Use of Call Balban Application in Assisting Motorcyclists

Melda Nurfadilah Rudiana[1], Levyna Cabytta Prasellina[2], Dimas Bagus Wiranatakusuma[3]

[1] Bachelor Student in Economics, Universitas Muhammadiyah Yogyakarta, Indonesia

[2] Bachelor Student in Economics, Universitas Muhammadiyah Yogyakarta, Indonesia

[3] Lecturer at Department of Economics, Universitas Muhammadiyah Yogyakarta, Indonesia

Email: melda.nur.fe20@umy.ac.id[1], levyna.cabytta.fe20@mail.umy.ac.id[2], dimas_kusuma@umy.ac.id[3]

ABSTRACT. Introduction – This study aims to develop a system that allows motorists to easily call a tire repair technician via an Android-based smartphone. The method used in compiling this research consists of data collection. analysis of user requirements, analysis of functional requirements and analysis of application system requirements. The tire patch application in this digital era provides a solution that helps motorists overcome the problem of flat or punctured tires. Suggestions that can be given to assist the development of tire patch location search applications for further development can be done by adding information on the location of tire patches that are open or closed both day and night and similar research can also be carried out with mobile-based applications.

**Keywords:** patch tires, apps, users, locations

INTRODUCTION

1.1 Research Background

The increase in the number of motorized vehicles has created an increasing need for various vehicle-related services, including tire repair services. In today's digital era, a tire patch application is needed to be a solution to assist motorists in dealing with flat or punctured tires. The use of a tire patch application has several advantages. First, this application makes it easy for motorists to find and call tire repair services quickly and efficiently. Through this app, riders can track their location and order tire repair services with just a few taps on their phone.

In addition, the tire patch application also helps save rider time. In an emergency situation when a flat tire occurs on the highway, drivers do not need to manually find the nearest tire repair shop or face traffic jams that may occur. With the app, they can easily find available tire patch service providers around them, choose the nearest option, and get help quickly.

Figure 1.1.1
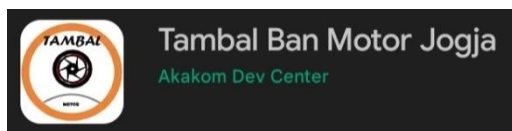
Previously there was an application for tire patches called "Tambal Ban Motor Jogja" which was released on January 24, 2021, however, this application is only available in the Yogyakarta area and only provides the nearest tire patch location without providing service features to customers, as well as features available are:

1. Select a location

2. List of registered tire patch services
3. Signpost
4. Order history

Figure 1.1.2

Furthermore, there is also a similar application called "Tambal Ban Online" which was released on
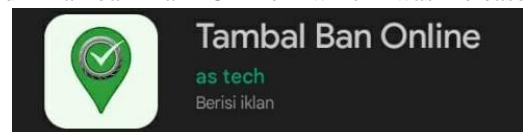
November 20, 2022, the use of this application is also almost the same, namely only providing the nearest tire patch location without providing service features to go to customers, and the features available are:

1. List of tire patches closest to your location
2. Tire patch location search
3. Browse tire patch locations
4. Form to add a tire patch location around

An increase in the number of motorized vehicles also means an increase in competition in the tire patch service industry. Tire patch applications allow service providers to expand their reach and reach more potential users. It also provides an opportunity for new entrepreneurs who want to enter the tire patch business to join the market by using the application platform.

However, there are several challenges that need to be overcome in the use of tire patch applications with the increasing number of motorized vehicles. First, tire patch service providers must ensure they have sufficient teams to respond to higher service demands. In the face of surging demand, service providers need to increase their capacity and consider using technology to optimize ordering and coordination processes.

In addition, service quality remains a key factor in the success of tire patch applications. Users will look for service providers who are reliable, qualified, and provide effective solutions to flat tire problems. Therefore, tire repair service providers need to ensure that their technicians are properly trained and have adequate equipment to handle various types of vehicles.

In conclusion, the use of tire patch applications is becoming increasingly important with the increase in the number of motorized vehicles. This application provides convenience, efficiency, and speed in obtaining tire patch services. However, challenges such as increasing service capacity and maintaining quality must still be overcome to meet the growing needs of riders.

Based on previous research from Assyabani (2019), stated that the high use of motorized vehicles in Surakarta is not uncommon for leaking tires to be found while driving. This condition is certainly not wanted by the drivers, this is due to the difficulty in finding tire patches where not every place is available and provides tire patches.

Improving the priority of vehicle users in helping to find the location of this tire patch, the author's research followed up by adding a feature to call a tire patch technician. With this background, the authors are interested in improving research on adding features with the research title "Use of the Call Balban Application in Helping Motorcyclists with Case "

1.2 Formulation of the problem
1. How does the Call BalBan application work?
2. What are the features in the Call Balban application?

1.3 Research purposes

This study aims to develop a system that allows motorists to easily call a tire repair technician via an Android-based smartphone.

1.4 Benefit

Benefit from planning application Call BalBan Android based is as following :

1. For Authors : Authors own chance For understand frequent problemsfaced by motorcyclist throughstudy And development system this . thiscan give outlook new , experience practical , and more understanding Good about need user in service tire patch .
2. For Alma mater : Results study And development application This can used as reference For study next in same fieldthiscan contribute on enhancement knowledge And understanding about use technology in industry tire patch . Besides it , application this too can become studies valuable comparisonfor the future .
3. For Society : Application Call BalBan give easy solution And efficient for public in look for And call technician tire patch via Android smartphone.

With use application this , motorists can with fast find location provider service nearest tire patch And call technician For repair punctured tires or flat . This save time , energy , and give comfort for motorcyclist .

LITERATURE REVIEW

2.1 Tire Repairs

Tire patching is the process of repairing or strengthening damaged or punctured tires by filling in holes or cracks using special patching materials. The purpose of a tire patch is to restore the normal function and reliability of the tires so that the vehicle can continue to operate safely.

Oftentimes, tire patches are looked down upon, where the work is taken for granted, even though they are services that hundreds to thousands of road users really need. Tire patching can be done as a temporary solution when the tire has minor damage that does not significantly affect the structure or strength of the tire, or as a first step before replacing the tire with a new one. Tire patching methods may vary depending on the type and extent of tire damage, and the type of vehicle involved.

2.2 Motor Rider

Motorists have a close relationship with tire fillings in the context of maintenance and safety of their vehicles. Here are some points regarding the relationship between motorists and tire patches:

1. Tire Care: As motorized vehicle users, drivers are responsible for maintaining their tires in good condition. This includes checking air pressure regularly, checking tire wear, and making sure there are no foreign objects stuck to the tires that could cause damage or punctures.
2. Understanding of Tire Patches: Motorcyclists need to understand the concept and process of tire fillings. When a tire suffers minor damage such as a nail or a break, the rider may consider having a tire patched as a temporary solution to gain additional time before the tire is replaced with a new one. However, it's important to understand that tire patches are only a temporary solution, and damaged tires should be replaced immediately to ensure optimum safety and performance.
3. Safety Awareness: Motorists must understand the importance of safety when using patched tires. Patched tires may perform differently from intact tires and can increase the risk of tire failure during a ride. Riders must consider safety factors and decide whether the use of patched tires is still safe to use in certain situations.
4. Access to Tire Repair Services: If a rider experiences tire damage on the road, they can seek out a tire repair service to repair their

tires. Many auto repair shops and service providers provide fast and efficient tire repair services. Riders can contact the nearest tire repair service or use a mobile application that provides on-demand services to repair their tires.

It's important to remember that tire patches only provide a temporary solution. If the tire is seriously damaged or cannot be patched, the driver must immediately replace the tire with a new one to maintain the safety and stability of the vehicle.

2.3 Mobile Application

A mobile application is software specifically designed to run on a mobile device, such as a smartphone or tablet. This application can be downloaded and installed from an application store provided by the mobile operating system, such as the App Store for iOS or the Google Play Store for Android.

Mobile applications have various purposes and functions. Some common types of mobile applications include:

1. Social Media Apps: Like Facebook, Instagram, Twitter and TikTok. This application allows users to connect with others, share content and interact through social media platforms.
2. Communication Apps: Like WhatsApp, Messenger, Skype or Telegram. This application allows users to communicate with other people via text messages, voice calls, or video calls.
3. E-commerce Application: Like Amazon, eBay, or Lazada. This application allows users to make product purchases online, explore item catalogs, and track orders.
4. Navigation Apps: Such as Google Maps, Waze, or Apple Maps. This application helps users find directions, find locations, calculate distances, and provide real-time traffic information.
5. Health and Wellness Apps: Like Fitbit, MyFitnessPal, or Headspace. This application helps users monitor health, fitness, sleep patterns, and provide guidance or physical exercise.
6. Banking Applications: Like the mobile applications of certain banks. This application allows users to access bank accounts, make money transfers, pay bills, or monitor financial transactions.

In addition, there are also many other types of applications, such as game applications, educational applications, photography applications, video editing applications, and many more. Mobile applications have become an important part of many people's daily lives, assisting them in various aspects of life and providing easy access to information and services through their mobile devices.

2.4 On-demand definition

On-demand refers to a business or service model where consumers can obtain or access products or services instantly on their demand. In the on-demand model, consumers can request products or services through available platforms or applications, and then these services will be provided immediately or provided quickly.

The on-demand model has become popular with the advancement of digital technology and online platforms. Some examples of common on-demand services include:

1. Food Delivery: On-demand services such as Uber Eats, DoorDash, or GrabFood allow consumers to order food from local restaurants or warungs and have it delivered directly to their home or office.
2. Transportation: Services such as Uber, Lyft, or Grab provide quick and easy access to booking a vehicle with a driver to get customers to their destination.
3. Cleaning and Repair Services: Services such as Handy or TaskRabbit provide home cleaning, repair, or garden maintenance services on request.
4. Video and Music Streaming: Platforms such as Netflix, Hulu, or Spotify allow consumers to instantly access video or music content over the internet without the need to download it first.
5. Health Services: Several on-demand health applications such as Teladoc or Doctor Consult allow consumers to consult doctors via telephone or video call without the need to go to a clinic or hospital.

The advantages of the on-demand model are ease of access, convenience, and responsiveness to consumer requests. Consumers can get products or services quickly, without having to leave their home, and often with more flexible choices. The on-demand model also provides opportunities for service providers or workers to offer their services directly to consumers without the need for traditional third party involvement. In several industries, the on-demand model has changed the way business is done and provided consumers with a more personalized and streamlined experience.

2.5 Previous Research

In this context, the authors include three previous studies to differentiate them from current research. The first study entitled "Finding Android-Based Tire Patches" by Sukri Sukri, Ramadhan Putra and Wita Yulianti from Abdurrab University Pekanbaru in 2021. This research uses SWOT analysis techniques to identify internal and external factors in developing applications on Android. The goal is that this application is expected to help users

who want to find tire patch locations along with information from tire patches and the closest route to the tire patch location so that it is more efficient in terms of time.

The second study entitled "Android-Based Online Tire Patch Service Order Application Using the Google Maps API" by Yulistyadi Firman Dwi P from the Informatics Engineering Department, PGRI Ronggolawe University, Tuban in 2023. This research aims to make it easier for vehicle users to find tire patch locations. the closest accessible tire patch search application.

The third research is running "Design and Build Application for Finding Tire Patch Locations in Surabaya Based on WEB" by Rina Puspita Sari and Agung Wahyudi from the informatics engineering department, University of 45 Surabaya in 2023. This research aims to make it easier to use vehicles in finding tire patch locations in the Surabaya area . Thus, the researcher believes that the current research is different from the previous studies mentioned above.

RESEARCH METHODS
3.1 Data collection

Data collection is carried out to obtain the data needed in making an application program. In this study, data collection techniques were carried out by means of literature studies. This method is a data collection technique based on references and supporting literature as reference material related to the object under study by studying methods, techniques, concepts, theories from various sources such as books and journals related to information from making applications made at the data analysis stage. . The references used for data in this study:

1. Rancangan Bangun Aplikasi Pencarian Lokasi Tambal Ban di Surabaya Berbasis WEB, yang disusun oleh Rina Puspita sari dan Agung Wahyudi
2. Aplikasi Order Layanan Tambal Ban Online Berbasis Android Dengan Memanfaatkan Google Maps API yang disusun oleh Ridhwan Gumilar Sudrajat, Nur Rachman dan Rahmi Nur Shofa
3. Pencarian Tempat Tambal Ban Berbasis Android yang disusun oleh Sukri Sukri, Ramadhan Putra dan Wita Yulianti.

3.2 Analysis of User Needs

Delivery of information and user satisfaction is the main goal of this mobile-based multimedia application. Therefore it is necessary to specify the needs of users in general. There are several things to consider in meeting user needs, namely:

1. User friendly, namely users prefer applications that are easy to use and operate.
2. A more attractive and pleasing display is to use multimedia elements such as images and text.
3. The resulting application can be used as an alternative to get more detailed information.

3.3 Functional Requirements Analysis

The functional requirements of this application so that it can run according to what you want to display:

1. The main page display of the application will display a menu list of 3 icons, namely navigation or interactive maps, help center, fill in electronic balances.
2. The icon will display the information according to the menu.
3. This application can later be used by motorists on the highway

3.4 Analysis of Application System Requirements
1. Hardware
   To run this application requires smartphone hardware with Android operating system.
2. Software
   To run this application requires Android operating system software.

RESULTS AND DISCUSSION

4.1 Definition of Call BalBan

The tire patch application is a mobile application designed to make it easier for users to get tire patch services for their vehicles. This application is generally connected to a network of registered tire repair technicians or repair shops, so that users can easily search for and order the required tire repair service.

Through the tire patch application, users can enter information about the location of the vehicle that has a tire leak, then the application will display a notification to the nearest tire patch technician, if the tire patch technician can help motorists, they will approve and automatically the application will send a notification to the user if there is a tire patch technician who approves and will go directly to the application user's location.

In addition, the tire patch application can also provide other features such as service history, payment through the application, technician reviews and ratings, as well as a help center to help users with questions or problems related to tire patch services.

4.2 Call BalBan Application Mechanism
4.2.1 Call BalBan Application Mechanism User Perspective
1. Registration and Login:
   - Users need to download the Call BalBan application from the official app store and register by creating an account.
   - After registering, users can log in to their account using the registered phone number or email address and password.
2. Determining Location:
   - Users must grant the Call BalBan app permission to access their location.
   - When wanting to order Call BalBan, users will be asked to enter their pickup address. This can be done by manually entering the

address or by using the automatic location feature.

3. Order Call BalBan:
   ▪ Users need to enter the destination address or select a destination from the list provided.

4. Confirmation and Assignment of Call BalBan Technicians:
   ▪ After the user has entered all the necessary details, the Call BalBan application will display the estimated price and arrival time of the Call BalBan technician.
   ▪ Users can review the information and confirm orders.
   ▪ Once confirmed, the application will look for the nearest Call BalBan technician to be assigned to the user's location.

5. Navigation and Monitoring:
   ▪ Once a driver has been assigned, users can view information on where the Call BalBan technician has been assigned, including the owner, and a photo of the location.
   ▪ The Call BalBan application provides real-time monitoring which allows the user to see the position of the Call BalBan technicians as they approach the user's location.

6. Payment:
   ▪ After arriving at the destination, the Call BalBan application will provide an estimate of the cost of the technician's services that need to be paid.
   ▪ Users can choose the desired payment method, such as cash payments or payments via electronic money connected to their account in the Call BalBan application.

7. Reviews and Ratings:
   ▪ After the Call BalBan technician service is complete, users can provide reviews and ratings of Call BalBan technicians.
   ▪ These reviews and ratings help maintain service quality and provide feedback to other users who may wish to use Call BalBan's services.

4.2.2 **Mechanism of Call BalBan** Application from Technician's Perspective

1. Registration and Verification:
   • Technicians must register through the Call BalBan application and fill in their personal information, such as name, telephone number, email address, and information on the location of a tire repair shop.
   • Drivers also need to go through a verification process, which may involve verifying documents such as a driver's license (SIM) and vehicle registration certificate (STNK).

2. Availability and Taking Orders:
   • Once the technician is successfully registered and verified, they will enter "Available" mode within the Call BalBan app.
   • When there is a Call BalBan service request from the user, the technician available in the nearest area will receive a notification about the order.
   • Technicians can accept or decline service orders based on their availability.

3. Navigate to Pick Up Location:
   • After receiving the order, the technician will see the details of the order, including the user's address.
   • The Call BalBan application provides a navigation feature that will help technicians reach the user's location using maps and directions.

4. Taking Service Orders:
   • The technician will reach the location and confirm the arrival to the user through the application.
   • Technicians will repair punctured tires.

5. Payment and Rating:
   • After arriving at the destination, the Call BalBan application will calculate the cost of the trip based on distance, time and other factors.
   • Users will pay via the chosen payment method, such as cash or payment through the application.
   • After that, users can provide technicians with reviews and ratings based on their experience.

6. Manage Availability Status:
   • After completing a repair, technicians can choose to remain available to take future orders or set their availability status to their liking.

4.3 Call BalBan Application Features

Following are some of the common features that can be found in a tire patch application:

1. Location Search: This feature allows the user to enter the location of the vehicle with a punctured tire so that technicians can find the place easily.

2. Technician List: The application can display a list of the closest available tire patch technicians. Technician information, such as name, rating, and distance, may also be available to help the user make an informed decision.

3. Mapping and Navigation: This feature provides an interactive map that displays the location of the nearest tire patch user and technician. Navigation can also be included to help users and technicians get to the location quickly and precisely.

4. Service Ordering: Users can order tire patching services through the application by entering information about the type of vehicle, the number of

tires that need to be repaired, and the problems experienced.

5. Communication with Technicians: Applications can provide direct communication features between users and tire patch technicians. This can be a text chat or voice call to discuss further details about the required services.

6. Cost Estimation: The application can provide a cost estimate for tire patching services based on the information provided by the user. This helps users estimate the costs that will be incurred before ordering services.

7. Service History: This feature records the tire patch service history that has been performed by the user. Users can view their order history, including date, service details, and costs incurred.

8. Payment Methods: Tire patching applications must provide various payment options, such as cash payments, and electronic money, or other payment methods provided in the application.

9. Reviews and Ratings: After the service is complete, users can provide reviews and ratings about the technicians who have performed the tire patch service. This helps other users in choosing a qualified technician.

10. Help and Support Center: Applications must provide a help center with contact information, FAQs, and usage guides to assist users if they encounter problems or have questions related to tire patching services.

CONCLUSION

In conclusion, the increase in the number of motorized vehicles has created a higher demand for tire repair services. The tire patch application in this digital era provides a solution that helps motorists overcome the problem of flat or punctured tires. The use of this application makes it easy to find and order tire patch services quickly and efficiently. Through this application, riders can track their location and order tire repair services easily through their cell phones.

In addition to these conveniences, the tire patch application also helps save rider time. In an emergency situation on the highway when a flat tire occurs, motorists do not need to manually find a tire repair shop or face traffic jams that may occur. Using the app, they can easily find available tire patch service providers around them, choose the nearest option, and get help quickly.

SUGGESTION

Suggestions that can be given to help the development of tire patch location search applications are:

1. For further development, it is possible to add information on the location of tire patches that are open or closed both day and night.

2. Similar research can be carried out with mobile-based applications.

REFERENCE

Aditama , RY, & Rosalina, I. (2020). Development Tire Patch Mobile ApplicationAndroid Based Online . National Journal of Engineering Electro And TechnologyInformation (JNTETI), 9(1), 28-34.

Darmawijaya , R., & Risan , M. (2018). Design System Information Tire PatchWeb Based in XYZ Workshop . Journal Development Technology InformationAnd Knowledge Computers , 2(9), 3375-3382.

Fajriah , N., & Yulianto , Y. (2020). Application Booking Service Patch Based Tires Web. Journal Scientific Education Technology And Vocational , 7(2), 80-89.

Heryanto , D., & Hardiyanto , A. (2018). Design Getup System Information Booking Web- Based Tire Patching in Tegal City . Journal Study Informatics , 1(1), 39-44.

Huda, A., & Supriyanto , H. (2019). Analysis And Design Mobile ApplicationAndroid-Based Tire Patch Service . Journal Sisfokom (System Information And Computer), 8(2), 106-113.

Isnaeni , AY (2023). Application Android Mobile –Based Surakarta City Tire Patch .Thesis , Institute Surakarta Technology .

Nurhadi , A., & Sujianto , A. (2017). Development Android application for ServiceTire Patch. Journal Technology Information And Knowledge Computers , 4(4), 305-312.

Oktavia , D., & Anggraini , D. (2017). Ordering android app Service PatchOnline Ban. National Journal of Engineering Electro And Technology Information (JNTETI), 6(1), 1-7.

Pamungkas , A., & Rosalina, I. (2019). Development Application Patch Based TiresAndroids. National Journal of Engineering Electro And Technology Information (JNTETI),8(1), 50-55.

Rizki , R., & Susanto , H. (2018). Design Ordering Mobile Application ServiceTire Patch Online. Journal Technology And System Computers , 6(3), 144-150.

Sari, RP, & Wahyudi , A. (2023). Design Get up Application Search LocationWeb- Based Patch Tires in Surabaya . TechnologyInformatics Surabaya,7(2), 45-56.

Sukri , S., Putra, R., & Yulianti , W. (2023). Search Place Patch Based TiresAndroids. Technology Information Applied , 10(3), 112-125.

Yusman , I., & Nasir, M. (2017). Analysis And Design Application Tire PatchOn line. Journal System Information , 12(2), 209-218.