**Literature Study and Expert Interviews Report**

# 1. Introduction

The purpose of this literature study and series of expert interviews was to gather comprehensive insights into the current state of tire procurement systems, focusing on the unique challenges and opportunities within the truck tire market. This research aimed to identify gaps in existing solutions and gather expert opinions to inform the development of a specialized dashboard for Truck Support Venlo.

# 2. Literature Study

## 2.1 Objective

The objective of the literature study was to review existing academic and industry literature to understand the current landscape of tire procurement, particularly focusing on:

* Methods for collecting tire price data.
* Challenges in data integration
* Effective web scraping techniques
* Legal and ethical considerations in web scraping
* Database design for large-scale data storage and retrieval
* Technologies and frameworks for developing user-friendly dashboards.

## 2.2 Methodology

A systematic review of literature was conducted using databases such as IEEE Xplore, Google Scholar, and industry publications. Keywords used included "tire procurement", "web scraping", "data integration", "database design", and "dashboard development".

## 2.3 Findings

**Data Collection Methods:** Most literature emphasized the importance of using web scraping tools like Selenium and Beautiful Soup for real-time data collection from various sources, including supplier websites and emails.

**Data Integration Challenges:** Common challenges identified included handling various data formats, ensuring data accuracy, and maintaining data timeliness. Integration workflows like those provided by n8n were recommended for seamless data processing.

**Web Scraping Techniques:** Techniques such as automated web scraping with tools like Selenium were found to be effective for extracting high-quality data. The importance of ethical scraping practices and adherence to legal guidelines were highlighted.

**Database Design:** Relational databases like MySQL were preferred for their reliability, scalability, and performance. Proper schema design was emphasized to ensure efficient data storage and retrieval.

**Technologies and Frameworks:** For frontend development, frameworks like Flutter were recommended due to their ease of use and performance benefits. Backend development was best supported by languages like Python, which offers robust libraries for scraping and data processing.

## 2.4 Conclusion

The literature review provided valuable insights into the current methods and technologies that can be leveraged to develop an effective tire procurement dashboard. It highlighted the need for specialized tools tailored to the truck tire market and identified best practices for data collection, integration, and system design.

# 3. Expert Interviews

## 3.1 Objective

The objective of the expert interviews was to gain practical insights and validation of the findings from the literature study. Experts from various fields, including web scraping, data integration, and dashboard development, were consulted.

## 3.2 Methodology

Experts were identified based on their experience and contributions to relevant fields. Semi-structured interviews were conducted, allowing for in-depth discussions while maintaining a focus on key topics.

## 3.3 Summary of Interviews

**Bas van de Meerakker:** Software Engineer

Emphasized the importance of using robust tools like Selenium and Scrapy for reliable data extraction.

Discussed the challenges of maintaining data quality and suggested regular updates and validations.

**Martijn Wigmans**: Database Architect

Highlighted the significance of a well-designed database schema to handle large volumes of data efficiently.

Recommended using MySQL for its balance of performance and scalability, with a focus on indexing and query optimization.

**Rick Groenen:** UI/UX Designer

Stressed the need for an intuitive and user-friendly interface for the dashboard.

Suggested incorporating features like real-time data visualization, interactive elements, and responsive design.

## 3.4 Key Takeaways

**Data Collection:** Experts agreed on the efficacy of using Selenium and other scraping tools for real-time data collection. They also highlighted the need for ethical practices and legal compliance.

**Data Integration**: The use of automated workflows like n8n was validated as a best practice for maintaining data accuracy and timeliness.

**Database Design:** Experts reinforced the importance of a robust database design, with MySQL being a preferred choice due to its reliability and performance.

**Dashboard Development:** The need for a user-friendly and interactive dashboard was emphasized, with recommendations to use frameworks like Flutter for frontend development.

## 3.5 Conclusion

The expert interviews validated the findings from the literature study and provided additional practical insights. The combined research highlighted the importance of using advanced technologies and best practices to develop a specialized tire procurement dashboard tailored to the needs of Truck Support Venlo.

# 4. Action Items

* Implement web scraping using Selenium and ensure ethical compliance.
* Design and develop a robust MySQL database for data storage.
* Develop the dashboard using Flutter, focusing on user experience and interactivity.
* Conduct regular updates and validations to maintain data quality.