 2023; Yardley et al., 2016).

In addition, the included studies varied widely in terms of intervention types (e.g., wearable devices, mobile apps, online forums) and outcome measures. Such heterogeneity complicates direct comparisons and synthesis of findings, potentially limiting the generalizability of conclusions (Linden & Hönekopp, 2021; Parr et al., 2019). Moreover, many studies relied on self-reported measures for outcomes like compliance and engagement. As already mentioned, self-reporting can introduce recall bias and social desirability bias, affecting the reliability of the data collected (Althubaiti, 2016; Durmaz et al., 2020; Kechagias et al., 2024).

Despite this variability, the recurrence of key behavioural determinants across different study types, contexts, and platforms reinforces the reliability of the findings. Themes such as the importance of trust, ease of use, user autonomy, and alignment with drivers' work context emerged consistently. Therefore, even if generalizability is limited, the core conclusions about engagement drivers in digital health adoption among truck drivers are considered to be supported by moderately strong and trustworthy evidence as assessed by widely known and used critical appraisal tools (Hong et al., 2019; Long et al., 2020).

5.4 Limitations and Potential Biases

Although this review followed the PRISMA 2020 framework to ensure transparency and objectivity, several limitations must be acknowledged that may affect the comprehensiveness and objectivity of the findings.

First and most significantly, the entire screening and review process was conducted by a single researcher. This introduces a potential risk of selection bias and subjective interpretation, particularly during full-text screening, data extraction, and quality appraisal. In standard systematic reviews, having multiple reviewers helps reduce individual bias and increases the reliability of study inclusion decisions. Without a second reviewer to independently cross-check, it is possible that relevant studies were unintentionally excluded or that judgments on study eligibility or thematic relevance were mistakably influenced by the researcher's perspective. Given the scope and time constraints of a master's-level thesis project, single-researcher screening is not uncommon and is considered acceptable when transparency and consistency in conducting the methodology are maintained (Waffenschmidt et al., 2019).

Second, the choice of databases and scope of the search strategy were constrained by both time and available resources. While major databases were used, the inclusion of additional databases such as Google Scholar or other discipline-specific repositories may have retrieved further relevant literature. In addition, this review did not include extensive manual reference list checks or grey literature searches, which may have excluded studies that are not accessible through the included academic databases. Furthermore, the rigid adherence to the PRISMA 2020 framework, while promoting systematic transparency, also limited the flexibility of the review process. Specifically, PRISMA discourages techniques such as literature "snowballing" or citation chasing, which could have otherwise led to the identification of additional relevant studies not captured by the initial search strategy. These limitations potentially reduce the breadth of the review, but the structured and replicable process it followed (i.e., PRISMA 2020 protocol) helps ensure the quality and reliability of the data that were included (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021).

It is also important to note that while these relevant studies were not formally included in the review due to protocol constraints, several were still referenced in the discussion to provide additional depth, contextual relevance, and theoretical grounding.

Third, the timeframe and personnel limitations of the project inherently restricted the depth and breadth of the search. With more time and a larger research team, the study could have incorporated more comprehensive search terms, a broader set of databases, and additional validation measures, such as inter-rater reliability testing and/or expert consultations. Nonetheless, the focused scope allowed for a manageable review within the academic timeframe and ensured the feasibility of a detailed, theory-based synthesis.

Another important limitation concerns the exclusion of two studies at the full-text review stage that had initially passed both title and abstract screening. Although these studies were ultimately excluded due to a lack of relevance to the review's core behavioural or implementation outcomes, their progression through the earlier screening stages features two key challenges:

- (1) It highlights the potential for subjective interpretation in a single-reviewer design, where the researcher's judgment may inadvertently influence inclusion decisions.
- (2) It reflects a broader limitation in how studies are indexed and abstracted. Titles and abstracts reviewed may have provided insufficient clarity on behavioural outcomes or user engagement, which led to borderline or misclassified entries.

This ambiguity may have likely contributed to the higher number of exclusions during title and abstract screening. These issues point to the need for dual-reviewer validation in future studies and clearer reporting standards in digital health research abstracts.

Finally, the inclusion criteria focused exclusively on English-language, peer-reviewed articles, which may have introduced language bias and excluded relevant findings published in other languages or in non-peer-reviewed sources such as reports, dissertations, or preprints. This approach is commonly adopted in systematic reviews due to practical considerations, and while it may introduce some bias, it is widely accepted in the research community (Mallett et al., 2012; Stern, 2020).

It is also important to note that this review was conducted within the scope of the MILESTONE project, which is focused on road freight transport and the use of mobile health interventions. As such, the review intentionally limited its inclusion criteria to professional truck drivers and digital health technologies. This narrowed scope was necessary to align with the project's specific objectives and ensure the depth and relevance of the analysis, though it may limit generalizability to other occupational groups or health intervention formats (MILESTONE, 2024).

6 RECOMMENDATIONS

This chapter outlines practical and research-oriented recommendations based on the findings of the present systematic review. The synthesized results identified key behavioural, technological, and contextual factors that influence the adoption and sustained engagement with digital health interventions among truck drivers. These insights inform a set of recommendations aimed at four levels: (1) general design principles for e-health and mobile applications, (2) specific considerations for the ongoing MILESTONE Project, (3) broader implications for stakeholders in the transportation sector, and (4) directions for future research. The goal is to support more effective, inclusive, and context-aware digital health solutions for the needs of mobile occupational groups. Moreover, these recommendations aim to support not only intervention designers, but also policymakers, practitioners, and researchers working to improve the adoption and long-term impact of digital health tools.

6.1 General Implications for E-Health and Mobile Application Design

The findings of this systematic review highlight several general principles that should inform the design of digital health interventions, particularly for mobile and occupationally constrained populations such as truck drivers. These recommendations are intended for digital health designers, developers, and public health practitioners aiming to create more effective, context-aware tools for this workforce.

Across the six included studies, user engagement and long-term retention were most strongly influenced by how well the interventions aligned with the demands and constraints of the trucking profession. This includes irregular work schedules, prolonged periods of isolation, and limited access to stable internet connectivity. Interventions that failed to accommodate these contextual realities typically saw limited adoption or high dropout rates.

Simplicity and accessibility consistently emerged as enabling factors. Applications that minimized user input, delivered clear and actionable feedback, and integrated seamlessly into daily routines were associated with higher engagement. For example, tools that supported self-monitoring, real-time feedback, and goal-setting, particularly when tied with coaching or motivational support, demonstrated better retention. These features reduce cognitive load and make healthy behaviour changes more achievable in unpredictable work environments.

Privacy, autonomy, and trust were also critical determinants of adoption. Several studies noted that drivers were hesitant to use applications they perceived as employer-controlled or overly invasive, especially when such tools collected biometric or behavioural data. Therefore, it is essential that digital health applications clearly communicate how data will be used, and ensure users retain control over what information is shared. Transparent policies and user-centred data settings can help build trust and promote sustained engagement.

The application of Persuasive System Design (PSD) principles, such as gamification, reminders, and progress tracking, also contributed positively to ongoing motivation. These features should be applied in ways that enhance autonomy and enjoyment rather than introduce pressure or surveillance. Additionally, interventions must account for differing levels of digital literacy. Providing intuitive user interfaces, simple navigation, and optional onboarding or training can reduce barriers to entry and support broader accessibility.

Altogether, these implications suggest that effective e-health solutions for truck drivers must be not only functionally robust but also socially and contextually sensitive. Future digital health applications targeting similar occupational groups should embed these principles from the outset of the design process.

6.2 Project-Specific Implications: Recommendations for the MILESTONE Project

Based on the evidence synthesized in this review, several targeted recommendations are proposed to enhance user engagement, compliance, and retention within the MILESTONE project. These are intended to support the development of a behaviourally informed and context-sensitive intervention for truck drivers:

1. *Design for Contextual Fit*

The MILESTONE intervention should be adapted to the realities of truck driving, which include limited downtime, high mobility, and unpredictable work hours. Incorporating features such as offline accessibility, brief interaction modules, and flexible check-in times will help ensure that the tool remains practical and usable during long-haul trips.

2. *Leverage Behaviour Change Techniques*

Core strategies such as self-monitoring, goal setting, and performance feedback were consistently associated with positive outcomes across the reviewed studies. MILESTONE should embed features that allow users to track their behaviours, receive automated or coach-based feedback, and set personalized, achievable goals that evolve with their progress.

3. *Address Privacy and Trust Concerns*

Several studies, including those by Greenfield et al. (2016) and Crizzle et al. (2022), emphasized drivers' apprehension toward technologies perceived as surveillance tools. To address this, MILESTONE must prioritize transparency in data practices. Users should have full visibility into what data are being collected, the option to control or disable certain features, and clear consent protocols to build confidence and trust.

4. *Use Gamification Strategically*

Programs such as SHIFT (Olson et al., 2016; Wipfli et al., 2019) demonstrated the potential of gamification to boost engagement, particularly through team-based competition, progress tracking, and reward mechanisms. MILESTONE can apply similar methods but should tailor them to user preferences, providing options for both competitive and collaborative modes to suit varying motivational styles among drivers.

5. *Provide Social and Motivational Support*

The inclusion of peer validation, social comparison, or optional group activities was shown to increase sustained engagement in multiple studies. MILESTONE could benefit from incorporating features that allow users to share progress, participate in group challenges, or receive encouragement from peers, thereby enhancing relational motivation.

6. *Pilot and Iterate with Drivers*

Co-design and user testing are essential for refining usability and ensuring the intervention reflects real-world needs. Engaging truck drivers during early development and pilot phases will provide actionable feedback, helping the project adjust features before scaling up implementation. The iterative design also improves user ownership and satisfaction.

6.3 Broader Implications for the Transportation Sector

The findings of this review have broader relevance for improving occupational health, safety, and well-being through digital interventions in the transportation sector. These implications extend beyond the scope of the MILESTONE project and are applicable to logistics firms, mobile app developers, health

service providers, and policymakers. As digitalization becomes more widespread in transport operations, it is essential to ensure that health technologies are designed with trust, usability, and behavioural alignment in mind to achieve long-term impact.

To increase user compliance and sustained engagement, tools should be designed to fit around the realities of truck drivers' work schedules. This means minimizing the need for user interaction during driving hours and maximizing value during rest periods. Automated features, such as personalized feedback, behaviour prompts, and motivational messages, can help sustain attention and support habit formation over time. It is also crucial that any technology adopted in this sector prioritizes driver privacy, autonomy, and control. Transparent data practices are necessary to overcome common barriers related to surveillance concerns, particularly when tools are deployed by employers.

On a broader scale, industry stakeholders should consider developing sector-wide guidelines for ethical data use in driver-focused digital applications. Logistics companies and third-party service providers must ensure that technologies respect user agency and comply with data protection standards. In parallel, governments and regulatory bodies can support adoption by integrating digital health tools into occupational health and safety frameworks. Policy measures might include incentivizing implementation through compliance credits or mandating support for cross-platform compatibility to accommodate diverse user devices. Ensuring equitable access, especially for owner-operators and independent drivers who may lack institutional resources, is also critical for scalable impact.

Service providers and technology developers should focus on embedding digital health tools within existing systems, such as electronic logging devices (ELDs) or telematics platforms. This can streamline adoption while preserving user routines. Usability and transparency must remain central to these integrations. In addition, offering optional features, such as self-monitoring, behavioural goal tracking, and peer-based motivation, can increase personalization and engagement without overwhelming users. Developers should also collaborate directly with drivers during the design and evaluation phases to ensure that tools are practical, intuitive, and usable in real-world driving conditions.

6.4 Directions for Future Research

Future research should deepen the exploration of behavioural and motivational factors that influence the adoption and sustained use of digital health technologies among truck drivers and other mobile occupational groups. One key priority is the implementation of longitudinal studies that track user engagement over extended periods. Most existing research focuses on short-term outcomes, which limits understanding of retention patterns and the factors that contribute to continued use.

There is also a strong case for the greater use of theory-informed intervention design, particularly applying frameworks such as COM-B, Self-Determination Theory (SDT), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Health Belief Model (HBM). These models provide valuable structures for understanding motivation, capability, and environmental influences, yet remain underutilized in transport-sector interventions.

Another important area is comparative research on engagement across digital platforms, including mobile applications, wearable devices, and integrated vehicle systems. Such comparisons could help identify which delivery mechanisms are most effective in specific occupational contexts. In parallel, cross-cultural studies are needed to examine how digital health adoption varies across regions, languages, and demographic subgroups, particularly as the global logistics workforce becomes increasingly diverse.

Further investigation into digital literacy, training needs, and customization preferences among low-tech user groups is also essential. Many truck drivers face barriers related to technology familiarity

or device access, which can compromise intervention uptake. Research should examine how onboarding processes, tutorial formats, and adjustable settings influence user confidence and engagement.

Experimental studies that isolate specific persuasive design features (e.g., gamification, peer support mechanisms, feedback frequency) could clarify which components have the strongest impact on behaviour change, health outcomes, and retention.

Finally, graduate students and early-career researchers may contribute by exploring hybrid implementation models, evaluating organizational readiness for digital health adoption, or co-designing tools in partnership with drivers and employers. These efforts can help bridge the gap between conceptual frameworks and real-world applications, ensuring that future interventions are both evidence-based and practically relevant.

7 CONCLUSION

This systematic review aimed to identify and synthesise behavioural, technological, and contextual determinants influencing the long-term engagement, compliance, and retention of truck drivers in digital health interventions. Through a systematic literature review following the PRISMA 2020 protocol, the study found that numerous digital health tools exist in general populations, but very few are fitted to the unique occupational realities of the trucking workforce.

The findings revealed that sustained engagement is shaped not only by persuasive design features but also by how well interventions align with the daily constraints of drivers, such as irregular schedules, isolation, fatigue, and limited connectivity. Core determinants such as self-monitoring, goal-setting, real-time feedback, privacy control, autonomy, and technological simplicity were consistently associated with improved user engagement. These behavioural insights were mapped onto an integrative framework that combined elements from the UTAUT2, MAVA, SDT, COM-B, HBM, and PSD, offering a comprehensive understanding of how digital tools can better serve mobile occupational users.

Importantly, the review highlighted a lack of longitudinal studies, theoretical grounding, and context-sensitive evaluation in the current literature. Most interventions focused on short-term outcomes, with limited attention to long-term retention or real-world feasibility. This gap reinforces the importance of designing interventions that are not only technically functional but also socially and contextually appropriate.

The study provides targeted recommendations that directly inform the MILESTONE project, a digital health initiative for truck drivers. These include designing for contextual fit, embedding behaviour change techniques, addressing privacy and trust concerns, and involving drivers in co-design processes. Aligning the project with the identified determinants increases its potential for sustained adoption and behavioural impact.

Overall, this thesis contributes to the growing field of occupational digital health by offering a theoretically grounded and practically relevant synthesis of engagement strategies. It highlights the need for multidisciplinary collaboration in designing tools that can bridge the gap between health innovation and the complex demands of transport-sector work. Future efforts should continue to refine these insights through empirical testing, user-centred design, and ongoing evaluation in real-world settings.

BIBLIOGRAPHY

- Aboye, G. T., Simegn, G. L., & Aerts, J.-M. (2024). Assessment of the Barriers and Enablers of the Use of mHealth Systems in Sub-Saharan Africa According to the Perceptions of Patients, Physicians, and Health Care Executives in Ethiopia: Qualitative Study. *Journal of Medical Internet Research*, 26, e50337. <https://doi.org/10.2196/50337>
- Adam-Poupart, A., LABR[^]Egrave;CHE, F., Smargiassi, A., Duguay, P., Busque, M.-A., GAGN[^]Eacute;, C., RINTAM[^]Auml;KI, H., Kjellstrom, T., & Zayed, J. (2013). Climate Change and Occupational Health and Safety in a Temperate Climate: Potential Impacts and Research Priorities in Quebec, Canada. *Industrial Health*, 51(1), 68–78. <https://doi.org/10.2486/indhealth.2012-0100>
- Al-Okaily, M., Abd Rahman, M. S., & Ali, A. (2019). FACTORS AFFECTING THE ACCEPTANCE OF MOBILE PAYMENT SYSTEMS IN JORDAN: THE MODERATING ROLE OF TRUST. *Journal of Information System and Technology Management*, 4(15), 16–26. <https://doi.org/10.35631/jistm.415002>
- Althubaiti, A. (2016). Information bias in health research: Definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, 9, 211–217. <https://doi.org/10.2147/JMDH.S104807>
- Alyafei, A., & Easton-Carr, R. (2024). The Health Belief Model of Behavior Change. In *StatPearls*. StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK606120/>
- Ammenwerth, E., Wilk, S., & Huang, Z. (2023). Personalization in mHealth: Innovative informatics methods to improve patient experience and health outcome. *Journal of Biomedical Informatics*, 147, 104523. <https://doi.org/10.1016/j.jbi.2023.104523>
- Amoadu, M., Ansah, E., & Sarfo, J. O. (2023). Psychosocial work factors, road traffic accidents and risky driving behaviours in low-and middle-income countries: A scoping review. *IATSS Research*, 47. <https://doi.org/10.1016/j.iatssr.2023.03.005>
- Amoadu, M., Sarfo, J. O., & Ansah, E. W. (2024). Working conditions of commercial drivers: A scoping review of psychosocial work factors, health outcomes, and interventions. *BMC Public Health*, 24(1), 2944. <https://doi.org/10.1186/s12889-024-20465-1>
- Anthony, K. (2025, February 21). The Evolving Landscape of Trucking: Challenges, Innovations, and Future Trends. *Global Trade Magazine*. <https://www.globaltrademag.com/the-evolving-landscape-of-trucking-challenges-innovations-and-future-trends/>
- Anuar, H., Shah, S. A., Gafor, A. H. bin A., Mahmood, M. I., & Ghazi, H. F. (2020). Usage of Health Belief Model (HBM) in Health Behavior: A Systematic Review. *Malaysian Journal of Medicine and Health SciencesResearchGate*, 16(11), 201–209.
- Anwar, A., Sani, J., Hassan, I., Shehu, A., Ahiome, R., & Abdulrahman, B. (2022). Effect of defects on highway quality. *World Journal of Engineering and Technology*, 5, 103–113. <https://doi.org/10.30574/wjaets.2022.5.2.0050>
- Apostolopoulos, Y., Lemke, M., & Sönmez, S. (2014). Risks endemic to long-haul trucking in North America: Strategies to protect and promote driver well-being. *New Solutions: A Journal of Environmental and Occupational Health Policy: NS*, 24(1), 57–81. <https://doi.org/10.2190/NS.24.1.c>

- Apostolopoulos, Y., Sönmez, S., Shattell, M., & Belzer, M. (2010). Worksite-Induced Morbidities among Truck Drivers in the United States. *AAOHN Journal*, 58, 285–296. <https://doi.org/10.1177/216507991005800703>
- Apostolopoulos, Y., Sönmez, S., Shattell, M. M., Gonzales, C., & Fehrenbacher, C. (2013). Health survey of U.S. long-haul truck drivers: Work environment, physical health, and healthcare access. *Work (Reading, Mass.)*, 46(1), 113–123. <https://doi.org/10.3233/WOR-121553>
- ATOS-MA. (2024, March 26). Highway to Growth: The Economic Impact of Road Freight. *Across the Ocean Shipping*. <https://atoshipping.com/highway-to-growth-the-economic-impact-of-road-freight/>
- Beer, P., & Mulder, R. (2020). The Effects of Technological Developments on Work and Their Implications for Continuous Vocational Education and Training: A Systematic Review. *Frontiers in Psychology*, 11, 918. <https://doi.org/10.3389/fpsyg.2020.00918>
- Bidargaddi, N., Schrader, G., Klasnja, P., Licinio, J., & Murphy, S. (2020). Designing m-Health interventions for precision mental health support. *Translational Psychiatry*, 10(1), 1–8. <https://doi.org/10.1038/s41398-020-00895-2>
- Biemans, W. (2023). The impact of digital tools on sales-marketing interactions and perceptions. *Industrial Marketing Management*, 115, 395–407. <https://doi.org/10.1016/j.indmarman.2023.10.015>
- Birkle, C., Pendlebury, D. A., Schnell, J., & Adams, J. (2020). Web of Science as a data source for research on scientific and scholarly activity. *Quantitative Science Studies*, 1(1), 363–376. https://doi.org/10.1162/qss_a_00018
- Bitkina, O., Kim, J., Park, J., Park, J., & Kim, H. K. (2019). Identifying Traffic Context Using Driving Stress: A Longitudinal Preliminary Case Study. *Sensors*, 19, 2152. <https://doi.org/10.3390/s19092152>
- Boeijinga, A., Hoeken, H., & Sanders, J. (2017). Health Communication| Risk Versus Planning Health Narratives Targeting Dutch Truck Drivers: Obtaining Impact Via Different Routes? *International Journal of Communication*, 11(0), Article 0.
- Boynukalin, B. (2021, June 3). ETF report reveals eliminating fatigue in professional drivers is critical to road safety. *ETF: European Transport Workers' Federation*. <https://www.etf-europe.org/etf-report-reveals-eliminating-fatigue-in-professional-drivers-is-critical-to-road-safety/>
- Bschaden, A., Rothe, S., Schöner, A., Pijahn, N., & Stroebele-Benschop, N. (2019). Food choice patterns of long-haul truck drivers driving through Germany, a cross sectional study. *BMC Nutrition*, 5, 56. <https://doi.org/10.1186/s40795-019-0326-3>
- Buckingham, S. A., Williams, A. J., Morrissey, K., Price, L., & Harrison, J. (2019). Mobile health interventions to promote physical activity and reduce sedentary behaviour in the workplace: A systematic review. *Digital Health*, 5, 2055207619839883. <https://doi.org/10.1177/2055207619839883>
- Butt, F. A., Fawzy, M., Al Wattar, B. H., Bueno-Cavanillas, A., Khan, K. S., & Khalaf, Y. (2024). The randomized clinical trial trustworthiness crisis. *Middle East Fertility Society Journal*, 29(1), 4. <https://doi.org/10.1186/s43043-023-00161-7>

- Caldwell, J. A., Caldwell, J. L., Thompson, L. A., & Lieberman, H. R. (2019). Fatigue and its management in the workplace. *Neuroscience & Biobehavioral Reviews*, 96, 272–289. <https://doi.org/10.1016/j.neubiorev.2018.10.024>
- Callefi, M. H. B. M., Ganga, G. M. D., Godinho Filho, M., Queiroz, M. M., Reis, V., & dos Reis, J. G. M. (2022). Technology-enabled capabilities in road freight transportation systems: A multi-method study. *Expert Systems with Applications*, 203. Scopus. <https://doi.org/10.1016/j.eswa.2022.117497>
- CASP. (n.d.). *CASP Checklists—Critical Appraisal Skills Programme*. CASP - Critical Appraisal Skills Programme. Retrieved April 28, 2025, from <https://casp-uk.net/casp-tools-checklists/>
- Castillo, R. C., Scharfstein, D. O., & MacKenzie, E. J. (2012). Observational studies in the era of randomized trials: Finding the balance. *The Journal of Bone and Joint Surgery. American Volume*, 94 Suppl 1, 112–117. <https://doi.org/10.2106/JBJS.L.00242>
- Chaturvedi, U., Chauhan, S. B., & Singh, I. (2025). The impact of artificial intelligence on remote healthcare: Enhancing patient engagement, connectivity, and overcoming challenges. *Intelligent Pharmacy*. <https://doi.org/10.1016/j.ipha.2024.12.003>
- Chirico, F., & Taino, G. (2018). Climate change and occupational health of outdoor workers: An urgent call to action for European policymakers. *Environmental Disease*, 3(4), 77. https://doi.org/10.4103/ed.ed_15_18
- Clemes, S., Varela Mato, V., Bodicoat, D., & King, J. A. (2022). A multicomponent structured health behaviour intervention to improve physical activity in long-distance HGV drivers: The SHIFT cluster RCT. *Public Health Research*, 10(12), 1–174. <https://doi.org/10.3310/PNOY9785>
- Clemes, S., Varela Mato, V., Munir, F., Edwardson, C., Chen, Y.-L., Hamer, M., Gray, L., Jaicim, N., Richardson, G., Johnson-Warrington, V., Troughton, J., Yates, T., & King, J. (2019). A cluster randomised controlled trial to investigate the effectiveness and cost-effectiveness of a Structured Health Intervention For Truckers (The SHIFT Study). *BMJ Open*, 9. <https://doi.org/10.1136/bmjopen-2019-030175>
- Colquhoun, H. L., Levac, D., O'Brien, K. K., Straus, S., Tricco, A. C., Perrier, L., Kastner, M., & Moher, D. (2014). Scoping reviews: Time for clarity in definition, methods, and reporting. *Journal of Clinical Epidemiology*, 67(12), 1291–1294. <https://doi.org/10.1016/j.jclinepi.2014.03.013>
- Crizzle, A., Bigelow, P., Adams, D., Gooderham, S., Myers, A., & Thiffault, P. (2017). Health and wellness of long-haul truck and bus drivers: A systematic literature review and directions for future research. *Journal of Transport & Health*, 7. <https://doi.org/10.1016/j.jth.2017.05.359>
- Cuentas-Hernandez, S., Li, X., King, M. J., Lewis, I., & Oviedo-Trespalacios, O. (2024). Driven to distraction: A systematic literature review on the role of the driving context in mobile phone use. *Transportation Research Part F: Traffic Psychology and Behaviour*, 106, 215–243. <https://doi.org/10.1016/j.trf.2024.08.006>
- Cunningham, T. R., Guerin, R. J., Ferguson, J., & Cavallari, J. (2022). Work-related fatigue: A hazard for workers experiencing disproportionate occupational risks. *American Journal of Industrial Medicine*, 65(11), 913–925. <https://doi.org/10.1002/ajim.23325>
- Davis, F. D. (1993). User acceptance of information systems: The technology acceptance model (TAM). *Int. J. Man-Machine Studies*, 38, 475–487. <https://doi.org/10.2307/249008>

- Davis, J., Mengersen, K., Bennett, S., & Mazerolle, L. (2014). Viewing systematic reviews and meta-analysis in social research through different lenses. *SpringerPlus*, 3(1), 511. <https://doi.org/10.1186/2193-1801-3-511>
- de Winter, J., Driessen, T., Dodou, D., & Cannoo, A. (2024). Exploring the challenges faced by Dutch truck drivers in the era of technological advancement. *Frontiers in Public Health*, 12. Scopus. <https://doi.org/10.3389/fpubh.2024.1352979>
- Deaton, A., & Cartwright, N. (2018). Understanding and misunderstanding randomized controlled trials. *Social Science & Medicine (1982)*, 210, 2–21. <https://doi.org/10.1016/j.socscimed.2017.12.005>
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18(1), 105–115. <https://doi.org/10.1037/h0030644>
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109–134. [https://doi.org/10.1016/0092-6566\(85\)90023-6](https://doi.org/10.1016/0092-6566(85)90023-6)
- Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In *Human motivation and interpersonal relationships: Theory, research, and applications* (pp. 53–73). Springer Science + Business Media. https://doi.org/10.1007/978-94-017-8542-6_3
- Deniz-Garcia, A., Fabelo, H., Rodriguez-Almeida, A. J., Zamora-Zamorano, G., Castro-Fernandez, M., Alberiche Ruano, M. del P., Solvoll, T., Granja, C., Schopf, T. R., Callico, G. M., Soguero-Ruiz, C., & Wagner, A. M. (2023). Quality, Usability, and Effectiveness of mHealth Apps and the Role of Artificial Intelligence: Current Scenario and Challenges. *Journal of Medical Internet Research*, 25, e44030. <https://doi.org/10.2196/44030>
- Dobson, R., Whittaker, R., Abroms, L. C., Bramley, D., Free, C., McRobbie, H., Stowell, M., & Rodgers, A. (2024). Don't Forget the Humble Text Message: 25 Years of Text Messaging in Health. *Journal of Medical Internet Research*, 26, e59888. <https://doi.org/10.2196/59888>
- Duganova, E., Novikov, I., Novikov, A., & Zagorodnii, N. (2022). Problems of introduction of digital technologies in the transport industry. *Transportation Research Procedia*, 63, 1024–1033. <https://doi.org/10.1016/j.trpro.2022.06.102>
- Durmaz, A., Dursun,  ., & Kabadayi, E. T. (2020). Mitigating the Effects of Social Desirability Bias in Self-Report Surveys: Classical and New Techniques. In M. L. Baran & J. E. Jones (Eds.), *Advances in Library and Information Science* (pp. 146–185). IGI Global. <https://doi.org/10.4018/978-1-7998-1025-4.ch007>
- eHealth, W. G. O. for. (2011). *mHealth: New horizons for health through mobile technologies: second global survey on eHealth*. World Health Organization. <https://iris.who.int/handle/10665/44607>
- Elassy, M., Al-Hattab, M., Takruri, M., & Badawi, S. (2024). Intelligent transportation systems for sustainable smart cities. *Transportation Engineering*, 16, 100252. <https://doi.org/10.1016/j.treng.2024.100252>
- FasterCapital. (2024, April 21). *Heavy Vehicles Driving Customer: Heavy Vehicles and Business Growth: How to Leverage Customer Demand*. FasterCapital. <https://fastercapital.com/content/Heavy-Vehicles-Driving-Customer--Heavy-Vehicles-and-Business-Growth--How-to-Leverage-Customer-Demand.html>

- Fernainy, P., Cohen, A. A., Murray, E., Losina, E., Lamontagne, F., & Sourial, N. (2024). Rethinking the pros and cons of randomized controlled trials and observational studies in the era of big data and advanced methods: A panel discussion. *BMC Proceedings*, 18(2), 1. <https://doi.org/10.1186/s12919-023-00285-8>
- Fernhay Solutions Ltd. (2025, February 17). *Overcoming Challenges in Urban Delivery and Being Efficient*. <https://fernhay.com/overcoming-challenges-in-urban-delivery/>
- Fink-Hafner, D., Dagen, T., Doušák, M., Novak, M., & Hafner-Fink, M. (2019). Delphi method: Strengths and weaknesses. *Advances in Methodology and Statistics*, 16(2). <https://doi.org/10.51936/fcfm6982>
- Ganesan, A. N., Louise, J., Horsfall, M., Bilsborough, S. A., Hendriks, J., McGavigan, A. D., Selvanayagam, J. B., & Chew, D. P. (2016). International Mobile-Health Intervention on Physical Activity, Sitting, and Weight: The Stepathlon Cardiovascular Health Study. *Journal of the American College of Cardiology*, 67(21), 2453–2463. <https://doi.org/10.1016/j.jacc.2016.03.472>
- Garbarino, S., Guglielmi, O., Sannita, W. G., Magnavita, N., & Lanteri, P. (2018). Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention. *International Journal of Environmental Research and Public Health*, 15(9), 1852. <https://doi.org/10.3390/ijerph15091852>
- Giebel, G., Speckemeier, C., Abels, C., Borchers, K., Wasem, J., Blase, N., & Neusser, S. (2021). Problems and Barriers related to the Use of Digital Health Applications: A Scoping Review Protocol. *JMIR Research Protocols*, 11. <https://doi.org/10.2196/32702>
- Gomis-Pastor, M., Berdún, J., Borrás-Santos, A., De Dios López, A., Fernández-Montells Rama, B., García-Esquirol, Ó., Gratacòs, M., Ontiveros Rodríguez, G. D., Pelegrín Cruz, R., Real, J., Bachs i Ferrer, J., & Comella, A. (2024). Clinical Validation of Digital Healthcare Solutions: State of the Art, Challenges and Opportunities. *Healthcare*, 12(11), Article 11. <https://doi.org/10.3390/healthcare12111057>
- Grammarly. (2024). *Grammarly* (Version 2024) [AI-based writing assistant]. <https://www.grammarly.com/>
- Greenfield, R., Busink, E., Wong, C. P., Riboli-Sasco, E., Greenfield, G., Majeed, A., Car, J., & Wark, P. A. (2016). Truck drivers' perceptions on wearable devices and health promotion: A qualitative study. *BMC Public Health*, 16(1), 677. <https://doi.org/10.1186/s12889-016-3323-3>
- Gupta, K. P., Singh, S., & Bhaskar, P. (2016). Citizen adoption of e-government: A literature review and conceptual framework. *Electronic Government, an International Journal*, 12(2), 160. <https://doi.org/10.1504/EG.2016.076134>
- Gusenbauer, M., & Haddaway, N. R. (2020). Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. *Research Synthesis Methods*, 11(2), 181. <https://doi.org/10.1002/jrsm.1378>
- Heaton, K., Combs, B., & Griffin, R. (2017). Truck Drivers' Use of the Internet: A Mobile Health Lifeline. *Workplace Health & Safety*, 65(6), 240–247. <https://doi.org/10.1177/2165079916665401>
- Hege, A., Lemke, M. K., Apostolopoulos, Y., Whitaker, B., & Sönmez, S. (2019). Work-Life Conflict among U.S. Long-Haul Truck Drivers: Influences of Work Organization, Perceived Job Stress,

- Sleep, and Organizational Support. *International Journal of Environmental Research and Public Health*, 16(6), 984. <https://doi.org/10.3390/ijerph16060984>
- Hege, A., Perko, M., Apostolopoulos, Y., Sönmez, S., & Strack, R. (2016). US long-haul truck driver health demands integrated approach. *International Journal of Workplace Health Management*, 9(4), 378–397. <https://doi.org/10.1108/IJWHM-12-2014-0058>
- Hesse, M., & Rodrigue, J.-P. (2004). The transport geography of logistics and freight distribution. *Journal of Transport Geography*, 12(3), 171–184. <https://doi.org/10.1016/j.jtrangeo.2003.12.004>
- Hicks, J. L., Boswell, M. A., Althoff, T., Crum, A. J., Ku, J. P., Landay, J. A., Moya, P. M. L., Murnane, E. L., Snyder, M. P., King, A. C., & Delp, S. L. (2023). Leveraging Mobile Technology for Public Health Promotion: A Multidisciplinary Perspective. *Annual Review of Public Health*, 44, 131–150. <https://doi.org/10.1146/annurev-publhealth-060220-041643>
- Hilton, M. (2024). JBI Critical appraisal checklist for systematic reviews and research syntheses. *The Journal of the Canadian Health Libraries Association*, 45(3), 180–183. <https://doi.org/10.29173/jchla29801>
- Hilty, D. M., Armstrong, C. M., Smout, S. A., Crawford, A., Maheu, M. M., Drude, K. P., Chan, S., Yellowlees, P. M., & Krupinski, E. A. (2022). Findings and Guidelines on Provider Technology, Fatigue, and Well-being: Scoping Review. *Journal of Medical Internet Research*, 24(5), e34451. <https://doi.org/10.2196/34451>
- Hong, Q. N., Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M., Griffiths, F., Nicolau, B., O’Cathain, A., Rousseau, M., & Vedel, I. (n.d.). *MIXED METHODS APPRAISAL TOOL (MMAT) VERSION 2018 User guide*.
- Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.-P., Griffiths, F., Nicolau, B., O’Cathain, A., Rousseau, M.-C., & Vedel, I. (2019). Improving the content validity of the mixed methods appraisal tool: A modified e-Delphi study. *Journal of Clinical Epidemiology*, 111, 49–59.e1. <https://doi.org/10.1016/j.jclinepi.2019.03.008>
- Hoque, M. R., Rahman, M. S., Nipa, N. J., & Hasan, M. R. (2020). Mobile health interventions in developing countries: A systematic review. *Health Informatics Journal*, 26(4), 2792–2810. <https://doi.org/10.1177/1460458220937102>
- Indra, B., Palmasutra, V., & Setyawan, F. A. (2024). Effectiveness of Digital Interventions in Reducing Occupational Stress: A Systematic Review. *Portuguese Journal of Public Health*, 1–14. <https://doi.org/10.1159/000540748>
- IRU. (2023, November 20). *Global truck driver shortage to double by 2028, says new IRU report*. <https://www.iru.org/news-resources/newsroom/global-truck-driver-shortage-double-2028-says-new-iru-report>
- Istepanian, R. S. H., & Woodward, B. (2016). *m-Health: Fundamentals and Applications*. John Wiley & Sons.
- ITF. (2024). The Final Frontier of Urban Logistics: Tackling the Last Metres. *OECD Publishing, Paris, No. 131*.
- Jeong, I., Park, J. B., Lee, K.-J., Won, J.-U., Roh, J., & Yoon, J.-H. (2018). Irregular work schedule and sleep disturbance in occupational drivers—A nationwide cross-sectional study. *PLOS ONE*, 13(11), e0207154. <https://doi.org/10.1371/journal.pone.0207154>

- Jones, C. J., Smith, H., & Llewellyn, C. (2014). Evaluating the effectiveness of health belief model interventions in improving adherence: A systematic review. *Health Psychology Review*, 8(3), 253–269. <https://doi.org/10.1080/17437199.2013.802623>
- Junaid, S. B., Imam, A. A., Balogun, A. O., De Silva, L. C., Surakat, Y. A., Kumar, G., Abdulkarim, M., Shuaibu, A. N., Garba, A., Sahalu, Y., Mohammed, A., Mohammed, T. Y., Abdulkadir, B. A., Abba, A. A., Kakumi, N. A. I., & Mahamad, S. (2022). Recent Advancements in Emerging Technologies for Healthcare Management Systems: A Survey. *Healthcare*, 10(10), 1940. <https://doi.org/10.3390/healthcare10101940>
- Katrak, P., Bialocerkowski, A. E., Massy-Westropp, N., Kumar, V. S., & Grimmer, K. A. (2004). A systematic review of the content of critical appraisal tools. *BMC Medical Research Methodology*, 4(1), 22. <https://doi.org/10.1186/1471-2288-4-22>
- Keating, D. (2024, October 18). EU needs 500,000 drivers urgently, truck and coach companies ask MEPs for solutions. *Euractiv*. <https://www.euractiv.com/section/eet/news/eu-needs-500000-drivers-urgently-truck-and-coach-companies-ask-meps-for-solutions/>
- Kechagias, E. P., Papadopoulos, G. A., & Rokai, I. (2024). Evaluating the Impact of Digital Health Interventions on Workplace Health Outcomes: A Systematic Review. *Administrative Sciences*, 14(6), Article 6. <https://doi.org/10.3390/admsci14060131>
- Khan, R., Khan, S., Almohaimeed, H. M., Almars, A. I., & Pari, B. (2025). Utilization, challenges, and training needs of digital health technologies: Perspectives from healthcare professionals. *International Journal of Medical Informatics*, 197, 105833. <https://doi.org/10.1016/j.ijmedinf.2025.105833>
- Kowalski, L., Finnes, A., Koch, S., & Bujacz, A. (2024). User engagement with organizational mHealth stress management intervention – A mixed methods study. *Internet Interventions*, 35, 100704. <https://doi.org/10.1016/j.invent.2023.100704>
- Kumar, D., Hasan, Y., & Afroz, S. (2023). Mobile Health Monitoring System: A Comprehensive Review. *International Journal of Research Publication and Reviews*, 4(6), 1922–1954. <https://doi.org/10.55248/gengpi.4.623.45128>
- Legault, L. (2017). Self-Determination Theory. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences* (pp. 1–9). Springer International Publishing. https://doi.org/10.1007/978-3-319-28099-8_1162-1
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, 5(1), 69. <https://doi.org/10.1186/1748-5908-5-69>
- Levy, K. (2022, December 6). Robo Truckers and the AI-Fueled Future of Transport. *Wired*. <https://www.wired.com/story/autonomous-vehicles-transportation-truckers-employment/>
- Lin, C.-C., Yang, Z., & Chang, C.-H. (2025). Facilitating adoption of virtual communities through emotional connection in the global logistics industry. *International Journal of Logistics Research and Applications*, 28(2), 191–209. Scopus. <https://doi.org/10.1080/13675567.2022.2153815>
- Lin, Y.-P., Lee, K.-C., Ma, W.-F., Syu, B.-S., Liao, W.-C., Yang, H.-T., Lu, S.-H., & Hong, O. (2025). A mobile technology-based tailored health promotion program for sedentary employees: Development and usability study. *BMC Public Health*, 25, 1452. <https://doi.org/10.1186/s12889-025-22401-3>

- Linden, A. H., & Hönekopp, J. (2021). Heterogeneity of Research Results: A New Perspective From Which to Assess and Promote Progress in Psychological Science. *Perspectives on Psychological Science*, 16(2), 358–376. <https://doi.org/10.1177/1745691620964193>
- Lipschitz, J. M., Pike, C. K., Hogan, T. P., Murphy, S. A., & Burdick, K. E. (2023). The Engagement Problem: A Review of Engagement with Digital Mental Health Interventions and Recommendations for a Path Forward. *Current Treatment Options in Psychiatry*, 10(3), 119–135. <https://doi.org/10.1007/s40501-023-00297-3>
- Liu, S., & and Hassini, E. (2024). Freight last mile delivery: A literature review. *Transportation Planning and Technology*, 47(3), 323–369. <https://doi.org/10.1080/03081060.2023.2268601>
- Liu, S., Ma, J., Sun, M., Zhang, C., Gao, Y., & Xu, J. (2025). Mapping the Landscape of Digital Health Intervention Strategies: 25-Year Synthesis. *Journal of Medical Internet Research*, 27, e59027. <https://doi.org/10.2196/59027>
- Livieri, G., Mangina, E., Protopapadakis, E. D., & Panayiotou, A. G. (2025). The gaps and challenges in digital health technology use as perceived by patients: A scoping review and narrative meta-synthesis. *Frontiers in Digital Health*, 7, 1474956. <https://doi.org/10.3389/fdgth.2025.1474956>
- Long, H. A., French, D. P., & Brooks, J. M. (2020). Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, 1(1), 31–42. <https://doi.org/10.1177/2632084320947559>
- Lopez-Alcalde, J., Wieland, L. S., Yan, Y., Barth, J., Khami, M. R., Shivalli, S., Lokker, C., Rai, H. K., Macharia, P., Yun, S., Lang, E., Bwanika Naggirinya, A., Campos-Asensio, C., Ahmadian, L., & Witt, C. M. (2024). Methodological Challenges in Randomized Controlled Trials of mHealth Interventions: Cross-Sectional Survey Study and Consensus-Based Recommendations. *Journal of Medical Internet Research*, 26, e53187. <https://doi.org/10.2196/53187>
- Madanian, S., Nakarada-Kordic, I., Reay, S., & Chetty, T. (2023). Patients’ perspectives on digital health tools. *PEC Innovation*, 2, 100171. <https://doi.org/10.1016/j.pecinn.2023.100171>
- Mallett, R., Hagen-Zanker ,Jessica, Slater ,Rachel, & and Duvendack, M. (2012). The benefits and challenges of using systematic reviews in international development research. *Journal of Development Effectiveness*, 4(3), 445–455. <https://doi.org/10.1080/19439342.2012.711342>
- Malvey, D., & Slovensky, D. J. (2014). *mHealth: Transforming Healthcare*. Springer.
- Mathern, C. (2019). *Literature review of risk factors in the road freight transport industry*. Wellington: WorkSafe New Zealand.
- McCool, J., Dobson, R., Whittaker, R., & Paton, C. (2022). Mobile Health (mHealth) in Low- and Middle-Income Countries. *Annual Review of Public Health*, 43, 525–539. <https://doi.org/10.1146/annurev-publhealth-052620-093850>
- McKinnon, A. C. (Ed.). (2010). *Green logistics: Improving the environmental sustainability of logistics*. Kogan Page.
- Meho, L. I., & Yang, K. (2007). Impact of data sources on citation counts and rankings of LIS faculty: Web of science versus scopus and google scholar. *Journal of the American Society for Information Science and Technology*, 58(13), 2105–2125. <https://doi.org/10.1002/asi.20677>

- Meller, A. (2024, May 13). *Truck driver shortage—Causes and risks | MT onroad*. Truck Driver Shortage - Causes and Risks | MT Onroad. <https://mtonroad.com/news/truck-driver-shortage---causes-and-risks>
- MILESTONE. (2024, March 28). *Mobile and Technological Solutions for Occupational Drivers*.
- Misokefalou, E., Papadimitriou, F., Kopelias, P., & Eliou, N. (2016). Evaluating Driver Distraction Factors in Urban Motorways. A Naturalistic Study Conducted in Attica Tollway, Greece. *Transportation Research Procedia*, 15, 771–782. <https://doi.org/10.1016/j.trpro.2016.06.064>
- Mohamad, N. (2022). *Stress and Anxiety on the Road: The Silent Victims and Their Sufferings*. 57–69.
- Mohd Johari, N. F., Mohamad Ali, N., Mhd Salim, M. H., & Abdullah, N. A. (2025). Factors driving the use of mobile health app: Insights from a survey. *mHealth*, 11, 12. <https://doi.org/10.21037/mhealth-24-44>
- Morgenstern, T., Schott, L., & Krems, J. F. (2020). Do drivers reduce their speed when texting on highways? A replication study using European naturalistic driving data. *Safety Science*, 128, 104740. <https://doi.org/10.1016/j.ssci.2020.104740>
- Mozafari, A., Vahedian, M., Mohebi, S., & Najafi, M. (2015). Work-related musculoskeletal disorders in truck drivers and official workers. *Acta Medica Iranica*, 53(7), 432–438.
- Mumtaz, H., Riaz, M. H., Wajid, H., Saqib, M., Zeeshan, M. H., Khan, S. E., Chauhan, Y. R., Sohail, H., & Vohra, L. I. (2023). Current challenges and potential solutions to the use of digital health technologies in evidence generation: A narrative review. *Frontiers in Digital Health*, 5, 1203945. <https://doi.org/10.3389/fdgth.2023.1203945>
- Munn, Z., Moola, S., Lisy, K., Riitano, D., & Tufanaru, C. (2015). Methodological guidance for systematic reviews of observational epidemiological studies reporting prevalence and cumulative incidence data. *JBI Evidence Implementation*, 13(3), 147. <https://doi.org/10.1097/XEB.0000000000000054>
- Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, 18(1), 143. <https://doi.org/10.1186/s12874-018-0611-x>
- Munn, Z., Stern, C., Aromataris, E., Lockwood, C., & Jordan, Z. (2018). What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. *BMC Medical Research Methodology*, 18(1), 5. <https://doi.org/10.1186/s12874-017-0468-4>
- Mustafa, A. S., Ali, N., Dhillon, J. S., Alkaws, G., & Baashar, Y. (2022). User Engagement and Abandonment of mHealth: A Cross-Sectional Survey. *Healthcare*, 10(2), 221. <https://doi.org/10.3390/healthcare10020221>
- Nahum-Shani, I., Smith, S. N., Spring, B. J., Collins, L. M., Witkiewitz, K., Tewari, A., & Murphy, S. A. (2018). Just-in-Time Adaptive Interventions (JITAI) in Mobile Health: Key Components and Design Principles for Ongoing Health Behavior Support. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine*, 52(6), 446–462. <https://doi.org/10.1007/s12160-016-9830-8>
- Nelson, J. R., Gren, L. H., Dickerson, T. T., Benson, L. S., Manortey, S. O., Ametepey, R., Avorgbedor, Y. E., & Alder, S. C. (2021). Using the Health Belief Model to explore rural maternal utilisation

- of skilled health personnel for childbirth delivery: A qualitative study in three districts of the Eastern Region of Ghana. *Journal of Global Health Reports*, 5. <https://doi.org/10.29392/001c.29883>
- Ng, M. K., Yousuf, B., Bigelow, P. L., & Van Eerd, D. (2015). Effectiveness of health promotion programmes for truck drivers: A systematic review. *Health Education Journal*, 74(3), 270–286. <https://doi.org/10.1177/0017896914533953>
- Nordhoff, S., Kyriakidis, Miltos, van Arem, Bart, & and Happee, R. (2019). A multi-level model on automated vehicle acceptance (MAVA): A review-based study. *Theoretical Issues in Ergonomics Science*, 20(6), 682–710. <https://doi.org/10.1080/1463922X.2019.1621406>
- Oinas-Kukkonen, H., & Harjumaa, M. (2009). Persuasive Systems Design: Key Issues, Process Model, and System Features. *Communications of the Association for Information Systems*, 24. <https://doi.org/10.17705/1CAIS.02428>
- Okoli, C., & Pawlowski, S. D. (2004). The Delphi method as a research tool: An example, design considerations and applications. *Information & Management*, 42(1), 15–29. <https://doi.org/10.1016/j.im.2003.11.002>
- Olson, R., Wipfli, B., Thompson, S. V., Elliot, D. L., Anger, W. K., Bodner, T., Hammer, L. B., & Perrin, N. A. (2016). Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States. *American Journal of Public Health*, 106(9), 1698–1706. <https://doi.org/10.2105/AJPH.2016.303262>
- OpenAI. (2024). *ChatGPT* (Version 29 April 2024) [Large language model]. <https://chatgpt.com/>
- Ossom Williamson, P., & Minter, C. I. J. (2019). Exploring PubMed as a reliable resource for scholarly communications services. *Journal of the Medical Library Association : JMLA*, 107(1), 16–29. <https://doi.org/10.5195/jmla.2019.433>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ (Clinical Research Ed.)*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... McKenzie, J. E. (2021). *PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews*. <https://doi.org/10.1136/bmj.n160>
- Parr, N. J., Schweer-Collins, M. L., Darlington, T. M., & Tanner-Smith, E. E. (2019). Meta-analytic Approaches for Examining Complexity and Heterogeneity in Studies of Adolescent Development. *Journal of Adolescence*, 77, 168–178. <https://doi.org/10.1016/j.adolescence.2019.10.009>
- Pernsley. (2016, July 13). *Sorting and Filtering Data with Excel—Learn Excel Now*. <https://www.learnexcelnow.com/sorting-and-filtering-data-with-excel/>
- Peters, M. D. J., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *JBI Evidence Implementation*, 13(3), 141. <https://doi.org/10.1097/XEB.0000000000000050>

- Peters, S. E., Grogan, H., Henderson, G. M., López Gómez, M. A., Martínez Maldonado, M., Silva Sanhueza, I., & Dennerlein, J. T. (2021). Working Conditions Influencing Drivers' Safety and Well-Being in the Transportation Industry: "On Board" Program. *International Journal of Environmental Research and Public Health*, 18(19), 10173. <https://doi.org/10.3390/ijerph181910173>
- Pourmohammadreza, N., Jokar, M. R. A., & Van Woensel, T. (2025). Last-mile logistics with alternative delivery locations: A systematic literature review. *Results in Engineering*, 25, 104085. <https://doi.org/10.1016/j.rineng.2025.104085>
- Pritchard, E., Kim, H. C., Nguyen, N., van Vreden, C., Xia, T., & Iles, R. (2022). The effect of weight loss interventions in truck drivers: Systematic review. *PloS One*, 17(2), e0262893. <https://doi.org/10.1371/journal.pone.0262893>
- Pritchard, E., van Vreden, C., Xia, T., Newnam, S., Collie, A., Lubman, D. I., de Almeida Neto, A., & Iles, R. (2023). Impact of work and coping factors on mental health: Australian truck drivers' perspective. *BMC Public Health*, 23, 1090. <https://doi.org/10.1186/s12889-023-15877-4>
- Rathore, B., Gupta, R., Biswas, B., Srivastava, A., & Gupta, S. (2022). Identification and analysis of adoption barriers of disruptive technologies in the logistics industry. *International Journal of Logistics Management*, 33(5), 136–169. Scopus. <https://doi.org/10.1108/IJLM-07-2021-0352>
- Richter, R. R., & Austin, T. M. (2012). Using MeSH (Medical Subject Headings) to Enhance PubMed Search Strategies for Evidence-Based Practice in Physical Therapy. *Physical Therapy*, 92(1), 124–132. <https://doi.org/10.2522/ptj.20100178>
- Rossi, M. (2021). *Digital health: Usage of innovative mobile technologies for health and wellness*. <https://tesidottorato.depositolegale.it/handle/20.500.14242/92570>
- Rouleau, G., Wu, K., Ramamoorthi, K., Boxall, C., Liu, R. H., Maloney, S., Zelmer, J., Scott, T., Larsen, D., Wijeyesundera, H. C., Ziegler, D., Bhatia, S., Kishimoto, V., Steele Gray, C., & Desveaux, L. (2024). Mapping Theories, Models, and Frameworks to Evaluate Digital Health Interventions: Scoping Review. *Journal of Medical Internet Research*, 26, e51098. <https://doi.org/10.2196/51098>
- RUAN. (2017, January 29). *Parking Shortage Limits Driver Productivity, Puts Them at Risk*. <https://www.ruan.com/resources/blog/truck-parking-shortage-limits-driver-productivity-puts-them-at-risk>
- Ryan, R. M., & Deci, E. L. (2017). *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. Guilford Publications.
- Schotten, M., El Aisati, M., Meester, W. J. N., Steinginga, S., & Ross, C. A. (2017). A Brief History of Scopus: The World's Largest Abstract and Citation Database of Scientific Literature. In F. J. Cantú-Ortiz (Ed.), *Research Analytics* (1st ed., pp. 31–58). Auerbach Publications. <https://doi.org/10.1201/9781315155890-3>
- Schroten, A., Grinsven, A. van, Tol, E., & Leestemaker, L. (2020, November). *Research for TRAN Committee: The impact of emerging technologies on the transport system*. <https://bit.ly/32hJzpH>
- Sekkay, F., Imbeau, D., Chinniah, Y., Dubé, P.-A., de Marcellis-Warin, N., Beauregard, N., & Trépanier, M. (2018). Risk factors associated with self-reported musculoskeletal pain among short and long distance industrial gas delivery truck drivers. *Applied Ergonomics*, 72, 69–87. <https://doi.org/10.1016/j.apergo.2018.05.005>

- Sendall, M., Crane, P., Mccosker, L., Biggs, H., Fleming, M., & Rowland, B. (2016). Workplace interventions to improve truck drivers' health knowledge, behaviours and selfreported outcomes. *Road and Transport Research*, 25, 31–43.
- Sgarbossa, F., Grosse, E. H., Neumann, W. P., Battini, D., & Glock, C. H. (2020). Human factors in production and logistics systems of the future. *Annual Reviews in Control*, 49, 295–305. <https://doi.org/10.1016/j.arcontrol.2020.04.007>
- Singh, J. (2013). Critical appraisal skills programme. *Journal of Pharmacology and Pharmacotherapeutics*, 4(1), 76–77. <https://doi.org/10.4103/0976-500X.107697>
- Siuhi, S., & Mwakalonge, J. (2016). Opportunities and challenges of smart mobile applications in transportation. *Journal of Traffic and Transportation Engineering (English Edition)*, 3. <https://doi.org/10.1016/j.jtte.2016.11.001>
- Smith & Solomon. (2023, December 27). *The Pros and Cons of Being a Truck Driver: Is it the Right Career for You?* <https://smithsolomon.com/>. <https://smithsolomon.com/the-pros-and-cons-of-being-a-truck-driver-is-it-the-right-career-for-you/>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Stephen, S. (2025, January 16). The Hidden Downsides of Being a Truck Driver: What You Need to Know. *The Real Trucker*. <https://therealtrucker.com/2025/01/16/the-hidden-downsides-of-being-a-truck-driver-what-you-need-to-know/>
- Stern, C. (2020). Language bias in systematic reviews: You only get out what you put in. *JBIManual for Evidence Synthesis*, 18(9), 1818–1819.
- Tian, H., Zhang, K., Zhang, J., Shi, J., Qiu, H., Hou, N., Han, F., Kan, C., & Sun, X. (2025). Revolutionizing public health through digital health technology. *Psychology, Health & Medicine*, 1–16. <https://doi.org/10.1080/13548506.2025.2458254>
- TRB. (n.d.). *TRID - Transport Research International Documentation*. Retrieved April 28, 2025, from <https://trid.trb.org/>
- Tsirozidis, G., Kirk ,Ulrik Bak, & and Zaggl, M. A. (n.d.). Benefits for thee, not for me? mHealth engagement through the lens of privacy calculus theory and trust. *Behaviour & Information Technology*, 0(0), 1–21. <https://doi.org/10.1080/0144929X.2025.2485395>
- Useche, S. A., Cendales, B., Alonso, F., & Montoro, L. (2022). Multidimensional prediction of work traffic crashes among Spanish professional drivers in cargo and passenger transportation. *International Journal of Occupational Safety and Ergonomics: JOSE*, 28(1), 20–27. <https://doi.org/10.1080/10803548.2020.1732102>
- Useche, S. A., Cendales, B., Montoro, L., & Esteban, C. (2018). Work stress and health problems of professional drivers: A hazardous formula for their safety outcomes. *PeerJ*, 6, e6249. <https://doi.org/10.7717/peerj.6249>
- Uttley, L., Quintana, D. S., Montgomery, P., Carroll, C., Page, M. J., Falzon, L., Sutton, A., & Moher, D. (2023). The problems with systematic reviews: A living systematic review. *Journal of Clinical Epidemiology*, 156, 30–41. <https://doi.org/10.1016/j.jclinepi.2023.01.011>
- Valentine, L., Hinton, J. D. X., Bajaj, K., Boyd, L., O'Sullivan, S., Sorenson, R. P., Bell, I. H., Vega, M. S., Liu, P., Peters, W., Mangelsdorf, S. N., Wren, T. W., Moller, C., Cross, S., McEnery, C., Bendall, S., Nicholas, J., & Alvarez-Jimenez, M. (2025). A meta-analysis of persuasive design,

- engagement, and efficacy in 92 RCTs of mental health apps. *Npj Digital Medicine*, 8(1), 1–17. <https://doi.org/10.1038/s41746-025-01567-5>
- Varela-Mato, V., Clemes, S. A., King, J., & Munir, F. (2019). Associations Between Musculoskeletal Conditions Risk, Sedentary Behavior, Sleep, and Markers of Mental Health: A Cross-Sectional Observational Study in Heavy Goods Vehicle Drivers. *Musculoskeletal Conditions Risk in HGV Drivers. Journal of Occupational and Environmental Medicine*, 61(5), 437–443. <https://doi.org/10.1097/JOM.0000000000001587>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead. *ResearchGate*, 17(5), 328–376. <https://doi.org/10.17705/1jais.00428>
- Virgara, R., Singh, B., O'Connor, E., Szeto, K., Merks, Z., Rees, C., Gilson, N., & Maher, C. (2024). Keep on truckin': How effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis. *BMC Public Health*, 24(1), 2623. <https://doi.org/10.1186/s12889-024-19929-1>
- Waffenschmidt, S., Knelangen, M., Sieben, W., Bühn, S., & Pieper, D. (2019). Single screening versus conventional double screening for study selection in systematic reviews: A methodological systematic review. *BMC Medical Research Methodology*, 19, 132. <https://doi.org/10.1186/s12874-019-0782-0>
- Wang, Y., Wang, H., Wang, S., Wind, S. A., & Gill, C. (2024). A systematic review and meta-analysis of self-determination-theory-based interventions in the education context. *Learning and Motivation*, 87, 102015. <https://doi.org/10.1016/j.lmot.2024.102015>
- West, R., & Michie, S. (2020). *A Brief Introduction to the COM-B Model of Behaviour and the PRIME Theory of Motivation*. <https://doi.org/10.32388/WW04E6.2>
- Williams, D. F., Thomas, S. P., & Liao-Troth, S. (2017). The Truck Driver Experience: Identifying Psychological Stressors from the Voice of the Driver. *Transportation Journal*, 56(1), 54–76. <https://doi.org/10.5325/transportationj.56.1.0054>
- Wipfli, B., Hanson, G., Anger, K., Elliot, D. L., Bodner, T., Stevens, V., & Olson, R. (2019). Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers. *Safety and Health at Work*, 10(1), 95–102. <https://doi.org/10.1016/j.shaw.2018.08.002>
- Wolkow, A. P., Rajaratnam, S. M. W., Wilkinson, V., Shee, D., Baker, A., Lillington, T., Roest, P., Marx, B., Chew, C., Tucker, A., Haque, S., Schaefer, A., & Howard, M. E. (2020). The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions. *Sleep Health*, 6(3), 366–373. <https://doi.org/10.1016/j.sleh.2020.03.005>
- World Bank & IRU. (2016). *Road Freight Transport Services Reform*. World Bank, Washington, DC. <https://doi.org/10.1596/25853>

- Yardley, L., Choudhury, T., Patrick, K., & Michie, S. (2016). Current Issues and Future Directions for Research Into Digital Behavior Change Interventions. *American Journal of Preventive Medicine*, 51(5), 814–815. <https://doi.org/10.1016/j.amepre.2016.07.019>
- Yeung, A. W. K., Torkamani, A., Butte, A. J., Glicksberg, B. S., Schuller, B., Rodriguez, B., Ting, D. S. W., Bates, D., Schaden, E., Peng, H., Willschke, H., van der Laak, J., Car, J., Rahimi, K., Celi, L. A., Banach, M., Kletecka-Pulker, M., Kimberger, O., Eils, R., ... Atanasov, A. G. (2023). The promise of digital healthcare technologies. *Frontiers in Public Health*, 11, 1196596. <https://doi.org/10.3389/fpubh.2023.1196596>
- Zainal, N. H., Liu, X., Leong, U., Yan, X., & Chakraborty, B. (2025). Bridging Innovation and Equity: Advancing Public Health Through Just-in-Time Adaptive Interventions. *Annual Review of Public Health*, 46(1), 43–68. <https://doi.org/10.1146/annurev-publhealth-071723-103909>
- Zhou, F., Alsaid, A., Blommer, M., Curry, R., Swaminathan, R., Kochhar, D., Talamonti, W., Tijerina, L., & Lei, B. (2020). Driver fatigue transition prediction in highly automated driving using physiological features. *Expert Systems with Applications*, 147, 113204. <https://doi.org/10.1016/j.eswa.2020.113204>

APPENDIX I – PRISMA 2020 CHECKLIST

Figure I.1. PRISMA 2020 Item Checklist ((Page, McKenzie, et al., 2021; Page, Moher, et al., 2021))

RESEARCH METHODS AND REPORTING			
Table 1 | PRISMA 2020 item checklist			
Section and topic	Item #	Checklist item	Location where item is reported
Title			
Title	1	Identify the report as a systematic review.	
Abstract			
Abstract	2	See the PRISMA 2020 for Abstracts checklist (table 2).	
Introduction			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
Methods			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesise results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesised results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	
Results			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram (see fig 1).	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesised results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
Discussion			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
Other information			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code, and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

BMJ: first published as 10.1136/bmj.n71 on 29 March 2021. Downloaded from <http://www.bmj.com/> on 15 March 2023 at Universiteit Hasselt. Protected by copyright.

APPENDIX II – DATA EXTRACTION TABLES – SCREENING

										Included = Excluded =		644 3	26 618	17 9	16 1	6 10		
										Database Source			Screening Phases - based on Eligibility					
No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Archive	Archive Location	Library Catalog	Pre-Screening	(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	Reason for Exclusion	
1	BHYLKT8X	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	JournalArticle	2018	Garbarino, Environmental Research and Public Health	International Journal of	Background: Professional truck drivers	eng			PubMed	☑	☑	☑	☑	☐	E3, E4, E5	
2	VUD2NQZZ	Sleepiness and Driving: Benefits of Treatment	JournalArticle	2019	McCall, C; Sleep Medicine Clinics	Cs; Sleep Medicine Clinics	Drowsy driving is common and causes	eng			PubMed	☑	☐				E2, E3	
3	LP3BA4Z8	Public health and international drug policy	JournalArticle	2016	Csete, Joa; Lancet (London, England)	Csete, Joa; Lancet (London, England)	In September 2015, the member states	eng			PubMed	☑	☐				E1, E2, E3	
4	6FLLYB6R	Sleepiness, attention and risk of accidents in powered two-wheelers	JournalArticle	2016	Bougard, C; Sleep Medicine Reviews	C; Sleep Medicine Reviews	In recent years, the role of "sleepiness i	eng			PubMed	☑	☐				E1, E3	
5	K5PNDNYK	Globalization, migration, and ethnicity	JournalArticle	2019	Segal, U. A; Public Health	U. A; Public Health	OBJECTIVES: This article presents an o	eng			PubMed	☑	☐				E1, E2, E3	
6	EWYDVY9R	Innovations and Possibilities in Connected Health	JournalArticle	2015	Krupinski, Journal of the American Academy of Audiology	Journal of the American Academy of Audiology	BACKGROUND: Health care is being fur	eng			PubMed	☑	☐				E1, E2	
7	GMLM5NRU	Advancing urban green and blue space contributions to public health	JournalArticle	2023	Hunter, Ru; The Lancet. Public Health	Ru; The Lancet. Public Health	Urban green and blue spaces (UGBS) h	eng			PubMed	☑	☐				E1, E2, E3	
8	T88HQAMN	Assessment of lifestyle "vital signs" in healthcare settings	JournalArticle	2023	Rozanski, Progress in Cardiovascular Diseases	Progress in Cardiovascular Diseases	Unhealthy lifestyles, such as maintenai	eng			PubMed	☑	☐				E1, E2, E3	
9	3NNWH5IL	The effect of weight loss interventions in truck drivers: Systematic review	JournalArticle	2022	Pritchard, PloS One	PloS One	INTRODUCTION: Truck driving is the mo	eng			PubMed	☑	☑	☑	☑	☐	E3, E4, E5	
10	7HDZM4MT	Advanced vehicle technologies and road safety: A scoping review of the evidence	JournalArticle	2020	Furlan, An; Accident; Analysis and Prevention	Accident; Analysis and Prevention	The proliferation of Advanced Vehicle T	eng			PubMed	☑	☐				E1, E3	
11	96MMXN44	A systematic review of oil tanker truck disasters: Identifying prevention targets	JournalArticle	2019	Ewbank, C; International Society for Burn Injuries	International Society for Burn Injuries	INTRODUCTION: Oil tanker truck disast	eng			PubMed	☑	☐				E3	
12	95HD9Y4Y	Factors and challenges of driving reduction and cessation: A systematic review and meta-synthesis of qualitative studies on self-regulation	JournalArticle	2019	Ang, Boon; Journal of Safety Research	Journal of Safety Research	INTRODUCTION: Older adults are at a g	eng			PubMed	☑	☐				E1, E3	
13	QPRDK3GH	Symposium review: An abundance of replacement heifers: What is the economic impact of raising more than are needed?	JournalArticle	2020	Overton, M; Journal of Dairy Science	Journal of Dairy Science	Historically, most dairy producers raise	eng			PubMed	☑	☐				E1, E2, E3	
14	EYGI86D	Risk of motor vehicle collisions after methadone use: A systematic review and meta-analysis	JournalArticle	2023	Tsal, Tou-Y; Drug and Alcohol Dependence	Drug and Alcohol Dependence	INTRODUCTION: Methadone maintenai	eng			PubMed	☑	☐				E1, E3	
15	CT8Y8NDV	Psychoactive substance use by truck drivers: a systematic review	JournalArticle	2014	Giroto, Ed; Occupational and Environmental Medicine	Occupational and Environmental Medicine	The aim of this study was to summarise	eng			PubMed	☑	☐				E3	
16	RPIRYU6U	Increasing utilisation of emergency ambulances	JournalArticle	2011	Lowthian, .; Publication of the Australian Hospital Association	Publication of the Australian Hospital Association	BACKGROUND: Increased ambulance i	eng			PubMed	☑	☐				E1, E3	
17	IRBW4RT	An exploratory study of long-haul truck drivers' secondary tasks and reasons for performing them	JournalArticle	2018	Iseland, To; Accident; Analysis and Prevention	Accident; Analysis and Prevention	Research on drivers has shown how ce	eng			PubMed	☑	☐				E3	
18	V3KAAT4B	Is distraction on the road associated with maladaptive mobile phone use? A systematic review	JournalArticle	2023	Rahmilla, H; Accident; Analysis and Prevention	Accident; Analysis and Prevention	Maladaptive Mobile Phone Use (MMPU'	eng			PubMed	☑	☐				E1, E3	
19	SDQSN7YA	Associations between vision impairment and vision-related interventions on crash risk and driving cessation: systematic review and meta-analysis	JournalArticle	2023	Nguyen, H; BMJ open	BMJ open	OBJECTIVES: To systematically investig	eng			PubMed	☑	☐				E1	
20	W6L5BIF	Effectiveness of Parent-Focused Interventions to Increase Teen Driver Safety: A Critical Review	JournalArticle	2015	Curry, Allis; The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine	The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine	PURPOSE: We critically reviewed recen	eng			PubMed	☑	☐				E1, E3	
21	G4YHHNG	Healthcare Programmes for Truck Drivers in Sub-Saharan Africa: A Systematic Review and Meta-Analysis	JournalArticle	2016	Lollo-Edwa; PloS One	PloS One	BACKGROUND: Truck drivers have uniq	eng			PubMed	☑	☐				E3	
22	NIV2S9KH	Internationalization of Medical Education - Motivations and Formats of Current Practices	JournalArticle	2022	Wu, Anette; Medical Science Educator	Medical Science Educator	PURPOSE: The COVID-19 pandemic ha	eng			PubMed	☑	☐				E1, E2, E3	
23	PYE92EI	Effect of free distribution of safety equipment on usage among motorcycle-taxi drivers in Tanzania--A cluster randomised controlled trial	JournalArticle	2014	Sumner, S; Injury	Injury	INTRODUCTION: Deaths due to road tr	eng			PubMed	☑	☐				E1, E3	
24	IJJGCUI8	The Netherlands: health system review	JournalArticle	2010	Schäfer, W; Health Systems in Transition	Health Systems in Transition	The Health Systems in Transition (HiT) |	eng			PubMed	☑	☐				E1, E2, E3	
25	7UH73GRW	Methods to evaluate driving competence for people with acquired brain injury (ABI): A systematic review	JournalArticle	2022	Alhashmi, Frontiers in Rehabilitation Sciences	Frontiers in Rehabilitation Sciences	Driving is essential for independence, c	eng			PubMed	☑	☐				E1, E3	
26	RGCUIPC	Role of multimodality imaging in evaluation of cardiovascular involvement in COVID-19	JournalArticle	2021	Citro, Rodi; Trends in Cardiovascular Medicine	Trends in Cardiovascular Medicine	The management of patients infected b	eng			PubMed	☑	☐				E1, E2, E3	
27	DVUSWXSX	Obstructive sleep apnea and risk of motor vehicle crash: systematic review and meta-analysis	JournalArticle	2009	Tregear, St; Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine	Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine	STUDY OBJECTIVES: We performed a sy	eng			PubMed	☑	☐				E1, E3	
28	XPY5SEPY	Epidemiology of road traffic accidents and its associated factors among public transportation in Africa: systematic review and meta-analysis	JournalArticle	2025	Atalay, Yib; Frontiers in Public Health	Frontiers in Public Health	INTRODUCTION: Nowadays, Injuries, di	eng			PubMed	☑	☐				E1, E3	

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
29	35J5JTL5	Public opinion on motor vehicle-related injury prevention policies: a systematic review of a decade of research	journalArticle	2014	Debinski, T	Traffic Injury Prevention	OBJECTIVE: Legislation is an effective s eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
30	Z64RUIPG	Challenges to student transition in allied health undergraduate education in the Australian rural and remote context: a synthesis of barriers and enablers	journalArticle	2015	Spiers, M.	Rural and Remote Health	INTRODUCTION: The optimum supply c eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
31	HDYWE7KX	The Contribution of Clinical Pharmacologists in Precision Medicine: An Opportunity for Health Care Improvement	journalArticle	2021	Grisafi, Da	Current Therapeutic Research, Clinical and Experimental	BACKGROUND: Clinical pharmacologi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
32	U4PPHBI	Cancer patients' experiences on self-management of chemotherapy treatment-related symptoms: A systematic review and thematic synthesis	journalArticle	2020	Magalhães	European Journal of Oncology Nursing: The Official Journal of European Oncology Nursing Society	PURPOSE: This study aimed to synthesi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
33	KU95CXF9	Effectiveness of nurse-led services for people with chronic disease in achieving an outcome of continuity of care at the primary-secondary healthcare interface: A quantitative systematic review	journalArticle	2021	Davis, K. M	International Journal of Nursing Studies	BACKGROUND: Globally, chronic disea eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
34	VSVLHXZI	Thinking outside the (pill) box: Does toxic metal exposure thwart antibiotic stewardship best practices?	journalArticle	2018	Wiggins, A	Plasmid	Multi-antibiotic resistant (MAR) bacteri eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
35	T54DA63B	From LncRNA to metastasis: The MALAT1-EMT axis in cancer progression	journalArticle	2024	Thapa, Riy	Pathology, Research and Practice	Cancer is a complex disease that causi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
36	726B592J	Regulation and registration as drivers of continuous professional competence for Irish pre-hospital practitioners: a discussion paper	journalArticle	2016	Knox, S.; D	Irish Journal of Medical Science	BACKGROUND: The regulatory body res eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
37	VDIFHA2W	A Review of Hazard Anticipation Training Programs for Young Drivers	journalArticle	2015	McDonald,	The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine	PURPOSE: Poor hazard anticipation ski eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
38	VHUQMDGB	The efficacy of hazard perception training and education: A systematic review and meta-analysis	journalArticle	2024	Prabhakha	Accident; Analysis and Prevention	BACKGROUND: Hazard perception (HP eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
39	29IWPTDT	Adolescent driving behavior before and during restrictions related to COVID-19	journalArticle	2020	Stavrinou,	Accident; Analysis and Prevention	INTRODUCTION: Understanding who hi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
40	X2I5AAYB	An online driving decision aid for older drivers reduces ambivalence and regret about driving decisions: Randomized trial	journalArticle	2025	DiGiusepp	Journal of the American Geriatrics Society	BACKGROUND: Decisions about drivin eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
41	XIX9JDMD	The dynamics of prehospital/hospital care and modes of transport during civil conflict and terrorist incidents	journalArticle	2017	Celik, S.; D	Public Health	OBJECTIVE: Prehospital and hospital c eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
42	SKRNL8YY	Effects of alertness management training on sleepiness among long-haul truck drivers: A randomized controlled trial	journalArticle	2018	Pylkkönen,	Accident; Analysis and Prevention	Education is a frequently recommende eng				PubMed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E5
43	E4AZI4W6	Young driver distraction: state of the evidence and directions for behavior change programs	journalArticle	2014	Buckley, Li	The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine	Adolescent drivers are overrepresente eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
44	277ALHPV	Impact of SMS Text Messaging Reminders on Helmet Use Among Motorcycle Drivers in Dar es Salaam, Tanzania: Randomized Controlled Trial	journalArticle	2022	Campbell,	Journal of Medical Internet Research	BACKGROUND: Road traffic injury is a eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
45	CSD4PYYN	Reliability and validity of the English and Malay versions of the Driving and Riding Questionnaire: a pilot study amongst older car drivers and motorcycle riders	journalArticle	2018	Ang, B. H.;	Public Health	OBJECTIVES: This study aimed to exam eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
46	ZIDKBV6R	Predicting and Reducing Driving Mishaps Among Drivers With Type 1 Diabetes	journalArticle	2017	Cox, Danie	Diabetes Care	OBJECTIVE: Two aims of this study were eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
47	TUQCVRW3	Occupations and the risk of buccal mucosa cancer in Indian men: A multi-centre case-control study	journalArticle	2024	Moirangthi	Cancer Epidemiology	OBJECTIVE: This study aimed to investi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
48	36ERVW6U	Analytical observational study of nonfatal motor vehicle collisions and incidents in a light-vehicle sales and service fleet	journalArticle	2019	Pratt, Step	Accident; Analysis and Prevention	Motor vehicle crashes (MVCs) are a sig eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
49	AM5RS9RL	Driving and diabetes mellitus in the Gulf Cooperation Council countries: Call for action	journalArticle	2015	Hassoun, J	Diabetes Research and Clinical Practice	The aim of the present article is to incre eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
50	LDJ9HTGA	Safety-critical event risk associated with cell phone tasks as measured in naturalistic driving studies: A systematic review and meta-analysis	journalArticle	2016	Simmons,	Accident; Analysis and Prevention	A systematic review and meta-analysis eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E2
51	S6YF6DV	Can video communication in the emergency medical communication centre improve dispatch precision? A before-after study in Norwegian helicopter emergency medical services	journalArticle	2023	Ulvin, Ole I	BMJ open	OBJECTIVES: Dispatching helicopter en eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
52	LTP8P7TN	Racial Inequities in Police Transport for Patients to the Emergency Department: A Multicenter Analysis	journalArticle	2024	Gagliardi, J	American Journal of Preventive Medicine	INTRODUCTION: Police involvement in eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
53	HKQZG7LH	Effects of a Community-Level Intervention on Alcohol-Related Motor Vehicle Crashes in California Cities: A Randomized Trial	journalArticle	2021	Saltz, Robt	American Journal of Preventive Medicine	INTRODUCTION: This trial assesses the eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
54	N7ZTKU9E	Prenatal diagnosis of congenital heart disease using four-dimensional spatio-temporal image correlation (STIC) telemedicine via an Internet link: a pilot study	journalArticle	2005	Viñals, F.;	Ultrasound in Obstetrics & Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology	OBJECTIVE: To assess whether the spa eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
55	EKN7Z9JG	Improving laboratory turnaround times in clinical settings: A systematic review of the impact of lean methodology application	journalArticle	2024	Cherie, Ne	PloS One	BACKGROUND: Lean methodology, origi eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
56	H4Z9FZJF	Prehospital care training in a rapidly developing economy: a multi-institutional study	journalArticle	2016	Vyas, Dine	The Journal of Surgical Research	BACKGROUND: The trauma pandemic i	eng			PubMed	☑	☐				E1, E2, E3
57	46G2C3WG	Multimodal In-Vehicle Hypoglycemia Warning for Drivers With Type 1 Diabetes: Design and Evaluation in Simulated and Real-World Driving	journalArticle	2024	Bérubé, C	JMIR human factors	BACKGROUND: Hypoglycemia threat	eng			PubMed	☑	☐				E1, E2, E3
58	5X2GAK8R	Using a Resident-Led School Outreach Program to Improve Knowledge of All-Terrain Vehicle Safety	journalArticle	2021	Jeffries, Kr	Southern Medical Journal	BACKGROUND: During the past decade	eng			PubMed	☑	☐				E1, E3
59	SG4HZ2QG	Work Ability and Vitality in Coach Drivers: An RCT to Study the Effectiveness of a Self-Management Intervention during the Peak Season	journalArticle	2019	van Schaai	International Journal of Environmental Research and Public Health	Background: This randomized controlle	eng			PubMed	☑	☐				E1
60	7ZKJPRJE	Intra- and inter-operator reliability of measuring compressive stiffness of the patellar tendon in volleyball players using a handheld digital palpation device	journalArticle	2024	van Dam, I	PloS One	This observational study aimed to evalu	eng			PubMed	☑	☐				E1, E2, E3
61	2XP3NVPV	The effect of sample site and collection procedure on identification of SARS-CoV-2 infection	journalArticle	2024	Davenport	The Cochrane Database of Systematic Reviews	BACKGROUND: Sample collection is a i	eng			PubMed	☑	☐				E1, E2, E3
62	JAULWR5B	Laboratory analysis of risky driving at 0.05% and 0.08% blood alcohol concentration	journalArticle	2017	Van Dyke,	Drug and Alcohol Dependence	BACKGROUND: The public health costs	eng			PubMed	☑	☐				E1, E2, E3
63	MS4IUODY	Exploring the Behaviour Change Wheel and the Theoretical Domains Framework in interventions for mobile phone driver distraction: A scoping review	journalArticle	2024	Demir, Bas	Accident; Analysis and Prevention	Mobile phone use while driving remains	eng			PubMed	☑	☐				E1
64	64EKQI56	Total ankle arthroplasty in France	journalArticle	2010	Besse, J.-L.	Orthopaedics & traumatology, surgery & research: OTSR	OBJECTIVES: After more than 10 years'	eng			PubMed	☑	☐				E1, E2, E3
65	39PDR598	Functional Decline After Nonhospitalized Injuries in Older Patients: Results From the Canadian Emergency Team Initiative Cohort in Elders	journalArticle	2022	Sirois, Mar	Annals of Emergency Medicine	STUDY OBJECTIVE: To estimate the cun	eng			PubMed	☑	☐				E1, E2, E3
66	S8E4TUB2	Does talking the talk matter? Effects of supervisor safety communication and safety climate on long-haul truckers' safety performance	journalArticle	2018	Huang, Yui	Accident; Analysis and Prevention	This study examines the distinct contri	eng			PubMed	☑	☐				E3
67	SXQ6A897	Modification of the hand-held Vscan ultrasound and verification of its performance for transvaginal applications	journalArticle	2013	Troyano Lu	Ultrasonics	PURPOSE: The purpose of this work wa	eng			PubMed	☑	☐				E1, E2, E3
68	WGYM2RQP	TeenDrivingPlan effectiveness: the effect of quantity and diversity of supervised practice on teens' driving performance	journalArticle	2014	Mirman, Jr	The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine	PURPOSE: The large contribution of ine	eng			PubMed	☑	☐				E1, E3
69	85AB457A	Infant deaths in the UK community following successful cardiac surgery: building the evidence base for optimal surveillance, a mixed-methods study	book	2016	Brown, Katherine L.; Wray, Jo; Knowles,		While early outcomes of paediatric can	eng			PubMed	☐					E0
70	GHZ9GP4B	The development and validation of video-based measures of drivers' following distance and gap acceptance behaviours	journalArticle	2020	Horswill, R	Accident; Analysis and Prevention	The distance at which drivers follow oth	eng			PubMed	☑	☐				E1, E3
71	VPKK9QNZ	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	journalArticle	2020	Wolkow, A	Sleep Health	OBJECTIVES: This study examined the ii	eng			PubMed	☑	☑	☑	☑	☐	E4, E5
72	585RERMQ	How much space do drivers provide when passing cyclists? Understanding the impact of motor vehicle and infrastructure characteristics on passing distance	journalArticle	2019	Beck, Ben;	Accident; Analysis and Prevention	BACKGROUND: Understanding factors	eng			PubMed	☑	☐				E1, E3
73	99FKPBC6	The burden of injuries in Nepal: findings from the NIHR Global Health Research Group	book	2025	Mytton, Julie; Joshi, Sunil Kumar; Banstc		Injuries cause significant harm and ma	eng			PubMed	☐					E0
74	N622EWNK	Development and validation of a robotic multifactorial fall-risk predictive model: A one-year prospective study in community-dwelling older adults	journalArticle	2020	Cella, Albe	PloS One	BACKGROUND: Falls in the elderly are i	eng			PubMed	☑	☐				E1, E2, E3
75	LM3NQTKG	Reducing barriers to healthy weight: Planned and responsive adaptations to a lifestyle intervention to serve people with impaired mobility	journalArticle	2018	Betts, Andi	Disability and Health Journal	BACKGROUND: People with impaired n	eng			PubMed	☑	☐				E1, E2, E3
76	TEVQWQZD	Evaluation of a five-year Bloomberg Global Road Safety Program in Turkey	journalArticle	2017	Gupta, S.;	Public Health	OBJECTIVE: Turkey was included in the	eng			PubMed	☑	☐				E1, E2, E3
77	DFENCWU	Evaluation of differences in injury patterns according to seat position in trauma victims survived traffic accidents	journalArticle	2018	Daskal, Ya	Chinese Journal of Traumatology = Zhonghua Chuang Shang Za Zhi	PURPOSE: Investigation of injury patter	eng			PubMed	☑	☐				E1, E2, E3
78	XED8SD3J	Engagement with the TeenDrivingPlan and diversity of teens' supervised practice driving: lessons for internet-based learner driver interventions	journalArticle	2015	Winston, F	Injury Prevention: Journal of the International Society for Child and Adolescent Injury Prevention	OBJECTIVE: Inexperienced, less-skilled	eng			PubMed	☑	☐				E1, E3
79	RN43P2PR	The effects of alcohol dose, exposure to an in-vehicle alcohol feedback device, and subjective responses to alcohol on the decision to drink-drive in young drivers	journalArticle	2020	Oulmet, M	Accident; Analysis and Prevention	BACKGROUND: Several factors may inf	eng			PubMed	☑	☐				E1, E3
80	SGAUJ49D	The prevalence of seatbelt and mobile phone use among drivers in Riyadh, Saudi Arabia: An observational study	journalArticle	2018	Alghnam, †	Journal of Safety Research	INTRODUCTION: Road traffic injuries (F	eng			PubMed	☑	☐				E1, E3
81	Y967829Q	The association between hematological parameters and metabolic syndrome in Iranian men: A single center large-scale study	journalArticle	2018	Ahmadzad	Diabetes & Metabolic Syndrome	AIMS: Some studies have demonstrat	eng			PubMed	☑	☐				E1, E3
82	23VBXLZV	Using cognitive status to predict crash risk: blazing new trails?	journalArticle	2014	Staplin, Lo	Journal of Safety Research	INTRODUCTION: A computer-based ver	eng			PubMed	☑	☐				E1, E2, E3
83	4QWRTJ7L	A brief peripheral motion contrast threshold test predicts older drivers' hazardous behaviors in simulated driving	journalArticle	2015	Henderson,	Accident; Analysis and Prevention	Our research group has previously dem	eng			PubMed	☑	☐				E1, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
84	R7NIKB6V	Experimental examination of the effects of televised motor vehicle commercials on risk-positive attitudes, emotions and risky driving inclinations	journalArticle	2015	Vingilis, Ev	Accident; Analysis and Prevention	PURPOSE: This study examined the shc eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
85	SVBBFQIV	Cognitive predictors of unsafe driving in older drivers: a meta-analysis	journalArticle	2009	Mathias, J.	International Psychogeriatrics	BACKGROUND: Older drivers are at a h eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
86	55LSTH8F	The relation between working conditions, aberrant driving behaviour and crash propensity among taxi drivers in China	journalArticle	2019	Wang, Yon	Accident; Analysis and Prevention	Although the taxi industry is playing an i eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
87	SBXSG3J6	Evaluating three methods to encourage mentally competent older adults to assess their driving behavior	journalArticle	2015	Uribe-Leitz	The Journal of Trauma and Acute Care Surgery	BACKGROUND: Fourteen percent (43.1 eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
88	6TV43PMX	Impact of Caffeine Ingestion on the Driving Performance of Anesthesiology Residents After 6 Consecutive Overnight Work Shifts	journalArticle	2020	Huffmyer, A	Anesthesia and Analgesia	BACKGROUND: Residency training in a eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
89	4F42J9LR	Diagnostic ultrasound at MACH 20: retroperitoneal and pelvic imaging in space	journalArticle	2009	Jones, J. A.	Ultrasound in Medicine & Biology	An operationally available diagnostic in eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
90	P2PYRXLX	A multiyear assessment of a hospital-school program to promote teen motor vehicle safety	journalArticle	2017	Unni, Purn	The Journal of Trauma and Acute Care Surgery	BACKGROUND: Motor vehicle crashes - eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
91	VWl2ICGK	The dilemma of re-licensing DWI offenders: The offenders' point of view	journalArticle	2016	Nadeau, Li	Accident; Analysis and Prevention	In many jurisdictions, drivers convicted eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
92	FAZVSQIF	A systematic approach to simulating field-based occupational whole-body vibration exposure in the lab using a 6df robot	journalArticle	2010	Dickey, Jar	Work (Reading, Mass.)	BACKGROUND: Whole-body vibration i: eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
93	2PYCSISI	Fatal passenger vehicle crashes 1999 to 2004 with drivers under age 15: the impact in Texas and other southern and southwestern states	journalArticle	2007	Frisch, Lar	Southern Medical Journal	Texas has more fatal crashes involving eng				PubMed	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
94	8P3RN23B	Weight Control Intervention for Truck Drivers: The SHIFT Randomized	journalArticle	2016	Olson, Rya	American Journal of Public H	Objectives. To evaluate the effectiveness eng				PubMed Central	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E4, E5
95	FNWGSFUZ	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	journalArticle	2019	Wipfli, Bra	Safety and Health at Work	Background: In a cluster-randomized tri eng				DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
96	SLI2QK8J	Effectiveness of health promotion programmes for truck drivers: A systematic review	journalArticle	2015	Ng, Mandy	Health Education Journal	Objective: To review the charact eng				DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E3, E4, E5
97	NOBQ59LZ	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	journalArticle	2024	Virgara, Rc	BMC Public Health	Abstract Background eng				DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E3, E4
98	AY7XDI28	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	journalArticle	2016	Greenfield	BMC Public Health	Professional truck drivers, as other shift English				BioMed Central (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
99	ME9544DA	Truck Drivers' Use of the Internet: A Mobile Health Lileline	journalArticle	2017	Heaton, Ki	Workplace Health & Safety	Because of their social isolation, irregu eng				PubMed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
100	CLT58DNU	Development and Assessment of a Carpooling Applied System: Perspective of Users from Public-Education Sector	journalArticle	2024	Delgado-Fi	Sustainability (Switzerland)	The heavy reliance on private cars is lin English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E3
101	LN7JAYDS	A Multi-Stakeholder Information System for Traffic Restriction Management	journalArticle	2024	Malafala, P	Logistics	Background: In many urban areas, 80% English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
102	679L RX93	Steering towards carbon neutral transportation practices: A comprehensive analysis of the challenges confronting the shipping industry in Sri Lanka	journalArticle	2025	Nizar, I.; Ai	Renewable and Sustainable Energy Reviews	The shipping industry remains a vital cc English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
103	F9QSIIPW	Artificial Intelligence-Enabled Metaverse for Sustainable Smart Cities: Technologies, Applications, Challenges, and Future Directions	journalArticle	2024	Lifelo, Z.; C	Electronics (Switzerland)	Rapid urbanisation has intensified the i English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
104	JTB7ZLTU	Urban Aviation: The Future Aerospace Transportation System for Intercity and Intracity Mobility	journalArticle	2024	Wild, G.	Urban Science	This review discusses the challenges of English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
105	KU49XQRF	Adaptable solutions for retail supply chain resilience in the post-COVID-19 era	journalArticle	2024	Orji, I.J.; U-	Socio-Economic Planning Sciences	Faced with globalization and unpredict English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E3
106	QRUTTEZH	Taxonomy of theories for blockchain applications in business and management	journalArticle	2024	Hanafizadeh	Digital Business	The rising prominence of blockchain te English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
107	SIFHNM3I	Determinants of Consumers' Intention to Use Autonomous Delivery Vehicles (ADVs): A Fuzzy-Set Qualitative Comparative Analysis Approach	journalArticle	2024	Wang, S.; I	World Electric Vehicle Journal	While numerous studies have investiga English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E3
108	G5FQGTPN	A cognitive load assessment method for fighter cockpit human-machine interface based on integrated multi-criteria decision making	journalArticle	2024	Pei, H.; Wa	Applied Soft Computing	The primary interface for communicati English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
109	NCW77FD9	PM2.5 and PM10 concentrations in urban and peri-urban environments of two Pacific Island Countries	journalArticle	2025	Hilly, J.J.; S	Atmospheric Pollution Research	Air quality monitoring in most Pacific Is English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
110	GXIFYQ5G	Application of Ginni's mean analysis for identifying the stationary driver enhancing modular construction adoption in the building industry	journalArticle	2025	Ali, A.H.; K	International Journal of Construction Management	Modular construction (MC) is recogniz English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
111	MSYPC5HA	Vehicle to Grid: Technology, Charging Station, Power Transmission, Communication Standards, Techno-Economic Analysis, Challenges, and Recommendations	journalArticle	2025	Biswas, P.	World Electric Vehicle Journal	Electric vehicles (EVs) must be used as English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
112	MDGGEIED	New York State Climate Impacts Assessment Chapter 10: Water Resources	journalArticle	2024	Leonard, K	Annals of the New York Academy of Sciences	Clean, abundant water is essential to tl English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3
113	9LHJKWMU	Artificial Intelligence in Nursing: Technological Benefits to Nurse's Mental Health and Patient Care Quality	journalArticle	2024	Dailah, H.(	Healthcare (Switzerland)	Nurses are frontline caregivers who hai English			Scopus	<input checked="" type="checkbox"/>	<input type="checkbox"/>					E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
114	GBUXW5KY	Investigating how consumption values and place identity shape long-haul truck drivers' intention to visit roadside rest areas	journalArticle	2024	Goel, P.; K	Transportation Research Part A: Policy and Practice	Transportation business organisations, English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
115	F9PLAIYF	Longitudinal Monitoring of Electric Vehicle Travel Trends Using Connected Vehicle Data	journalArticle	2024	Desai, J.; P	World Electric Vehicle Journal	Historically, practitioners and research English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
116	50BRLVTF	The Emerging Role of Artificial Intelligence in Enhancing Energy Efficiency and Reducing GHG Emissions in Transport Systems	journalArticle	2024	Miller, T.; C	Energies	The global transport sector, a significar English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
117	KQ8FXB3E	A systematic review of machine learning-based microscopic traffic flow models and simulations	journalArticle	2025	Rowan, D.;	Communications in Transportation Research	Microscopic traffic flow models and sir English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
118	HHd4ND64	A Bi-Level Optimization Model for Hydrogen Station Location Considering Hydrogen Cost and Range Anxiety	journalArticle	2025	Jiang, L.; W	Sustainability (Switzerland)	In pursuit of sustainable development, English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
119	947E7J7W	Decision-Making on Key Factors Driving the Demand for Electric Vehicles	journalArticle	2025	Stopka, O.	Applied Sciences (Switzerland)	The article presents a research study of English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
120	IT23U62H	How Is Transportation Sector Low-Carbon (TSLC) Research Developing After the Paris Agreement (PA)? A Decade Review	journalArticle	2025	Zhao, X.; H	Sustainability (Switzerland)	The Paris Agreement (PA), an authorita English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
121	7QBCTYLD	Factors affecting carbon dioxide emissions for sustainable development goals – New insights into six asian developed countries	journalArticle	2024	Hoa, P.X.;	Heliyon	The worldwide economic scene faces t English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
122	VJKF4MB5	Improving sustainable development performance of new energy industry through green innovation network evolution empowered by digitalization: Based on temporal exponential random graph model	journalArticle	2025	Liu, Q.; Ch	Energy Conversion and Management	The sustainable development of the ne English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
123	V3I7J7C7	Energy management and industry 4.0: Analysis of the enabling effects of digitalization on the implementation of energy management practices	journalArticle	2025	Cagno, E.;	Applied Energy	Manufacturing industries face significa English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
124	J57F7N9M	AI-based robots in industrialized building manufacturing	journalArticle	2025	Wang, M.;	Frontiers of Engineering Management	Industrialized buildings, characterized English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
125	XCX92IVQ	Customers' reuse intention to autonomous delivery vehicles in terminal delivery service: A valence theory perspective	journalArticle	2025	Jiang, L.; Y;	Journal of Retailing and Consumer Services	Autonomous delivery vehicles (ADVs), English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
126	ZN4X3QD4	Mitigating Supply Chain Vulnerabilities: A Bibliometric Analysis of Sustainable Logistics for Resilience and Risk Management with Perspectives on the Automotive Industry	journalArticle	2024	Abdelaziz,	International Journal of Automotive Science and Technology	In a world increasingly shaped by globa English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
127	77DA5VAU	Digital twins: A scientometric investigation into current progress and future directions	journalArticle	2025	Kaur, H.; B	Expert Systems with Applications	The emergence of a modern industrial i English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
128	BZM8U24U	How Risk Perception of Air Pollution Influences Consumers' Pro-Environmental Behaviors: An Empirical Study Based on the Extended Theory of Planned Behavior	journalArticle	2025	Peng, M.; C	Sustainability (Switzerland)	Air pollution is a critical global issue aff English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
129	FJJEKWTS	Driving style classification and recognition methods for connected vehicle control in intelligent transportation systems: A review	journalArticle	2025	Mel, P.; Ka	ISA Transactions	Advancements in intelligent vehicle tec English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
130	UC258888	Physiological Evaluation of User Experience in Unstable Automated Driving: A Comparative Study	journalArticle	2025	Hwang, S.;	Applied Sciences (Switzerland)	While automated-driving technology is English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
131	773RPZ7J	Revealing determinants shaping the sustainable consumption of single-use plastic food container substitutes	journalArticle	2025	Zhao, S.; T.	Environmental Impact Assessment Review	With the fast growth of the takeaway se English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
132	C3A24MAZ	Interdisciplinary Perspectives on Agent-Based Modeling in the Architecture, Engineering, and Construction Industry: A Comprehensive Review	journalArticle	2024	Mazzetto, ;	Buildings	This paper explores the transformative English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
133	WQ5UKZ4B	Exploration of Crash Features of Electric Vehicles with Traffic Crash Data in Changshu, China	journalArticle	2025	Long, R.; Li	World Electric Vehicle Journal	The rapid development of electric vehic English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
134	HB6UI652	A nutrient circular economy framework for wastewater treatment plants	journalArticle	2024	Soo, A.; Sh	Desalination	Given the criticality of phosphorous an English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
135	KGBGJ9KK	Nonlinear Impact Analysis of Urban Road Traffic Carbon Emissions Based on the Integration of Gasoline and Electric Vehicles	journalArticle	2025	Xie, D.; Shi	Buildings	With the rapid proliferation of electric v English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
136	WLHQ7UHD	Advancing railway sustainability: Strategic integration of circular economy principles in ballasted track systems	journalArticle	2025	Koohmishi	Journal of Cleaner Production	The railway sector plays a pivotal role in English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
137	YK4GHWRL	Understanding the impact of push-pull-mooring factors on the switching and continued usage intentions for electric three-wheelers in public transport	journalArticle	2025	T Davis, P.;	Sustainable Futures	The transition from fossil fuel-powered English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
138	2K5Q5L9D	Contribution of ICT Development to Disaster Risk Reduction from a Spatial Perspective: A Preliminary Literature Review	journalArticle	2025	Puspita, Li	Journal of Disaster Research	Information and communication techn English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
139	UCKP8IYN	Mixes of Policy Instruments for the Full Decarbonisation of Energy Systems: A Review	journalArticle	2025	Cocker, F.;	Energies	Stand-alone carbon pricing is still pred English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
140	RE5XSSG5	State-of-the-art in real-time virtual interfaces for tractors and farm machines: A systematic review	journalArticle	2025	Lohan, S.K	Computers and Electronics in Agriculture	This systematic literature review (SLR) i English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
141	WENSA87R	Encouraging Safety 4.0 to enhance industrial culture: An extensive study of its technologies, roles, and challenges	journalArticle	2025	Haleem, A	Green Technologies and Sustainability	This decade, workplace safety has eme English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
142	XLH52PS6	The Impact of Farmland Transfer on Urban-Rural Integration: Causal Inference Based on Double Machine Learning	journalArticle	2025	Lu, Y.; Zhu	Land	Urban-rural fragmentation represents i English	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
143	71VWLZG4	Recent Findings on the Pollution Levels in the Romanian Black Sea Ecosystem: Implications for Achieving Good Environmental Status (GES) Under the Marine Strategy Framework Directive (Directive 2008/56/EC)	JournalArticle	2024	Oros, A.; C	Sustainability (Switzerland)	This study provides a comprehensive e	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
144	VKERVF22	A Systematic Review of Opportunities and Limitations of Innovative Practices in Sustainable Agriculture	JournalArticle	2025	Boros, A.; †	Agronomy	A transformation is needed in agricultu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
145	M4V2S8TK	Augmented reality safety warnings in roadway work zones: Evaluating the effect of modality on worker reaction times	JournalArticle	2024	Sabeti, S.;	Transportation Research Part C: Emerging Technologies	Given the aging highway infrastructure	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
146	8XT6IEVZ	Safety still matters: Unveiling the value propositions of augmented reality head-up displays in autonomous vehicles through conjoint analysis	JournalArticle	2025	Kang, C.; L	Travel Behaviour and Society	Despite the huge progress toward fully	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
147	KSMWHRUS	Inhibitors in ridesharing firms from developing Nations: A novel integrated MCDM – Text Mining approach using Large-Scale data	JournalArticle	2025	Koley, S.; k	Transportation Research Part E: Logistics and Transportation Review	Our study identifies major impediment	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
148	NQVWAK82	The Impact of Autonomous Vehicles on Safety, Economy, Society, and Environment	JournalArticle	2024	Gherardini	World Electric Vehicle Journal	Autonomous driving is a rising technolc	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
149	XXRFU8GZ	How environmental accidents influence consumer “green” behavior: An econometric analysis	JournalArticle	2024	Hardcopf	Business Strategy and the Environment	Environmental accidents (EAs) are firm	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
150	BYAAFY7W	Integrated green technology adoption, ship speed optimization and slot management for shipping alliance under emission limits and uncertain fuel prices	JournalArticle	2025	Gu, Y.; Wei	Journal of Cleaner Production	Due to newly adopted global sulfur emi	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
151	QIHVK4ZG	The application of lean six sigma to improve mining transportation overall vehicle effectiveness (MTOVE): a case study in mining company	JournalArticle	2025	Hia, S.W.; †	International Journal of Lean Six Sigma	Purpose: The purpose of this paper is to	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
152	QMH9HS3J	Metaverse technology in sustainable supply chain management: Experimental findings	JournalArticle	2025	Sadeghi R.	Decision Support Systems	The metaverse is a transformative force	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
153	UXD055MM	The Antecedents of Courier Continuance Participation Intention: A Dyadic Analysis of Courier–Customer Interactions in Crowdsourcing Delivery	JournalArticle	2024	Wang, W.;	Systems	Crowdsourcing delivery has emerged a	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
154	TQ5GP199	Telescopic forklift selection through a novel interval-valued Fermatean fuzzy PIPRECIA–WISP approach	JournalArticle	2024	Görçün, Ö.	Expert Systems with Applications	Telescopic forklifts stand apart from ot	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
155	LG8FKZ9E	A Systematic Survey of Digital Twin Applications: Transferring Knowledge From Automotive and Aviation to Maritime Industry	JournalArticle	2025	Mao, R.; Li	Intelligent Transportation Systems	Digital twin (DT) technology, which cre	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
156	YWQMTQI5	Mapping the Theory of Consumption Values: A Systematic Review Using the TCCM Approach	JournalArticle	2025	Sharma, C	Journal of Consumer Behaviour	The theory of consumption values (TCV	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
157	TKPLZNYU	Digital transformation as a catalyst for green innovation: An Examination of high-tech enterprises in China's Yangtze River Delta	JournalArticle	2024	Zhu, Q.; Hi	Sustainable Futures	Green innovation represents a foundati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
158	PQVZ7GUS	Data Communication Challenges of Connected and Automated Vehicles in Rural Areas	JournalArticle	2025	Tavasoli, P.	IEEE Access	The integration of connected and autor	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
159	3JWQ9QDB	Designing adaptive policy packages for inclusive smart cities: Lessons from Singapore's smart nation program	JournalArticle	2024	Sha, K.; Ta	Sustainable Cities and Society	In the last two decades, cities have em	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
160	EGTE8B95	Drivers and barriers of unmanned aerial vehicles in emergency logistics operations	JournalArticle	2025	Ozbiltekin	Technology in Society	Unmanned Aerial Vehicles (UAVs), whic	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
161	TIA9WFPY	Prevalence of cell phone use while driving in different urban settings. A roadside observational study in maputo city, Mozambique	JournalArticle	2025	Maposse, I.	Heliyon	Introduction: All forms of cell phone us	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
162	ALRE6XKG	Factors predicting green behavior and environmental sustainability in autonomous vehicles: A deep learning-based ANN and PLS-SEM approach	JournalArticle	2024	Arpacı, I.; J	Research in Transportation Business and Management	With their cost-effective performance,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
163	C98NMRW5	The role of port smartness in achieving sustainable development goals	JournalArticle	2025	Khalifeh, P.	Maritime Policy and Management	This research aims to investigate the si	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
164	956PKCVI	Overcoming Barriers to Sustainable Green Transportation in Ho Chi Minh City: A Pathway Toward Achieving SDGs 11 and 13	JournalArticle	2024	Nguyen Th	Sustainability (Switzerland)	Ho Chi Minh City (HCMC), Vietnam's la	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
165	D5NPQNCA	Evaluating the impact of natural resource rents, R&D expenditures, green finance and energy efficiency on carbon emissions in BRICS economies: Greening the path to carbon neutrality in the post-COP 27 era	JournalArticle	2025	Amin, N.; ‡	Technology in Society	This study investigates the impact of n	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
166	SFCZF3U3	Riding with distraction: Exploring the intention and behaviour of smartphone use while riding among motorcyclists in Vietnam	JournalArticle	2025	Hoang, H.;	Accident Analysis and Prevention	The pervasive use of smartphones has	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
167	PFD6Q77Q	Role of behavioral intention in implementation of green information systems among Malaysians	JournalArticle	2025	Gopinatha	Discover Sustainability	Significant advancements in Informati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
168	G48CGSC2	Promoting Sustainable Transportation: How People Trust and Accept Autonomous Vehicles—Focusing on the Different Levels of Collaboration Between Human Drivers and Artificial Intelligence—An Empirical Study with Partial Least Squares Structural Equation Modeling and Multi-Group Analysis	JournalArticle	2025	Yang, Y.; K	Sustainability (Switzerland)	Despite the advancement in autonomo	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
169	BS7KJ6YX	Exploring Food Delivery Riders Need-Based Segments: A Mixed-Method Approach	JournalArticle	2025	Zhang, J.; 2	Services Marketing Quarterly	On-demand food delivery (ODFD) servi	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
170	F9P7C93Q	Determinants of consumer intention to use autonomous delivery vehicles: based on the planned behavior theory and normative activation model	JournalArticle	2025	Ju, C.; War	Humanities and Social Sciences Communications	Autonomous delivery vehicles (ADVs) If	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
171	SIDBSW3	Realization of circular economy principles in manufacturing: obstacles, advancements, and routes to achieve a sustainable industry transformation	JournalArticle	2024	Dennlson,	Discover Sustainability	This review explores the integration of (	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
172	455G2HHH	Strategic load management: Enhancing eco-efficiency in mining operations through automated technologies	JournalArticle	2024	Firoozi, A.;	Results in Engineering	In the face of escalating global demand	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
173	5X2EZRB3	Understanding pedestrian bridge usage considering perception and socio-demographic characteristics of the road users in Dhaka city	JournalArticle	2025	Sadeek, S.	Transportation Research Interdisciplinary Perspectives	Walking often involves crossing a road,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
174	XXK5LJDI	2025 Heart Disease and Stroke Statistics: A Report of US and Global Data from the American Heart Association	JournalArticle	2025	Martin, S.S	Circulation	BACKGROUND: The American Heart As	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
175	62JPH4TS	Artificial intelligence-enabled smart city management using multi-objective optimization strategies	JournalArticle	2025	Kumar, R.;	Expert Systems	This article outlines an integrated strati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
176	2WHSR3JH	Green Behaviour Engagement Towards the Achievement of Sustainable Health: A Systematic Review and Bibliometric Analysis	JournalArticle	2024	Siva Rama	Social Marketing Quarterly	Background: The short-term actions ga	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
177	TYRT2IHT	Improving Driver Engagement in Delivery and Rideshare Services	JournalArticle	2025	Saunders,	Journal of Business Logistics	Due to driver autonomy, delivery and rik	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
178	C9E3R24B	Smart Intersections and Connected Autonomous Vehicles for Sustainable Smart Cities: A Brief Review	JournalArticle	2025	Khanmoha	Sustainability (Switzerland)	As the importance of safety, efficiency,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
179	ZM9WVX62	Determinants of environmental pollution: Evidence from Indonesia	JournalArticle	2024	Xuan, V.N.	Journal of Open Innovation: Technology, Market, and Complexity	This study explores the nexus between	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
180	ZLKZEZCL	Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development	JournalArticle	2024	Megawati,	International Journal of Sustainable Development and Planning	Economic development faces global ch	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
181	KNXNB4SM	BIM-based smart safety monitoring system using a mobile app: a case study in an ongoing construction site	JournalArticle	2025	Hossain, P.	Construction Innovation	Purpose: Construction safety is a cruci	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
182	LHGZDHV3	The Problems of Scooter-Sharing in Smart Cities Based on the Example of the Silesian Region in Poland	JournalArticle	2025	Wolniak, R	Smart Cities	Highlights: What are the main findings?	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
183	GGH45AAB	How will the public respond to in-vehicle fatigue detection technology?	JournalArticle	2025	Sprajcer, P.	Technology in Society	Fatigue detection technology (FDT) use	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
184	4M64KSU7	Supply chain management maturity and business models: scientific mapping using SciMAT	JournalArticle	2025	Vasconcel	Benchmarking	Purpose: Organizations and markets ar	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
185	TWVAGAP2	Human-Machine Interface Design of Construction Machinery Based on Scenario Generation and Accident Pattern Analysis	JournalArticle	2025	Park, S.J.;	Archives of Design Research	Background The interaction between cr	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
186	9CFXK294	Leveraging social media data in knowledge management to identify noncompliance: insights from the foodservice industry	JournalArticle	2025	Lee, C.K.H	Journal of Knowledge Management	Purpose: Social media data contains a	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
187	GPYXMG75	Aerial e-mobility perspective: Anticipated designs and operational capabilities of eVTOL urban air mobility (UAM) aircraft	JournalArticle	2025	Marzouk, C	Edelweiss Applied Science and Technology	We collected data about 13 urban air m	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
188	P6IH2BQJ	Electrifying the Road: A Comprehensive Analysis of Factors Influencing Consumer Adoption of Electric Vehicles	JournalArticle	2025	Bindhya, P.	International Journal of Energy Economics and Policy	This study examines the factors influen	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
189	NYWLK8R7	Assessing the impact of traffic climate and risk-taking attitude on the risky riding behaviour of young motorcyclists in Vietnam	JournalArticle	2025	Hoang, H.;	Transportation Research Part F: Traffic Psychology and Behaviour	This research investigates the interrela	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
190	V47F565J	The 2024 report of the Lancet Countdown on health and climate change: facing record-breaking threats from delayed action	JournalArticle	2024	Romanello	The Lancet		English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
191	VWZ9UBB6	Human cost, machine insight: A data-driven analysis of Australian road crashes	JournalArticle	2025	Soltani, A.;	Case Studies on Transport Policy	In Australia, road crash injuries continu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
192	WCZQP6B2	Investigating the Influential Factors of Ride-Hailing Usage Frequency in the Post-Pandemic Era	JournalArticle	2024	Du, M.;	Applied Sciences (Switzerland)	The COVID-19 pandemic has had an ur	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
193	UZ4DSD85	Studying older adults' willingness to relocate and change transport mode with the random bivariate generalized ordered probit	JournalArticle	2025	Fu, C.;	Transportation Research Part A: Policy and Practice	Older adults are more likely to resist ch	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
194	XWRDE9H3	The impact of international agreements and government policies on collaborative management of environmental pollution and carbon emissions in the transportation sector	JournalArticle	2025	John, C.K.;	Environmental Impact Assessment Review	The transportation sector is one of the l	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
195	ZHZ525KL	Evaluation of Construction Worker Perceptions of Wearable Proximity Sensors during the COVID-19 Pandemic	JournalArticle	2025	Yang, X.;	Journal of Construction Engineering and Management	During the COVID-19 pandemic, social	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
196	Z9KVHHXY	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	JournalArticle	2025	Lin, C.-C.;	International Journal of Logistics Research and Applications	This paper aims to analyse logistics ser	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E1, E2, E3
197	LSNSVG3N	Technological trends in mountain logistics: A patent analysis	JournalArticle	2024	Teshome,	Research in Transportation Business and Management	Transportation and logistics in mountai	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
198	5IE25V52	Does industry 4.0 and environmental quality asymmetrically affect South Africa's manufacturing sector? A fresh insight from nonlinear autoregressive distributed lag (NARDL) model	journalArticle	2024	Ngepah, N	Discover Sustainability	Owing to recent developments and imp	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
199	H5L2WNVC	Unlocking the Potential: How Flying Taxis Will Shape the Future of Transportation	journalArticle	2024	Naveen, P.	Sustainability (Switzerland)	The advent of flying taxis, also known a	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
200	8NMMLC1P	Smart-Circular strategies for managing biomass resource challenges: A novel approach using circular intuitionistic fuzzy methods	journalArticle	2024	Alinejad, S	Energy Conversion and Management	The growing global population and the r	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
201	2JAGB2ZD	Emission reduction pressure and enterprise digital transformation: do enterprise innovation and digital economy matter?	journalArticle	2024	Li, X.; Yang	Business Process Management Journal	Purpose: Coordinating low-carbonizati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
202	A3B5527I	Exploring the fusion of greening and digitalization for sustainability	journalArticle	2024	Ye, F.; Zhai	Journal of Cleaner Production	Mitigating environmental degradation r	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
203	U3FG7KLV	Identifying and modelling the barriers to returns of end-of-life (EOL) heavy-duty machinery in Nigeria: A consumers' perspective	journalArticle	2024	Meng, Q.; C	Journal of Cleaner Production	EOL product returns has become more	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
204	BAZBW77P	Marketing Strategy and Preference Analysis of Electric Cars in a Developing Country: A Perspective from the Philippines	journalArticle	2024	Uy, J.R.R.; I	World Electric Vehicle Journal	The wide-scale integration of electric v	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
205	I8GMMF5H	Determinants of uptake the residential solar photovoltaic system and its impact on environmental sustainability: Evidence from PLS-SEM and fuzzy sets (fsQCA)	journalArticle	2024	Alkawsi, G	Engineering Science and Technology, an International Journal	In response to the escalating global CO	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
206	YDMG45IQ	A Novel Data-Envelopment Analysis Interval-Valued Fuzzy-Rough-Number Multi-Criteria Decision-Making (DEA-IFRN MCDM) Model for Determining the Efficiency of Road Sections Based on Headway Analysis	journalArticle	2024	Andjelković	Mathematics	The capacity of transport infrastructure	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
207	IWBUCDCM	Mitigation Measures for Information Asymmetry between Participants in Construction Projects: The Impact of Trust	journalArticle	2024	Ivić, I.; Cer	Sustainability (Switzerland)	Sustainability requirements pose comp	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
208	Y9WUG3CD	Aligning servitization and circularity: The role of institutional confluence in sustainable business models	journalArticle	2024	Stabler, D.	Journal of Cleaner Production	This conceptual study explores the align	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
209	A7YADEDZ	Evaluating the intention to use Industry 5.0 (I5.0) drones for cleaner production in Sustainable Food Supply Chains: an emerging economy context	journalArticle	2024	Mahroof, K	Supply Chain Management	Purpose: The purpose of this study is to	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
210	UTED6PVY	Accelerating Urban Development in Indonesia: The Impact of Online Government Services	journalArticle	2024	Yulian, M.;	Sustainable Development and Planning	In Indonesia, the transition to online bu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
211	8U4ADF8D	Techno-Economic and Sustainable Challenges for EV Adoption in India: Analysis of the Impact of EV Usage Patterns and Policy Recommendations for Facilitating Seamless Integration	journalArticle	2024	Sathyan, S	International Journal of Sustainable Energy Planning and Management	The growing interest in EVs as a sustain	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
212	F42N3KHC	Neutrosophic bipolar fuzzy decision-based approach for developing sustainable circular business model innovation tools	journalArticle	2024	Zaidan, A.; J	Computers and Industrial Engineering	The circular economy (CE) has been ide	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
213	VHEM4IGK	Key Factors Influencing Consumer Choices in Wood-Based Recycled Products for Circular Construction Sector	journalArticle	2024	David, G.M	Sustainability (Switzerland)	This article explores the integration of v	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
214	NUVJUE8C	Exploring the Perspectives of Oil and Gas Industry Managers on the Adoption of Sustainable Practices: A Q Methodology Approach to Green Marketing Strategies	journalArticle	2024	Abedin, B.;	Sustainability (Switzerland)	This article investigates the perspectiv	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
215	CUZS6DYQ	NPCC4: Climate change and New York City's health risk	journalArticle	2024	Matte, T.; L	Annals of the New York Academy of Sciences	This chapter of the New York City Panel	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
216	J87CDMP8	A deep connection among the natural resources, technical progress, efficient energy and sustainability: The mediating role of governance	journalArticle	2024	Chen, L.; X	Resources Policy	Many changes in the environment are c	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
217	L78PQHSE	Sustainability and New Technologies: Last-Mile Delivery in the Context of Smart Cities	journalArticle	2024	Andreas, K	Sustainability (Switzerland)	The purpose of this study is to conduct	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
218	YX0XB2XC	Transportation-Enabled Services: Concept, Framework, and Research Opportunities	journalArticle	2024	Agatz, N.; C	Service Science	As a result of rapid advancements in ur	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
219	6HETJPRQ	Intelligent machines as information and communication technology and their influence on sustainable marketing practices for beneficial impact on business performance: A conceptual framework	journalArticle	2024	Behera, R.;	Journal of Cleaner Production	Intelligent machines are the machines	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
220	KI0WHYUK	Difficulties experienced by Latin American oil and gas companies in the integrated adoption of practices aligned with the UN SDGs	journalArticle	2024	Borges, F.F	Corporate Governance (Bingley)	Purpose: This paper aims to understand	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
221	QKXXDW4V	Leveraging the interplay of Internet of Things (IoT) capabilities for achieving customer satisfaction in a B2B2C context: an integrative perspective	journalArticle	2024	Chand, P.;	Journal of Business and Industrial Marketing	Purpose: Despite IoT's huge potential, i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
222	5QZ4DYRE	Persona-PhysioSync AV: Personalized Interaction through Personality and Physiology Monitoring in Autonomous Vehicles	journalArticle	2024	Giron, J.; S	Sensors	The emergence of autonomous vehicle	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
223	KE7NEFE3	Recent advances in prefabrication techniques for biobased materials towards a low-carbon future: From modules to sustainability	journalArticle	2024	Sutkowska	Journal of Building Engineering	The evolution of building-structure mar	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
224	I4CB32UB	Critical success factors for the adoption of AVs in sustainable urban transportation	journalArticle	2024	Zarbakhsh	Transport Policy	Before integrating Autonomous Vehicle	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
225	T69ISXAY	Exploring Electric Vehicle Patent Trends through Technology Life Cycle and Social Network Analysis	journalArticle	2024	Chen, Y.; C	Sustainability (Switzerland)	In response to environmental and ener	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
226	YZFR8X2D	Overview of Sustainable Mobility: The Role of Electric Vehicles in Energy Communities	journalArticle	2024	Menyhart,	World Electric Vehicle Journal	From 2035 onward, the registration of r	English	Scopus			☑	☐				E1, E3
227	JU7IYQQW	Interval-valued fermatean fuzzy based risk assessment for self-driving vehicles	journalArticle	2024	Kirişçi, M.	Applied Soft Computing	The decision-making(DM) processes ut	English	Scopus			☑	☐				E1, E3
228	2226MV7A	Optimal performance selection of sustainable mobility service projects based on IFSS - Prospect theory - VIKOR: A case study of electric vehicle sharing program	journalArticle	2024	Liu, H.; Lu,	PLoS ONE	Current mobility trend indicates that th	English	Scopus			☑	☐				E1, E3
229	INCYCEN4	An Empirical Study on Job Embracing by Mobile Platform Workers	journalArticle	2024	Ryoo, S.Y.;	Asia Pacific Journal of Information Systems	Despite the maturity of platforms, only	English	Scopus			☑	☐				E1, E2, E3
230	APDEJFRF	Eye tracking measures of bicyclists' behavior and perception: A systematic review	journalArticle	2024	Ma, S.; Zha	Part F: Traffic Psychology and Behaviour	With improved portability and affordabi	English	Scopus			☑	☐				E1, E3
231	XDNCHYCM	Analysis and Prediction of Risky Driving Behaviors Using Fuzzy Analytical Hierarchy Process and Machine Learning Techniques	journalArticle	2024	Alam, W.;	Sustainability (Switzerland)	Driver behavior plays a pivotal role in er	English	Scopus			☑	☐				E1, E3
232	2BNRA5FS	Towards sustainable last-mile logistics? Investigating the role of cooperation, regulation, and innovation in scenarios for 2035	journalArticle	2024	Plazier, P.;	Research in Transportation Business and Management	Last-mile logistics is of crucial importa	English	Scopus			☑	☐				E1, E2, E3
233	YGXT2PNU	IoT-based entrepreneurial opportunities in smart transportation: a multidimensional framework	journalArticle	2024	Jami Pour,	International Journal of Entrepreneurial Behaviour and Research	Purpose: The Internet of Things (IoT), as	English	Scopus			☑	☐				E1, E2, E3
234	LI6QDKBF	Characterization of a Covid-tired urban bike delivery system: The Montreal experience	journalArticle	2024	Pirie, S.; Tr	Research in Transportation Business and Management	The Covid-19 pandemic led to a rapid c	English	Scopus			☑	☐				E1, E3
235	T8T9LR3Y	Bus Drivers' Behavioral Intention to Comply with Real-Time Control Instructions: An Empirical Study from China	journalArticle	2024	Chen, W.;	Sustainability (Switzerland)	Developing intelligent bus control syste	English	Scopus			☑	☐				E1, E3
236	6T9Q599C	Towards Sustainable Decarbonization: Addressing Challenges in Electric Vehicle Adoption and Infrastructure Development	journalArticle	2024	Adamashv	Energies	The transition to electric vehicles (EVs)	English	Scopus			☑	☐				E1, E3
237	TV5CB7SE	Electric vehicle charging technologies, infrastructure expansion, grid integration strategies, and their role in promoting sustainable e-mobility	journalArticle	2024	Singh, A.R.	Alexandria Engineering Journal	The transport sector is experiencing a r	English	Scopus			☑	☐				E1, E3
238	SW46ES3E	Comprehensive Review of Carbon Capture and Storage Integration in Hydrogen Production: Opportunities, Challenges, and Future Perspectives	journalArticle	2024	Alizadeh, S	Energies	The growing emphasis on renewable er	English	Scopus			☑	☐				E1, E2, E3
239	87AT9YVB	A strategic roadmap for combating barriers negating the implementation of prefabricated net-zero carbon buildings	journalArticle	2024	Rauniyar, J	Developments in the Built Environment	In the global push for carbon neutrality	English	Scopus			☑	☐				E1, E2, E3
240	LY9LG8EQ	Digital Twin Approach for Operation and Maintenance of Transportation System—Systematic Review	journalArticle	2024	Werbńska	Sensors	There is a growing need to implement n	English	Scopus			☑	☐				E1, E3
241	92MSZBVE	Risks of Drone Use in Light of Literature Studies	journalArticle	2024	Tubis, A.A.	Sensors	This article aims to present the results	English	Scopus			☑	☐				E1, E2, E3
242	KRGRFIXH	Decarbonization in the Oil and Gas Sector: The Role of Power Purchase Agreements and Renewable Energy Certificates	journalArticle	2024	Chrysikopi	Sustainability (Switzerland)	This study examines the adoption of Po	English	Scopus			☑	☐				E1, E2, E3
243	4NWRSYEB	The impact of people's subjective perception on their acceptance of automated vehicles: A meta-analysis	journalArticle	2024	Li, L.;	Cher Part F: Traffic Psychology and Behaviour	The automated vehicles (AV) is an impc	English	Scopus			☑	☐				E1, E3
244	K23823ET	Electrifying the Last-Mile Logistics (LML) in Intensive B2B Operations—An European Perspective on Integrating Innovative Platforms	journalArticle	2024	Sanz, A.;	M Logistics	Background: literature on last mile logi	English	Scopus			☑	☐				E1, E2, E3
245	UA6WLDAM	Piezoelectric Energy Harvesting for Civil Engineering Applications	journalArticle	2024	Shehu, L.;	Energies	This work embarks on an exploration of	English	Scopus			☑	☐				E1, E2, E3
246	GZZ6N78P	VR for construction engineering and management: Review of user experience perspective	journalArticle	2024	Zhang, J.;	J Internet of Things (Netherlands)	The field of construction engineering ar	English	Scopus			☑	☐				E1, E2, E3
247	57LMDFPN	Deciphering the dynamics of human-environment interaction in China: Insights into renewable energy, sustainable consumption patterns, and carbon emissions	journalArticle	2024	Anser, M.K	Sustainable Futures	The increasing acknowledgment of the	English	Scopus			☑	☐				E1, E2, E3
248	WDQDNHW	Utilization of green internet of things (GloT) applications towards sustainable performance: The antecedents and consequences of carbon footprint	journalArticle	2024	Alalwan, A	Journal of Cleaner Production	This study aims to propose and investig	English	Scopus			☑	☐				E1, E2, E3
249	8XQSUN4Q	Marijuana Legalization and Truck Safety	journalArticle	2024	Balthrop, J	Journal of Business Logistics	Many states have legalized medical anc	English	Scopus			☑	☐				E3
250	98VWTBZX	Systematic Literature Review of Barriers and Enablers to Implementing Food Informatics Technologies: Unlocking Agri-Food Chain Innovation	journalArticle	2024	Orjuela-Ge	Foods	Access to food products is becoming n	English	Scopus			☑	☐				E1, E2, E3
251	J87AIDNR	Critical review on fostering sustainable progress: An in-depth evaluation of cleaner production methodologies and pioneering innovations in industrial processes	journalArticle	2024	Manikand	Journal of Cleaner Production	Cleaner production approaches and imi	English	Scopus			☑	☐				E1, E2, E3
252	2U565QAX	Estimating and Mitigating the Congestion Effect of Curbside Pick-ups and Drop-Offs: A Causal Inference Approach	journalArticle	2024	Liu, X.;	Qia Transportation Science	Curb space is one of the busiest areas	English	Scopus			☑	☐				E1, E2, E3
253	JEJIM9HK	Exploring the Influence of linear infrastructure projects 4.0 technologies to promote sustainable development in smart cities	journalArticle	2024	Sánchez, C	Results in Engineering	Industry 4.0 technologies have a high p	English	Scopus			☑	☐				E1, E2, E3
254	5U7BQEW6	Policy stimulation for the electric vehicle industry: An analysis of mainstream media discourse	journalArticle	2024	Jain, M.;	Ta Business Strategy and the Environment	Motivated by the indisputable relevanc	English	Scopus			☑	☐				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
255	KYVY94YF	A Study on the Key Factors for the Sustainable Development of Shared Mobility Based on TDM Theory: The Case Study from China	journalArticle	2024	Wang, M.; Systems		This study is based on an investigation	English	Scopus			☑	☐				E1, E3
256	LKR45HJ8	Investigating the potential of a battery swapping method at refuel stations for electric vehicle: A case study of INDIA	journalArticle	2024	Murugan, P; Transportation Research Part F: Traffic Psychology and Behaviour		Electric vehicles (EVs) are introduced to	English	Scopus			☑	☐				E1, E2, E3
257	SEQ8PEND	Harnessing AI for Sustainable Shipping and Green Ports: Challenges and Opportunities	journalArticle	2024	Durlik, J.; Applied Sciences (Switzerland)		The maritime industry, responsible for i	English	Scopus			☑	☐				E1, E2, E3
258	6ZJN434P	Application of UTAUT2 on Adopting Artificial Intelligence Powered Lead Management System (AI-LMS) in passenger car sales	journalArticle	2024	Das, S.; Da Technological Forecasting and Social Change		This paper investigates the acceptance	English	Scopus			☑	☐				E1, E2, E3
259	ZV9JGGPA	Driver heterogeneity in willingness to give control to conditional automation	journalArticle	2024	Ansar, M.S; Transportation Research Part F: Traffic Psychology and Behaviour		Drivers with varying locus of control ma	English	Scopus			☑	☐				E1, E3
260	ET24HN8M	Assessing the e-commerce last-mile logistics' hidden risk hurdles	journalArticle	2024	Raj, R.; Sin Cleaner Logistics and Supply Chain		Due to increasing last-mile logistics co	English	Scopus			☑	☐				E1, E2, E3
261	CR46QGTI	The Impact of green finance on transformation to green energy: Evidence from industrial enterprises in China	journalArticle	2024	Chen, D.; Technological Forecasting and Social Change		Green finance is a novel financial mode	English	Scopus			☑	☐				E1, E2, E3
262	CFCYUSZ4	Mega Ports' Mitigation Response and Adaptation to Climate Change	journalArticle	2024	Puig, M.; C Journal of Marine Science and Engineering		Mega ports, defined in this study as tho	English	Scopus			☑	☐				E1, E2, E3
263	UMZD6BEY	Home healthcare in Spanish rural areas: Applying vehicle routing algorithms to health transport management	journalArticle	2024	Castillo, C Socio-Economic Planning Sciences		Depopulation of rural areas poses a rar	English	Scopus			☑	☐				E1, E2, E3
264	GJW7AS6	A review on sustainability, Industry 4.0 and collaboration implications in vehicle allocation operations	journalArticle	2024	Cimen, M.; International Journal of Logistics Management		Purpose: Vehicle allocation problems (	English	Scopus			☑	☐				E1, E2, E3
265	AKWCMWA5	Analysis of Road Traffic Accidents in Dense Cities: Geotech Transport and ArcGIS	journalArticle	2024	Aati, K.; Hc Transportation Engineering		Road Traffic Accidents (RTAs) provide a	English	Scopus			☑	☐				E1, E3
266	AV794D9H	Local Government Environmental Policy Innovation: Emerging Regulation of GHG Emissions in the Transportation-for-Hire Industry	journalArticle	2024	Zwick, A.; Sustainability (Switzerland)		Given that most environmental regulati	English	Scopus			☑	☐				E1, E3
267	BRFGSYIN	How Much Progress Have We Made towards Decarbonization? Policy Implications Based on the Demand for Electric Cars in Poland	journalArticle	2024	Olejarr, A.; Energies		The growing demand for personal mobi	English	Scopus			☑	☐				E1, E3
268	AL6SVS6F	Critical methods of geopolymer feedstocks activation for suitable industrial applications	journalArticle	2024	Kehinde, C Heliyon		As health and safety issues emanating	English	Scopus			☑	☐				E1, E2, E3
269	JSB854YV	A review of the use of AI in the mining industry: Insights and ethical considerations for multi-objective optimization	journalArticle	2024	Corrigan, C Extractive Industries and Society		In the effort to rapidly transform the wa	English	Scopus			☑	☐				E1, E2, E3
270	K8538RKT	Global strategies for a low-carbon future: Lessons from the US, China, and EU's pursuit of carbon neutrality	journalArticle	2024	Evro, S.; O Journal of Cleaner Production		Carbon neutrality strategies have a sign	English	Scopus			☑	☐				E1, E2, E3
271	8FICL42K	A comprehensive survey of low-carbon planning and operation of electricity, hydrogen fuel, and transportation networks	journalArticle	2024	Zhou, Y.; C IET Energy Systems Integration		The trend of global energy systems tow	English	Scopus			☑	☐				E1, E2, E3
272	ANLVINJE	Unlocking the potential of solid waste management with circular economy and Industry 4.0	journalArticle	2024	Alshari, H. Computers and Industrial Engineering		This paper reviews the intersection of li	English	Scopus			☑	☐				E1, E2, E3
273	DW5QHVF5	Assessment of Shared Mobility Acceptability for Sustainable Transportation in Amman	journalArticle	2024	Albataynet Urban Science		Shared mobility services furnish convey	English	Scopus			☑	☐				E1, E2, E3
274	HSIN7UUA	2024 ACC/AHA Key Data Elements and Definitions for Social Determinants of Health in Cardiology: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Data Standards	journalArticle	2024	Morris, A.A Circulation: Cardiovascular Quality and Outcomes			English	Scopus			☑	☐				E1, E2, E3
275	N79EJBF3	Artificial intelligence - driven sustainable development: Examining organizational, technical, and processing approaches to achieving global goals	journalArticle	2024	Kulkov, I.; Sustainable Development		This study presents a comprehensive li	English	Scopus			☑	☐				E1, E2, E3
276	BLMCDLK2	Smarter eco-cities and their leading-edge artificial intelligence of things solutions for environmental sustainability: A comprehensive systematic review	journalArticle	2024	Bibri, S.E.; Environmental Science and Ecotechnology		The recent advancements made in the	English	Scopus			☑	☐				E1, E2, E3
277	HRRNUE8	Sustainable Transportation Solutions for Intelligent Mobility: A Focus on Renewable Energy and Technological Advancements for Electric Vehicles (EVs) and Flying Cars	journalArticle	2024	Kashem, P Future Transportation		(1) Introduction: Transportation logistic	English	Scopus			☑	☐				E1, E3
278	177YD5GX	A Comprehensive Review on Smart Electromobility Charging Infrastructure	journalArticle	2024	Ayoade, I.; World Electric Vehicle Journal		This study thoroughly analyses Smart E	English	Scopus			☑	☐				E1, E2, E3
279	WWMIU83T	Urban Environment's Contributory Factors for the Adoption of Cargo Bike Usage: A Systematic Literature Review	journalArticle	2024	Chatziloan Future Transportation		The supply chain sector plays a crucial	English	Scopus			☑	☐				E1, E3
280	6JH347QH	Assessing Strategies to Overcome Barriers for Drone Usage in Last-Mile Logistics: A Novel Hybrid Fuzzy MCDM Model	journalArticle	2024	Tadić, S.; Mathematics		Effective last-mile (LM) delivery is critic	English	Scopus			☑	☐				E1, E2, E3
281	9LF37Y29	The role of internet of things adoption on the sustainability performance of the renewable energy supply chain: A conceptual framework	journalArticle	2024	Masoomi, Renewable and Sustainable Energy Reviews		To effectively integrate clean energy re	English	Scopus			☑	☐				E1, E2, E3
282	RSEMEF9Y	The Factors Influencing User Satisfaction in Last-Mile Delivery: The Structural Equation Modeling Approach	journalArticle	2024	Whovac, V Mathematics		The primary goal of this research is to ix	English	Scopus			☑	☐				E1, E3
283	BMBFL8X6	Achieving fairness in the food system	journalArticle	2024	Onyeaka, I Food and Energy Security		The challenge of feeding an additional	English	Scopus			☑	☐				E1, E2, E3
284	Q9E2YDTC	Circularity of resources in the craft brewery segment: An analysis supported by innovation	journalArticle	2024	Julkovski, I Environmental Quality Management		This article analyzes how the circularity	English	Scopus			☑	☐				E1, E2, E3
285	UFB4PRA3	Recent Advances for the Development of Sustainable Transport and Their Importance in Case of Global Crises: A Literature Review	journalArticle	2024	Sobczuk, S Applied Sciences (Switzerland)		The 21st century is a time of rapid deve	English	Scopus			☑	☐				E1, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
286	E9M7284L	Does the new energy vehicles subsidy policy decrease the carbon emissions of the urban transport industry? Evidence from Chinese cities in Yangtze River Delta	JournalArticle	2024	U, J.; Jiang	Energy	New energy vehicles (NEV) have becom	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
287	MVFVU3QX	Couples traveling together and long-haul truckers' transport performance: A theory-based empirical test	JournalArticle	2024	Su, Z.; Liu,	Travel Behaviour and Society	As the core force in logistics transporta	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
288	BQ292IQK	A latent class analysis of public perceptions about shared mobility barriers and benefits	JournalArticle	2024	Chahine, F.	Transportation Research Interdisciplinary Perspectives	The United States faces urban issues li	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
289	NCSESPMR	Supporting disaster relief operations through RFID: enabling visibility and coordination	JournalArticle	2024	Wagner, S.	International Journal of Logistics Management	Purpose: In the aftermath of disasters,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
290	HRNV5IC6	It starts at home: non-economic factors influencing consumer acceptance of battery storage in Australia	JournalArticle	2024	McCarthy,	Environmental Science and Pollution Research	Homeowners play a critical role in the t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
291	8FG2UIIW	Developing an integrated digital delivery framework and workflow guideline for construction safety management in a project delivery system	JournalArticle	2024	Amo Larbi,	Safety Science	The drive to digitalise the construction	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
292	BCAMDZXD	Disadvantaged workers are not all alike in attitudes towards automation	JournalArticle	2024	Schuster,	Transportation Research Interdisciplinary Perspectives	Automated vehicle (AV) adoption is ant	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
293	ILMHUSHF	Socio-environmental implications of the decarbonization of copper and lithium mining and mineral processing	JournalArticle	2024	Negrete, M.	Resources Policy	Minerals and metals will play an import	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
294	8C9ZTFIE	Enhancing Drone Operator Competency within the Construction Industry: Assessing Training Needs and Roadmap for Skill Development	JournalArticle	2024	Nwaogu, J.	Buildings	Industry 5.0 is expected to solve the iss	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
295	YSFJVYF6	Collaborative Intelligence for Safety-Critical Industries: A Literature Review	JournalArticle	2024	Ramos, I.F.	Information (Switzerland)	While AI-driven automation can increas	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
296	1R3CC9E9	Effectiveness of road safety interventions: An evidence and gap map	JournalArticle	2024	Goel, R.; Ti	Campbell Systematic Reviews	Background: Road Traffic Injuries (RTI)	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
297	KIDHMZSD	State-of-the-Art Electric Vehicle Modeling: Architectures, Control, and Regulations	JournalArticle	2024	Hussein, F.	Electronics (Switzerland)	The global reliance on electric vehicles	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
298	986QYXV	The Impact of Industry 4.0 on occupational health and safety: A systematic literature review	JournalArticle	2024	Bispo, L.G.	Journal of Safety Research	Introduction: Industry 4.0 has brought r	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E1, E3, E4
299	HA5FZ2LZ	What Drives People's Willingness to Adopt Autonomous Vehicles? A Review of Internal and External Factors	JournalArticle	2023	Rahman, F.	Sustainability (Switzerland)	This article presents a state-of-the-art	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
300	SAC97X3R	Towards smart work zones: Creating safe and efficient work zones in the technology era	JournalArticle	2023	Venthurutt	Journal of Safety Research	Introduction: Work Zones (WZs) have lc	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
301	IJ3SCKDS	Luxury in female technology (FemTech): Selection of smart jewelry for women through BCM-MARCOS group decision-making framework with fuzzy ZE-numbers	JournalArticle	2023	Haseli, G.	Technological Forecasting and Social Change	As an extension of wearable technolog	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
302	PE6QBEPD	Assessing the kid's behaviour with factors of social media advertising: DEMATEL application	JournalArticle	2023	Bandil, D.	Journal of Advances in Management Research	Purpose: Kids get exposed to advertisin	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
303	6CAYN5A5	An examination of the relationship between financial performance and safety factors in the heavy trucking industry	JournalArticle	2023	Soro, W.L.	Safety Science	Heavy trucks disproportionately contrit	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
304	LILG79AJ	Lean-agile-resilience-green practices adoption challenges in sustainable agri-food supply chains	JournalArticle	2023	Sahu, A.K.	Business Strategy and the Environment	Supply chain practitioners are striving t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
305	3BQ3HM9B	Autonomous and Sustainable Service Economies: Data-Driven Optimization of Design and Operations through Discovery of Multi-Perspective Parameters	JournalArticle	2023	Alahmari, I.	Sustainability (Switzerland)	The rise in the service economy has bei	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
306	3YA7IDZJ	Evaluating the blockchain-based healthcare supply chain using interval-valued Pythagorean fuzzy entropy-based decision support system	JournalArticle	2023	Mishra, A.	Engineering Applications of Artificial Intelligence	In the current era, blockchain technolo	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
307	U9EHWGVY	Perceived Factors Influencing Blue-Collar Workers' Participation in Worksite Health Promotion Programs in Freight Transport: A Qualitative Investigation Using the TDF and COM-B	JournalArticle	2024	Damen, M.	International Journal of Environmental Research and Public Health	Blue-collar workers in the freight trans	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E3, E4
308	VLDCQNU	The risks of using ChatGPT to obtain common safety-related information and advice	JournalArticle	2023	Oviedo-Tré	Safety Science	ChatGPT is a highly advanced AI langua	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
309	FLUKF9T8	Factors Influencing University Students' Behavioral Intention to Use Electric Car-Sharing Services in Guangzhou, China	JournalArticle	2023	Yu, T.; Zhai	SAGE Open	Along with reducing traffic congestion,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
310	5PZ7YX67	Investigating Challenges to Adoption of Industry 4.0 Technologies in Logistics Management for Last Mile Delivery	JournalArticle	2023	Sharma, V.	International Journal of Innovation and Technology Management	Innovative technologies from Industry 4	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E3, E5
311	6994ECQ7	Barriers to vehicle-sharing among NGOs during disaster relief operations: Findings from a developing country's perspective	JournalArticle	2023	Islam, S.; V	International Journal of Disaster Risk Reduction	NGOs (Non-governmental Organization	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
312	M6DPDBY2	Integrated Lean-Green Practices and Supply Chain Sustainability for Manufacturing SMEs: A Systematic Literature Review and Research Agenda	JournalArticle	2023	Kosasih, V.	Sustainability (Switzerland)	While it is understandable that lean an	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
313	AB3JRGXX	Exploring and assessing landfill viability and sustainability dynamics in the Cape Coast Metropolis	JournalArticle	2024	Aidoo, E.; T	Journal of Infrastructure, Policy and Development	This study investigates the viability and	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
314	DKNEI9VM	Finite mixture (or latent class) modeling in transportation: Trends, usage, potential, and future directions	JournalArticle	2023	Kim, S.H.; I	Transportation Research Part B: Methodological	Accounting for some types of heteroge	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
315	HQCLZWND	Consolidating Port Decarbonisation Implementation: Concept, Pathways, Barriers, Solutions, and Opportunities	JournalArticle	2023	Alamouch,	Sustainability (Switzerland)	Industries worldwide are facing the urg	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
316	J9SGCXPX	The long road to automated trucking: Insights from driver focus groups	JournalArticle	2023	Bhoopalan	Transportation Research Part C: Emerging Technologies	Work towards making automated drivin	English	Scopus			✓	☐				E3
317	DTRAYC5M	Carbon savings, fun, and money: The effectiveness of multiple motives for eco-driving and green charging with electric vehicles in Germany	JournalArticle	2023	Kramer, J.	Energy Research and Social Science	Electric vehicles can contribute to CO2	English	Scopus			✓	☐				E1, E3
318	8YTBBZZU	Aspects of artificial intelligence in future electric vehicle technology for sustainable environmental impact	JournalArticle	2024	Rauf, M.; K	Environmental Challenges	Global energy trends are experiencing c	English	Scopus			✓	☐				E1, E3
319	ES4CDPXN	Minimizing Cost Overrun in Rail Projects through 5D-BIM: A Systematic Literature Review	JournalArticle	2023	Hussain, C	Infrastructures	Mega projects delivering rail infrastruct	English	Scopus			✓	☐				E1, E2, E3
320	H378MEUA	Mapping synergies and trade-offs between smart city dimensions: A network analysis	JournalArticle	2023	Vanli, T.; A	Cities	Smart cities have emerged to cope with	English	Scopus			✓	☐				E1, E2, E3
321	VTD4BLP4	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	JournalArticle	2024	de Winter,	Frontiers in Public Health	Introduction: Despite their important r	English	Scopus			✓	✓	✓	✓	☐	E4
322	MUFPTPD3	Fuel cell-based hybrid electric vehicles: An integrated review of current status, key challenges, recommended policies, and future prospects	JournalArticle	2023	Waseem, I	Green Energy and Intelligent Transportation	Battery electric vehicles (BEVs) and fue	English	Scopus			✓	☐				E1, E3
323	S2FJQFWD	Artificial Intelligence in retail – a systematic literature review	JournalArticle	2023	Heins, C.	Foresight	Purpose: The purpose of this study is to	English	Scopus			✓	☐				E1, E2
324	U557ENVI	Sustainability and affordability of Chinese-funded renewable energy project in sub-Saharan Africa: a hybridized solid oxide fuel cell, temperature sensors, and lithium-based solar system approach	JournalArticle	2023	Opoku, P.	Environmental Science and Pollution Research	Renewable energy projects are at the c	English	Scopus			✓	☐				E1, E2, E3
325	4MNWLKSH	The relationship between dynamic monitoring network plans and eco-efficiency – New evidence from atmospheric quality monitoring policy in China	JournalArticle	2023	Chen, P.; C	Journal of Environmental Management	China's rapid economic development i	English	Scopus			✓	☐				E1, E2, E3
326	GHSJ95XW	Effectiveness and User Perception of an In-Vehicle Voice Warning for Hypoglycemia: Development and Feasibility Trial	JournalArticle	2024	Bérubé, C.	JMIR Human Factors	Background: Hypoglycemia is a frequer	English	Scopus			✓	☐				E1, E2
327	LZ3GVYHP	Exploring high-performance green innovation in China's logistics companies: a TOE framework based on fsQCA	JournalArticle	2024	Li, S.; Zhu,	Frontiers in Environmental Science	In recent years, the Chinese logistics in	English	Scopus			✓	☐				E3
328	AK52HABJ	Evaluation of challenges to the adoption of intelligent transportation system for urban smart mobility	JournalArticle	2023	Waqar, A.	Research in Transportation Business and Management	Implementing Intelligent Transport Syst	English	Scopus			✓	☐				E1
329	PBJDIWPI	Artificial Intelligence and Information System Resilience to Cope with Supply Chain Disruption	JournalArticle	2024	Gupta, S.	IEEE Transactions on Engineering Management	Artificial Intelligence (AI) as a technolog	English	Scopus			✓	☐				E3
330	Q8CW9YDR	What moves truck drivers? A person-centered perspective on workplace physical activity promotion	JournalArticle	2024	Gawlik, A.	Occupational Safety and Ergonomics	Objectives. In developing physical activ	English	Scopus			✓	☐				E3
331	NKZZ6GW4	Digital Supply Chain Capabilities: Mitigating Disruptions and Leveraging Competitive Advantage Under COVID-19	JournalArticle	2024	Nayal, K.; f	IEEE Transactions on Engineering Management	Researchers and practitioners have hig	English	Scopus			✓	☐				E1, E2
332	QFUMZM7Q	Driving sustainable healthcare service management in the hospital sector	JournalArticle	2023	Tushar, S.	Journal of Cleaner Production	Sustainability in service management i	English	Scopus			✓	☐				E1, E2, E3
333	RDGKCPF9	Sustainable Maritime Freight Transportation: Current Status and Future Directions	JournalArticle	2023	Singh, S.; I	Sustainability (Switzerland)	Maritime freight has gained popularity i	English	Scopus			✓	☐				E1, E2, E3
334	L3UIKQZ4	Vehicular motor emissions research: Systematic review of emerging trends and research landscape from 2007 to 2021	JournalArticle	2024	Otitolaiye,	Multidisciplinary Reviews	The growing spate of greenhouse gas ai	English	Scopus			✓	☐				E1, E2, E3
335	DY6CSBJV	A Review of Digital Twin Applications in Civil and Infrastructure Emergency Management	JournalArticle	2023	Cheng, R.;	Buildings	Natural disasters can cause severe dar	English	Scopus			✓	☐				E1, E2, E3
336	VELAJLUU	Emergent methane mitigation and removal approaches: A review	JournalArticle	2024	Mundra, L.	Atmospheric Environment: X	Early control of atmospheric methane i	English	Scopus			✓	☐				E1, E2, E3
337	2UYS6G4P	A Cyber-Physical-Social Perspective on Future Smart Distribution Systems	JournalArticle	2023	Wang, Y.; C	Proceedings of the IEEE	An increasing number of distributed en	English	Scopus			✓	☐				E1, E2, E3
338	MEYSXUZH	Predicting Consumer Electronics E-Commerce: Technology Acceptance Model and Logistics Service Quality	JournalArticle	2024	Wu, C.-F.;	International Journal of Interactive Multimedia and Artificial Intelligence	In online shopping for consumer electr	English	Scopus			✓	✓	☐			E1
339	E4UCGMA3	White-glove service delivery: A quantitative analysis	JournalArticle	2023	Wang, H.;	Part E: Logistics and Transportation Review	White-Glove Service (WGS) is an emerg	English	Scopus			✓	☐				E3
340	63DQ6XQ5	Marketing cereal to the generation Z cohort: what are the key drivers that stimulate consumer behavioural intentions in South Africa?	JournalArticle	2023	Maziriri, E.	Young Consumers	Purpose: This paper aims to examine h	English	Scopus			✓	☐				E1, E2, E3
341	R979375F	Digital transformation, technological innovation, and operational resilience of port firms in case of supply chain disruption	JournalArticle	2023	He, X.; Hu,	Marine Pollution Bulletin	To investigate how the digital transform	English	Scopus			✓	☐				E2
342	MV5S6TPG	Complementarity, Interoperability, and Level of Integration of Humanitarian Drones with Emerging Digital Technologies: A State-of-the-Art Systematic Literature Review of Mathematical Models	JournalArticle	2023	Aretoulaki,	Drones	The adoption of drones and other emer	English	Scopus			✓	☐				E1, E2
343	4IFBN4LF	Similar cities, but diverse carbon controls: Inspiration from the Yangtze River Delta megacity cluster in China	JournalArticle	2023	Cheng, C.;	Science of the Total Environment	Addressing global uneven urban develo	English	Scopus			✓	☐				E1, E2, E3
344	FAMFDYSX	Advancements and Applications of Life Cycle Assessment in Slope Treatment: A Comprehensive Review	JournalArticle	2024	Yao, Y.; Xu	Sustainability (Switzerland)	Life cycle assessment (LCA) plays an ir	English	Scopus			✓	☐				E1, E2, E3
345	LQLQK8U7	The seventh transport revolution and the new challenges for sustainable mobility	JournalArticle	2023	Cascetta, I	Journal of Urban Mobility	Over the course of history there have b	English	Scopus			✓	☐				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
346	U6Z96IB8	Enhancing airport apron safety through intelligent transportation systems: Proposed FEDA model	journalArticle	2023	Korkmaz, İ	Safety Science	The safe operation of an airport apron i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
347	JTH2ZL2G	Blockchain in supply chain management: a feature-function framework for future research	journalArticle	2024	Brau, J.C.;	Supply Chain Management	Purpose: Blockchain technology offers	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
348	CZBI33M7	An Intelligent Fuzzy MCDM Model Based on D and Z Numbers for Paver Selection: IMF D-SWARA—Fuzzy ARAS-Z Model	journalArticle	2023	Jovanović,	Axioms	One of the most important challenges i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
349	VYDX6NTW	An integrated Best–Worst Method and Interpretive Structural Modeling approach for assessing the barriers to circular economy implementation	journalArticle	2023	Debnath, É	Decision Analytics Journal	The Circular Economy (CE) concept ha	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
350	3BX4MDCX	Carbon Capture and Storage: Application in the Oil and Gas Industry	journalArticle	2023	Yasemi, S.	Sustainability (Switzerland)	As a rapidly evolving technology, carbon	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
351	3IPE87XR	Advancing Airport Project Delivery: A Comparison of Design-Build and Traditional Methods in Terms of Schedule and Cost Performance	journalArticle	2023	Khalef, R.;	Journal of Management in Engineering	Current airport infrastructure is in a sta	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
352	GX9MZRGX	Evolution, Challenges, and Opportunities of Transportation Methods in the Last-Mile Delivery Process	journalArticle	2023	Zhu, X.;	Ca Systems	The rapid development of modern logis	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
353	NM8TA72H	Performance measurement of road freight transportation: A case of trucking industry	journalArticle	2023	Dadsena, İ	Transport Policy	The aim of this study is to measure the	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
354	ILD9ABN	Demand Side Management in Industrial, Commercial, and Residential Sectors: A Review of Constraints and Considerations	journalArticle	2023	Williams, İ	Energies	Demand Side Management (DSM) is a c	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
355	UFR6H6CF	Perceived Risk and Food Tourism: Pursuing Sustainable Food Tourism Experiences	journalArticle	2024	An, S.;	Chic Sustainability (Switzerland)	While food can function as a componer	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
356	5CPF65PL	A Holistic Approach to Exploring the Root Factors of Work Zone Accidents	journalArticle	2024	Chammou	Journal of Management in Engineering	Work zones are crucial for infrastruc	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
357	8FP65HEP	Predicting the core determinants of cloud-edge computing adoption (CECA) for sustainable development in the higher education institutions of Africa: A high order SEM-ANN analytical approach	journalArticle	2024	Hiran, K.K.	Technological Forecasting and Social Change	Aims: In the recent past, many studies i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
358	CK3T5AVE	A PESTLE analysis of the trucking industry: key insights and implications	journalArticle	2024	Torres-Núñ	Cogent Business and Management	Trucks are essential for transporting go	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
359	AGS3WGUG	Scrutinizing the nexus between green innovations and the sustainability of environmental system: novel insights from European database	journalArticle	2023	Ha, L.T.	Environmental Science and Pollution Research	A study is presented in this paper that €	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
360	HTDGMHEW	When is a simulation a digital twin? A systematic literature review	journalArticle	2023	Wooley, A.	Manufacturing Letters	This paper presents a systematic litera	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
361	G8KMLV93	Efficiency in the Last Mile of Autonomous Ground Vehicles with Lockers: From Conventional to Renewable Energy Transport	journalArticle	2023	Levkovych	Sustainability (Switzerland)	This research aims to compare autonoi	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
362	J7LHNII2	A Readiness Model and Factors Influencing Blockchain Adoption in Malaysia's Software Sector: A Survey Study	journalArticle	2023	Al-Ashmor	Sustainability (Switzerland)	The technology of Blockchain may oper	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
363	FWW3ILEQ	Future Trends in Smart Green IoT: Vehicle-to-Everything in the Era of Electric Vehicles	journalArticle	2024	Aldhanhan	IEEE Open Journal of Vehicular Technology	The electrification of the transportat	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
364	IGY56ELV	Data-Based Orderly Charging Strategy Considering Users' Charging Choices	journalArticle	2023	Tao, Y.;	Ch Energies	This work proposes a centralized data-I	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
365	A9QZHP98	Future on Wheels: Safeguarding Privacy in Tomorrow's Connected Vehicles-FUTURE-SP	journalArticle	2024	Znidi, F.;	M IEEE Access	As connected and autonomous vehicle	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
366	R4NLFP9X	Digital technology and its application in supply chain management: new evidence from China's economy	journalArticle	2023	Hua, H.;	Jir Environmental Science and Pollution Research	The purpose of this article is to investig	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E1
367	ZWRFU8DA	Electromobility: Logistics and Business Ecosystem Perspectives Review	journalArticle	2023	Grzesiak, É	Energies	In the evolving landscape of electromob	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
368	7XLV8QSV	A Comprehensive Review of the Distinctive Tendencies of the Diffusion of E-Mobility in Central Europe	journalArticle	2023	Horváth, G	Energies	The study introduces the current situat	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
369	5VVASJD3	Selecting the ideal sustainable green strategy for logistics companies using a T-spherical fuzzy-based methodology	journalArticle	2024	Aytekin, A.	Engineering Applications of Artificial Intelligence	Governments, institutions, and organiz	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
370	Q3MERRJ9	State of health forecasting of Lithium-ion batteries operated in a battery electric vehicle fleet	journalArticle	2023	von Bülow,	Journal of Energy Storage	Most existing methods for battery state	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
371	84DQSG37	Modelling the Impact of Driver Work Environment on Driving Performance among Oil and Gas Heavy Vehicles: SEM-PLS	journalArticle	2023	Al-Mekhlaf	Safety	Driving heavy vehicles with dangerous	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
372	MXFGKMCY	The applicability of advanced technologies from the traditional industry to mitigate ergonomic problems in maintenance activities in the mining industry	journalArticle	2023	Santos, A.J	Journal of Quality in Maintenance Engineering	Purpose: Many advanced technologies	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
373	K53RPY4U	Health, safety, and socioeconomic impacts of cannabis liberalization laws: An evidence and gap map	journalArticle	2023	Sevigny, E.	Campbell Systematic Reviews	Background: Globally, cannabis laws ar	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
374	G2ZPMCH6	Data Analytics in Supply Chain Management: A State-of-the-Art Literature Review	journalArticle	2024	Darbanian	Operations and Supply Chain Management	In recent years, there has been a growi	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
375	CJ9B5JD2	Adoption of socially interactive technologies for shipping services	journalArticle	2024	Yang, C.-C	Maritime Policy and Management	In this research, the effects of the adop	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E1, E2
376	ZD4S2ZK3	Requirements for the automated loading and unloading of autonomous trucks: an interoperability perspective	journalArticle	2024	Thylén, N.;	Physical Distribution and Logistics Management	Purpose: With the introduction of autor	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
377	J3DZIE7P	Progress and prospects in planning: A bibliometric review of literature in Urban Studies and Regional and Urban Planning, 1956–2022	journalArticle	2023	Sharifi, A.;	Progress in Planning	The global population has rapidly urba	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
378	QEPJVS8M	Internet of agriculture: Analyzing and predicting tractor ride comfort through supervised machine learning	journalArticle	2023	Singh, A.;	Engineering Applications of Artificial Intelligence	The aim of this study is to improve ride	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
379	NUZKV66N	Insight into how cyber forensic accounting enhances the integrated reporting quality in small and medium enterprises	journalArticle	2024	Pham, Q.H	Cogent Business and Management	The objective of this current research is	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
380	LJUKKT4J	Crash Severity Analysis of Young Adult Motorcyclists: A Comparison of Urban and Rural Local Roadways	journalArticle	2023	Champaht	Applied Sciences (Switzerland)	In developing nations, motorcycles are	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
381	Z6RDN9ST	ROLE OF GREEN LOGISTICS IN THE CONSTRUCTION OF SUSTAINABLE SUPPLY CHAINS	journalArticle	2023	Pham, N.D	Polish Maritime Research	The global supply chain has been growi	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
382	ZZ3RTE53	Factors Affecting Renewable Energy for Sustainable Development: The Case of the Philippines	journalArticle	2024	Xuan, V.N	Environmental Health Insights	This paper examines the nexus between	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
383	74XTQCKD	Analysing a GSCM Enabler-Based Model for Implementation of Its Practices: a Pythagorean Fuzzy AHP and CoCoSo Approach	journalArticle	2023	Panpatil, S	Process Integration and Optimization for Sustainability	Green supply chain management (GSC	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
384	B4P3FCR7	Assessing the barriers of integrating technological innovations in textiles sector: Implications towards sustainable production	journalArticle	2023	Alam, M.F.	Green Technologies and Sustainability	With the aftermath of the pervasive CO	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
385	NU2D8S4H	Decarbonizing the cement and concrete industry: A systematic review of socio-technical systems, technological innovations, and policy options	journalArticle	2023	Griffiths, S	Renewable and Sustainable Energy Reviews	Concrete is the most highly used const	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
386	G9S553NY	The development of sustainable electric vehicle business ecosystems	journalArticle	2023	Aghesi, P.	SN Business and Economics	Electrifying passenger transportation h	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
387	QTNKUDQR	The effects of sustainability innovation and supply chain resilience on sustainability performance: Evidence from China's cold chain logistics industry	journalArticle	2024	Zhang, B.	Cogent Business and Management	The purpose of this paper is to investig	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
388	PS4B8DUF	Switching up the delivery game: Understanding switching intention to retail drone delivery services	journalArticle	2023	Sham, R.	Journal of Retailing and Consumer Services	Drone delivery services have been gaini	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
389	Q87WVRZ2	Determinants of Environmental Pollution in China: Novel Findings from ARDL Method	journalArticle	2024	Xuan, V.N	Environmental Health Insights	This study examines how EC, FF use, R	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
390	XK4N8T8Q	Role of Cargo Owner in Logistic Chain Sustainability	journalArticle	2023	Caldeirinh	Sustainability (Switzerland)	Understanding the factors and charact	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
391	JKAPW7MH	The State of the Art in Deep Learning Applications, Challenges, and Future Prospects: A Comprehensive Review of Flood Forecasting and Management	journalArticle	2023	Kumar, V.	Sustainability (Switzerland)	Floods are a devastating natural calam	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
392	RDUYU298	Exploring Safety Vulnerability in Prefabricated Construction and Mitigation Effects of Internet of Things	journalArticle	2024	Luo, L.; Hu	IEEE Transactions on Engineering Management	Prefabricated construction, known for i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
393	WKL5HHAP	Green port management practices for sustainable port operations: a multi method study of Asian ports	journalArticle	2024	Mahmud, I	Maritime Policy and Management	Ports pose a substantial portion of mar	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
394	46NS3KG4	Adoption of big data analytics for energy pipeline condition assessment - A systematic review	journalArticle	2023	Hussain, N	International Journal of Pressure Vessels and Piping	Due to complexity, the oil and gas indu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
395	Y9DM8KEI	An Intuitionistic Fuzzy Consensus WASPAS Method for Assessment of Open-Source Software Learning Management Systems	journalArticle	2023	Deb, P.P.; I	Informatica (Netherlands)	Ineffective evaluation of open-source s	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
396	RX82C5S5	Creation of sustainable growth with explainable artificial intelligence: An empirical insight from consumer packaged goods retailers	journalArticle	2023	Behera, R.	Journal of Cleaner Production	Consumer packaged goods retailers ca	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
397	RL4PNHN8	Split Federated Learning for 6G Enabled-Networks: Requirements, Challenges, and Future Directions	journalArticle	2024	Hafi, H.; Br	IEEE Access	Sixth-generation (6G) networks anticip	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
398	LJSMZ26G	Digitalization of supply chains in Industry 4.0 environment of manufacturing organizations: conceptualization, scale development & validation	journalArticle	2024	Mishra, R.	Production Planning and Control	Digitalization of the supply chain repre	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
399	88YL7BWV	Shifting Systematically Towards Sustainable Consumption and Production: A Solution Framework to Overcome the Impacts of Covid-19	journalArticle	2022	Goyal, S.; I	International Journal of Information Technology and Decision Making	The threats like increasing pollution lev	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
400	7XSFY7W9	Last-Mile Delivery Methods in E-Commerce: Does Perceived Sustainability Matter for Consumer Acceptance and Usage?	journalArticle	2022	Klein, P.; P	Sustainability (Switzerland)	Sustainability has gained significant im	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
401	S37N5EJ2	Emerging practices and research issues for big data analytics in freight transportation	journalArticle	2023	Gorman, P	Maritime Economics and Logistics	Freight transportation has been experie	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
402	UFUXI8RC	Lean supply chain management and Industry 4.0 interrelationships: the status quo and future perspectives	journalArticle	2023	El Jaouhari	International Journal of Lean Six Sigma	Purpose: This study aims to address lex	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
403	JB7VSMAT	The Impact of Industry 4.0 on the relationship between TPM and maintenance performance	journalArticle	2022	Tortorella	Journal of Manufacturing Technology Management	Purpose: In this paper, the authors exai	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
404	7CNHZUE7	Application of Unmanned Aircraft Systems for smart city transformation: Case study Belgrade	journalArticle	2022	Ilıc, D.; Mi	Technological Forecasting and Social Change	There are different approaches to trans	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
405	8PP6T2I6	The frequency use and the modal shift to ICT-based mobility services	journalArticle	2022	Mostofi, H	Resources, Environment and Sustainability	The information and communication te	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
406	BJ2AY5VG	Future smart cities requirements, emerging technologies, applications, challenges, and future aspects	journalArticle	2022	Javed, A.R.	Cities	Future smart cities are the key to fulfilli	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
407	MJCJC7DV	Toward Integrated Large-Scale Environmental Monitoring Using WSN/UAV/Crowdsensing: A Review of Applications, Signal Processing, and Future Perspectives	journalArticle	2022	Fascista, A	Sensors	Fighting Earth's degradation and safeg	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
408	KVMBJL52	Integration of consumer preferences into dynamic life cycle assessment for the sharing economy: methodology and case study for shared mobility	journalArticle	2023	Fernando,	International Journal of Life Cycle Assessment	Purpose: The rising of the sharing econ	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
409	W2SPMXAF	A facilitating framework for a developing country to adopt smart waste management in the context of circular economy	journalArticle	2022	Khan, F.; A	Environmental Science and Pollution Research	To achieve higher standards of sustaini	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
410	RD47GP7P	The Effect of Using Augmented Reality Technology in Takeaway Food Packaging to Improve Young Consumers' Negative Evaluations	journalArticle	2023	Gu, C.; Hu	Agriculture (Switzerland)	This paper examines the use of augmer	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
411	T8BWHUE6	Deep Journalism and DeepJournal V1.0: A Data-Driven Deep Learning Approach to Discover Parameters for Transportation	journalArticle	2022	Ahmad, I.;	Sustainability (Switzerland)	We live in a complex world characteris	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
412	QI36SLVN	Smart cities need environmental consciousness and more social responsibilities as an outcome of COVID-19 – reflections from urban road commuters	journalArticle	2022	Leow, N.X.	Foresight	Purpose: A lesson has been learned fro	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
413	XNG3629F	Heart Disease and Stroke Statistics - 2023 Update: A Report from the American Heart Association	journalArticle	2023	Tsao, C.W.	Circulation	Background: The American Heart Assor	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
414	EYG64KYA	Mobility-on-demand pricing versus private vehicle TCO: how cost structures hinder the dethroning of the car	journalArticle	2023	Kuhnimho	Transportation	This study uses a unique dataset on the	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
415	X6R69WNW	Smartphone Addiction Assessment Using Pythagorean Fuzzy CRITIC-TOPSIS	journalArticle	2023	Ertemel, A.	Sustainability (Switzerland)	Addiction to smartphones, particularly	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
416	QW233FS9	Transport infrastructure environmental performance: the role of stakeholders, technological integration, government policies and lean supply chain management	journalArticle	2023	Fan, J.; Mo	Frontiers in Environmental Science	The recent past is characterized by heij	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
417	5P4ABNWN	Regulating connected and automated vehicles: How do drivers experience being automatically regulated by digital traffic rules?	journalArticle	2022	Hansen, L.	Transportation Research Interdisciplinary Perspectives	Digital traffic rules using geofencing ca	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
418	VA3REGZU	Heart Disease and Stroke Statistics-2022 Update: A Report from the American Heart Association	journalArticle	2022	Tsao, C.W.	Circulation	Background: The American Heart Assor	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
419	TXNJN574	Arctic roads and railways: Social and environmental consequences of transport infrastructure in the circumpolar North	journalArticle	2022	Povorozny	Arctic Science	Land-based transport corridors and rel	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
420	Z4JXNLT5	Edge AI-Assisted IoV Application for Aggressive Driver Monitoring: A Case Study on Public Transport Buses	journalArticle	2023	Soy, H.	International Journal of Automotive Science and Technology	With the increasing adoption of digital t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
421	PGB96PH4	Impact of food safety supervision efficiency on preventing and controlling mass public crisis	journalArticle	2022	Ding, J.; Qi	Frontiers in Public Health	Food safety has received unprecedented	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
422	JKGSS34N	The impact of job security, job satisfaction and job embeddedness on employee retention: an empirical investigation of Pakistan's health-care industry	journalArticle	2022	Aman-Ulla	Journal of Asia Business Studies	Purpose: The purpose of this study is to	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
423	4QMNI7GN	Shaping future low-carbon energy and transportation systems: Digital technologies and applications	journalArticle	2022	Song, J.; Hi	Energy	Digitalization and decarbonization are i	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
424	42B62SMZ	Humanizing autonomous vehicle driving: Understanding, modeling and impact assessment	journalArticle	2022	Orfanou, F	Transportation Research Part F: Traffic Psychology and Behaviour	The advent of autonomous vehicles bri	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
425	C7ZR4P2	Pilot Study on User Service Guarantee Elements for Electric Minivans	journalArticle	2022	Zhou, X.; Y	Sustainability (Switzerland)	With the introduction of "carbon neutri	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
426	BSBT2F9F	Forecasting: theory and practice	journalArticle	2022	Petropoul	International Journal of Forecasting	Forecasting has always been at the for	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
427	GHRFA74H	The effects of ridesourcing services on vehicle ownership: The case of Great Britain	journalArticle	2023	Bligin, P.; †	Transportation Research Part D: Transport and Environment	Understanding the impacts of ridesour	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
428	2MG83MBH	Opportunities and Adoption Challenges of AI in the Construction Industry: A PRISMA Review	journalArticle	2022	Regona, M	Journal of Open Innovation: Technology, Market, and Complexity	Artificial intelligence (AI) is a powerfu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
429	NBDEFPSC	How Immersive Virtual Reality Safety Training System Features Impact Learning Outcomes: An Experimental Study of Forklift Training	journalArticle	2023	Abbas, A.;	Journal of Management in Engineering	Immersive virtual reality (VR)-based tra	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
430	F3GMA4NI	Mapping Climate Change Mitigation Strategies Adopted by Industries: An Overview from First Commitment of Kyoto Protocol (2009–2023)	journalArticle	2023	Singh, P.; †	Environmental and Climate Technologies	– This paper analyses the climate chan	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
431	9HRCPAIQ	Antecedents in Determining Users' Acceptance of Electric Shuttle Bus Services	journalArticle	2022	Wang, N.; I	Mathematics	The electric shuttle bus service is a pro	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
432	CRPYME73	Modelling perceived risk and trust in driving automation reacting to merging and braking vehicles	journalArticle	2022	He, X.; Stai	Transportation Research Part F: Traffic Psychology and Behaviour	Perceived risk and trust are crucial for	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
433	R4MFGTIU	Evaluating Actions to Improve Air Quality at University Hospitals Birmingham NHS Foundation Trust	journalArticle	2022	Simpson, C	Sustainability (Switzerland)	Air pollution is the single largest enviro	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
434	RI46PY37	Tackling Climate Change with Machine Learning	journalArticle	2023	Roelnick, D.	ACM Computing Surveys	Climate change is one of the greatest c	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
435	JKJFTVZB	A General Framework to Forecast the Adoption of Novel Products: A Case of Autonomous Vehicles	journalArticle	2022	Dubey, S.;	Transportation Research Part B: Methodological	Due to the unavailability of prototypes,	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
436	GHRXIBXN	Multi-dimensional perspectives on electric vehicles design: A mind map approach	journalArticle	2022	Gupta, A.;	Cleaner Engineering and Technology	The increased demand for transport an	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
437	DQH9T6L2	A Literature Review of Emerging Research Needs for Micromobility—Integration through a Life Cycle Thinking Approach	journalArticle	2022	Marques, I	Future Transportation	Micromobility is an increasingly attract	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
438	BXW2GI8V	Decarbonizing the oil refining industry: A systematic review of sociotechnical systems, technological innovations, and policy options	journalArticle	2022	Griffiths, S	Energy Research and Social Science	The oil refining industry, which was est	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
439	JTZS45TB	A hybrid multi-criteria decision-making approach to evaluate interrelationships and impacts of supply chain performance factors on pharmaceutical industry	journalArticle	2023	Khan, S.A.;	Journal of Multi-Criteria Decision Analysis	Pharmaceutical Supply Chain (PSC) pl	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
440	DI2K6XA6	Assessing the Factors Impacting Transport Usage of Mobility App Users in the National Capital Territory of Delhi, India	journalArticle	2022	Gupta, S.; †	Sustainability (Switzerland)	Smartphone-based mobility apps have	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
441	LS8K2ZNU	The nexus between e-commerce adoption in a health pandemic and firm performance: The role of pandemic response strategies	JournalArticle	2022	Juliet Orji	Journal of Business Research	This paper takes the initial step in explic	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
442	LA6PBVNC	Technology-enabled capabilities in road freight transportation systems: A multi-method study	JournalArticle	2022	Callefi, M.J	Expert Systems with Applications	Several studies in the literature have ali	English	Scopus			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E1, E2, E3, E4, E5
443	XNWKUNKX	Behavioural norms or personal gains? –An empirical analysis of commuters' intention to switch to multimodal mobility behaviour	JournalArticle	2023	Timmer, S.	Transportation Research Part A: Policy and Practice	Existing research has revealed that the	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
444	AWMRX4I2	The Minderoo-Monaco Commission on Plastics and Human Health	JournalArticle	2023	Landrigan, Annals of Global Health	Background: Plastics have conveyed gr	English	Scopus				<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
445	KDAGWAXL	Developing a framework to analyse the effect of sustainable manufacturing adoption in Indian textile industries	JournalArticle	2022	Chourasiy	Cleaner Logistics and Supply Chain	This study aims to develop a framework	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
446	GHHYK8YV	A Moderated Mediation Model to Explain Consistent Condom Use Intention Among Young Adults in South Africa	JournalArticle	2022	Nkwe, E.S	Social Marketing Quarterly	Background: Behavioral sustenance is	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
447	TE9LYCXA	Evaluating pollution damage function through carbon pricing, renewable energy demand, and cleaner technologies in China: blue versus green economy	JournalArticle	2022	Akhtar, M.	Environmental Science and Pollution Research	Climate change and increased greenh	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
448	EBYRQS7B	A mini-review of machine learning in big data analytics: Applications, challenges, and prospects	JournalArticle	2022	Nti, I.K.; Oti	Big Data Mining and Analytics	The availability of digital technology in t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
449	K2STCENA	Impact of Transportation Electrification on the Electricity Grid—A Review	JournalArticle	2022	Bayani, R.; Vehicles		Transportation electrification is a pivot	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
450	WV4RKRYR	Exploring the implications of autonomous vehicles: a comprehensive review	JournalArticle	2022	Othman, K	Innovative Infrastructure Solutions	Over the last few years, a large emphas	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
451	BB336GG5	It Isn't enough to be easy and useful! Combined use of SEM and necessary condition analysis for a better understanding of consumers' acceptance of medical wearable devices	JournalArticle	2023	Low, M.P.; Smart Health		With the rising variability and offers of s	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
452	B8SKTYU6	ADAS at work: assessing professional bus drivers' experience and acceptance of a narrow navigation system	JournalArticle	2022	Johansson	Cognition, Technology and Work	Due to the argued benefits of passenge	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
453	ZFQXEY38	Behavioral Ethics Ecologies of Human-Artificial Intelligence Systems	JournalArticle	2022	Fox, S.	Behavioral Sciences	Historically, evolution of behaviors ofte	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
454	67TJ8DXB	Impacts of Connected and Automated Vehicles on Road Safety and Efficiency: A Systematic Literature Review	JournalArticle	2023	Matin, A.; I	IEEE Transactions on Intelligent Transportation Systems	Connected and automated vehicles (C	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
455	WZD89GGN	Multi-actor perspectives on human robotic collaboration implementation in the heavy automotive manufacturing industry - A Swedish case study	JournalArticle	2023	Wang, Q.; I	Technology in Society	Implementing an industrial collaborati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
456	4ATIFK9P	Adopting net-zero in emerging economies	JournalArticle	2022	Virmani, N	Journal of Environmental Management	In recent years, rapid reduction in natu	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
457	7CB53FRJ	Investigation and analysis of implementation challenges for autonomous vehicles in developing countries using hybrid structural modeling	JournalArticle	2022	Kumar, G.;	Technological Forecasting and Social Change	The advent of autonomous vehicles (AV	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
458	9F2SDCJ9	Waste of electrical and electronic equipment management from the perspective of a circular economy: A Review	JournalArticle	2023	de Oliveira	Waste Management and Research	In addition to the difficulties involved in	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
459	AQC4863Z	Digital technology for quality management in construction: A review and future research directions	JournalArticle	2022	Luo, H.; Liu	Developments in the Built Environment	Significant developments in digital tec	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
460	46HFJ3K9	How to Cross the Chasm for the Electric Vehicle World's Laggards—A Case Study in Kuwait	JournalArticle	2023	Ottesen, A	World Electric Vehicle Journal	Ever since the discovery of oil in 1938, t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
461	5XSF4A5P	Research trends of sustainability and marketing research, 2010–2020: Topic modeling analysis	JournalArticle	2023	Jung, Y.J.; Heliyon		In recent decades, rapid growth has be	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
462	3BEALFEP	Decarbonizing the pulp and paper industry: A critical and systematic review of sociotechnical developments and policy options	JournalArticle	2022	Furszyfer D	Renewable and Sustainable Energy Reviews	Paper has shaped society for centuries	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
463	YZ6T63TB	Factors Influencing Public Risk Perception of Emerging Technologies: A Meta-Analysis	JournalArticle	2023	Li, C.; Li, Y.	Sustainability (Switzerland)	The development and application of em	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
464	4A753XBB	Exploring the attitudes of Millennials and Generation Xers toward ridesourcing services	JournalArticle	2022	Azimi, G.; f	Transportation	This paper presents a study investigati	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
465	P8ZZEBIH	From moon landing to metaverse: Tracing the evolution of Technological Forecasting and Social Change	JournalArticle	2023	Kraus, S.; f	Technological Forecasting and Social Change	Technological Forecasting and Social C	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
466	AP5HTPI8	Heuristics processing of green advertising: Review and policy implications	JournalArticle	2023	Santa, J.C.	Ecological Economics	Green advertising aims to communicat	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
467	F5LZVLSD	Dashboard Layout Effects on Drivers' Searching Performance and Heart Rate: Experimental Investigation and Prediction	JournalArticle	2022	Yang, H.; V	Frontiers in Public Health	Carsharing scale has been increasing r	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
468	GENZDRCI	Inland waterway transport and the 2030 agenda: Taxonomy of sustainability issues	JournalArticle	2022	Barros, B. f	Cleaner Engineering and Technology	Inland Waterway Transport (IWT) is rec	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
469	3M5RP7YN	Investigating the Risk Factors Associated with Injury Severity in Pedestrian Crashes in Santiago, Chile	JournalArticle	2022	Rampinelli	International Journal of Environmental Research and Public Health	Pedestrians are vulnerable road users t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
470	DTDRUVIN	Impacts of Pokémon GO on route and mode choice decisions: exploring the potential for integrating augmented reality, gamification, and social components in mobile apps to influence travel decisions	JournalArticle	2022	Guo, Y.; Pe	Transportation	This study aims to understand the impe	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
471	MNISQ54T	Laminating STRATH block chain technology- SWOT architectures to endure business strategy between digital transformation, firms and supply chains capabilities for sustainability	journalArticle	2023	Sahu, A.K.;	Journal of Cleaner Production	The study laminated a link between Dig	English	Scopus			☑	☐				E1, E2, E3
472	T7M23R2G	Circular economy adoption challenges in medical waste management for sustainable development: An empirical study	journalArticle	2022	Kandasam	Sustainable Development	In recent years, many countries are pro	English	Scopus			☑	☐				E1, E2, E3
473	HJBHFV6G	What Affects Rural Ecological Environment Governance Efficiency? Evidence from China	journalArticle	2022	Qian, M.;	International Journal of Environmental Research and Public Health	With rapid economic development, the	English	Scopus			☑	☐				E1, E2, E3
474	VYAMRYK4	Exploring the Social Trend Indications of Utilizing E-Commerce during and after COVID-19's Hit	journalArticle	2023	Fakieh, B.;	Behavioral Sciences	COVID-19 is a major global crisis affect	English	Scopus			☑	☐				E1, E2, E3
475	ZMF5CKHJ	Aspects of E-Scooter Sharing in the Smart City	journalArticle	2022	Popova, Y.	Informatics	The contemporary urban environment f	English	Scopus			☑	☐				E1, E2, E3
476	ZA8T2DWW	Distributed power generation planning for distribution networks using electric vehicles: Systematic attention to challenges and opportunities	journalArticle	2022	Singh, B.;	Journal of Energy Storage	Electric vehicular distributed generatio	English	Scopus			☑	☐				E1, E2, E3
477	5ESA932L	Predicting factors affecting the intention to use a 3PL during the COVID-19 pandemic: A machine learning ensemble approach	journalArticle	2022	German, J.	Heliyon	The COVID-19 pandemic had brought c	English	Scopus			☑	☐				E1, E2, E3
478	WC4Q56D2	Harmonizing work safety and health practices towards technician's productivity in the workplace: A modified theory of planned behaviour	journalArticle	2023	Shodipe, C	Cogent Business and Management	Several technicians have been exposec	English	Scopus			☑	☐				E1, E2, E3
479	DJCDHH46	Investigating Older Adults' Propensity toward Ridesourcing Services	journalArticle	2022	Sarker, M	Journal of Transportation Engineering Part A: Systems	This paper presents the results of a stu	English	Scopus			☑	☐				E1, E3
480	9AXDFHJI	To share or not to share, by whom is the question. Acceptability and acceptance of shared transport services by vulnerable groups	journalArticle	2023	De Paepe,	Transport Reviews	It is believed that shared transport serv	English	Scopus			☑	☐				E1, E3
481	VH95Q39S	Impact of Manufacturing Servitization on Factor Productivity of Industrial Sector Using Global Value Chain	journalArticle	2022	Zhang, J.	Sustainability (Switzerland)	The current study estimates the impact	English	Scopus			☑	☐				E1, E2, E3
482	5E57MEYD	Gamification and sensory stimuli in eco-driving research: A field experiment to reduce energy consumption in electric vehicles	journalArticle	2023	Degirmenci,	Transportation Research Part F: Traffic Psychology and Behaviour	Gamification can create meaningful en	English	Scopus			☑	☐				E1
483	CTAZW2HR	Eliciting attitudinal factors affecting the continuance use of E-scooters: An empirical study in Chicago	journalArticle	2022	Javadinasr,	Transportation Research Part F: Traffic Psychology and Behaviour	As e-scooters become more popular, s	English	Scopus			☑	☐				E1, E3
484	EWJINLHL	Visual analysis of low-carbon supply chain: Development, hot-spots, and trend directions	journalArticle	2022	Luo, J.;	Frontiers in Environmental Science	A low-carbon supply chain is generally	English	Scopus			☑	☐				E1, E2, E3
485	5EWX8JLW	A Systematic Review of Green Building Development in China: Advantages, Challenges and Future Directions	journalArticle	2022	Cao, Y.;	Xu Sustainability (Switzerland)	In the 21st century, traditional constr	English	Scopus			☑	☐				E1, E2, E3
486	PXRZJA6C	5G as an Enabler of Connected-and-Automated Mobility in European Cross-Border Corridors—A Market Assessment	journalArticle	2022	Rizopoulos,	Sustainability (Switzerland)	5G systems are capable of facilitating	English	Scopus			☑	☐				E1
487	97UJ4G2VH	Effective and Acceptable Eco-Driving Guidance for Human-Driving Vehicles: A Review	journalArticle	2022	Tu, R.;	Xu, International Journal of Environmental Research and Public Health	Eco-driving guidance refers to courses,	English	Scopus			☑	☐				E1, E2
488	32HX2UCG	Willingness of Chinese households to pay extra for hydrogen-fuelled buses: A survey based on willingness to pay	journalArticle	2023	Wang, S.;	Frontiers in Environmental Science	Hydrogen-fuelled buses play an import	English	Scopus			☑	☐				E1, E2, E3
489	6FDATP3P	Emerging trends and influential outsiders of transportation science	journalArticle	2023	Haghani, H	Transportation Letters	Fifty years of evolution of transportati	English	Scopus			☑	☐				E1, E2, E3
490	UP627WSK	Industry 4.0 Technologies Applied to the Rail Transportation Industry: A Systematic Review	journalArticle	2022	Laiton-Bor	Sensors	Background: Industry 4.0 technologies	English	Scopus			☑	☐				E1, E3
491	8QX39IPH	Current Risk Situation Training in Industry, and Games as a Strategy for Playful, Engaging and Motivating Training	journalArticle	2023	Rufino Jóni	Journal on Interactive Systems	Workplace safety is a constant concern	English	Scopus			☑	☐				E1, E2, E3
492	GRPHGSHA	Perceived barriers to the movement of goods in Canada: A grounded theory investigation	journalArticle	2022	Sears, S.;	Transportation Research Part A: Policy and Practice	This paper investigates stakeholder's p	English	Scopus			☑	☐				E3
493	ETMB2EF3	A Comprehensive Survey on Software as a Service (SaaS) Transformation for the Automotive Systems	journalArticle	2023	Blanco, D.;	IEEE Access	Over the last few decades, automotive	English	Scopus			☑	☐				E1, E2, E3
494	JKXSCMPC	Modeling COVID-19 Impact on Consumption and Mobility in Europe: A Legacy Toward Sustainable Business Performance	journalArticle	2022	Ameer, W.	Frontiers in Psychology	This article has explored the impact of	English	Scopus			☑	☐				E1, E2, E3
495	ABJ97A8T	The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels	journalArticle	2022	Romanelli,	The Lancet		English	Scopus			☑	☐				E1, E2, E3
496	3SHHTDQW	Individual barriers, requirements, and attitudes towards mode choice among low income older adults: Case study of Dallas, Texas	journalArticle	2022	Hyun, K.;	S Advances in Transportation Studies	Mobility disparities among older adults	English	Scopus			☑	☐				E1, E2, E3
497	GNIJASLBQ	Identifying Intention-Based Factors Influencing Consumers' Willingness to Pay for Electric Vehicles: A Sustainable Consumption Paradigm	journalArticle	2022	Zheng, S.;	1 Sustainability (Switzerland)	In an effort to reduce environmental po	English	Scopus			☑	☐				E1, E2, E3
498	42RFFPTB9	The Risky-Opportunity Analysis Method (ROAM) to Support Risk-Based Decisions in a Case-Study of Critical Infrastructure Digitization	journalArticle	2022	Ardebili, A.	Risks	Socio-ecologic, socio-economic, and s	English	Scopus			☑	☐				E1, E2, E3
499	LKWXM42Q	Level 5 autonomy: The new face of disruption in road transport	journalArticle	2018	Skeete, J.;	1 Technological Forecasting and Social Change	By 2020, the EU road transport sector i	English	Scopus			☑	☐				E1, E3
500	HUPRVJDZ	Individual predictors of autonomous vehicle public acceptance and intention to use: A systematic review of the literature	journalArticle	2020	Golbabaei,	Journal of Open Innovation: Technology, Market, and Complexity	Fully autonomous vehicles (AV) would	English	Scopus			☑	☐				E1, E3
501	N6657EW6	A Comprehensive Review on the Integration of Electric Vehicles for Sustainable Development	journalArticle	2022	Hossain, H	Journal of Advanced Transportation	In this article, the concept of an electr	English	Scopus			☑	☐				E1, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
502	E9LQLVIK	Understanding organizations' artificial intelligence journey: A qualitative approach	journalArticle	2022		Pacific Asia Journal of the Radhakrishna Association for Information Systems	Background: With growth in Artificial In	English	Scopus			☑	☐				E1, E2, E3
503	R484JC9T	Performance Analysis of Mobile Broadband Networks with 5G Trends and Beyond: Rural Areas Scope in Malaysia	journalArticle	2020	Shayea, I.;	IEEE Access	This paper presents a multidimensiona	English	Scopus			☑	☐				E1, E2, E3
504	XA74DMV4	How self-gratification and social values shape revisit intention and customer loyalty of Airbnb customers	journalArticle	2022	Tajeddini, I.	International Journal of Hospitality Management	Although the interrelationships among	English	Scopus			☑	☐				E1, E2, E3
505	X663BSN7	Real-time information sharing, customer orientation, and the exploration of intra-service industry differences: Malaysia as an emerging market	journalArticle	2021	Ghour, A.;	Technological Forecasting and Social Change	Differences in business practices and t	English	Scopus			☑	☐				E1, E2, E3
506	VX52P47Z	The Internet of Things in the Oil and Gas Industry: A Systematic Review	journalArticle	2020	Wanasingh, T.	IEEE Internet of Things Journal	The low oil price environment is driving	English	Scopus			☑	☐				E1, E2, E3
507	SRPPU684	Emerging digital economy companies and leading cryptocurrencies: Insights from blockchain-based technology companies	journalArticle	2021	Ghaemi, A.S.	Journal of Enterprise Information Management	Purpose: The purpose of this study is to	English	Scopus			☑	☐				E1, E2, E3
508	72432HE2	Bioinspired Computational Intelligence and Transportation Systems: A Long Road Ahead	journalArticle	2020	Del Ser, J.;	IEEE Transactions on Intelligent Transportation Systems	This paper capitalizes on the increasing	English	Scopus			☑	☐				E1
509	QYVTEF78	Secure over-the-air software updates in connected vehicles: A survey	journalArticle	2020	Halder, S.;	Computer Networks	Current trends forecast that Over-the-A	English	Scopus			☑	☐				E1, E2, E3
510	JJ8U2VYV	Parametric review of food supply chain performance implications under different aspects	journalArticle	2020	Sharma, J.	Journal of Advances in Management Research	Purpose: Presented work gives compar	English	Scopus			☑	☐				E1, E2, E3
511	R7T67YXG	Understanding the barriers for Internet-based e-waste collection system in China	journalArticle	2020	Wang, W.;	Journal of Environmental Planning and Management	Internet-based electronic waste (e-was	English	Scopus			☑	☐				E1, E2, E3
512	UY9HN756	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	journalArticle	2019	Levi-Belieck, C.	International Journal of Information Management	Whereas implementing a mobile applic	English	Scopus			☑	☑	☑	☑	☑	
513	Q22M3DNG	Pharmaceutical Supply Chain Sustainability under the Torchlight of Social Media	journalArticle	2022	Seddigh, N.	Operations and Supply Chain Management	This research aims to explore the chall	English	Scopus			☑	☐				E1, E2, E3
514	YG2265NC	The impacts of the fourth industrial revolution on smart and sustainable cities	journalArticle	2021	Gonçalves, J.	Sustainability (Switzerland)	This article aims to analyze the impact	English	Scopus			☑	☐				E1, E2, E3
515	NMjXH33l	A critical review of the circular economy for lithium-ion batteries and photovoltaic modules-status, challenges, and opportunities	journalArticle	2022	Heath, G.A.	Journal of the Air and Waste Management Association	A review discusses key insights, gaps, &	English	Scopus			☑	☐				E1, E2, E3
516	SD6i4XCX	Circular economy practices in the built environment	journalArticle	2020	Joensuu, T.	Journal of Cleaner Production	The aim of this literature review is to pr	English	Scopus			☑	☐				E1, E2, E3
517	SPEBUFT3	The Design of Incentive Mechanism for Policy-Oriented Guarantee Institutions' Digital Transformation in China	journalArticle	2022	Li, Y.; Ma, Y.	Discrete Dynamics in Nature and Society	Currently, China is actively promoting t	English	Scopus			☑	☐				E1, E2, E3
518	736XlHA4	Digitalisation driven urban metabolism circularity: A review and analysis of circular city initiatives	journalArticle	2022	D'Amico, C.	Land Use Policy	Digitalisation of urban metabolism circ	English	Scopus			☑	☐				E1, E2, E3
519	BGPB5NR6	Ecohydrological disturbances associated with roads: Current knowledge, research needs, and management concerns with reference to the tropics	journalArticle	2018	Wempe, B.	Ecology	Roads are a pervasive form of disturbar	English	Scopus			☑	☐				E1, E2, E3
520	HNSA3Z8A	Futures of artificial intelligence through technology readiness levels	journalArticle	2021	Martínez-Pérez, J.	Telematics and Informatics	Artificial Intelligence (AI) offers the pot	English	Scopus			☑	☐				E1, E2, E3
521	7M3GY92C	Gasoline prices and their relationship to the number of fatal crashes on U.S. roads	journalArticle	2021	Safaei, N.;	Transportation Engineering	Economic factors are assumed to have	English	Scopus			☑	☐				E1, E2, E3
522	835VEHYU	The potential of road pricing schemes to reduce carbon emissions	journalArticle	2018	Cavallaro, L.	Transport Policy	Road pricing is a transport measure ma	English	Scopus			☑	☐				E1, E2, E3
523	MBjX3RU5	Adaptive governance of autonomous vehicles: Accelerating the adoption of disruptive technologies in Singapore	journalArticle	2021	Tan, S.Y.; Tan, S.Y.	Government Information Quarterly	Despite their promise, there have been	English	Scopus			☑	☐				E1, E2, E3
524	5ETLNEXU	The sustainability of artificial intelligence: an urbanistic viewpoint from the lens of smart and sustainable cities	journalArticle	2020	Yigitcanlar, T.	Sustainability (Switzerland)	The popularity and application of artific	English	Scopus			☑	☐				E1, E2, E3
525	IQD4JRLQ	Acceptance of 5 G technology: Mediation role of Trust and Concentration	journalArticle	2020	Akbari, M.;	Journal of Engineering and Technology Management - JET-M	Even though 4 G technology is still unde	English	Scopus			☑	☐				E1, E2, E3
526	34KBLY9D	Modelling single-vehicle, single-rider motorcycle crash injury severity: an ordinal logistic regression approach	journalArticle	2017	Pour-Rouh, A.	International Journal of Urban Sciences	Motorcycles represent an increasing pr	English	Scopus			☑	☐				E1, E2, E3
527	5CZKZAV6	Encouraging the Sustainable Adoption of Autonomous Vehicles for Public Transport in Belgium: Citizen Acceptance, Business Models, and Policy Aspects	journalArticle	2022	Camps-Ar, J.	Sustainability (Switzerland)	Several mobility-related issues persist i	English	Scopus			☑	☐				E1, E3
528	9KJZ6KFJ	A review and future directions on enhancing sustainability benefits across food-energy-water systems: The potential role of biochar-derived products	journalArticle	2019	Hersh, B.;	AIMS Environmental Science	The future of food-energy-water resourc	English	Scopus			☑	☐				E1, E2, E3
529	BEWBQCVU	Interpretive structural modelling: A comprehensive literature review on applications	journalArticle	2017	Attri, R.	International Journal of Six Sigma and Competitive Advantage	Interpretive structural modelling (ISM)	English	Scopus			☑	☐				E1, E2, E3
530	4HH7AHKU	Farming Reimagined: A case study of autonomous farm equipment and creating an innovation opportunity space for broadacre smart farming	journalArticle	2019	Reif-Eckstein, J.	NIAS - Wageningen Journal of Life Sciences	As agriculture meets digital technologi	English	Scopus			☑	☐				E1, E2, E3
531	XXXF728P	The ecosystem of drivers for electronic procurement adoption for construction project procurement: A systematic review and future research directions	journalArticle	2020	Yeu, S.K.;	Engineering, Construction and Architectural Management	Purpose: The purpose of this paper is to	English	Scopus			☑	☐				E1, E2, E3
532	BR2MCQ3E	Blockchain: The operating system of smart cities	journalArticle	2021	Bagioee, S.	Cities	Blockchain is an emerging technology &	English	Scopus			☑	☐				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
533	UPBKVEW4	Human moral reasoning types in autonomous vehicle moral dilemma: A cross-cultural comparison of Korea and Canada	JournalArticle	2020	Rhim, J.; Lee, S.	Computers in Human Behavior	The widespread of Autonomous Vehicle Behavior	English	Scopus			✓	☐				E1, E2, E3
534	FGCZY7NZ	Effects of COVID-19 on the Australian economy: Insights into the mobility and unemployment rates in education and tourism sectors	JournalArticle	2021	Munawar, S.	Sustainability (Switzerland)	Coronavirus Disease 2019 (COVID-19)	English	Scopus			✓	☐				E1, E2, E3
535	7BZV3QXF	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	JournalArticle	2022	Rathore, B.	International Journal of Logistics Management	Purpose: Recently, disruptive technologies	English	Scopus			✓	✓	✓	✓	☐	E1, E2, E3, E4, E5
536	SX9EJNKW	A TOE approach to establish a green supply chain adoption decision model in the semiconductor industry	JournalArticle	2016	Hwang, B.-	Sustainability (Switzerland)	The green supply chain is an innovation	English	Scopus			✓	☐				E1, E2, E3
537	2WR99Y7E	Ride or not to ride: Does the customer deviate toward ridesharing?	JournalArticle	2021	Shamim, A.	International Journal of Environmental Research and Public Health	Traditional taxi services have now been	English	Scopus			✓	☐				E1, E3
538	RPFI71KI	Investigating generational disparities in attitudes toward automated vehicles and other mobility options	JournalArticle	2020	Rahimi, A.; Part C: Emerging Technologies	Transportation Research	This paper presents a study in investigating	English	Scopus			✓	☐				E1, E3
539	82DTHP4M	Big data as a value generator in decision support systems: a literature review	JournalArticle	2021	Grander, C.	Revista de Gestao	Purpose: This paper aims to analyze how	English	Scopus			✓	☐				E1, E2, E3
540	6IWWGCKI	Sustainability assessment of public transport, part II -applying a multi-criteria assessment method to compare different bus technologies	JournalArticle	2021	Dahlgren, S.	Sustainability (Switzerland)	Many Swedish regional transport authorities	English	Scopus			✓	☐				E1, E3
541	5E3AH46F	Wearable Sensing Technology Applications in Construction Safety and Health	JournalArticle	2019	Ahn, C.R.; Engineering and Management	Journal of Construction	The advent of wearable sensing technologies	English	Scopus			✓	☐				E2, E3
542	R2Q75KGQ	A bibliometric analysis of objective and subjective risk	JournalArticle	2021	Nobanee, I.	Risks	In relation to "objective risk" or "subjective risk"	English	Scopus			✓	☐				E1, E2, E3
543	A9FSYMWF	Framing electric mobility for urban sustainability in a circular economy context: An overview of the literature	JournalArticle	2021	Leal Filho, W.	Sustainability (Switzerland)	The development of electro-mobility is	English	Scopus			✓	☐				E1, E3
544	9X66SQXQ	To err is human: Exploratory multilevel analysis of supply chain delivery delays	JournalArticle	2021	Awaysheh, G.	Journal of Operations Management	We examine the impact of human error on	English	Scopus			✓	☐				E3
545	YH24QKCH	Transport inequalities and the adoption of intelligent transportation systems in Africa: A research landscape	JournalArticle	2021	Ajayi, O.O.	Sustainability (Switzerland)	Intelligent Transportation Systems (ITS)	English	Scopus			✓	☐				E1
546	EE55VPCD	The application of simulation in lean production research: a critical review and future directions	JournalArticle	2021	Shou, W.; Engineering, Construction and Architectural Management	Engineering, Construction and Architectural Management	Purpose: Simulation has attracted increasing	English	Scopus			✓	☐				E1, E2, E3
547	IFRP66KH	A critical review of the impacts of COVID-19 on the global economy and ecosystems and opportunities for circular economy strategies	JournalArticle	2021	Ibn-Mohamed, A.	Resources, Conservation and Recycling	The World Health Organization declares	English	Scopus			✓	☐				E1, E2, E3
548	L98FTURK	Heart disease and stroke statistics - 2018 update: A report from the American Heart Association	JournalArticle	2018	Benjamin, E.J.	Circulation	Each year, the American Heart Association	English	Scopus			✓	☐				E1, E2, E3
549	HTD8EYTK	Organic Compost Supply Chain Analysis: A TCE Perspective	JournalArticle	2022	Chikwava, R.	Operations and Supply Chain Management	With the growing attention to Circular Economy	English	Scopus			✓	☐				E1, E2, E3
550	QY6HGHQW	How to design and manage WEEE systems: A multi-level analysis	JournalArticle	2015	Elia, V.; Gönül, M.	Environment and Waste Management	The growing production of waste electrical	English	Scopus			✓	☐				E1, E2, E3
551	RYMIDPCM	Smart and sustainable logistics of Port cities: A framework for comprehending enabling factors, domains and goals	JournalArticle	2021	D'Amico, C.	Sustainable Cities and Society	Digital technologies integrated into port	English	Scopus			✓	☐				E1, E2, E3
552	F8XW5L4S	Developing the WH2 framework for environmental sustainability in logistics service providers: A taxonomy of green initiatives	JournalArticle	2017	Centobelli, P.	Journal of Cleaner Production	This paper aims to provide a novel taxonomy	English	Scopus			✓	☐				E2, E3
553	SLHUE9W	Extending the TAM for Green IT: A normative perspective	JournalArticle	2018	Yoon, C.	Computers in Human Behavior	Green IT, a future-oriented and pro-environment	English	Scopus			✓	☐				E1, E2
554	QH58ZFE6	Scheduling Under Uncertainty for Industry 4.0 and 5.0	JournalArticle	2022	Bakon, K.	IEEE Access	This article provides a review about how	English	Scopus			✓	☐				E1, E2, E3
555	VJ9CGHH2	SDG-Oriented Supply Chains: Business Practices for Procurement and Distribution	JournalArticle	2022	Gammarat, S.	Sustainability (Switzerland)	This paper aims at analyzing sustainable	English	Scopus			✓	☐				E1, E2, E3
556	DYH139L2	A Deep Learning Approach towards Railway Safety Risk Assessment	JournalArticle	2020	Alawad, H.	IEEE Access	Railway stations are essential aspects of	English	Scopus			✓	☐				E1, E2, E3
557	S8YTWLTP	A tutorial survey on vehicle-to-vehicle communications	JournalArticle	2020	Zeadally, S.	Telecommunication Systems	The automotive industry is undergoing	English	Scopus			✓	☐				E1, E2, E3
558	J4DM7KBC	Road safety evaluation through automatic extraction of road horizontal alignments from Mobile LIDAR System and inductive reasoning based on a decision tree	JournalArticle	2018	Antonio M.	ISPRS Journal of Photogrammetry and Remote Sensing	Safe roads are a necessity for any society	English	Scopus			✓	☐				E1, E3
559	DIMX3UIZ	The moderating role of subjective norms and self-congruence in customer purchase intentions in the LCC market: Do not tell me I am cheap	JournalArticle	2021	Suk, M.; Kim, S.	Research in Transportation Business and Management	Low-cost carriers (LCCs) have matured	English	Scopus			✓	☐				E1, E2, E3
560	PC6DTN7G	Availability, Demand, Perceived Constraints and Disuse of ADAS Technologies in Spain: Findings from a National Study	JournalArticle	2019	Lijarcio, I.	IEEE Access	Advanced Driver Assistance Systems (ADAS)	English	Scopus			✓	☐				E1, E2, E3
561	BAMMYKJ5	Functional, symbolic and societal frames for automobility: Implications for sustainability transitions	JournalArticle	2018	Sovacool, J.	Transportation Research Part A: Policy and Practice	Automobility refers to the continued, structured	English	Scopus			✓	☐				E1, E2, E3
562	KFU48GKU	Climbing up the circularity ladder? – A mixed-methods analysis of circular economy in business practice	JournalArticle	2021	Stumpf, L.	Journal of Cleaner Production	The adoption of a circular economy is	English	Scopus			✓	☐				E1, E2, E3
563	5B19SFHB	Evaluating the factors that influence blockchain adoption in the freight logistics industry	JournalArticle	2020	Orji, I.I.; Kim, S.	Transportation Research Part E: Logistics and Transportation Review	This study proposes a technology-oriented	English	Scopus			✓	✓	☐			E5

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
564	WL26HK57	Evaluating critical barriers to implementation of WEEE management using DEMATEL approach	journalArticle	2018	Kumar, A.;	Resources, Conservation and Recycling	The generation of waste of electrical an	English	Scopus			☑	☐				E1, E2, E3
565	E2E4J3P	Exploring Trust in Self-Driving Vehicles Through Text Analysis	journalArticle	2020	Lee, J.D.; K	Human Factors	Objective: This study examined attitude	English	Scopus			☑	☐				E1
566	45KJQ4RF	Evaluation and improvement of the efficiency of logistics companies with data envelopment analysis model	journalArticle	2021	Lee, P.F.; L	Engineering Journal	The performance of global trade depen	English	Scopus			☑	☐				E3
567	P7RECYM9	Fuel cell electric vehicle as a power plant: Fully renewable integrated transport and energy system design and analysis for smart city areas	journalArticle	2017	Oldenbroe	International Journal of Hydrogen Energy	Reliable and affordable future zero emi	English	Scopus			☑	☐				E1, E3
568	BTE746PJ	The role of 5g technologies in a smart city: The case for intelligent transportation system	journalArticle	2021	Gohar, A.;	Sustainability (Switzerland)	A smart city is an urban area that collec	English	Scopus			☑	☐				E1
569	GE4U2Z86	Self-organisation, adaptability, organisational networks and inter-organisational coordination: empirical evidence from humanitarian organisations in Uganda	journalArticle	2020	Mutebi, H.;	Journal of Humanitarian Logistics and Supply Chain Management	Purpose: To coordinate humanitarian o	English	Scopus			☑	☐				E1, E2, E3
570	8QIM6843	Uncovering the dark and bright sides of implementing collaborative forecasting throughout sustainable supply chains: An exploratory approach	journalArticle	2020	Shoukhy	Technological Forecasting and Social Change	This research inquired into the constitu	English	Scopus			☑	☐				E1, E2, E3
571	BTPRN32I	Anticipating acceptance of emerging technologies using twitter: the case of self-driving cars	journalArticle	2018	Kohl, C.; K	Journal of Business Economics	In an early stage of developing emergin	English	Scopus			☑	☐				E1
572	YFC6KKHS	Robots in agriculture: prospects, impacts, ethics, and policy	journalArticle	2021	Sparrow, R	Precision Agriculture	Agriculture is both the site of developm	English	Scopus			☑	☐				E1, E2, E3
573	AMI4NUBZ	Drivers of advances in mechanized timber harvesting - a selective review of technological innovation	journalArticle	2017	Lindroos, C	Croatian Journal of Forest Engineering	Timber harvesting operations vary great	English	Scopus			☑	☐				E1, E2, E3
574	GUINPP2L	Overview and current status of remote sensing applications based on unmanned aerial vehicles (UAVs)	journalArticle	2015	Pajares, G.	Photogrammetric Engineering and Remote Sensing	Remotely Piloted Aircraft (RPA) is prese	English	Scopus			☑	☐				E1, E2, E3
575	AKJYGXMA	Design for reduced resource consumption during the use phase of products	journalArticle	2017	Shui, L.H.; I	CIRP Annals - Manufacturing Technology	Much work on sustainable design has fr	English	Scopus			☑	☐				E1, E2, E3
576	RK23WXYA	Evaluating sustainable drivers for social responsibility in the context of ready-made garments supply chain	journalArticle	2020	Kumar, A.;	Journal of Cleaner Production	The approach of incorporating social re	English	Scopus			☑	☐				E1, E2, E3
577	7LWX9ZCI	A study on challenges of passenger transport system in Bhutan	journalArticle	2022	Gurung, M.	International Journal of Multicriteria Decision Making	The entire transport system is faced wit	English	Scopus			☑	☐				E1, E3
578	MECA6ARE	Analysis of risk factors in sustainable supply chain management in an emerging economy of leather industry	journalArticle	2021	Moktadir, T	Journal of Cleaner Production	In the present competitive business env	English	Scopus			☑	☐				E1, E2, E3
579	PUK35UN4	The augmentation of Knowledge Management through Industry 4.0: case of Aviation sector of emerging economy	journalArticle	2022	Miao, M.; Z	Knowledge Management Research and Practice	This research examines critical elemen	English	Scopus			☑	☐				E1, E2, E3
580	8H469CIZ	Ergonomics Perspective in Agricultural Research: A User-Centred Approach Using CAD and Digital Human Modeling (DHM) Technologies	journalArticle	2016	Patel, T.; S	Journal of The Institution of Engineers (India): Series A	Computer-aided Design (CAD) and Digi	English	Scopus			☑	☐				E1, E2, E3
581	LSNM3TVG	Evaluating the effects of automated monitoring on driver non-compliance at active railway level crossings	journalArticle	2021	Larue, G.S	Accident Analysis and Prevention	Collisions between road users and train	English	Scopus			☑	☐				E1, E3
582	PA9RTCPP	The interaction between internet, sustainable development, and emergence of society 5.0	journalArticle	2020	Roblek, V.;	Data	(1) Background: The importance of this	English	Scopus			☑	☐				E1, E2, E3
583	Q8RJUMV	Balanced scorecard-based analysis about European energy investment policies: A hybrid hesitant fuzzy decision-making approach with Quality Function Deployment	journalArticle	2019	Dinçer, H.;	Expert Systems with Applications	This study aims at analyzing the perform	English	Scopus			☑	☐				E1, E2, E3
584	XPPCIRDY	Studies of the effectiveness of transport sector interventions in low- and middle-income countries: An evidence and gap map	journalArticle	2021	Malhotra, S	Campbell Systematic Reviews	Background: There are great disparities	English	Scopus			☑	☐				E1, E2
585	BBPF8EB8	How do data centers make energy efficiency investment decisions? Qualitative evidence from focus groups and interviews	journalArticle	2019	Klemick, H	Energy Efficiency	The data center industry is one of the t	English	Scopus			☑	☐				E1, E2, E3
586	BMJDIKJ5	Evaluating the impact of real-time coaching programs on drivers overtaking cyclists	journalArticle	2021	Rossi, R.; C	Transportation Research Part F: Traffic Psychology and Behaviour	Innovative motor insurance schemes ir	English	Scopus			☑	☐				E1
587	3AJ8IS4V	Multidimension Analysis of Autonomous Vehicles: The Future of Mobility	journalArticle	2021	Othman, K	Civil Engineering Journal (Iran)	The level of investment in AVs technolo	English	Scopus			☑	☐				E1, E3
588	785ZDPB5	A systematic literature review on the service supply chain: research agenda and future research directions	journalArticle	2020	Choudhury	Production Planning and Control	This paper provides a methodological c	English	Scopus			☑	☐				E1, E2, E3
589	6QFPP6G4	Requirements for Big Data adoption for Railway asset Management	journalArticle	2020	McMahon, J	IEEE Access	Nowadays, huge amounts of data have	English	Scopus			☑	☐				E1, E3
590	779G2ICA	Digital economics	journalArticle	2019	Goldfarb, J	Journal of Economic Literature	Digital technology is the representation	English	Scopus			☑	☐				E1, E2, E3
591	APA8N6RU	How can smart mobility innovations alleviate transportation disadvantage? Assembling a conceptual framework through a systematic review	journalArticle	2020	Butler, L.;	Applied Sciences (Switzerland)	Transportation disadvantage is about t	English	Scopus			☑	☐				E1, E2
592	YQX8SP7S	The Role of Perceived Value and Green Consumption Attitude on Purchase Intention of Eco-Bag: A Study on Young Consumers	journalArticle	2022	Hassan, H.	Jurnal Pengurusan	In recent decades, consumers have be	English	Scopus			☑	☐				E1, E2, E3
593	QFLB4AVL	Heart disease and stroke statistics—2020 update a report from the American Heart Association	journalArticle	2020	Virani, S.S.	Circulation	BACKGROUND: The American Heart As	English	Scopus			☑	☐				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
594	NR7VVF9P	Factors Influencing Users' Willingness to Adopt Connected and Autonomous Vehicles: Net and Configurational Effects Analysis Using PLS-SEM and FsQCA	journalArticle	2022	Li, G.; Lian	Journal of Advanced Transportation	To accelerate the widespread adoption	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
595	Y96VTTWW	A survey on Industrial Information Integration 2016–2019	journalArticle	2020	Chen, Y.	Journal of Industrial Integration and Management	Industrial information integration engin	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
596	DZMTARZ2	Transportation, the pathogen vector to rule them all: Evidence from the recent coronavirus pandemic	journalArticle	2021	Stavroulak	Journal of Transport and Health	Introduction: It is common knowledge t	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
597	SHKRBDZX	A Survey on Mobile Augmented Reality with 5G Mobile Edge Computing: Architectures, Applications, and Technical Aspects	journalArticle	2021	Siriwardha	IEEE Communications Surveys and Tutorials	The Augmented Reality (AR) technology	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
598	DUJ3N6KZ	Internet of Things (IoT): Opportunities, issues and challenges towards a smart and sustainable future	journalArticle	2020	Nižetić, S.	Journal of Cleaner Production	The rapid development and implement	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
599	87HNDEG2	Quality function deployment: A literature review	journalArticle	2002	Chan, L.-K	European Journal of Operational Research	This paper presents a literature review	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
600	NVQP4GCT	Operations Research (OR) in Service Industries: A Comprehensive Review	journalArticle	2013	Xing, Y.; Li	Systems Research and Behavioral Science	The share of gross domestic product in	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
601	VU8FA8G3	International operations management research	journalArticle	2000	Prasad, S.	Journal of Operations Management	This paper profiles the literature on inte	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
602	I3WB8GG4	An in-depth literature review of the waste electrical and electronic equipment context: Trends and evolution	journalArticle	2015	Pérez-Bell	Waste Management and Research	The consumption of electrical and elec	English	Scopus			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
603	2XKECNCH	Canadian Population-Based Survey of Commercial Drivers during the COVID-19 Pandemic: Health- and Safety-Related Factors Affecting Collision Risk	journalArticle	2025	Johnson, J	Journal of Transport & Health	BackgroundCommercial motor vehicle: en-US				trid.trb.org	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
604	QQQBKW9J	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	journalArticle	2022	Crizzle, Ali	Journal of Transport & Health	IntroductionLong-haul truck drivers (LH	en			DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
605	VA8Y573T	Patterns of use, knowledge, and perceived effects of sedating medication on driving: A questionnaire survey of Japanese drivers who use sedating medication	journalArticle	2018	Okamura, T	Transportation Research Part F: Traffic Psychology and Behaviour	ObjectiveThis study was designed to inv	en			DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
606	I6NE3BTU	Mixed-method analysis of truck driver health knowledge using an online forum	journalArticle	2018	Versteeg, J	Safety Science	Truck driving in North America is a high	en			DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
607	NHHGIDZD	The Impact of Product Failure on Innovation Diffusion: The Example of the Cargo Bike as Alternative Vehicle for Urban Transport	journalArticle	2016	Heinrich, L	Transportation Research Procedia	Transport systems are marked by a stro	en			DOI.org (Crossref)	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
608	4F77LS86	Competition, Computers, and Coaching: Three C's for More Effective Health and Safety Promotion with Truck Drivers	conferencePaper	2009	Olson, Ryan; Anger, W. Kent; Elliot, Dian	Truck drivers experience unacceptable	en-US				trid.trb.org	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E6
609	4XSAFYMV	The Obsolescence of Electronic Components: A Threat to the Availability of Rail Vehicles?	conferencePaper	2005	Blum, Detlef		This paper describes how microelectro	en-US			trid.trb.org	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
610	UTQR3YMK	SAFETY AND PRODUCTIVITY THROUGH FLEXIBILITY: DRIVING HOURS REVIEW	conferencePaper	2001	Mabbott, N.; Newman, S.; Moore, B.		A review of the regulatory approach to t	en-US			trid.trb.org	<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
611	XARBQYCI	Innovative health care mobility services in the US	journalArticle	2020	Wolfe, MK; BMC PUBLIC HEALTH	Background	Transportation barriers pre	English	WOS:000542267400002			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
612	W7F8IP7U	A Survey-Based Investigation of Human Factors Associated With Transport Related Injuries in Horses	journalArticle	2018	Padalino, F	FRONTIERS IN VETERINARY SCIENCE	Injuries resulting from road transport a	English	WOS:000452357800001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
613	SEN7MPUT	The Perceived Value of Reducing Sedentary Behavior in the Truck Driving Population	journalArticle	2019	Mullane, S	FRONTIERS IN PUBLIC HEALTH	Purpose: To conduct rapid qualitative a	English	WOS:000479248600001			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			E3, E4
614	Q2Z9XBLN	Stakeholders' Perspectives on the Challenges of Emergency Obstetric Referrals and the Feasibility and Acceptability of an m-Health Intervention in Northern Iraq	journalArticle	2021	Relyea, B.	FRONTIERS IN GLOBAL WOMENS HEALTH	The health system in northern Iraq has	English	WOS:001023263400001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
615	2GW4ZP6V	Louisiana trucking companies' implementation of workplace health promotion programs: Explanatory sequential mixed method case study	journalArticle	2023	Houghtalir	WORK-A JOURNAL OF PREVENTION ASSESSMENT & REHABILITATION	BACKGROUND: Trucking companies m	English	WOS:001091663100024			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
616	D8P2NTSZ	A Coordination Mechanism for the Freight Routing Problem with Discrete Time Intervals	conferencePaper	2019	Papadopol	University of Southern California	Transportation networks suffer from tra	English	WOS:000490488301121			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E3
617	2EKK5H4G	A Smart Capsule Equipped with Artificial Intelligence for Autonomous Delivery of Medical Material through Drones	journalArticle	2021	Amicone, I	APPLIED SCIENCES-BASEL	Featured Application A Smart Capsule	English	WOS:000694169600001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
618	DAIXVPV7	Key factors associated with Australian parents' willingness to use an automated vehicle to transport their unaccompanied children	journalArticle	2021	Koppel, S.	TRANSPORTATION RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR	This study aimed to identify the key fact	English	WOS:000641904800011			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
619	IHRWH3LR	Assessing the impact of risk-taking behavior on road crash involvement among University students residing in two Mediterranean countries	journalArticle	2011	Antonopou	SAFETY SCIENCE	Surveillance systems are indispensable	English	WOS:000292076400019			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
620	DD5QLLKE	Drivers with Low Vision: Characteristics and Transportation Issues	journalArticle	2018	Crudden, J	JOURNAL OF VISUAL IMPAIRMENT & BLINDNESS	Introduction: This study provides descr	English	WOS:000429491700001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
621	I4HK7REB	The Social and Policy Predictors of Driving Mobility Among Older Adults	journalArticle	2011	Kulikov, E	JOURNAL OF AGING & SOCIAL POLICY	This research was designed to identify	English	WOS:000286820500001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
622	DFZD87E6	Primary Perspectives in Meme Utilization as a Digital Driver for Medical Community Engagement and Education Mobilization: Pre-Post Study	journalArticle	2023	Wang, DR; JMIR HUMAN FACTORS	Background: Memes have gone "viral,"	English	WOS:001015221900025				<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
623	2C4RLW8R	Digital Innovations in MSMEs during Economic Disruptions: Experiences and Challenges of Young Entrepreneurs	journalArticle	2022	Cueto, LI; I	ADMINISTRATIVE SCIENCES	The spike in COVID-19 cases all over th	English	WOS:000775556000001			<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3

No.	Study ID	Title	Item Type	Year of Publication	Author	Publication Title	Abstract Note	Language	Database Source			Pre-Screening	Screening Phases - based on Eligibility				Reason for Exclusion
									Archive	Archive Location	Library Catalog		(1) Title Screening	(2) Abstract Screening	(3a) Retrieved Articles	(3b) Full-Text Screening	
624	WNUH7LM4	Do environmental attitudes predict perceived active school travel barriers, facilitators, and motivations among youth? Evidence from a national Canadian survey	JournalArticle	2024	Buttazzoni, M	JOURNAL OF TRANSPORT & HEALTH	Introduction: Active school travel (AST; English	English		WOS:001336522900001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
625	AAH4GBVQ	Factors associated with alcohol abuse and dependence among public transport workers in the metropolitan region of Belo Horizonte	JournalArticle	2016	Cunha, NC	INTERNATIONAL ARCHIVES OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH	Alcohol use may be associated with oc English	English		WOS:000379192600001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
626	G4RWVDSJ	CONSTRAINING THE UBER-POWERFUL DIGITAL PLATFORMS: A PROPOSAL FOR A NEW FORM OF REGULATION OF ON-DEMAND ROAD TRANSPORT WORK	JournalArticle	2022	Rawling, M	UNIVERSITY OF NEW SOUTH WALES LAW JOURNAL	Late in 2020 in California, two giant ridi English	English		WOS:001130768900001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
627	3LU9ICKH	"From good hearted community members we get volunteers" - an exploratory study of palliative care volunteers across Africa	JournalArticle	2020	Loth, CC; ↑	BMC PALLIATIVE CARE	Background Volunteers play a significa English	English		WOS:000528681100001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
628	UCEDH2TE	Primary Prevention of Weight Gain Among New Bus Operators Results of the "Success & Health Impacts For Transit operators during Onboarding" (SHIFT Onboard) Pilot Study	JournalArticle	2023	Olson, R; F	JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE	ObjectiveThis study aimed to test the fe English	English		WOS:000925880100019		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
629	GU32FEYC	COVID-19 in the Workplace in Indonesia	JournalArticle	2022	Lestari, F; ↑	SUSTAINABILITY	Coronavirus Disease 2019 (COVID-19) English	English		WOS:000771675500001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
630	B2U6RZX7	The potential effects of autonomous vehicles on alcohol consumption and drink-driving behaviours	JournalArticle	2020	Booth, L; ↑	DRUG AND ALCOHOL REVIEW	Introduction By removing the need for a English	English		WOS:000547557100017		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
631	VRD5UY4V	A systematic review of epidemiological studies investigating risk factors for work-related road traffic crashes and injuries	JournalArticle	2008	Robb, G; S	INJURY PREVENTION	Objective: To critically appraise the put English	English		WOS:000252868300012		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
632	N974IRFG	Concordance of Motor Vehicle Crash, Emergency Department, and Inpatient Hospitalization Data Sets in the Identification of Drugs in Injured Drivers	JournalArticle	2013	Bunn, T; Si	TRAFFIC INJURY PREVENTION	Objective: Prescription drug overdoses English	English		WOS:000336085100003		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
633	6YPDIEQY	Implementing a Sleep Health Education and Sleep Disorders Screening Program in Fire Departments A Comparison of Methodology	JournalArticle	2016	Barger, LK; ↑	JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE	Objective: The objective of this study is English	English		WOS:000377812000017		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
634	UMH77GEQ	The impact of restricted driver's licenses on crash risk for older drivers: A systematic review	JournalArticle	2017	Asbridge, ↑	RESEARCH PART A-POLICY AND PRACTICE TRANSPORTATION	Background: As the Canadian populati English	English		WOS:000395612300010		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
635	3J6GQIE6	A brief and unsupervised online intervention improves performance on a validated test of hazard perception skill used for driver licensing	JournalArticle	2021	Horswill, ↑	RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR	Drivers who have higher levels of hazan English	English		WOS:000641904800010		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1
636	AE3YU6TN	Sustainable crowdshipping: Navigating technological fit and security risks	JournalArticle	2025	Chua, R; V	TECHNOLOGY IN SOCIETY	'Crowdshipping' (CS), a burgeoning tren English	English		WOS:001417320500001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
637	WGGWNEQ2	Great to use as a conversation starter: End user views on the acceptability and feasibility of a prototype decision aid for older drivers	JournalArticle	2025	Veerhuis, ↑	JOURNAL OF SAFETY RESEARCH	Background: Conversations about driv English	English		WOS:001365097200001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
638	D63EUWZS	'It is empowering and gives people dignity in a very difficult process': A multistage, multimethod qualitative study to understand the views of end users in the cultural adaptation of a dementia and driving decision aid	JournalArticle	2024	Veerhuis, ↑	HEALTH EXPECTATIONS	Background: Decisions about driving fo English	English		WOS:001186252100001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
639	YWILNEVI	Exploring perceptions about chronic wasting disease risks among wildlife and agriculture professionals and stakeholders	JournalArticle	2016	Schuler, KI	WILDLIFE SOCIETY BULLETIN	Chronic wasting disease (CWD) is a fat English	English		WOS:000373125600007		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
640	ND95S8JP	Variability in Primary Care Telehealth Delivery Methods Across Chronic Conditions	JournalArticle	2025	Ferguson, ↑	JAMA NETWORK OPEN	Importance Sociodemographic charac English	English		WOS:001455401100004		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2
641	74DN8S83	Aging, work and technology: application driver as a laboral possibility for the 50+ population	JournalArticle	2021	de Barros, ↑	CADERNOS BRASILEIROS DE TERAPIA OCUPACIONAL - BRAZILIAN JOURNAL OF OCCUPATIONAL THERAPY	Introduction: The demographic transiti Portuguese	Portuguese		WOS:000640229200002		<input type="checkbox"/>					E0
642	B4DZ6P3Y	The effect of psychosocial factors on perceptions of driver education using the goals for driver education framework	JournalArticle	2019	Bates, L; H	TRANSPORTATION RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR	Professional driver education and train English	English		WOS:000496865700012		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3
643	B5NLE49B	The effectiveness and impact of driver licensing programs on licensing and employment rates for Aboriginal and Torres Strait Islander peoples of Australia: A systematic review	JournalArticle	2021	Porykali, B	JOURNAL OF TRANSPORT & HEALTH	Introduction: Access to a valid driver lic English	English		WOS:000655678800003		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
644	I4Z9UIJN	E-Cigarette Use in Young Adult Never Cigarette Smokers with Disabilities: Results from the Behavioral Risk Factor Surveillance System Survey	JournalArticle	2021	Atuegwu, ↑	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	Young adult never cigarette smokers wi English	English		WOS:000654843200001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
645	D5VQNU4C	Assessment of older drivers in New Zealand: The current system, research and recommendations	JournalArticle	2011	Hoggarth, ↑	AUSTRALASIAN JOURNAL ON AGEING	The purpose of this article is to clarify tl English	English		WOS:000295007600009		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
646	ETVVL5FW	Provider Consensus on Candidate Protective and Risk Factors for Adverse Psychosocial Outcomes Following Discharge From a PICU: A Modified Delphi Study*	JournalArticle	2020	Williams, C	PEDIATRIC CRITICAL CARE MEDICINE	Objectives: Pediatric palliative care prc English	English		WOS:000509523000001		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E2, E3
647	55MUCNQJ	What aspects of demographic, personality, attitudes and perceptions of law enforcement influence self-reported likelihood of drink driving?	JournalArticle	2015	MacKenzie, ↑	JOURNAL OF RISK RESEARCH	The aim of the current study was to exa English	English		WOS:000362881500006		<input checked="" type="checkbox"/>	<input type="checkbox"/>				E1, E3

**APPENDIX III – DATA EXTRACTION TABLES – FULL-TEXT
REVIEW DETAILS**

No.	Title		Study Design	Country	Population	Sample Size
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	Reviews	Descriptive review of existing literature; not a primary empirical study.	Italy, USA, Brazil, Australia	Professional truck drivers (TDs), both male and female, across various countries (Italy, USA, Brazil, Australia).	Review covers a total sample size of 87,261 male and 3,887 female drivers across eight studies.
2	The effect of weight loss interventions in truck drivers: Systematic review	Reviews	Systematic Review (includes RCTs, quasi-experimental, and pre-post intervention studies)	USA, Finland, and Australia	Long-distance truck drivers (>500 km/day); primarily male, aged 18+, from the USA, Finland, and Australia	Total: 1,214 participants across 7 studies
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	Quantitative	Prospective, non-randomized controlled trial conducted under naturalistic conditions.	Malaysia	59 male heavy vehicle drivers in Malaysia	59 participants (25 Device, 34 Control)
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	Quantitative	Cluster-randomized controlled trial involving 22 trucking terminals from 5 companies in the U.S	USA	U.S. commercial truck drivers, mostly male, aged ~48 years	452 participants (229 intervention, 223 control)
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Quantitative	Process evaluation of a previously conducted cluster-randomized controlled trial	USA	U.S. truck drivers (predominantly male, average age ~49) who were overweight or obese (BMI ≥27), employed at 5 trucking companies	134 participants (intervention group completers from the SHIFT trial)
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	Reviews	Systematic Review of 9 articles covering 8 unique health promotion interventions for truck drivers	USA, Sweden, Netherlands, and Australia	Truck drivers (mostly male), mean age ~38–48 years, from the USA, Sweden, Netherlands, and Australia	Across studies, sample sizes ranged from 30 to 542 participants
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	Reviews	Systematic review and meta-analysis of 19 intervention studies	USA, Europe, Australia, Taiwan	Truck drivers (>50% truck drivers required in included studies); mainly male, working in the U.S., Europe, Australia, Taiwan	2,137 participants across 19 included studies
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Qualitative	Phenomenological qualitative study using four semi-structured focus groups	UK	34 male professional truck drivers (UK-based, average age 42.2), recruited from one logistics company	34 participants
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Quantitative	Cross-sectional quantitative study	USA	106 long-haul truck drivers (mostly White married males), recruited at trade shows and via companies in the U.S.	106 participants
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	Quantitative	Cross-sectional survey study using structural equation modeling (SEM) and moderation analysis	Taiwan	Logistics service provider (LSP) staff in Taiwan – client-facing employees in air/sea freight firms	355 valid respondents from a total of 500 distributed questionnaires
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	Quantitative	Cross-sectional quantitative survey with open-text analysis (mixed methods in practice, but predominantly quantitative in structure)	Netherlands	Dutch professional truck drivers (n = 3,708); national and international drivers	3,708 professional truck drivers
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	Reviews	Multi-method study: Systematic Literature Review (SLR), secondary data analysis, and expert validation	Not specified	Not human participants; study focuses on capabilities in road freight transportation systems (targeting companies, infrastructure, technologies)	Not applicable – no participant sample; the study reviews 66 articles and conducts expert validation with 6 logistics professionals
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	Quantitative	Quantitative observational study using real-world app usage and behavioral data from drivers over 11,805 trips; observational study using app logs and Poisson regression	UK and USA	109 professional drivers from a large engineering firm, operating fleet vehicles in the UK and US	11,805 trips logged from 109 drivers
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	Mixed Methods	Multi-method exploratory study using Fuzzy Delphi Method (FDM), Interpretive Structural Modelling (ISM), and MICMAC analysis; combined structured qualitative expert judgement (Delphi) with quantitative modeling and analysis (ISM/MICMAC)	India	15 logistics experts in India with 9–17 years of experience in warehousing, transport, inventory, and customer service management	15 experts (FDM/ISM input sample)
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Mixed Methods	paired quantitative survey and qualitative interviews	Canada	Canadian long-haul truck drivers (LHTD); primarily male (95%), mean age 53 years	59 LHTD completed both the survey and interviews
16	Mixed-method analysis of truck driver health knowledge using an online forum	Mixed Methods	Mixed-method content analysis using qualitative thematic coding and quantitative post metrics (frequency, engagement ratios); combines qualitative coding of forum content with quantitative analysis of post engagement	Canada	Truck drivers participating in an open-access online health forum (The Truckers Report Health Forum)	1,760 forum posts analyzed; 150 posts selected randomly for systems-level coding

No.	Title	Intervention Type	Comparison Group	Study Duration	Setting
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	No direct intervention; the review discusses proposed strategies like educational programs, telehealth monitoring, etc., as potential interventions.	No formal comparison group; studies reviewed included drivers with and without sleep/mental health disorders.	Not a longitudinal study; timeline details relate to individual studies reviewed (most are cross-sectional).	Various: Long-haul trucking, workplace, highways, road environments, some medical exam settings.
2	The effect of weight loss interventions in truck drivers: Systematic review	Multicomponent lifestyle interventions: diet, physical activity, motivational interviewing (MI), counselling, education, team competitions	Present in 3 studies (2 RCTs and 1 quasi-experimental design); remaining were single group studies	Ranged from 1 month to 12 months; some had follow-ups up to 30 months	Workplaces (trucking companies), health clinics, remote (online, phone-based interventions)
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	Wrist-worn HR-based drowsiness monitoring device	Yes (Device vs. Control group)	4 weeks (Phase 1) + 12 weeks (Phase 2) = 16 weeks total	Real-world driving (naturalistic), shift-based work environments
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	SHIFT program – multicomponent intervention: weight-loss competition, behavioral self-monitoring, computer-based training, and motivational interviewing	Yes – Usual practice control group at matched terminals	6 months	Trucking company terminals across multiple states; real-world work environments
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Multicomponent mobile-delivered program: web-based training, weight loss competition, self-monitoring, and motivational interviewing	No direct comparison in this article (focus was only on intervention completers); the original SHIFT trial had a control group.	6 months (intervention period)	Mobile/remote delivery; participants accessed materials via personal devices or terminals
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	Multicomponent health promotion interventions, including counseling, education, physical activity, nutrition, and sometimes work practice changes	4 of 8 interventions included reference/comparison groups	Varied: 4 months to 2 years	Trucking companies, highways, and transportation field settings
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	Interventions targeting physical activity, sedentary behavior, sleep, diet, weight loss, drug/alcohol use, and/or smoking	Present in some studies (e.g., RCTs and quasi-RCTs); 7 studies had no control group	Varied across studies – from 8 weeks to 12+ months, depending on the intervention	Worksites/truck depots, remote (digital/phone-based), mixed work/home environments
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Not an intervention study – explores perceptions of wearable health technology and health promotion	None – not applicable in qualitative design	Conducted over a period of several weeks (focus groups in Nov-Dec 2014); no long-term follow-up	Focus groups held at a logistics company in the UK
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Not an intervention study – examined Internet usage patterns among truck drivers	None	One-time survey – snapshot cross-sectional design	Trucking trade shows and company sites across the U.S.
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	Not an intervention – assessed factors influencing adoption of virtual communities (VCs) in the logistics industry	None – no intervention or control condition	Data collected in July–August 2021; one-time cross-sectional survey	Workplaces in the logistics industry; sample drawn from Directory of Members of Air and Sea Freight Forwarder Association, Taiwan
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	No intervention – the study assessed experiences, work pressure, safety, technology perceptions, etc.	No formal comparison group; analysis includes comparison by subgroup (e.g., national vs. international drivers)	Survey administered in September–October 2021	Online questionnaire distributed via trucker-focused media platforms (Transporteffect BV, Chauffeursnieuws)
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	No human intervention; identifies and classifies technology-enabled capabilities (e.g., smart contracts, fleet management, IoT-based tracking)	Not applicable	Not specified in duration terms; validation conducted over May to October 2020	Context is global road freight transportation systems; not field-based
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	Not an interventional trial; observed behavior based on use of a fleet-management mobile app	Indirect – comparison between those using real-time notifications and those not using them in early deployment phase	5-month period in early 2016	Real-world commercial driving conditions (UK and US)
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	Not an intervention – aimed at identifying barriers to adopting disruptive technologies (DTs) in logistics	None – comparative analysis is internal via ranking of barriers	Not specified in exact duration; methods suggest short-term expert engagement	Logistics sector in India (warehouses, transport, inventory, procurement – expert knowledge based)
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Not an intervention study; assessed impact and perceptions of using electronic logging devices (ELDs)	Yes – ELD users vs. non-users	Conducted from August to November (year not explicitly repeated in body, implied 2021)	7 truck stops across Alberta and Saskatchewan, Canada
16	Mixed-method analysis of truck driver health knowledge using an online forum	No intervention; study explores health knowledge and perceptions via online forum analysis	None – analysis is descriptive, though themes are compared across categories	Posts from 2006 to 2016 analyzed retrospectively	Online forum – The Truckers Report Health Forum

No.	Title	Data Collection Methods	Digital Platform/Tool Used	Theoretical Framework	Peer-Reviewed
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	Literature review methodology; original studies involved self-administered questionnaires, medical exams, interviews, actigraphy, and database reviews.	Tele-health support and online educational programs were recommended but not used directly in the studies reviewed.	Not based on a formal behavioral theory; highlights relationships between sleep disorders, mental health, and occupational stress.	Yes - published in the International Journal of Environmental Research and Public Health
2	The effect of weight loss interventions in truck drivers: Systematic review	Extracted from included studies: weight, BMI, waist/fat measurements; self-reported logs, follow-up assessments; risk of bias tools used for review	Online training modules, phone-based coaching, behavioral self-monitoring tools (e.g., logs, step counters)	Motivational Interviewing (MI) was the primary behavior change approach; some mention of behavioral counseling, but limited theory details in most included studies	Yes - Published in PLOS ONE
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	IVMS (in-vehicle monitoring system), KSS (Karolinska Sleepiness Scale), sleep diaries, HR data	Holux wrist-worn HR device	Based on physiological markers (HR variability); not explicitly grounded in a behavioral theory	Yes - published in Sleep Health
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	Objective body measurements (BMI, weight, fat %), self-reported surveys (diet, sleep, physical activity), biometric screenings, and process tracking	Mobile-friendly website for logging, cTRAIN software for training, motivational interviewing via phone	Total Worker Health approach; not rooted in a named behavioral theory but emphasizes integrated physical and occupational health	Yes - Published in American Journal of Public Health (AJPH)
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Self-monitoring logs, motivational interviewing records, training module completions, and pre/post measurements (weight, activity, diet)	SHIFT web platform, cTRAIN learning software, and mobile coaching calls	Based on Ecological Perspective, Social Cognitive Theory of Self-Regulation, Operant Theory, and aligned with the Total Worker Health (TWH) approach	Yes - Published in Safety and Health at Work
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	Questionnaires, biometric assessments, self-report surveys, exercise testing, and interviews	Some used on-board computers (OBCs) and web-based tools as part of interventions	Only 2 studies used theory explicitly: Transtheoretical Model, Social Cognitive Theory, Social Contextual Model	Yes - Published in Health Education Journal
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	Extracted from reviewed studies: objective tools (e.g., accelerometry, actigraphy, biometrics), self-report surveys, and validated questionnaires	Included interventions using Fitbits, online web apps, mobile devices, and self-monitoring platforms	Only some studies used theory; e.g., Social Cognitive Theory, Transtheoretical Model, Health Belief Model, Self-efficacy theory	Yes - Published in BMC Public Health, a peer-reviewed journal
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Audio-recorded focus groups, transcribed verbatim; thematic content analysis	Discussions centered on wearable health tech (e.g., Fitbits, apps), though no specific brand/device was used	Psychological phenomenology; discussion guided by themes from prior research but not rooted in formal behavioral theory	Yes - Published in BMC Public Health
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Paper and pencil surveys with questions on demographics, health, work, and Internet usage; analyzed using SAS software	Laptops, smartphones, tablets used by participants; study explores potential of mobile health (mHealth) tools	No formal theoretical framework applied	Yes - Published in Workplace Health & Safety
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	Self-administered structured questionnaires using Likert scales; validated via pilot testing, EFA, CFA, SEM	Study focused on adoption of virtual communities (VCs) - not specific tools, but includes apps, platforms, and internal systems	Technology Acceptance Model (TAM) with emotional connection as a moderator	Yes - Published in International Journal of Logistics Research and Applications
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	Structured questionnaire (51 multiple-choice questions, 15 open comments); text analyzed using GPT-4; statistical methods included factor analysis	Discussion of advanced driver assistance systems (ADAS): ACC, LKA/LDW, AEB, cameras, on-board computers	Not based on a named behavioral theory; interpretations touch on signal detection theory and Illich's 'Tools for Conviviality'	Yes - Published in Frontiers in Public Health
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	Systematic literature review, secondary data (gov/industry reports), and expert interviews (via videoconference)	Wide range of technologies discussed: IoT, blockchain, smart GPS, ITS, RFID, cloud platforms, mobile apps, augmented reality, etc.	None explicitly applied; capability readiness level (CRL) model adapted from TRL (Technology Readiness Level) is used conceptually	Yes - Published in Expert Systems With Applications, a peer-reviewed journal
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	App usage logs, driving incident data (14 risky behaviors), analyzed with mixed-effects Poisson regression	Fleet-management mobile app with real-time notifications and pre-drive feedback features	Based on feedback theory and Experiential Learning Theory (Kolb); pre-driving feedback and real-time feedback studied as behavioral modifiers	Yes - Published in International Journal of Information Management
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	Structured expert surveys via FDM and ISM instruments, analyzed using fuzzy logic, hierarchical modeling, and MICMAC matrix	Study analyzes barriers to 7 DTs: IoT, blockchain, big data, drones, AI, autonomous vehicles (AVs), 3D printing	Theory of Disruptive Innovation and Ecosystems Framework (Adner & Kapoor, 2016)	Yes - Published in The International Journal of Logistics Management
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Structured survey (adapted from US and Canadian tools), semi-structured interviews, statistical analysis, and thematic coding using Nvivo	Electronic Logging Devices (ELDs) - specific models not named	Phenomenological approach used for qualitative analysis; no formal behavioral theory	Yes - Published in Journal of Transport & Health
16	Mixed-method analysis of truck driver health knowledge using an online forum	Forum scraping and qualitative coding by researchers; quantitative metrics include posts per code, views, replies, engagement ratios	Study platform was an online forum, but specific health technologies were discussed (e.g., DOT regulations, fitness advice, diet tools)	Applied Rasmussen's Risk Management Framework to assess systems-level awareness	Yes - Published in Safety Science

No.	Title	Funding Source	Limitations Noted
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	No external funding received.	Small number of studies available, heterogeneity across study methods, countries, and regulations; primarily descriptive, not systematic review or meta-analysis.
2	The effect of weight loss interventions in truck drivers: Systematic review	National Health and Medical Research Council (NHMRC, Australia); Transport Workers Union; Lintox; Centre for Work Health and Safety	Small sample sizes, risk of bias across studies, heterogeneity in design and outcome reporting, limited long-term evidence
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	Shell Road Safety; authors from Shell contributed to design and manuscript, but not data collection/analysis	Low device sensitivity, self-report bias, small number completing both phases, potential Hawthorne effect
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	National Heart, Lung, and Blood Institute (NHLBI) – NIH (Grant R01HL1054950)	Attrition, lack of in-depth dietary tracking, no long-term follow-up, moderate participation rate, difficult to isolate components of the intervention
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	National Heart, Lung, and Blood Institute (Grant R01HL1054950); sponsor had no involvement in manuscript preparation	Non-random sample (only those who completed intervention), no comparison group in current analysis, limited generalizability beyond study completers
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	Not stated in the article.	Small number of studies, limited sample sizes, weak methodological quality, short follow-up, limited use of theory, no direct chronic disease outcomes
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	Not directly specified in the paper.	Small number of studies with robust methodology, moderate-to-high heterogeneity, weak long-term follow-up, low certainty in some outcomes
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	EIT Digital, NIHR CLAHRC for North West London	Single-organization sample, limited generalizability, volunteer bias, low prior exposure to wearables among participants
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	NIOSH (National Institute for Occupational Safety and Health) – Grant R21OH009965	Cross-sectional design, potential recall bias, limited generalizability (recruited at trade shows), no objective usage tracking
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	UK Economic and Social Research Council (ESRC) and Taiwan MOST (UK-Taiwan Network Grant 2021)	Lacked client-side perceptions, limited generalizability beyond Taiwan, results might vary with staff characteristics; longitudinal designs suggested
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	Netherlands Organization for Scientific Research (NWO) (Transitions and Behavior grant)	Self-selection bias, some nonresponse in comment boxes, technology sentiment possibly affected by misunderstanding of systems
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	CAPES – a Brazilian national research funding foundation	Limited language scope (English only), no in-depth discussion of each capability, only desktop validation, lack of empirical deployment studies
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	Not mentioned	Single organization, non-random sample for real time feedback group, possible underreporting of trips, lack of demographic variables
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	Not explicitly stated	Small sample of experts, exploratory design, regional scope, limited to 10 barriers
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Alberta Occupational Health and Safety Futures Grant Programme	Small sample, convenience sampling, lack of longitudinal crash/fatigue data, no identification of specific ELD devices
16	Mixed-method analysis of truck driver health knowledge using an online forum	No external funding – explicitly stated in acknowledgments	Lack of moderation, no demographic data, possible misclassification of posts, small sample for systems analysis (150 posts), and possible misinterpretation of forum tone

No.	Title		Ethical Approval	For Quality Assessment	Quality Assessment		
					Appraisal Tool	Quality Score	Quality Rating
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	No	Not mentioned in the paper – likely not required due to being a review	NO	NA		
2	The effect of weight loss interventions in truck drivers: Systematic review	No	Not mentioned in the paper – likely not required due to being a review	NO	NA		
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	Yes	Approved by institutional ethics committee	NO	NA		
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	Yes	Approved by the institutional review board at Oregon Health & Science University (OHSU)	NO	NA		
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Yes	Approved by Oregon Health & Science University Institutional Review Board; all participants gave informed consent	YES	CASP	10/13	High
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	No	Not mentioned in the paper – likely not required due to being a review	NO	NA		
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	No	Not mentioned in the paper – likely not required due to being a review	NO	NA		
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Yes	Approved by Imperial College Research Ethics Committee (Ref: 14/C2246); informed consent obtained	YES	CASP	9/10	High
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Yes	Approved by University of Alabama at Birmingham Institutional Review Board; informed consent obtained	YES	CASP	7/11	Moderate
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	No	Not mentioned in the paper.	NO	NA		
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	Yes	Approved by the TU Delft Human Research Ethics Committee (approval number 3013)	NO	NA		
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	No	No mention of ethical approval – appropriate as it involved no human subjects or sensitive data	NO	NA		
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	No	No explicit mention.	YES	CASP	10/12	High
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	No	No explicit mention.	NO	NA		
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	Yes	Approved by the University of Saskatchewan Research Ethics Board; informed consent obtained	YES	MMAT	5/5	High
16	Mixed-method analysis of truck driver health knowledge using an online forum	No	No explicit mention.	YES	MMAT	5/5	High

No.	Title	Data Analysis	
		Key Findings	Outcomes Measured
1	Sleep and Mental Health in Truck Drivers: Descriptive Review of the Current Evidence and Proposal of Strategies for Primary Prevention	Sleep and mental health issues are prevalent among TDs, contributing to road accidents; underdiagnosed/undertreated problems; need for primary prevention strategies.	Sleep quality, prevalence of psychiatric disorders (depression, anxiety, stress), substance use (alcohol, drugs), BMI, accident risk.
2	The effect of weight loss interventions in truck drivers: Systematic review	Multicomponent interventions (especially those using MI) had medium-to-large effects on weight loss; sustainability remains uncertain; evidence level is weak overall	Weight, BMI, waist circumference, fat mass, blood glucose levels, presence of diabetes/metabolic syndrome
3	The impact of heart rate-based drowsiness monitoring on adverse driving events in heavy vehicle drivers under naturalistic conditions	Device use reduced harsh braking events significantly; accuracy was modest	Harsh braking, harsh acceleration, self-reported sleep and sleepiness
4	Weight Control Intervention for Truck Drivers: The SHIFT Randomized Controlled Trial, United States	Statistically significant weight loss (~3.31 kg between groups), increased fruit/vegetable intake, and physical activity; 15-min increase in sleep; scalable intervention	BMI, body weight, body fat %, waist circumference, diet (fat %, sugar intake), physical activity, sleep quality and duration, and self-reported driving safety
5	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers	Self-monitoring was the strongest predictor of weight loss; completing all components (certification) led to the most substantial results (5.36 kg loss vs. 1.43 kg)	Body weight, fruit and vegetable consumption, physical activity levels
6	Effectiveness of health promotion programmes for truck drivers: A systematic review	Some success in improving intermediate health outcomes (e.g., BMI, physical activity); strongest when education and counseling components were included	BMI, body fat %, physical activity, blood pressure, cholesterol, nutrition, stress, fatigue, job control, smoking, and dietary behavior
7	Keep on truckin': how effective are health behaviour interventions on truck drivers' health? A systematic review and meta-analysis	Small-to-moderate improvement in fruit and vegetable intake; no significant effects on other cardiometabolic or behavioral health outcomes	Diet (fruit/veg), physical activity, sedentary behavior, sleep, BMI, weight, blood pressure, cholesterol, smoking, alcohol use
8	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study	Drivers are open to using wearable health tech, but have privacy concerns; stressed the need for tech aligned with truckers' unique work conditions	Perceptions, attitudes, motivations, and barriers regarding wearable health technologies and workplace health promotion
9	Truck Drivers' Use of the Internet: A Mobile Health Lifeline	Truckers used the Internet more for job-related tasks than health; younger and less experienced drivers used it more often	Frequency of Internet use (personal vs. job), device types used, associations with demographics and work history
10	Facilitating adoption of virtual communities through emotional connection in the global logistics industry	Perceived ease of use and usefulness significantly predict VC e-business usage; emotional connection significantly moderates both pathways	Intention to use VCs, perceived ease of use, perceived usefulness, emotional connection (measured via multi-item constructs)
11	Exploring the challenges faced by Dutch truck drivers in the era of technological advancement	Drivers report low perceived respect, work pressure (national drivers), and security concerns (international drivers); mixed views on ADAS technologies	Perceptions of profession, work pressure, safety, wages, technological acceptance, and future outlook
12	Technology-enabled capabilities in road freight transportation systems: A multi-method study	Identified 32 technology-enabled capabilities across 6 categories; 28 are commercially ready, 4 are still experimental; offers roadmap for implementation	Not health outcomes; study mapped technological capabilities and readiness levels in logistics operations
13	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app	Pre-driving app use significantly reduced risky driving behavior; this effect was mitigated by real-time notifications and amplified with app usage experience	Total risky driving incidents, and specific types: braking, speeding, turning, lane changing, etc.
14	Identification and analysis of adoption barriers of disruptive technologies in the logistics industry	Lack of top management support, legal/regulatory frameworks, and infrastructure are major drivers of DT adoption barriers; trust and privacy are dependent	Relative weight and interdependency of 10 adoption barriers to DTs
15	Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers	ELD users reported less fatigue, better sleep, lower stress, and reduced pressure to violate hours-of-service regulations; some raised concerns about income and parking availability	Sleep quality, sleep fragmentation, perceived fatigue, stress, income impact, usability concerns, and parking challenges
16	Mixed-method analysis of truck driver health knowledge using an online forum	Truck drivers showed limited systems-level health knowledge, strong interest in food/exercise, but shared low-quality health advice; high self-blame identified	Engagement with health topics (quantified), thematic codes of health knowledge, and systems-level attribution of health responsibility

APPENDIX IV – QUALITY ASSESSMENT OF THE INCLUDED STUDIES

- 1 – Wipfli et al. 2019 – CASP Random Controlled Trials Checklist
- 2 – Greenfield et al. 2016 – CASP Qualitative Checklist
- 3 – Heaton et al. 2017 – CASP Cross-Sectional Studies Checklist
- 4 – Levi-Bliech et al. 2019 – CASP Cohort Studies Checklist
- 5 – Crizzle et al. 2022 – MMAT
- 6 – Versteeg et al. 2018 – MMAT



CNSP

Critical Appraisal Skills Programme

CASP Checklist: For Randomised Controlled Trials (RCTs)

Reviewer Name:	Rocel Tadina
Paper Title:	Process Evaluation of a Mobile Weight Loss Intervention for Truck Drivers
Author:	Wipfli, Brad; Hanson, Ginger; Anger, Kent; Elliot, Diane L.; Bodner, Todd; Stevens, Victor; Olson, Ryan
Web Link:	https://linkinghub.elsevier.com/retrieve/pii/S2093791117305425
Appraisal Date:	May 18, 2025

During critical appraisal, never make assumptions about what the researchers have done. If it is not possible to tell, use the “Can’t tell” response box. If you can’t tell, at best it means the researchers have not been explicit or transparent, but at worst it could mean the researchers have not undertaken a particular task or process. Once you’ve finished the critical appraisal, if there are a large number of “Can’t tell” responses, consider whether the findings of the study are trustworthy and interpret the results with caution.

Section A Is the basic study design valid for a randomised controlled trial?	
1. Did the study address a clearly formulated research question?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Population: Commercial truck drivers in the U.S. Intervention: The SHIFT mobile health weight loss program Comparator: Control terminals Outcomes: Body weight, diet, physical activity
2. Was the assignment of participants to interventions randomised?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The study used cluster randomisation: 10 terminals were paired and randomly assigned to intervention or control using an SAS-generated sequence. Allocation was concealed at the terminal level prior to rollout.
3. Were all participants who entered the study accounted for at its conclusion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell CONSORT-style flowchart provided. Loss to follow-up reported; 134 of 266 intervention participants completed follow-up. Intention-to-treat was not explicitly stated, but dropouts were acknowledged and quantified.
Section B Was the study methodologically sound?	
4. (a) Were the participants 'blind' to intervention they were given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Can't Tell Participants were aware of their involvement in SHIFT; blinding was not possible due to the nature of the digital intervention.
(b) Were the investigators 'blind' to the intervention they were giving to participants?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Can't Tell Investigators were not blinded, which is typical in behavioural intervention studies.
(c) Were the people assessing/analysing outcome/s 'blinded'?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell Not reported. Some outcomes were not blinded; objective data were system-generated.
5. Were the study groups similar at the start of the randomised controlled trial?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell

	Baseline characteristics (age, BMI, tenure) were reported and comparable between intervention and control groups.
6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Both groups were followed up equally and only the SHIFT program varied between groups.
Section C: What are the results?	
7. Were the effects of intervention reported comprehensively?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Outcomes were clearly specified. GEE models are used to compare groups. p-values and predicted mean differences reported. Engagement metrics and subgroup comparisons were also discussed.
8. Was the precision of the estimate of the intervention or treatment effect reported?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Confidence intervals for key outcomes were reported in supplemental tables.
9. Do the benefits of the experimental intervention outweigh the harms and costs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell No significant harms were reported. Cost analysis was not included, but benefits (e.g., weight loss, and behaviour change) were statistically significant for certified participants.
Section D: Will the results help locally?	
10. Can the results be applied to your local population/in your context?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Truck drivers in similar mobile workforces, especially in North America, could benefit.

	Behaviour change targets (e.g., diet, self-monitoring) are broadly relevant.
11. Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell SHIFT combined multiple behaviour change components. Its digital delivery makes it scalable, but local implementation may depend on infrastructure and tech access.

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns
<ul style="list-style-type: none"> Strong cluster RCT design Clear outcomes and analytic approach Real-world relevance Engagement and behavioural theory integration 	<ul style="list-style-type: none"> Lack of blinding No cost-effectiveness analysis Limited generalizability outside North American truck drivers 	<ul style="list-style-type: none"> Blinding of assessors Sustainability of behaviour change post-intervention



CNSP

Critical Appraisal Skills Programme

CASP Checklist: For Qualitative Research

Reviewer Name:	Rocel Tadina
Paper Title:	Truck drivers' perceptions on wearable devices and health promotion: a qualitative study
Author:	Greenfield, Rama; Busink, Ellen; Wong, Cybele P.; Riboli-Sasco, Eva; Greenfield, Geva; Majeed, Azeem; Car, Josip; Wark, Petra A.
Web Link:	https://doi.org/10.1186/s12889-016-3323-3
Appraisal Date:	May 18, 2025

During critical appraisal, never make assumptions about what the researchers have done. If it is not possible to tell, use the “Can’t tell” response box. If you can’t tell, at best it means the researchers have not been explicit or transparent, but at worst it could mean the researchers have not undertaken a particular task or process. Once you’ve finished the critical appraisal, if there are a large number of “Can’t tell” responses, consider whether the findings of the study are trustworthy and interpret the results with caution.

Section A Are the results valid?	
1. Was there a clear statement of the aims of the research?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Aim: To explore truck drivers' perceptions of wearable devices and mobile health (mHealth) technologies. Justified as an under-researched area relevant to improving health in this high-risk population.
2. Is a qualitative methodology appropriate?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The goal was to understand subjective experiences and attitudes; thus, the qualitative methodology (focus groups) was appropriate.
3. Was the research design appropriate to address the aims of the research?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell A phenomenological approach was used to explore drivers' lived experiences and perceptions, which aligned well with the study's aim.
4. Was the recruitment strategy appropriate to the aims of the research?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Participants were recruited from one large logistics company where the intervention would be relevant. The authors acknowledged the recruitment context and described participant demographics clearly.
5. Was the data collected in a way that addressed the research issue?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Four semi-structured focus groups were used. The study provides a clear explanation of the method, use of audio recording, and thematic analysis.
6. Has the relationship between researcher and participants been adequately considered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell There was no clear discussion of reflexivity or researcher positionality, which is a limitation of qualitative accuracy.

Section B: What are the results?	
7. Have ethical issues been taken into consideration?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Approved by Imperial College Research Ethics Committee (Ref: 14IC2246); informed consent obtained
8. Was the data analysis sufficiently rigorous?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Thematic analysis was used. Themes and representative quotes were presented clearly. Multiple researchers were involved in the analysis; data saturation was mentioned.
9. Is there a clear statement of findings?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Thematic categories were clearly presented (e.g., barriers, facilitators, attitudes). Credibility and limitations were acknowledged in the discussion.
Section C: Will the results help locally?	
10. How valuable is the research?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The study adds valuable insight into the feasibility and acceptance of mHealth among truck drivers. Suggestions are made for tailoring technology to fit occupational constraints. The need for more inclusive future research and adaptation for other populations is discussed.

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns
<ul style="list-style-type: none"> Clear aim and appropriate design Rich data collection and transparent thematic analysis Ethical protocols followed 	<ul style="list-style-type: none"> Sample limited to one company in the UK (affects generalisability) 	<ul style="list-style-type: none"> No mention of researcher reflexivity or positionality

CNSP

Critical Appraisal Skills Programme

CASP Checklist: For Descriptive/Cross-Sectional Studies

Reviewer Name:	Rocel Tadina
Paper Title:	Truck Drivers' Use of the Internet: A Mobile Health Lifeline
Author:	Heaton, Karen; Combs, Bryan; Griffin, Russell
Web Link:	https://pubmed.ncbi.nlm.nih.gov/27807256/
Appraisal Date:	May 18, 2025

During critical appraisal, never make assumptions about what the researchers have done. If it is not possible to tell, use the “Can’t tell” response box. If you can’t tell, at best it means the researchers have not been explicit or transparent, but at worst it could mean the researchers have not undertaken a particular task or process. Once you’ve finished the critical appraisal, if there are a large number of “Can’t tell” responses, consider whether the findings of the study are trustworthy and interpret the results with caution.

Section A: Are the results valid?	
1. Did the study address a clearly focused issue?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Aim: To describe how long-haul truck drivers use the internet for personal and work-related tasks, including health information. The population, outcome, and scope were clearly defined.
2. Did the authors use an appropriate method to answer their question?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell A cross-sectional descriptive survey was appropriate to explore current behaviours among a defined group of workers.
3. Were the subjects recruited in an acceptable way?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Can't Tell Recruitment was done at trade shows, companies, and word-of-mouth; convenience sampling introduces potential bias and limits generalizability.
4. Were the measures accurately measured to reduce bias?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell Self-report surveys were used, but there was no mention of validation of survey items (e.g., for frequency or accuracy of internet use). Some questions may be subjective and prone to recall bias.
5. Were the data collected in a way that addressed the research issue?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Data collection via a structured paper-and-pencil questionnaire was clear and relevant to the research goals.
6. Did the study have enough participants to minimise the play of chance?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell No power calculation was reported. The sample size of 106 may be limited depending on the variability in responses across subgroups.
7. How are the results presented and what is the main result?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Results were clearly summarized by proportions and trends (e.g., age, experience, education level related to internet use). Key finding: The Internet is used frequently for work-related tasks but less often for health.
8. Was the data analysis sufficiently rigorous?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Descriptive statistics and chi-square tests were used to identify group differences.

	Limitations in-depth are acknowledged in the discussion.
9. Is there a clear statement of findings?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The findings were clearly stated with adequate support from data and discussed in the context of prior research.
10. Can the results be applied to the local population?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell Limited generalizability due to sampling method and regional focus (mostly U.S. drivers at specific locations). Results may not represent all truck drivers or those in other transport subgroups.
11. How valuable is the research?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Contributes useful insights into tech adoption and behaviour among truck drivers, especially for digital health communication. Highlights demographic differences in engagement with technology.

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns
<ul style="list-style-type: none"> • Clear research question • Appropriate cross-sectional design • Practical relevance for mHealth design 	<ul style="list-style-type: none"> • Non-random, convenience sampling • No validation of the survey tool • No power analysis 	<ul style="list-style-type: none"> • Accuracy of self-report measures • Potential bias due to recruitment settings

CNSP

Critical Appraisal Skills Programme

CASP Checklist: For Cohort Studies

Reviewer Name:	Rocel Tadina
Paper Title:	Mobile apps and employee behavior: An empirical investigation of the implementation of a fleet-management app
Author:	Levi-Bliech, M.; Kurtser, P.; Pliskin, N.; Fink, L.
Web Link:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85069049085&doi=10.1016%2fj.ijinfomgt.2019.07.006&partnerID=40&md5=d0f6a104f5bf827c61d0903df795173b
Appraisal Date:	May 18, 2025

During critical appraisal, never make assumptions about what the researchers have done. If it is not possible to tell, use the “Can’t tell” response box. If you can’t tell, at best it means the researchers have not been explicit or transparent, but at worst it could mean the researchers have not undertaken a particular task or process. Once you’ve finished the critical appraisal, if there are a large number of “Can’t tell” responses, consider whether the findings of the study are trustworthy and interpret the results with caution.

Section A: Are the results valid?	
1. Did the study address a clearly focused issue?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Aim: To explore how mobile fleet-management app usage impacts risky driving behaviour in professional drivers. Clear outcomes (risky driving events), exposure (app use), and population.
2. Was the cohort recruited in an acceptable way?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell Participants (109 drivers) were from a single large engineering organization, so the cohort may not be fully representative of the general population of truck drivers.
3. Was the exposure accurately measured to minimise bias?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell App log files provided objective, timestamped data on pre-driving and real-time usage. Groups were identified based on actual interaction with the app features.
4. Was the outcome accurately measured to minimise bias?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Outcomes (risky driving events) were objectively recorded by the app, including harsh braking, speeding, etc.
5. (a) Have the authors identified all important confounding factors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Key confounders discussed: driving experience, app familiarity, and trip characteristics.
b) Have they taken account of the confounding factors in the design and/or analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The study used mixed-effects Poisson regression to adjust for driver-level and trip-level variables.
6. a) Was the follow up of subjects complete enough?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell 11,805 trips were recorded; no attrition or incomplete data was flagged by the authors.
b) Was the follow up of subjects long enough?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The study spanned 5 months, which is sufficient to observe repeated driving behaviours and cumulative engagement patterns.

Section B: What are the results?	
7. What are the results of this study?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Clear results: "Pre-driving app use was associated with reduced risky driving behaviour." Real-time feedback weakened this effect (moderating interaction). Usage experience strengthened beneficial effects.
8. How precise are the results?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Confidence intervals were reported, and significant associations were highlighted.
9. Do you believe the results?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell The study is well-designed for observational analysis. The large dataset, objective measurements, and statistical controls support validity.
Section C: Will the results help locally?	
10. Can the results be applied to the local population?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Can't Tell May depend on fleet type, country, organizational policies, and access to similar technology. Limited to drivers employed by a single large multinational company.
11. Do the results of this study fit with other available evidence?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Aligns with feedback and learning theory and previous research on digital behaviour change tools.
12. What are the implications of this study for practice?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Tell Demonstrates that mobile feedback tools may be valuable for reducing risk in fleet operations. May inform driver training, tech design, and incentive structures.

APPRAISAL SUMMARY: List key points from your critical appraisal that need to be considered when assessing the validity of the results and their usefulness in decision-making.

Positive/Methodologically sound	Negative/Relatively poor methodology	Unknowns
<ul style="list-style-type: none"> Strong statistical modelling Objective measurement of both exposure and outcomes Confounders accounted for 	<ul style="list-style-type: none"> Limited generalizability (single company) No randomized comparison group 	<ul style="list-style-type: none"> Organizational and cultural variability in similar contexts

Study: Impact of electronic logging devices on fatigue and work environment in Canadian long-haul truck drivers (Crizzle et al. 2022)

Part I: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
<i>Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.</i>					
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5. Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?			✓	
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	✓			
	3.3. Are there complete outcome data?	✓			
	3.4. Are the confounders accounted for in the design and analysis?			✓	
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	✓			
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	✓			
	5.2. Are the different components of the study effectively integrated to answer the research question?	✓			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	✓			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	✓			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	✓			

Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.

Study: Mixed-method analysis of truck driver health knowledge using an online forum (Versteeg et al. 2018)

Part I: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?	✓			
	S2. Do the collected data allow to address the research questions?	✓			
	<i>Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.</i>				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?	✓			
	1.2. Are the qualitative data collection methods adequate to address the research question?	✓			
	1.3. Are the findings adequately derived from the data?	✓			
	1.4. Is the interpretation of results sufficiently substantiated by data?	✓			
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	✓			
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5. Did the participants adhere to the assigned intervention?				
3. Quantitative non- randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?	✓			
	4.2. Is the sample representative of the target population?			✓	
	4.3. Are the measurements appropriate?	✓			
	4.4. Is the risk of nonresponse bias low?			✓	
	4.5. Is the statistical analysis appropriate to answer the research question?	✓			
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	✓			
	5.2. Are the different components of the study effectively integrated to answer the research question?	✓			
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	✓			
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	✓			
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	✓			

Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.

APPENDIX V – AI LOGBOOK

A. Search String Expansion Assistance

Prompt 1:

I am setting some keywords for my systematic literature review and these are my initial main keywords for "AND". Will you help me add more keywords for "OR" for all the keywords written below?

(compliance OR retention OR engagement OR ...) AND (e-health OR...) AND (mobile applications OR...) AND (transportation sector OR transportation OR transport sector OR transport OR...)

ChatGPT response 1:

Here's a list of additional "OR" keywords for each main keyword group you mentioned. I've expanded them to include synonyms, related terms, and variations commonly used in research:

1. Compliance, Retention, Engagement

Existing: *compliance OR retention OR engagement*

Expanded:

compliance OR adherence OR conformity OR observance OR commitment OR retention OR continuation OR perseverance OR engagement OR participation OR involvement OR motivation OR user behavior OR user adoption

2. E-health

Existing: *e-health*

Expanded:

e-health OR digital health OR telehealth OR telemedicine OR mHealth OR online health services OR health informatics OR virtual healthcare OR electronic health services OR remote healthcare

3. Mobile Applications

Existing: *mobile applications*

Expanded:

mobile applications OR mobile apps OR smartphone apps OR mobile software OR digital applications OR mobile tools OR app-based solutions OR mobile platforms OR health apps OR app technologies

4. Transportation Sector

Existing: *transportation sector OR transportation OR transport sector OR transport*

Expanded:

transportation sector OR transportation OR transport sector OR transport OR logistics OR mobility OR transit OR public transport OR freight OR supply chain OR travel sector OR traffic systems OR transportation infrastructure OR urban mobility

Let me know if you'd like me to refine these further or create a more structured query!

Prompt 2 (same thread):

I have additional main keywords... AND (truck drivers OR...)

ChatGPT response 2:

*Great! Here's an expanded list of "OR" keywords for **truck drivers**:*

Truck Drivers

- **Existing:** truck drivers
- **Expanded:**
truck drivers OR lorry drivers OR heavy vehicle operators OR freight drivers OR commercial drivers OR long-haul drivers OR professional drivers OR logistics drivers OR delivery drivers OR transportation workers OR motor freight drivers OR road freight drivers

Let me know if you'd like me to revisit or refine any other parts of your query!

Prompt 3 (same thread):

Another main keyword:

...AND (Europe OR EU OR European Union OR...)

ChatGPT response 3:

*Here's an expanded list of "OR" keywords for **Europe**:*

Europe, EU, European Union

- **Existing:** Europe OR EU OR European Union
- **Expanded:**
Europe OR EU OR European Union OR European countries OR Eurozone OR European Economic Area OR EEA OR Euro region OR Schengen area OR European continent OR Western Europe OR Eastern Europe OR Northern Europe OR Southern Europe

Let me know if you'd like to refine this further!

B. Full-Text Review – Data Extraction AssistancePrompt 1:

If I attach a document, will you help me extract some information from it? Please help me identify the following parameters according to the attached document. For reference, I am including their description/importance:

*(*Attachment: Garbarino et al. – 2018)*



Field/Column	Description of Importance
Study Design	<i>To identify the appropriate appraisal tool, for assessing the quality of the study and level of evidence for additional transparency</i>
Population	<i>Description of participants</i>
Sample Size	<i>Helps assess the strength and validity of findings</i>
Intervention Type	<i>Type of digital health intervention applied in the study</i>
Comparison Group	<i>If any; Relevant for evaluating outcomes</i>
Study Duration	<i>Timeframe of the study; helps assess sustainability and exposure</i>
Setting	<i>Workplace, on-road, clinical, remote, etc.; context for how the intervention was implemented</i>

Data Collection Methods	<i>Helps assess validity</i>
Digital Platform/Tool Used	<i>Names/Types of tools used</i>
Theoretical Framework	<i>Any behavioural or health theory used; Useful for conceptual mapping</i>
Peer-Reviewed	<i>Final checking to ensure that the inclusion criteria are met</i>
Funding Source	<i>Reveals potential bias or conflict of interest</i>
Limitations Noted	<i>To acknowledge weaknesses in the study; helps in quality appraisal</i>
Key Findings	<i>Summary of main results; forms the basis for synthesis</i>
Outcomes Measured	<i>Primary outcomes (e.g., engagement, compliance, retention, health indicators)</i>
Ethical Consideration	<i>Check whether yes, no, waived, unclear – with brief explanation</i>

ChatGPT response 1:

Yes, absolutely! Here's the extraction based on the document you uploaded:

Field/Column	Extracted Information
Study Design	<i>Descriptive review of existing literature; not a primary empirical study.</i>
Population	<i>Professional truck drivers (TDs), both male and female, across various countries (Italy, USA, Brazil, Australia).</i>
Sample Size	<i>Review covers a total sample size of 87,261 male and 3,887 female drivers across eight studies.</i>
Intervention Type	<i>No direct intervention; the review discusses proposed strategies like educational programs, telehealth monitoring, etc., as potential interventions.</i>
Comparison Group	<i>No formal comparison group; studies reviewed included drivers with and without sleep/mental health disorders.</i>
Study Duration	<i>Not a longitudinal study; timeline details relate to individual studies reviewed (most are cross-sectional).</i>
Setting	<i>Various: Long-haul trucking, workplace, highways, road environments, some medical exam settings.</i>
Data Collection Methods	<i>Literature review methodology; original studies involved self-administered questionnaires, medical exams, interviews, actigraphy, and database reviews.</i>
Digital Platform/Tool Used	<i>Tele-health support and online educational programs were recommended but not used directly in the studies reviewed.</i>
Theoretical Framework	<i>Not based on a formal behavioral theory; highlights relationships between sleep disorders, mental health, and occupational stress.</i>
Peer-Reviewed	<i>Yes, the paper is published in the International Journal of Environmental Research and Public Health, a peer-reviewed journal.</i>
Funding Source	<i>No external funding received.</i>
Limitations Noted	<i>Small number of studies available, heterogeneity across study methods, countries, and regulations; primarily descriptive, not systematic review or meta-analysis.</i>
Key Findings	<i>Sleep and mental health issues are prevalent among TDs, contributing to road accidents; underdiagnosed/undertreated problems; need for primary prevention strategies.</i>
Outcomes Measured	<i>Sleep quality, prevalence of psychiatric disorders (depression, anxiety, stress), substance use (alcohol, drugs), BMI, accident risk.</i>
Ethical Consideration	<i>No — "No mention of ethics approval."</i>

Would you also like me to format this into a ready-to-use table (e.g., Excel or Word document) for easier use?  

Prompt 2 (same thread):

Hello, I need your help again with another study data extraction. Same parameters to determine, including ethical approval. Here is the file.

*(*Attachment: Pritchard et al. – 2022)*

ChatGPT Response 2:

Based on the content of the study by Pritchard et al. (2022), here is the full extraction of the requested parameters:

Field/Column	Extracted Information
Study Design	Systematic Review (includes RCTs, quasi-experimental, and pre-post intervention studies)
Population	Long-distance truck drivers (≥ 500 km/day); primarily male, aged 18+, from the USA, Finland, and Australia
Sample Size	Total: 1,214 participants across 7 studies
Intervention Type	Multicomponent lifestyle interventions: diet, physical activity, motivational interviewing (MI), counselling, education, team competitions
Comparison Group	Present in 3 studies (2 RCTs and 1 quasi-experimental design); remaining were single-group studies
Study Duration	Ranged from 1 month to 12 months; some had follow-ups up to 30 months
Setting	Workplaces (trucking companies), health clinics, remote (online, phone-based interventions)
Data Collection Methods	Extracted from included studies: weight, BMI, waist/fat measurements; self-reported logs, follow-up assessments; risk of bias tools used for review
Digital Platform/Tool Used	Online training modules, phone-based coaching, behavioral self-monitoring tools (e.g., logs, step counters)
Theoretical Framework	Motivational Interviewing (MI) was the primary behavior change approach; some mention of behavioral counseling, but limited theory details in most included studies
Peer-Reviewed	Yes – Published in PLOS ONE, a peer-reviewed journal
Funding Source	National Health and Medical Research Council (NHMRC, Australia); Transport Workers Union; Linfox; Centre for Work Health and Safety
Limitations Noted	Small sample sizes, risk of bias across studies, heterogeneity in design and outcome reporting, limited long-term evidence
Key Findings	Multicomponent interventions (especially those using MI) had medium-to-large effects on weight loss; sustainability remains uncertain; evidence level is weak overall
Outcomes Measured	Weight, BMI, waist circumference, fat mass, blood glucose levels, presence of diabetes/metabolic syndrome
Ethical Approval	Not mentioned in the paper – likely not required due to being a review, but you should classify this as “No” per your form’s categories

Let me know if you'd like this formatted as a table or entered into a specific template/document.


Prompt 3 (same thread):

How about for this article?

*(*Attachment: Wolkow et al. – 2020)*

ChatGPT Response 3:

Based on the full content of Wolkow et al. (2020), here is the extracted information aligned with your required parameters:

Field/Column	Extracted Information
Study Design	<i>Prospective, non-randomized controlled trial conducted under naturalistic conditions.</i>
Population	<i>59 male heavy vehicle drivers recruited from two hauliers in Malaysia.</i>
Sample Size	<i>59 participants: 25 in Device group, 34 in Control group.</i>
Intervention Type	<i>Use of a wrist-worn heart rate-based drowsiness detection device.</i>
Comparison Group	<i>Yes: Device vs. Control groups.</i>
Study Duration	<i>16 weeks total: 4 weeks in Phase 1 (device in silent mode), 12 weeks in Phase 2 (device in active mode with alerts).</i>
Setting	<i>Naturalistic driving conditions, including real work shifts across morning and afternoon/evening times in Malaysia.</i>
Data Collection Methods	<i>In-vehicle monitoring system (IVMS), self-reported Karolinska Sleepiness Scale (KSS), sleep diaries, and device-recorded heart rate and drowsiness data.</i>
Digital Platform/Tool Used	<i>Holux wrist-worn HR device using photoplethysmography (PPG) sensors.</i>
Theoretical Framework	<i>Not explicitly grounded in a formal theoretical model, but draws on physiological principles of heart rate variability and sleepiness.</i>
Peer-Reviewed	<i>Yes – Published in Sleep Health, a peer-reviewed journal.</i>
Funding Source	<i>Shell Road Safety funded the study. Authors from Shell were involved in project design and manuscript preparation but not in data collection or analysis.</i>
Limitations Noted	<i>Low sensitivity of the HR device, small number of participants who completed both phases, potential Hawthorne effect, reliance on self-reported sleepiness/sleep data.</i>
Key Findings	<i>The HR-based device significantly reduced harsh braking events when alerts were active, though its predictive accuracy was modest.</i>
Outcomes Measured	<i>Harsh braking, harsh acceleration, sleep duration, subjective sleepiness (KSS), drowsiness event frequency.</i>
Ethical Approval	 <i>Yes – “All procedures were approved by the institutional ethics committee.”</i>

Let me know if you'd like all three articles compiled into a summary table or document.

Prompt 4 (same thread):

Apart from mentioning the study design, will you also mention the category according to this list:

Study Design	Examples	Appraisal Tool
Quantitative	<i>Randomised controlled trials (RCTs), interventional trials</i>	<i>CASP</i>
Observational	<i>Cohort studies, cross-sectional surveys</i>	<i>CASP</i>
Qualitative	<i>Interview-based studies, focus group research, thematic analysis studies</i>	<i>CASP</i>
Mixed Methods	<i>Combined quantitative and qualitative studies</i>	<i>MMAT</i>
Reviews	<i>Systematic reviews, meta-analyses of interventions or observational data</i>	<i>AMSTAR 2</i>

(*Attachment: Olson et al. – 2016)

ChatGPT Response 4:

Yes, I can absolutely do that. Here is the extracted information from **Olson et al. (2016)** – the SHIFT randomized controlled trial, including its **study type category and corresponding appraisal tool** based on your classification:

Field/Column	Extracted Information
Study Design	Cluster-randomized controlled trial involving 22 trucking terminals from 5 companies in the U.S.
Study Type (Category)	Quantitative – fits under RCTs/interventional trials
Appraisal Tool	CASP (Critical Appraisal Skills Programme)
Population	U.S. commercial truck drivers, mostly male, aged ~48 years
Sample Size	452 participants (229 intervention, 223 control)
Intervention Type	SHIFT program – multicomponent intervention: weight-loss competition, behavioral self-monitoring, computer-based training, and motivational interviewing
Comparison Group	Yes – Usual practice control group at matched terminals
Study Duration	6 months
Setting	Trucking company terminals across multiple states; real-world work environments
Data Collection Methods	Objective body measurements (BMI, weight, fat %), self-reported surveys (diet, sleep, physical activity), biometric screenings, and process tracking
Digital Platform/Tool Used	Mobile-friendly website for logging, cTRAIN software for training, motivational interviewing via phone
Theoretical Framework	Total Worker Health approach; not rooted in a named behavioral theory but emphasizes integrated physical and occupational health
Peer-Reviewed	✔ Yes – Published in American Journal of Public Health (AJPH)
Funding Source	National Heart, Lung, and Blood Institute (NHLBI) – NIH (Grant R01HL1054950)
Limitations Noted	Attrition, lack of in-depth dietary tracking, no long-term follow-up, moderate participation rate, difficult to isolate components of the intervention
Key Findings	Statistically significant weight loss (–3.31 kg between groups), increased fruit/vegetable intake, and physical activity; 15-min increase in sleep; scalable intervention
Outcomes Measured	BMI, body weight, body fat %, waist circumference, diet (fat %, sugar intake), physical activity, sleep quality and duration, and self-reported driving safety
Ethical Approval	✔ Yes – Approved by the institutional review board at Oregon Health & Science University (OHSU)

Would you like this one added to a master summary table along with the previous studies?



Prompt 5 (same thread):

(*Attachment: Wipfli et al. – 2019)

ChatGPT Response 5:

Based on the full content of **Wipfli et al. (2019)**, here is the detailed extraction:

Field/Column	Extracted Information
Study Design	Process evaluation of a previously conducted cluster-randomized controlled trial

Study Type (Category)	<i>Quantitative — intervention evaluation using statistical models</i>
Appraisal Tool	<i>CASP (Critical Appraisal Skills Programme)</i>
Population	<i>U.S. truck drivers (predominantly male, average age ~49) who were overweight or obese (BMI ≥ 27), employed at 5 trucking companies</i>
Sample Size	<i>134 participants (intervention group completers from the SHIFT trial)</i>
Intervention Type	<i>Multicomponent mobile-delivered program: web-based training, weight loss competition, self-monitoring, and motivational interviewing</i>
Comparison Group	<i>No direct comparison in this article (focus was only on intervention completers); the original SHIFT trial had a control group</i>
Study Duration	<i>6 months (intervention period)</i>
Setting	<i>Mobile/remote delivery; participants accessed materials via personal devices or terminals</i>
Data Collection Methods	<i>Self-monitoring logs, motivational interviewing records, training module completions, and pre/post measurements (weight, activity, diet)</i>
Digital Platform/Tool Used	<i>SHIFT web platform, cTRAIN learning software, and mobile coaching calls</i>
Theoretical Framework	<i>Based on Ecological Perspective, Social Cognitive Theory of Self-Regulation, Operant Theory, and aligned with the Total Worker Health (TWH) approach</i>
Peer-Reviewed	 <i>Yes – Published in Safety and Health at Work (a peer-reviewed journal)</i>
Funding Source	<i>National Heart, Lung, and Blood Institute (Grant R01HL1054950); sponsor had no involvement in manuscript preparation</i>
Limitations Noted	<i>Non-random sample (only those who completed intervention), no comparison group in current analysis, limited generalizability beyond study completers</i>
Key Findings	<i>Self-monitoring was the strongest predictor of weight loss; completing all components (certification) led to the most substantial results (5.36 kg loss vs. 1.43 kg)</i>
Outcomes Measured	<i>Body weight, fruit and vegetable consumption, physical activity levels</i>
Ethical Approval	 <i>Yes – Approved by Oregon Health & Science University Institutional Review Board; all participants gave informed consent</i>

Let me know if you'd like this added to your overall summary table or need a downloadable version.




Prompt 6 (same thread):

(*Attachment: Wipfli et al. – 2019)

ChatGPT Response 6:

Here is the full data extraction from Ng et al. (2015) based on your specified framework:

Field/Column	Extracted Information
Study Design	<i>Systematic Review of 9 articles covering 8 unique health promotion interventions for truck drivers</i>
Study Type (Category)	<i>Reviews</i>
Appraisal Tool	<i>AMSTAR 2 (used for systematic reviews)</i>
Population	<i>Truck drivers (mostly male), mean age ~38–48 years, from the USA, Sweden, Netherlands, and Australia</i>
Sample Size	<i>Across studies, sample sizes ranged from 30 to 542 participants</i>
Intervention Type	<i>Multicomponent health promotion interventions, including counseling, education, physical activity, nutrition, and sometimes work practice changes</i>
Comparison Group	<i>4 of 8 interventions included reference/comparison groups</i>

Study Duration	<i>Varied: 4 months to 2 years</i>
Setting	<i>Trucking companies, highways, and transportation field settings</i>
Data Collection Methods	<i>Questionnaires, biometric assessments, self-report surveys, exercise testing, and interviews</i>
Digital Platform/Tool Used	<i>Some used on-board computers (OBCs) and web-based tools as part of interventions</i>
Theoretical Framework	<i>Only 2 studies used theory explicitly: Transtheoretical Model, Social Cognitive Theory, Social Contextual Model</i>
Peer-Reviewed	 <i>Yes – Published in Health Education Journal</i>
Funding Source	 <i>Not stated in the article</i>
Limitations Noted	<i>Small number of studies, limited sample sizes, weak methodological quality, short follow-up, limited use of theory, no direct chronic disease outcomes</i>
Key Findings	<i>Some success in improving intermediate health outcomes (e.g., BMI, physical activity); strongest when education and counseling components were included</i>
Outcomes Measured	<i>BMI, body fat %, physical activity, blood pressure, cholesterol, nutrition, stress, fatigue, job control, smoking, and dietary behavior</i>
Ethical Approval	 <i>No mention – ethics approval was not discussed in the review, so per your form, classify it as “No”</i>


Would you like all extracted studies compiled into a consolidated summary document?

Prompt 7 (same thread):

*(*Attachment: Virgara et al. – 2024)*

ChatGPT Response 7:

Based on Virgara et al. (2024), here is the full data extraction according to your parameters:

Field/Column	Extracted Information
Study Design	<i>Systematic review and meta-analysis of 19 intervention studies</i>
Study Type (Category)	<i>Reviews</i>
Appraisal Tool	<i>AMSTAR 2 (for systematic reviews)</i>
Population	<i>Truck drivers (≥50% truck drivers required in included studies); mainly male, working in the U.S., Europe, Australia, Taiwan</i>
Sample Size	<i>2,137 participants across 19 included studies</i>
Intervention Type	<i>Interventions targeting physical activity, sedentary behavior, sleep, diet, weight loss, drug/alcohol use, and/or smoking</i>
Comparison Group	<i>Present in some studies (e.g., RCTs and quasi-RCTs); 7 studies had no control group</i>
Study Duration	<i>Varied across studies — from 8 weeks to 12+ months, depending on the intervention</i>
Setting	<i>Worksites/truck depots, remote (digital/phone-based), mixed work/home environments</i>
Data Collection Methods	<i>Extracted from reviewed studies: objective tools (e.g., accelerometry, actigraphy, biometrics), self-report surveys, and validated questionnaires</i>
Digital Platform/Tool Used	<i>Included interventions using Fitbits, online web apps, mobile devices, and self-monitoring platforms</i>
Theoretical Framework	<i>Only some studies used theory; e.g., Social Cognitive Theory, Transtheoretical Model, Health Belief Model, Self-efficacy theory</i>
Peer-Reviewed	 <i>Yes – Published in BMC Public Health, a peer-reviewed journal</i>
Funding Source	<i>Not directly specified in the paper</i>

Limitations Noted	<i>Small number of studies with robust methodology, moderate-to-high heterogeneity, weak long-term follow-up, low certainty in some outcomes</i>
Key Findings	<i>Small-to-moderate improvement in fruit and vegetable intake; no significant effects on other cardiometabolic or behavioral health outcomes</i>
Outcomes Measured	<i>Diet (fruit/veg), physical activity, sedentary behavior, sleep, BMI, weight, blood pressure, cholesterol, smoking, alcohol use</i>
Ethical Approval	✗ No – No mention of ethics approval in this systematic review, so per your categories, classify as “No”

Let me know if you'd like this and the other studies compiled into a summary sheet or table for your review.

Prompt 8 (same thread):

(*Attachment: *Greenfield et al. – 2016*)

ChatGPT Response 8:

Here is the full data extraction from *Greenfield et al. (2016)*:

Field/Column	Extracted Information
Study Design	<i>Phenomenological qualitative study using four semi-structured focus groups</i>
Study Type (Category)	<i>Qualitative – interview-based focus groups</i>
Appraisal Tool	<i>CASP Qualitative Checklist</i>
Population	<i>34 male professional truck drivers (UK-based, average age 42.2), recruited from one logistics company</i>
Sample Size	<i>34 participants</i>
Intervention Type	<i>Not an intervention study – explores perceptions of wearable health technology and health promotion</i>
Comparison Group	<i>None – not applicable in qualitative design</i>
Study Duration	<i>Conducted over a period of several weeks (focus groups in Nov–Dec 2014); no long-term follow-up</i>
Setting	<i>Focus groups held at a logistics company in the UK</i>
Data Collection Methods	<i>Audio-recorded focus groups, transcribed verbatim; thematic content analysis</i>
Digital Platform/Tool Used	<i>Discussions centered on wearable health tech (e.g., Fitbits, apps), though no specific brand/device was used</i>
Theoretical Framework	<i>Psychological phenomenology; discussion guided by themes from prior research but not rooted in formal behavioral theory</i>
Peer-Reviewed	✓ Yes – Published in BMC Public Health
Funding Source	<i>EIT Digital, NIHR CLAHRC for North West London</i>
Limitations Noted	<i>Single-organization sample, limited generalizability, volunteer bias, low prior exposure to wearables among participants</i>
Key Findings	<i>Drivers are open to using wearable health tech, but have privacy concerns; stressed the need for tech aligned with truckers' unique work conditions</i>
Outcomes Measured	<i>Perceptions, attitudes, motivations, and barriers regarding wearable health technologies and workplace health promotion</i>
Ethical Approval	✓ Yes – Approved by Imperial College Research Ethics Committee (Ref: 14IC2246); informed consent obtained

Would you like this added to your ongoing summary or formatted into a document for reporting or synthesis?

Prompt 9 (same thread):

(*Attachment: *Heaton et al. – 2017*)

ChatGPT Response 9:

Here is the full data extraction from **Heaton et al. (2017)** according to your specified parameters:

Field/Column	Extracted Information
Study Design	Cross-sectional quantitative study
Study Type (Category)	Quantitative – uses surveys and statistical analysis
Appraisal Tool	CASP (Critical Appraisal Skills Programme)
Population	106 long-haul truck drivers (mostly White married males), recruited at trade shows and via companies in the U.S.
Sample Size	106 participants
Intervention Type	Not an intervention study – examined Internet usage patterns among truck drivers
Comparison Group	None
Study Duration	One-time survey – snapshot cross-sectional design
Setting	Trucking trade shows and company sites across the U.S.
Data Collection Methods	Paper and pencil surveys with questions on demographics, health, work, and Internet usage; analyzed using SAS software
Digital Platform/Tool Used	Laptops, smartphones, tablets used by participants; study explores potential of mobile health (mHealth) tools
Theoretical Framework	No formal theoretical framework applied
Peer-Reviewed	✅ Yes – Published in Workplace Health & Safety
Funding Source	NIOSH (National Institute for Occupational Safety and Health) – Grant R21OH009965
Limitations Noted	Cross-sectional design, potential recall bias, limited generalizability (recruited at trade shows), no objective usage tracking
Key Findings	Truckers used the Internet more for job-related tasks than health; younger and less experienced drivers used it more often
Outcomes Measured	Frequency of Internet use (personal vs. job), device types used, associations with demographics and work history
Ethical Approval	✅ Yes – Approved by University of Alabama at Birmingham Institutional Review Board; informed consent obtained

Would you like this added to your consolidated table or exported into a structured report?

Prompt 10 (same thread):

(*Attachment: Lin, Yang, & Chang – 2025)

ChatGPT Response 10:

Based on **Lin, Yang, & Chang (2025)**, here is the full data extraction aligned with your framework:

Field/Column	Extracted Information
Study Design	Cross-sectional survey study using structural equation modeling (SEM) and moderation analysis
Study Type (Category)	Quantitative – hypothesis testing via questionnaire and SEM
Appraisal Tool	CASP (Critical Appraisal Skills Programme)
Population	Logistics service provider (LSP) staff in Taiwan – client-facing employees in air/sea freight firms
Sample Size	355 valid respondents from a total of 500 distributed questionnaires
Intervention Type	Not an intervention – assessed factors influencing adoption of virtual communities (VCs) in the logistics industry
Comparison Group	None – no intervention or control condition

Study Duration	<i>Data collected in July–August 2021; one-time cross-sectional survey</i>
Setting	<i>Workplaces in the logistics industry; sample drawn from Directory of Members of Air and Sea Freight Forwarder Association, Taiwan</i>
Data Collection Methods	<i>Self-administered structured questionnaires using Likert scales; validated via pilot testing, EFA, CFA, SEM</i>
Digital Platform/Tool Used	<i>Study focused on adoption of virtual communities (VCs) – not specific tools, but includes apps, platforms, and internal systems</i>
Theoretical Framework	<i>Technology Acceptance Model (TAM) with emotional connection as a moderator</i>
Peer-Reviewed	✔ Yes – Published in <i>International Journal of Logistics Research and Applications</i>
Funding Source	✔ Yes – UK Economic and Social Research Council (ESRC) and Taiwan MOST (UK–Taiwan Network Grant 2021)
Limitations Noted	<i>Lacked client-side perceptions, limited generalizability beyond Taiwan, results might vary with staff characteristics; longitudinal designs suggested</i>
Key Findings	<i>Perceived ease of use and usefulness significantly predict VC e-business usage; emotional connection significantly moderates both pathways</i>
Outcomes Measured	<i>Intention to use VCs, perceived ease of use, perceived usefulness, emotional connection (measured via multi-item constructs)</i>
Ethical Approval	✗ No mention of ethics approval; per your categories, classify as “No”

Let me know if you'd like all the studies compiled into one editable or exportable format.


Prompt 11 (same thread):

(*Attachment: *de Winter et al. – 2024*)

ChatGPT Response 11:

Here is the full data extraction from *de Winter et al. (2024)* based on your criteria:

Field/Column	Extracted Information
Study Design	<i>Cross-sectional quantitative survey with open-text analysis (mixed methods in practice, but predominantly quantitative in structure)</i>
Study Type (Category)	<i>Quantitative – categorized as survey-based cross-sectional research</i>
Appraisal Tool	<i>CASP (Critical Appraisal Skills Programme)</i>
Population	<i>Dutch professional truck drivers (n = 3,708); national and international drivers</i>
Sample Size	<i>3,708 professional truck drivers</i>
Intervention Type	<i>No intervention – the study assessed experiences, work pressure, safety, technology perceptions, etc.</i>
Comparison Group	<i>No formal comparison group; analysis includes comparison by subgroup (e.g., national vs. international drivers)</i>
Study Duration	<i>Survey administered in September–October 2021</i>
Setting	<i>Online questionnaire distributed via trucker-focused media platforms (Transporteffect BV, Chauffeursnieuws)</i>
Data Collection Methods	<i>Structured questionnaire (51 multiple-choice questions, 15 open comments); text analyzed using GPT-4; statistical methods included factor analysis</i>
Digital Platform/Tool Used	<i>Discussion of advanced driver-assistance systems (ADAS): ACC, LKA/LDW, AEB, cameras, on-board computers</i>
Theoretical Framework	<i>Not based on a named behavioral theory; interpretations touch on signal detection theory and Illich's 'Tools for Conviviality'</i>
Peer-Reviewed	✔ Yes – Published in <i>Frontiers in Public Health</i>
Funding Source	✔ Yes – Netherlands Organization for Scientific Research (NWO) (Transitions and Behavior grant)

Limitations Noted	<i>Self-selection bias, some nonresponse in comment boxes, technology sentiment possibly affected by misunderstanding of systems</i>
Key Findings	<i>Drivers report low perceived respect, work pressure (national drivers), and security concerns (international drivers); mixed views on ADAS technologies</i>
Outcomes Measured	<i>Perceptions of profession, work pressure, safety, wages, technological acceptance, and future outlook</i>
Ethical Approval	 Yes – Approved by the TU Delft Human Research Ethics Committee (approval number 3013)




Let me know if you'd like this and your previous extractions consolidated into one file.

Prompt 12 (same thread):

(*Attachment: *Callefi et al. – 2022*)

ChatGPT Response 12:

Based on the full content of *Callefi et al. (2022)*, here is the detailed data extraction aligned with your framework:

Field/Column	Extracted Information
Study Design	<i>Multi-method study: Systematic Literature Review (SLR), secondary data analysis, and expert validation</i>
Study Type (Category)	<i>Reviews – it includes a systematic review as a core component</i>
Appraisal Tool	<i>AMSTAR 2 (for systematic reviews and evidence syntheses)</i>
Population	<i>Not human participants; study focuses on capabilities in road freight transportation systems (targeting companies, infrastructure, technologies)</i>
Sample Size	<i>Not applicable – no participant sample; the study reviews 66 articles and conducts expert validation with 6 logistics professionals</i>
Intervention Type	<i>No human intervention; identifies and classifies technology-enabled capabilities (e.g., smart contracts, fleet management, IoT-based tracking)</i>
Comparison Group	<i>Not applicable</i>
Study Duration	<i>Not specified in duration terms; validation conducted over May to October 2020</i>
Setting	<i>Context is global road freight transportation systems; not field-based</i>
Data Collection Methods	<i>Systematic literature review, secondary data (gov/industry reports), and expert interviews (via videoconference)</i>
Digital Platform/Tool Used	<i>Wide range of technologies discussed: IoT, blockchain, smart GPS, ITS, RFID, cloud platforms, mobile apps, augmented reality, etc.</i>
Theoretical Framework	<i>None explicitly applied; capability readiness level (CRL) model adapted from TRL (Technology Readiness Level) is used conceptually</i>
Peer-Reviewed	 Yes – Published in <i>Expert Systems With Applications</i> , a peer-reviewed journal
Funding Source	 CAPES – a Brazilian national research funding foundation
Limitations Noted	<i>Limited language scope (English only), no in-depth discussion of each capability, only desktop validation, lack of empirical deployment studies</i>
Key Findings	<i>Identified 32 technology-enabled capabilities across 6 categories; 28 are commercially ready, 4 are still experimental; offers roadmap for implementation</i>
Outcomes Measured	<i>Not health outcomes; study mapped technological capabilities and readiness levels in logistics operations</i>
Ethical Approval	 No mention of ethical approval – appropriate as it involved no human subjects or sensitive data

Let me know if you'd like this added to a compiled summary or formatted as a reference table.

Prompt 13 (same thread):(*Attachment: *Levi-Bliech et al. – 2019*)ChatGPT Response 13:

Here is the full data extraction from *Levi-Bliech et al. (2019)* based on your specified framework:

Field/Column	Extracted Information
Study Design	Quantitative observational study using real-world app usage and behavioral data from drivers over 11,805 trips
Study Type (Category)	Quantitative – observational study using app logs and Poisson regression
Appraisal Tool	CASP (Critical Appraisal Skills Programme)
Population	109 professional drivers from a large engineering firm, operating fleet vehicles in the UK and US
Sample Size	11,805 trips logged from 109 drivers
Intervention Type	Not an interventional trial; observed behavior based on use of a fleet-management mobile app
Comparison Group	Indirect – comparison between those using real-time notifications and those not using them in early deployment phase
Study Duration	5-month period in early 2016
Setting	Real-world commercial driving conditions (UK and US)
Data Collection Methods	App usage logs, driving incident data (14 risky behaviors), analyzed with mixed-effects Poisson regression
Digital Platform/Tool Used	Fleet-management mobile app with real-time notifications and pre-drive feedback features
Theoretical Framework	Based on feedback theory and Experiential Learning Theory (Kolb); pre-driving feedback and real-time feedback studied as behavioral modifiers
Peer-Reviewed	✓ Yes – Published in International Journal of Information Management
Funding Source	✗ Not mentioned
Limitations Noted	Single organization, non-random sample for real-time feedback group, possible underreporting of trips, lack of demographic variables
Key Findings	Pre-driving app use significantly reduced risky driving behavior; this effect was mitigated by real-time notifications and amplified with app usage experience
Outcomes Measured	Total risky driving incidents, and specific types: braking, speeding, turning, lane changing, etc.
Ethical Approval	✗ No explicit mention – per your criteria, classify as “No”

Let me know if you'd like this included in your consolidated review summary or formatted for reporting.

Prompt 14 (same thread):(*Attachment: *Rathore et al. – 2022*)ChatGPT Response 14:

Based on the full content of *Rathore et al. (2022)*, here is the extracted study information according to your framework:

Field/Column	Extracted Information
Study Design	Multi-method exploratory study using Fuzzy Delphi Method (FDM), Interpretive Structural Modelling (ISM), and MICMAC analysis
Study Type (Category)	Mixed Methods – combines structured qualitative expert judgment (Delphi) with quantitative modeling and analysis (ISM/MICMAC)
Appraisal Tool	MMAT (Mixed Methods Appraisal Tool)

Population	15 logistics experts in India with 9–17 years of experience in warehousing, transport, inventory, and customer service management
Sample Size	15 experts (FDM/ISM input sample)
Intervention Type	Not an intervention – aimed at identifying barriers to adopting disruptive technologies (DTs) in logistics
Comparison Group	None – comparative analysis is internal via ranking of barriers
Study Duration	Not specified in exact duration; methods suggest short-term expert engagement
Setting	Logistics sector in India (warehouses, transport, inventory, procurement – expert knowledge based)
Data Collection Methods	Structured expert surveys via FDM and ISM instruments, analyzed using fuzzy logic, hierarchical modeling, and MICMAC matrix
Digital Platform/Tool Used	Study analyzes barriers to 7 DTs: IoT, blockchain, big data, drones, AI, autonomous vehicles (AVs), 3D printing
Theoretical Framework	Theory of Disruptive Innovation and Ecosystems Framework (Adner & Kapoor, 2016)
Peer-Reviewed	✓ Yes – Published in <i>The International Journal of Logistics Management</i>
Funding Source	✗ Not explicitly stated
Limitations Noted	Small sample of experts, exploratory design, regional scope, limited to 10 barriers
Key Findings	Lack of top management support, legal/regulatory frameworks, and infrastructure are major drivers of DT adoption barriers; trust and privacy are dependent
Outcomes Measured	Relative weight and interdependency of 10 adoption barriers to DTs
Ethical Approval	✗ No mention of ethics approval; per your classification, record as “No”

Let me know if you want this added to your ongoing data summary or formatted into an exportable table.

Prompt 15 (same thread):

(*Attachment: Crizzle et al. – 2022)

ChatGPT Response 15:

Based on **Crizzle et al. (2022)**, here is the detailed data extraction aligned with your framework:

Field/Column	Extracted Information
Study Design	Mixed Methods – paired quantitative survey and qualitative interviews
Study Type (Category)	Mixed Methods
Appraisal Tool	MMAT (Mixed Methods Appraisal Tool)
Population	Canadian long-haul truck drivers (LHTD); primarily male (95%), mean age 53 years
Sample Size	59 LHTD completed both the survey and interviews
Intervention Type	Not an intervention study; assessed impact and perceptions of using electronic logging devices (ELDs)
Comparison Group	Yes – ELD users vs. non-users
Study Duration	Conducted from August to November (year not explicitly repeated in body, implied 2021)
Setting	7 truck stops across Alberta and Saskatchewan, Canada
Data Collection Methods	Structured survey (adapted from US and Canadian tools), semi-structured interviews, statistical analysis, and thematic coding using Nvivo

Digital Platform/Tool Used	Electronic Logging Devices (ELDs) – specific models not named
Theoretical Framework	Phenomenological approach used for qualitative analysis; no formal behavioral theory
Peer-Reviewed	✔ Yes – Published in Journal of Transport & Health
Funding Source	✔ Alberta Occupational Health and Safety Futures Grant Programme
Limitations Noted	Small sample, convenience sampling, lack of longitudinal crash/fatigue data, no identification of specific ELD devices
Key Findings	ELD users reported less fatigue, better sleep, lower stress, and reduced pressure to violate hours-of-service regulations; some raised concerns about income and parking availability
Outcomes Measured	Sleep quality, sleep fragmentation, perceived fatigue, stress, income impact, usability concerns, and parking challenges
Ethical Approval	✔ Yes – Approved by the University of Saskatchewan Research Ethics Board; informed consent obtained

Let me know if you'd like this included in your compiled summary table or prepared in a format for reporting.

Prompt 16 (same thread):

(*Attachment: Versteeg et al. – 2018)

ChatGPT Response 16:

Based on Versteeg et al. (2018), here is the complete extraction using your required parameters:

Field/Column	Extracted Information
Study Design	Mixed-method content analysis using qualitative thematic coding and quantitative post metrics (frequency, engagement ratios)
Study Type (Category)	Mixed Methods – combines qualitative coding of forum content with quantitative analysis of post engagement
Appraisal Tool	MMAT (Mixed Methods Appraisal Tool)
Population	Truck drivers participating in an open-access online health forum (The Truckers Report Health Forum)
Sample Size	1,760 forum posts analyzed; 150 posts selected randomly for systems-level coding
Intervention Type	No intervention; study explores health knowledge and perceptions via online forum analysis
Comparison Group	None – analysis is descriptive, though themes are compared across categories
Study Duration	Posts from 2006 to 2016 analyzed retrospectively
Setting	Online forum – The Truckers Report Health Forum
Data Collection Methods	Forum scraping and qualitative coding by researchers; quantitative metrics include posts per code, views, replies, engagement ratios
Digital Platform/Tool Used	Study platform was an online forum, but specific health technologies were discussed (e.g., DOT regulations, fitness advice, diet tools)
Theoretical Framework	Applied Rasmussen's Risk Management Framework to assess systems-level awareness
Peer-Reviewed	✔ Yes – Published in Safety Science
Funding Source	✗ No external funding – explicitly stated in acknowledgments
Limitations Noted	Lack of moderation, no demographic data, possible misclassification of posts, small sample for systems analysis (150 posts), and possible misinterpretation of forum tone

<i>Key Findings</i>	<i>Truck drivers showed limited systems-level health knowledge, strong interest in food/exercise, but shared low-quality health advice; high self-blame identified</i>
<i>Outcomes Measured</i>	<i>Engagement with health topics (quantified), thematic codes of health knowledge, and systems-level attribution of health responsibility</i>
<i>Ethical Approval</i>	✗ <i>No mention of ethical approval; per your criteria, classify as “No”</i>

Would you like this integrated into your summary database or a downloadable synthesis file?