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Finding a Solution for University Students in Bahrain Through an Application Named "Tawseela"

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***Abstract*— *This research examines the demand for a UI/UX-focused mobile application designed to enhance university transportation services, specifically through the 'Tawseela' application. The study explores the challenges faced by students in accessing reliable and efficient transportation to and from the university and assesses their willingness to adopt a localised digital solution to address these issues. A survey was conducted to gather data from potential users regarding their current transportation experiences, pain points, and the potential impact of an improved UI/UX design in streamlining their commuting process. The 'Tawseela' application aims to facilitate coordination among students, enabling them to connect and share rides to and from the university. Additionally, the app offers a source of income for students who are heading to the university and can offer rides to others. This helps reduce overall transportation costs for students while providing an opportunity for those driving to earn extra income. The study highlights the key benefits of implementing such an application, including increased convenience, cost savings, optimised route planning, improved communication with fellow students, and reduced waiting times. Furthermore, it helps minimise the risks associated with relying on unknown service providers by enabling users to easily access reviews and ratings from fellow students.*

***Keywords*—** *transportation, UI/UX design, 'Tawseela' application, student commute, ridesharing, transport services, students, transportation management, campus connectivity.*

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I. INTRODUCTION

A. Overview

Transportation is essential for university students, enabling them to attend classes, participate in activities, and access vital services [1]. In Bahrain, students face challenges such as unreliable public transport, high costs, and limited commuting options [2]. Many resort to informal ridesharing through social media, which often lacks structure, safety, and efficiency. To address these issues, 'Tawseela' is a dedicated mobile app designed to facilitate organised, affordable, and secure

ridesharing among students. The platform enables students to connect, share rides, reduce commuting costs, and even earn extra income. Unlike existing solutions, 'Tawseela' is tailored to Bahraini cultural norms, ensuring a safe and respectful environment for all users [3]. This research examines the demand for 'Tawseela', its impact on transportation efficiency, and potential challenges such as user adoption, privacy, and security. By analysing student feedback and transportation trends, the study aims to provide recommendations for optimising the app's UI/UX and ensuring its long-term success. 'Tawseela' not only offers a practical solution to student transportation challenges but also fosters community and cultural understanding. Its success in Bahrain could serve as a model for similar initiatives in other regions.

B. Project description

Tawseela is a ridesharing application designed to assist Bahraini university students with their increasing mobility needs. Following the elimination of government-funded university buses, students now face limited and often

costly options for commuting, making it difficult for them to travel to and from university daily. Tawseela offers an affordable, reliable solution by providing a well-organised and reasonably priced ridesharing service. Tawseela's mobile application allows students to split the cost of transportation and enjoy a more convenient commute. This ridesharing model significantly lowers costs compared to more conventional modes of transportation. Additionally, Tawseela enables student drivers to earn money by transporting their peers, fostering a cooperative community and reducing the cost of student commutes. The user-friendly digital platform of Tawseela offers features such as intelligent scheduling, real-time ride tracking, and secure payment methods, allowing users to book rides easily while maintaining control over their travel arrangements. The platform also promotes environmental sustainability by encouraging carpooling, contributing to a cleaner and more environmentally friendly urban environment. Tawseela is designed to meet the needs of students, offering a flexible, affordable, and practical solution that accommodates students' academic schedules and budgetary limitations. The platform not only facilitates the daily commute but also fortifies the student body by promoting peer support and shared experiences. In conclusion, Tawseela is making university transportation more accessible and effective for Bahraini university students through its creativity and student-centred approach.

C. *Project Aims*

- Developing an app for convenient and reliable student transportation.
- Providing affordable transportation services.
- Reducing time and effort required for daily commuting.
- Contributing to reducing traffic congestion.
- Supporting sustainable transportation solutions.
- Enhancing social interaction among students.

D. *Problem statement*

Students in Bahrain face significant challenges when commuting to their universities. The available private transportation options are often expensive, placing a financial burden on students and their families[4]. Furthermore, these options may lack adequate coverage in all areas, leaving many students without convenient and reliable daily commuting choices. Relying on private transportation can also increase stress for students, especially with traffic congestion and difficulties during peak hours.

These challenges negatively impact students' attendance and can lead to a decline in their academic performance, making it essential to seek sustainable and more economically efficient solutions.

E. *Research Methodology*

To better understand the shared transportation market and identify the specific needs of university students in Bahrain, we adopted a mixed research approach that combined quantitative,

qualitative, and descriptive analytical methods. This combination allowed us to view the topic from multiple perspectives and build a more comprehensive picture of the current situation. We began by using the quantitative approach, which focused on collecting numerical data to measure patterns and behaviours. Through surveys distributed to students at the University of Bahrain, we were able to gather measurable insights into their transportation usage and preferences. This helped us identify trends and make comparisons between existing options (Rezk, 2024) [5].

At the same time, we recognised the importance of going beyond numbers. For this reason, we also used a qualitative approach to delve deeper into students' lived experiences.

Through interviews and open-ended questions, we explored the challenges students face while commuting, challenges that numbers alone cannot fully capture (Rezk, 2024) [6].

To further enrich our analysis, we applied a descriptive analytical method, which enabled us to assess the broader context by studying available data and evaluating the performance of key competitors in the transportation sector, such as private buses and ride-sharing services like Uber. This helped us identify existing market gaps and understand where Tawseela could offer real value (Saad, 2021) [7]. Together, these methods provided a well-rounded understanding of the market. They not only helped us highlight problems but also guided us toward finding realistic and effective solutions that align with students' actual needs and daily routines.

II. Literature Review

A. *International Case Studies*

1) *GoMore*

The study by Guyader and Piscicelli (2019) examines GoMore's [8]. evolution from a non-profit ridesharing site to a diversified mobility platform offering both B2C rentals and P2P services. Through document analysis and interviews, the research highlights how GoMore leveraged

shared resources and competencies to achieve growth and profitability. Key advantages include user engagement, technological innovation, and cross-model integration. However, challenges such as operational complexity, internal competition, and financial constraints for expansion were noted. The study concludes that diversification enhances competitiveness but introduces management and resource allocation difficulties.

2) Waze Carpool

This U.S based field experiment investigates how carpooling can reduce traffic congestion [*9*]. Using data from over 537,000 users across four states, the study found that time savings are a major motivator for adopting carpooling. Proximity to high-occupancy vehicle (HOV) lanes significantly increased user engagement and registration rates. The research emphasizes that simple, targeted notifications can effectively attract users, and future improvements may rely on machine learning for personalized targeting. Despite its success, the study acknowledges privacy concerns and limited geographic scope.

3) Taxi-sharing- Local in Athens .

This study explores Athens taxi drivers' [10]. attitudes toward taxi-sharing and dynamic pricing. Using surveys and quantitative models, it found widespread resistance to adopting new systems, especially among older drivers. Younger drivers showed more openness, influenced by technology and competition from platforms like Uber. While the study effectively identifies behavioural factors, it lacks passenger perspectives and cross-city comparisons, limiting its generalizability. Cultural and technological barriers were also found to hinder adoption.

B. Local Case Studies (Bahrain / GCC)

1) Uber

Uber's case illustrates innovation and disruption in urban mobility [11]. Founded in 2009, it revolutionized transportation through a user-friendly app, dynamic pricing, and global scalability. Strengths include affordability, convenience, and technological integration, while weaknesses involve low driver earnings, regulatory challenges, and sustainability concerns. Studies show many drivers earn below minimum wage after expenses, raising ethical and economic issues. Despite these challenges, Uber's adaptability and innovation have reshaped the transportation industry, setting new standards for digital mobility. The case underscores the importance of continuous innovation and policy reform to balance profitability, driver welfare, and sustainability.

III. Research Methodology and Findings

A. Survey Analysis

- Are you a university student?

The results indicate that 89.5% of survey participants are university students, reflecting strong interest in the app among the target group. This suggests that the data collected accurately reflects students' daily commuting needs.

- Do you own a car?

The results showed that 59.2% of students do not own a car, indicating a strong need for ride-sharing solutions. In contrast, 40.6% of students own cars, providing an opportunity to create a system that connects car owners with students in need of transportation, making ride-sharing a practical and beneficial solution. See Figure .

- Do you have difficulty getting to university every day?

It was found that 66.8% of students experience difficulties commuting to university on a regular or occasional basis, highlighting the need for a more efficient and reliable transportation system. In contrast, only 7% experience no problems, indicating that the vast majority would benefit from a solution that facilitates their access to university.

- If you use public transportation, how would you describe Your Experience

The results reveal widespread dissatisfaction with public transportation, with only 2.7% of users considering it convenient and fast, 34.2% considering it crowded, 33.7% considering it not always available, and 20.4% considering it impractical. These figures reinforce the need to provide more convenient and efficient transportation alternatives.

- How important is it to have a rating system for drivers and passengers?

45.9% of students consider driver verification necessary, while 54.4% consider it useful but unnecessary. However, having a verification system in place will increase the level of trust among users, making the app safer and more attractive to students.

- How receptive are you to sharing a ride with new (relatively unfamiliar) peers?

The results indicate that 75.2% of students are willing to share a ride provided there are clear safety policies in place, confirming that safety is a top priority for users. Therefore, the app should include features such as identity verification, emergency alerts, and trip history to ensure students feel comfortable using the service.

- Please list your suggestions for solutions to feel safe when using a "university student" transportation app.

Participants made several suggestions for enhancing the app's security, including verifying that all users are college students to ensure a safe environment, adding a live tracking system and an emergency button to protect passengers, allowing drivers to choose their gender to provide greater user convenience, implementing a rating and review system for drivers and passengers to enhance trust, requiring drivers and passengers to sign formal agreements to ensure compliance with rules, allowing ride-sharing between students in the same major or region to facilitate communication, and linking a user's location to a parent's device to increase security.

B. *SWOT Analysis*

The SWOT analysis illustrated in [Figure 1]. provides a comprehensive overview of the internal and external factors influencing the transportation service targeted at students. The strengths highlight the service's affordability, eco-friendly focus, and its alignment with students' specific transportation needs. Conversely, weaknesses include logistical issues.

Fig. 1. *SWOT Analysis*

particularly with international operations. The analysis also identifies opportunities such as the rising demand for budget-friendly transport and potential partnerships with universities. However, threats like strong market competition, legal regulations, and economic instability pose significant challenges.

IV. The Solution

The proposed solution is to develop a user-friendly and comprehensive mobile application that serves as a centralized platform for students in Bahrain to easily access shared transportation services. This application will connect students, allowing them to coordinate and share rides to and from universities, housing areas, and other facilities. It aims to provide an affordable, efficient, and convenient solution for student commuting.

Fig. 2. *Application Interface*

A. *Application Interface and Features*

The Tawseela application [Figure 2]. offers a focused set of transportation services tailored specifically to the needs of university students in Bahrain. It operates as a ride-sharing platform that connects students who are looking for transportation with fellow students who are willing to offer rides. The services are designed to be safe, efficient, and community-based, with several key features:

- Student-to-Student Ride Sharing: The primary service provided by Tawseela is connecting students who need a ride with other students who have available seats in their cars. The application allows both parties to coordinate schedules and routes easily

- Secure Booking System: Tawseela provides an organised ride-booking system that allows students to select available rides based on pick-up and drop-off points, timing, and driver profiles.

- Verified Users Only: To ensure safety and reliability, the application requires users to register with their university email or student ID. This creates a trusted network of verified users.

- Gender-Sensitive Ride Options: In alignment with cultural preferences in Bahrain, Tawseela offers gender-based filtering options, allowing users to choose rides with individuals of the same gender, if preferred.

- Ratings and Reviews: Users can rate each ride experience and leave reviews, helping others make informed decisions and maintain a high standard of service within the platform.

- Notifications and Scheduling Tools: Students receive timely notifications regarding upcoming rides and can set schedules for recurring daily or weekly transportation needs.

- In-App Chat: The application includes a secure chat feature, allowing students to communicate directly for coordination while maintaining privacy.

B. *Strengths of the Solution*

1 Improved convenience and accessibility for students to find reliable, affordable, and efficient transportation options for commuting to universities and other locations.

2 A centralized platform that enables students to compare different ride-sharing options based on ratings, reviews, and cost, making it easier to choose the best option.

3 Potential cost savings for students by offering an affordable alternative to traditional forms of transportation.

4 Opportunities for students to share rides, reducing costs and contributing to a more sustainable and environmentally friendly transportation solution.

5 Contributing to the improvement of the overall transportation experience for students in Bahrain.

C. *Disadvantages of the Solution*

1 The initial development and launch of the application may involve significant costs for technology, infrastructure, and marketing efforts.

2 Attracting enough students to use the platform and ensuring consistent participation may be challenging in the early stages.

3 Students may hesitate or be reluctant to adopt a new platform for ride-sharing, especially if they are already using other transportation methods.

4 Keeping information about available rides, schedules, and drivers accurate and up-to-date may require ongoing effort and management.

5 Addressing concerns related to safety, privacy, and liability could present challenges, particularly in ensuring secure and trustworthy ride-sharing among students.

D. *User Needs and Preferences*

- Providing a mobile application that connects customers with workers and companies offering home maintenance services is a desirable and effective solution for the Bahraini community.
- The target group in Bahraini society has limited knowledge of our competitors in this project.
- There is a strong demand and need within the local Bahraini community for a variety of home maintenance services.
- The majority of the local Bahraini community desires efficient services with skilled professionals at average prices.
- The majority of the local Bahraini community values the speed of response to service requests, which will be readily available through the application.

V. Conclusion and Recommendation

This study explored the shared transportation market in the Kingdom of Bahrain, with a particular emphasis on the commuting challenges faced by university students. By applying a mixed-method approach—combining quantitative, qualitative, and descriptive analytical methods—we were able to identify a clear gap in the market where existing solutions such as private buses or ride-hailing services like Uber fall short in meeting students' specific needs.

The idea of Tawseela was developed in response to this gap: a student-centered transportation solution designed to offer safe, flexible, and cost-effective shared rides aligned with university schedules and campus locations. Every aspect of the project—from branding to technical implementation and communication strategy—was shaped around the users' expectations, aiming to provide a seamless and reliable experience.

The feasibility study confirmed the project's viability both technically and financially, particularly if supported by smart marketing and institutional partnerships. Surveys and interviews indicated a strong level of student interest and demand, validating the practical potential of the concept.

In conclusion, this research not only identified a pressing issue but also proposed a scalable, user-driven solution that can have a meaningful impact on students' academic and social lives. Tawseela is not just a project; it's a step toward building smarter, student-friendly transportation ecosystems that promote accessibility, efficiency, and community well-being.

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