Interface Analysis of the Pickup and Destination Location Search Feature in the GoRide Menu of the Gojek Application

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Abstrak

Penerapan komponen Antarmuka yang efektif merupakan aspek krusial dalam menentukan keberhasilan aplikasi mobile, termasuk Gojek. Penelitian ini bertujuan untuk mengevaluasi implementasi komponen UI pada fitur pencarian lokasi penjemputan dan tujuan dalam menu GoRide di aplikasi Gojek dengan menggunakan metode Heuristik Usability. Metode ini terdiri dari sepuluh prinsip heuristik yang dikemukakan oleh Jakob Nielsen, yang digunakan untuk mengidentifikasi masalah kegunaan yang berpotensi mempengaruhi pengalaman pengguna. Penelitian dilakukan dengan pendekatan kualitatif, di mana serangkaian evaluasi dilakukan oleh pakar UI terhadap antarmuka fitur pencarian lokasi pada GoRide. Hasil penelitian menunjukkan beberapa area perbaikan terkait konsistensi desain, visibilitas status sistem, kejelasan pesan kesalahan, dan efisiensi penggunaan pada fitur pencarian lokasi, yang berdampak pada efisiensi dan kepuasan pengguna. Implikasi dari temuan ini dapat menjadi panduan bagi pengembang dalam meningkatkan kualitas antarmuka fitur pencarian lokasi pada GoRide guna meningkatkan pengalaman pengguna secara keseluruhan. Studi ini juga memberikan kontribusi pada pengembangan metodologi analisis UI dan evaluasi kegunaan aplikasi berbasis heuristik di Indonesia.

***Kata kunci** : User Interface, GoRide, Gojek, analisis UI, Heuristik Usabilitz*

Abstract

The effective implementation of User Interface (UI) components is a crucial aspect in determining the success of mobile applications, including Gojek. This research aims to evaluate the implementation of UI components in the location search feature for pickup and destination within the GoRide menu of the Gojek application using the Heuristic Usability method. This method consists of ten heuristic principles proposed by Jakob Nielsen, which are used to identify usability issues that may potentially affect the user experience. The research was conducted using a qualitative approach, where a series of evaluations were carried out by UI experts on the user interface of the location search feature in GoRide. The results of the study indicate several areas for improvement related to design consistency, visibility of system status, clarity of error messages, and efficiency of use in the location search feature, which impact user efficiency and satisfaction. The implications of these findings can serve as guidelines for developers in enhancing the quality of the location search interface in GoRide to improve the overall user experience. This study also contributes to the development of UI analysis methodologies and heuristic-based usability evaluation of applications in Indonesia.

***Keywords** : User Interface, GoRide, Gojek, UI analysis, Heuristic Usability*

1. Introduction

Digital transformation in the transportation industry has brought significant changes to urban mobility. Ride-hailing applications like Gojek have become key catalysts for this transformation in Indonesia. As one of Southeast Asia's leading technology unicorns, Gojek has seamlessly integrated itself into the daily lives of the community through various services, including GoRide, which offers motorbike-based transportation solutions. The success of this platform is largely attributed to the effectiveness of its user interface (UI), which serves as a bridge between users and digital services, reflecting the importance of user-centered design principles in enhancing user engagement (Garrett, 2010).

The location search feature for pick-up and drop-off points within the GoRide application is a crucial element that influences user experience and operational efficiency. The accuracy and ease of determining pick-up and drop-off locations affect user satisfaction, wait times, and the overall quality of service. Precise geolocation is a key factor in building user trust in ride-hailing applications, especially in areas with varying network conditions. However, designing an intuitive and responsive UI for this feature remains a significant challenge, considering Indonesia's diverse topography and technological infrastructure.

Previous studies emphasize the importance of real-time feedback systems in online transportation applications, including estimated arrival times and route visualization. Incorporating these elements into the user interface of the location search feature can significantly enhance user experience and operational efficiency. For instance, research by Venkatesh, Thong, & Xu (2012) found that ease of use and perceived usefulness are major factors in the acceptance and continued use of mobile applications.

In the context of UI design, a user-centered design approach is essential for increasing user engagement and loyalty in mobile applications (Garrett, 2010). Understanding the context of use and the specific needs of users is at the core of effective design. This is highly relevant for GoRide's location search feature, given the various situations and conditions users may encounter when utilizing the service.

Furthermore, research on the role of technology in the user experience of ride-hailing services indicates that the speed and accuracy of the booking process, including location search, positively correlate with user satisfaction. Additionally, a UI design that adapts to varying network conditions and diverse devices is crucial, especially in developing countries like Indonesia, where technological infrastructure is unevenly distributed (Haniva et al., 2023).

The Importance of Heuristic Evaluation in GoRide's UI Design

To evaluate and improve the UI of the location search feature in GoRide, a heuristic evaluation approach is highly relevant. Nielsen's (1994) heuristic evaluation method allows for the identification of usability issues within the user interface based on ten heuristic principles. These principles include system status visibility, consistency with the real world, and user control and freedom, which are particularly pertinent in the context of mobile applications like GoRide. For example, the principle of system status visibility emphasizes the importance of real-time feedback when the system processes location search requests, while the principle of consistency with the real world ensures that icons and terminology used align with users' everyday understanding, facilitating easier navigation of the application.

This study aims to conduct an in-depth analysis of the UI of the location search feature in the GoRide application, focusing on visual design, functionality, and user experience through heuristic evaluation. This approach involves direct observation and user interviews, as well as analysis based on heuristic principles (Nielsen, 1994; Haniva et al., 2023). The results are expected to identify the strengths and weaknesses of the current feature and to formulate recommendations for UI improvements. This approach aligns with the methodology of evaluating electronic service quality, which emphasizes the user perspective in quality assessment (Parasuraman, Zeithaml, & Malhotra, 2005).

With the findings from this research, developers can better understand the areas that need improvement to enhance the user experience in the GoRide application. Additionally, the study is expected to contribute to the literature on UI design and heuristic evaluation methods in the context of mobile applications in developing countries, where factors such as diverse technological infrastructure and unique user characteristics are critical aspects of the design process.

2. Theoretical Framework

2.1. User Interface (UI)

The User Interface (UI) is a critical component in the interaction between users and digital systems, aiming to facilitate effective and efficient usage. UI integrates various visual and functional elements such as buttons, icons, text, and layouts to create a seamless and intuitive user experience.

Haniva et al. (2023), in their study on user experience analysis of the UPT-TIK website at Universitas Singaperbangsa Karawang, assert that effective UI design must consider aspects of ease of use, efficiency, and user satisfaction. The researchers emphasize that a well-designed UI can enhance user engagement and improve information retention.

In a study conducted by Ibrahim and Lestari (2023) on the UI/UX design of the Rumah Tahfidz Akhwat website, the importance of responsiveness in UI design is highlighted, especially for applications accessed through various devices with different screen sizes. The research findings reveal that responsive design can enhance accessibility and overall user experience.

In the context of mobile applications like Gojek, having an intuitive and user-friendly UI is crucial for increasing user satisfaction. Research analyzing service satisfaction among Go-Car application users indicates that the ease of use of the application, including a user-friendly UI, significantly influences customer satisfaction.

Furthermore, Ramadhanti et al. (2023) conducted a study on the use of heuristic evaluation in UI/UX design, emphasizing the importance of principles such as system status visibility, alignment between the system and the real world, as well as consistency and standards in designing effective UIs. The researchers suggest that applying these principles can help anticipate usability issues in web applications.

2.2. Application of the Heuristic Evaluation Method in Mobile Applications

The application of the Heuristic Evaluation method allows developers to systematically assess the interface of mobile applications based on the ten heuristic principles established by Nielsen (1994). These principles, such as system status visibility, alignment with the real world, user control and freedom, as well as aesthetic and minimalist design, are highly relevant in the context of mobile applications.

Using this method, developers are expected to identify usability issues that may not be detected through traditional user testing. These issues can include confusing navigation, interface elements that are too small to be easily tapped with fingers, or a lack of clear feedback when users perform certain actions.

A case study conducted by Haniva et al. (2023) demonstrates that the implementation of the Heuristic Evaluation method on the UPT-TIK mobile application successfully identified several usability problems affecting user efficiency and satisfaction. These findings were then used to provide interface improvement recommendations, such as rearranging the layout, enhancing the visibility of important elements, and simplifying navigation flows.

By addressing the usability issues identified through heuristic evaluation, mobile application developers can enhance the overall user experience. Well-designed interfaces that consider the specific needs of mobile users will improve efficiency, satisfaction, and user loyalty to the application.

3. Research Methodology

This study employs the heuristic evaluation method, focusing on expert observation, experience, and judgment of the location search feature in the GoRide application. This method was

chosen due to its ability to efficiently identify usability issues without requiring a large number of external respondents (Nielsen, 1994). The evaluation was conducted by researchers who have intensively used the GoRide app and have a deep understanding of good interface design principles (Garrett, 2010).

The main steps in this research include initial observation of the location search feature on various devices and network conditions. The goal was to assess the effectiveness and efficiency of the feature in accurately determining the user's location. The observations were then analyzed using Nielsen's 10 heuristic principles (1994), such as system status visibility, match between system and the real world, user control and freedom, and flexibility and efficiency of use. Each aspect of the feature was evaluated to measure its contribution to the user experience.

The researchers also conducted a literature review to compare their findings with previous relevant studies. For instance, Haniva et al. (2023) demonstrated that applying heuristic evaluation in mobile apps can identify various usability issues that affect user satisfaction and efficiency. Additionally, Ramadhanti et al. (2023) highlighted the importance of heuristic evaluation in UI/UX design, particularly in anticipating usability issues in web and mobile applications.

After the heuristic evaluation was individually performed, the researchers discussed their findings in an expert group to gain diverse and comprehensive perspectives on the quality of the evaluated feature. The final step was to prepare an evaluation report summarizing the findings from the observations and expert discussions. This report includes a list of identified usability problems with the location search feature, along with recommendations for improvements based on effective interface design principles, in line with previous research, such as the findings of Parasuraman, Zeithaml, & Malhotra (2005) on the importance of electronic service quality.

While the heuristic evaluation method offers advantages in terms of efficiency and the ability to produce in-depth analysis based on the real-world experiences of experts, it also has limitations regarding the subjectivity of the evaluation. To minimize potential bias, this study involved multiple experts who independently conducted the evaluation and compared the findings with relevant literature.

Overall, this method provides valuable insights into the quality of the location search feature in the GoRide app from a usability perspective. The findings can serve as feedback for developers to improve the performance of this feature, enhancing user experience and promoting user satisfaction and trust in the GoRide service.

Heuristic Usability Evaluation

The Heuristic Usability Evaluation method, introduced by Jakob Nielsen in 1990, is an approach to evaluate user interfaces based on ten fundamental principles or heuristics (Nielsen, 1994). This evaluation aims to identify usability problems that may go undetected in traditional user testing. In the context of the GoRide application, this method was applied to assess the location search feature.

The Heuristic Usability Evaluation principles relevant to the GoRide feature include:

1. **Visibility of System Status** The GoRide app continuously informs users about the current status through timely feedback. For instance, when users input pickup or destination locations, the app displays real-time location suggestions and processing indicators, so users know the system is working to find the desired location.

2. **Match Between System and the Real World** The GoRide interface uses familiar terms and icons, such as map icons, location pins, and terminology like "Pickup" and "Destination." This makes it easier for users to understand the app's functionality and navigation, as it uses language and concepts that align with the real world.

3. **User Control and Freedom** GoRide offers users the freedom to change or cancel the pickup location and destination before confirming the booking. However, the limitation in manually adjusting the pickup point, especially in areas with weak GPS signals, can reduce user control

and requires further improvement.

4. **Consistency and Standards** The design of the location search feature in GoRide is consistent with the design standards of other Gojek applications. The use of uniform colors, icons, and layouts helps users navigate easily and reduces confusion when switching between features within the app.

5. **Error Prevention** The app strives to prevent errors by providing accurate location suggestions and an auto-complete feature. However, in areas with low connectivity, location accuracy may decrease, increasing the risk of booking errors. Implementing additional verification features could help prevent such errors.

6. **Recognition Rather Than Recall** GoRide utilizes location history and favorite locations to reduce users' memory load. When entering a pickup or destination location, the app displays suggestions based on frequently used or recently selected locations, making the booking process faster and more convenient.

7. **Flexibility and Efficiency of Use** The interface is designed to be flexible and efficient for both novice and experienced users. Users can quickly input locations via manual entry or select from an interactive map, and can also save favorite locations for quicker access in the future.

8. **Aesthetic and Minimalist Design** GoRide implements a simple and minimalist interface design, focusing on essential elements such as location input fields and the map. Efficient use of space and clean visuals help users stay focused on the main task without being distracted by unnecessary elements.

9. **Help Users Recognize, Diagnose, and Recover from Errors** When an error occurs, such as a failure to determine the location, the app displays a clear message and offers solutions, such as manually entering the address or checking the internet connection. This helps users understand the issue and take corrective action.

10. **Help and Documentation** GoRide provides assistance through an in-app help feature and usage guides that are accessible at any time. Although the interface is designed to be intuitive, the availability of this documentation supports users who may experience difficulties or are using the app for the first time.

By applying these ten heuristic principles specifically to the location search feature in GoRide, the evaluation becomes more relevant and targeted. This enables researchers to precisely identify areas requiring improvement and provide more accurate recommendations. Implementing improvements based on this evaluation is expected to enhance the user experience, reduce usability errors, and ultimately increase user satisfaction and loyalty to the GoRide service.

4. Test Results

The location search feature for pickup and destination is one of the key components in the GoRide app, allowing users to define the starting point of their journey. Based on observations and interviews with GoRide users in Semarang, several important aspects related to this feature were identified :

4.1. Principles of Visibility of System Status and Help and Documentation in the Pickup Location Sharing Feature

The location sharing feature for pickup and destination has significant potential to enhance the user experience in the GoRide app. This feature allows users to share their pickup location with friends, family, or colleagues who also use the GoRide app, facilitating coordination and joint trip planning. Although this feature is available in the app, its utilization by users has not been fully optimized.

In the context of Jakob Nielsen's principle of **Visibility of System Status**, GoRide can improve the visibility of this feature by ensuring that elements indicating its presence are clear and easily recognizable. For example, the location-sharing icon or button, placed on the booking screen or pickup point, could be made more prominent to attract users' attention. Additionally, adding notifications or pop-up messages to remind users about the existence and purpose of this feature can further enhance its visibility. By doing so, users will be more likely to notice and utilize the feature in relevant situations.

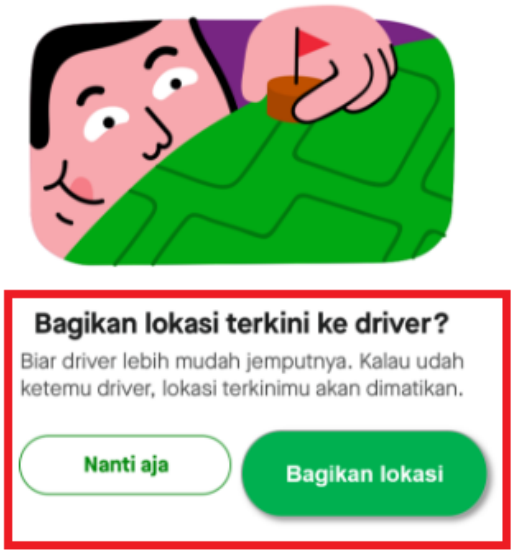

Image 1. Location Sharing Feature in GoRide.

The **Help and Documentation** principle is also highly relevant to assist users in understanding how to use the location-sharing feature. As seen in *Image 1*, providing brief in-app guides or tutorials will help new users who may not be familiar with the sharing function. Additionally, clear and concise instructions on how to share locations and its benefits will encourage users to take advantage of this feature more frequently in their daily travel. Additional documentation, such as a FAQ section or contextual help, would also be extremely helpful for users who may have questions or uncertainties when first using this feature.

The benefits of applying these principles include enhanced coordination and a greater sense of security for GoRide users. With better visibility and clear guidance, users will easily share their pickup locations with their loved ones, reducing the risk of miscommunication or confusion about pickup points. Moreover, this feature provides a sense of security, especially when users are traveling alone or at night, as close contacts can track the user's location in real-time.

This demonstrates that social and security aspects significantly affect customer satisfaction with online transportation services. Users are likely to be more satisfied and loyal to services that offer features enhancing social interaction and a sense of safety, such as ride-sharing options or emergency buttons. Therefore, implementing the principles of **Visibility of System Status** and **Help and Documentation** will help improve user satisfaction and loyalty towards the GoRide location-sharing feature.

4.2. Application of the Principle of Match Between System and the Real World in Integration with Digital Maps and Traffic Information

The principle of **Match Between System and the Real World** is implemented in GoRide through the integration of intuitive and familiar digital maps and real-time traffic information. Users can view an interactive map that displays their location, street names, and nearby landmarks, making it easier to select an accurate pickup point. This integration allows users to navigate the app in a way that closely aligns with their real-world experiences, which helps reduce confusion and enhances the efficiency of navigating the application.

Real-time traffic information provides users with more control over planning their trips, such as choosing the best route based on current traffic conditions. This application of the principle makes users feel more comfortable, as the interface resembles their real-world experience, further reducing confusion and making navigation smoother and more efficient.

User experience with the GoRide app is significantly influenced by how the pickup location search feature is integrated with digital maps and real-time traffic information. Observations of the GoRide interface show that this feature is well-implemented, allowing users to easily see their current location, select their desired pickup point, and access contextual information such as street names, landmarks, and nearby facilities through an interactive and informative digital map.

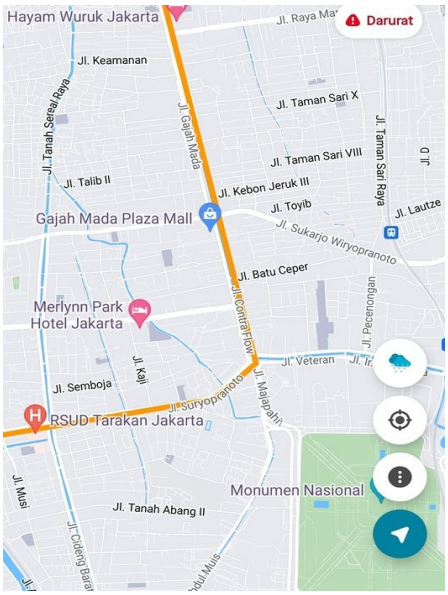

Image 2. Integration with Digital Maps and Traffic Information

The User Control and Freedom principle is also relevant in this feature. Users are given control to select or change their pickup points and adjust their route as needed. As shown in *Image 2*, where GoRide displays an interactive navigation feature with options to choose alternative routes based on real-time traffic information, users have the flexibility to plan their trips, particularly when facing congestion or road detours.

Effective integration with digital maps enhances the ease of use of the app and helps users pinpoint their pickup locations more accurately. This aligns with the findings of Parasuraman, Zeithaml, & Malhotra (2005), who emphasized the importance of information quality in improving user satisfaction with digital services. They found that the availability of accurate, relevant, and up-to-date information significantly contributes to user satisfaction.

Additionally, real-time traffic information plays a crucial role in improving user experience. Interviews with GoRide users in Semarang revealed that many users appreciate the traffic information displayed on the digital map, such as congestion levels or route diversions due to roadworks. This information helps users estimate the pickup time and choose the optimal pickup location based on current traffic conditions.

Research by Ramadhanti et al. (2023) in the AIP Conference Proceedings also highlights that the application of heuristic evaluation in digital applications enables developers to anticipate usability issues. In the context of GoRide, this means developers can consider enhancing the map and traffic information features to support a better user experience, such as providing more interactive alternative route options and user-preference-based route selections.

While the integration with digital maps and traffic information in the GoRide app is fairly good, there is still room for improvement. Some users have suggested adding more detailed information to the digital map, such as bus stop locations, train stations, or other key places. Additionally, users have expressed a desire for more interactive navigation features, such as clearer direction guidance or options for selecting alternative routes based on user preferences.

By applying the heuristic principles proposed by Nielsen (1994), including visibility of system status, user control, and flexibility, GoRide can further enhance the overall user experience, improve customer satisfaction, and strengthen user trust and loyalty to the GoRide service in Semarang.

4.3. User Control and Freedom in GoRide: Giving Users the Freedom to Change or Cancel Pickup and Destination Locations Before Confirming the Booking

The **User Control and Freedom** principle in GoRide's location search feature presents a combination of strengths and significant limitations that impact the overall user experience. On the positive side, GoRide has successfully implemented a system that offers users a basic level of flexibility when selecting locations. Users can easily change their pickup and destination points before confirming the booking. Additionally, they can save and access favorite addresses and search history, providing further convenience.

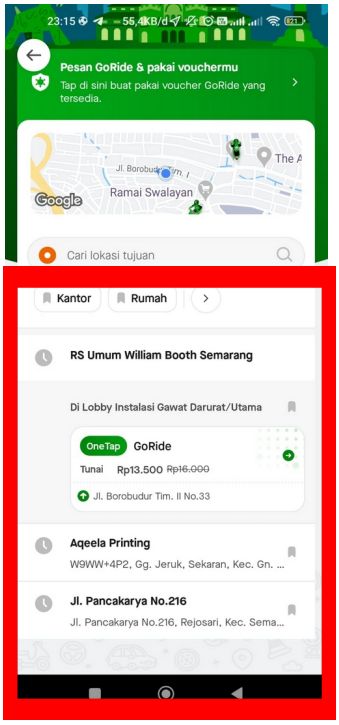

Image 3. GoRide Saves Favorite Addresses and Search History

The GoRide application shows that features such as saving favorite addresses and search history are available, along with a clear cancellation feature. The interface provides an easily accessible "back" button and a confirmation process before finalizing the booking.

However, several significant limitations still exist within the system, especially regarding manual adjustments and technical issues. Users face difficulties when manually adjusting the location pin in areas with weak GPS signals. Additionally, there are limitations in the zoom and pan functions on the

map when adjusting the location. The system's heavy dependence on GPS signal quality, slow response during manual location adjustments, and interference from tall buildings or enclosed areas create significant technical barriers that impact the user experience.

Based on these findings, several improvement recommendations can be made to enhance service quality. In terms of improving manual control, implementing a drag-and-drop system for adjusting the location pin, adding a more responsive zoom feature, and integrating nearby landmarks for location reference could offer better solutions. System optimization is also needed through the development of an offline mode for areas with weak signals, improved geolocation accuracy through network triangulation, and the addition of a visual location confirmation feature.

Furthermore, ease of use can be improved by adding a location search feature based on points of interest (POI), implementing a more accurate autocomplete system, and allowing multiple pickup points to be saved.

The implementation of these recommendations would have an impact on various aspects of the service. From a user experience perspective, these improvements could enhance user satisfaction by providing better control, reducing errors in location determination, and improving the time efficiency of the booking process. From an operational perspective, this could reduce cancellations due to location errors, improve driver-passenger matching efficiency, and optimize routes and travel time.

From a business perspective, these improvements could increase user retention, reduce operational costs related to location errors, and build greater trust in the service overall.

In conclusion, while GoRide has provided basic features for user control and freedom in location search, there is still significant room for improvement, particularly in terms of manual adjustments and handling areas with weak GPS signals. Implementing the proposed recommendations would not only improve the user experience but also positively impact operational efficiency and the overall business value of the service.

4.4. (Consistency and Standards) The interface design of the location search feature in GoRide is consistent with the design standards of other Gojek applications.

GoRide demonstrates effective implementation in creating a cohesive and consistent user experience. This design consistency is evident through uniform visual elements, such as Gojek's distinctive green color scheme applied to primary buttons and interactive elements, as well as the use of intuitive and familiar icons for standard functions like location pins, search, and favorite features. The uniformity of these visual elements not only reinforces the application's visual identity but also facilitates users in understanding and operating the available features without confusion. According to Garrett (2010), consistent visual elements help strengthen user engagement with the application.

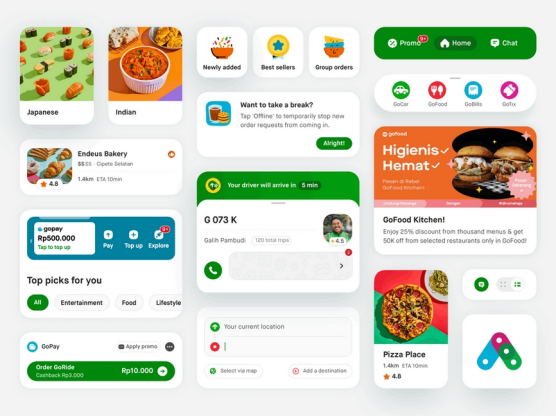

Image 4. Gojek Application Design

From Image 4, it can be seen that in terms of layout, GoRide adopts a design pattern consistent with other features within the Gojek ecosystem. The search column is positioned at the top of the screen, the interactive map in the center, and the confirmation button at the bottom, reflecting a clear

and easily predictable visual hierarchy. Additionally, consistent typography in font type and text size ensures readability and information accessibility. This consistency helps reduce the learning curve for new users, allowing them to navigate the application more easily, while existing users feel familiar with the consistent interface across all Gojek applications (Nielsen, 1994).

However, there are several areas that require improvement to enhance the overall consistency and standards of the interface. In some cases, variations were found in the system's responsiveness when interacting with the map, such as differences in zoom sensitivity or gesture responses when users adjust location pins. Error messages and system notifications also sometimes display inconsistencies in format and delivery style, which can cause confusion for users. Consistency in system communication is essential to maintain a smooth and reliable user experience (Parasuraman, Zeithaml, & Malhotra, 2005).

To improve consistency and standards, a more comprehensive design guide is needed that covers all interactions on the map and location manipulations to ensure uniform interaction patterns. Standardizing the format of messages and notifications throughout the application will also strengthen a consistent and easily understandable communication language for users. Implementing a strict quality control system to monitor adherence to design standards in each application update will ensure a consistent and reliable user experience.

The effective implementation of consistency and standards in the GoRide location search feature has had a positive impact on various aspects of usability. Users report ease in adapting to new features and efficiency in completing location search tasks. From a cognitive perspective, the users' mental load is reduced due to consistent interaction patterns. From a business perspective, this standardization contributes to increased user satisfaction and a reduction in error rates when using the application, ultimately supporting user retention and platform growth (Garrett, 2010).

Overall, although GoRide has demonstrated good implementation in terms of consistency and standards, there is still room for improvement that can further enhance the quality of the user experience. Emphasizing detail in the standardization of interactions and system communication will strengthen GoRide's position as a user-friendly online transportation service.

4.5. Error Prevention

The Application Strives to Prevent Errors by Providing Accurate Location Suggestions and Auto-complete Features

Analysis of the Error Prevention aspect in GoRide's location search feature reveals systematic efforts to minimize user errors through various preventive mechanisms. GoRide's location search system has implemented an intelligent auto-complete feature, as shown in **Image 5**, where the application proactively suggests addresses based on user input, thereby reducing the likelihood of typos or incorrect location selections. Additionally, the system is equipped with predictive algorithms that offer location suggestions based on users' travel history and popular places in the surrounding area, helping to ensure accuracy in destination selection.

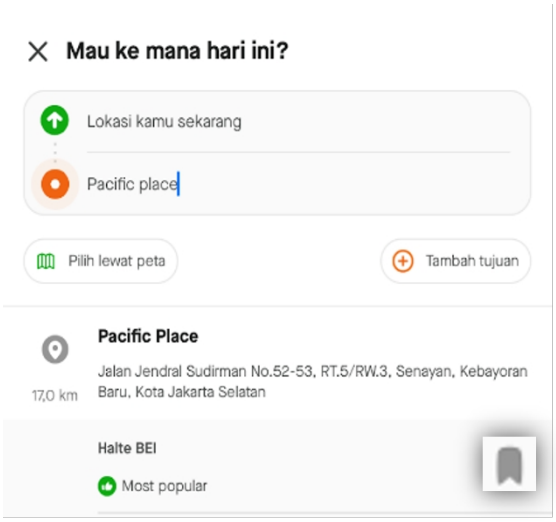

Image 5. Gojek Provides Location Suggestions from History or Popular Locations

However, significant challenges arise when users are in areas with unstable network connectivity or weak GPS signals. In such conditions, the accuracy of location determination decreases, which can lead to various errors, such as incorrect placement of location pins, inaccurate distance estimations, and potential misunderstandings between users and drivers. These issues become more complex in densely populated areas or regions with many high-rise buildings, where signal interference can further degrade location accuracy.

To address these limitations, several error prevention strategies have been implemented, yet further development is still required. A two-step verification system for location confirmation can be applied, where users are asked to verify their address through nearby landmarks or location photos. Implementing a location data caching system for areas with low connectivity can also help maintain accuracy when signals are unstable. Developing an offline mode that allows the storage of local maps and Points of Interest (POI) data can serve as an additional solution to reduce dependence on real-time connectivity.

Another important aspect of error prevention is enhancing visual and informative feedback to users. The system can provide proactive warnings when potential errors are detected, such as when a selected location is outside the service area or when GPS accuracy is low. Implementing a location accuracy rating system displayed through visual indicators can help users make more informed decisions before confirming their orders. Additionally, adding a "manual location confirmation" feature with clear visual guidance can offer alternatives when the automatic system does not function optimally.

From an operational perspective, improving the error prevention system has a significant impact on service efficiency. Reducing errors in location determination can decrease the rate of order cancellations, increase the efficiency of pickup times, and ultimately enhance satisfaction for both users and driver partners. This also implies a reduction in operational costs related to error correction and handling customer complaints.

In conclusion, although GoRide has implemented several basic mechanisms for error prevention in the location search feature, there remains significant room for improvement, especially in addressing connectivity and location accuracy challenges. Implementing more comprehensive error prevention strategies, supported by robust verification systems and informative feedback, will result in a more reliable and efficient user experience. This approach will not only enhance user satisfaction but also provide a competitive advantage in the increasingly competitive ride-hailing industry.

4.6. Recognition Rather Than Recall
GoRide Utilizes Location History and Favorite Locations Features

Evaluation of the Recognition Rather Than Recall principle in GoRide's location search feature reveals effective implementation in assisting users to access location information without needing to remember specific details. The system successfully reduces users' cognitive load through the implementation of a comprehensive location history feature and easily accessible favorite locations system. This approach reflects a deep understanding of design principles that prioritize recognition over recall, where users do not need to remember complete addresses to reach their destinations.

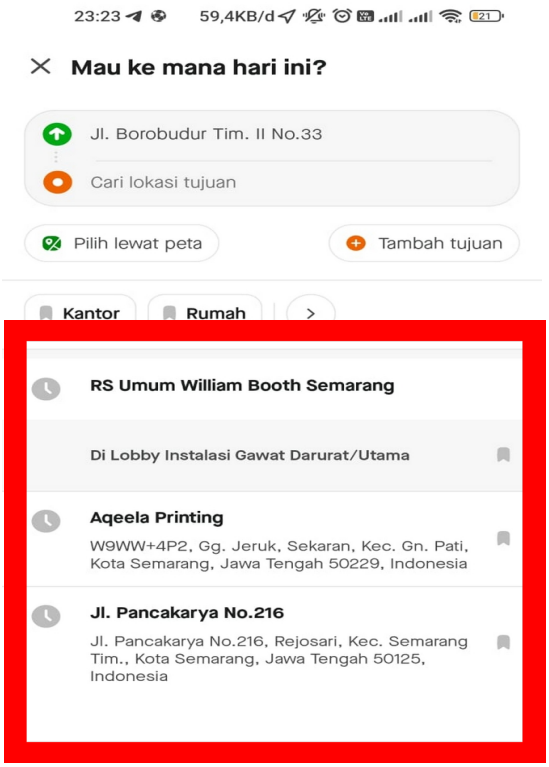

Image 6. Gojek Utilizes Location History and Favorite Locations Features

The implementation of the location history feature in GoRide is illustrated in **Image 6**, where GoRide provides users with their location history, showcasing a smart approach to data organization. The system automatically saves and displays frequently visited locations, prioritizing recently accessed ones. This information is presented through an intuitive interface, with popular locations displayed immediately after users open the search column. This not only accelerates the booking process but also enhances location selection accuracy as users can easily verify the correct address from the available list.

In developing the location recognition system, GoRide also implements smart categorization that helps users identify locations based on usage context. For example, the system automatically groups locations into categories such as "Home," "Office," or "Favorite Places," making it easier for users to find their destinations. The addition of personal labels on favorite locations also allows users to organize their destinations in a more meaningful and personalized way.

However, there are several areas that still require development to optimize the location recognition feature. One such area is the need to enhance the learning algorithms to better understand users' travel patterns based on time and context. For instance, the system could prioritize displaying office locations during working hours and home locations outside of working hours. Additionally,

integration with users' calendars can help the system display location suggestions relevant to upcoming meetings or activities.

Another important aspect that needs improvement is the personalization of the user experience in location recognition. Implementing more advanced machine learning systems can help identify and predict users' location preferences based on their historical behavior. The system can also be enriched with features such as grouping locations based on visit frequency, visit time, or travel context, thereby providing more relevant and personalized suggestions.

From an operational perspective, enhancing the location recognition system offers various benefits. Significantly reducing location search time increases the efficiency of the booking process, which in turn enhances user satisfaction and overall system productivity. Data indicates that users who utilize the history and favorite features tend to have higher booking completion rates and shorter booking times compared to users who manually retype addresses.

In conclusion, the implementation of the Recognition Rather Than Recall principle in GoRide has successfully created a more efficient and convenient user experience in the location search process. However, there are still significant opportunities for further development, especially in terms of personalization and contextualization of location suggestions. By continuously improving the location recognition system and integrating more advanced machine learning technologies, GoRide can further strengthen its position as a user-friendly and efficient online transportation service.

4.7. *Flexibility and Efficiency of Use* in the Design of GoRide's Location Search Feature

Evaluation of the **Flexibility and Efficiency of Use** principle in GoRide's location search feature demonstrates that the application's interface design supports flexible and efficient usage for both novice and experienced users. This principle focuses on providing various ways for users to accomplish their tasks easily and quickly without sacrificing flexibility in meeting individual needs.

The GoRide application offers convenience to users through multiple input methods for pickup and destination locations. Users can manually enter an address, select from location history, or pinpoint a location on the interactive map. By providing these options, the application allows users to choose the method that best suits their situation, such as when needing to select a different location from the current one or using previously saved favorite points. The ease of selecting input methods contributes significantly to efficiency, especially for users who require quick responses in certain conditions (Nielsen, 1994).

Additionally, GoRide's search feature leverages history and favorite data, making the location search process faster. When users open the search bar, the application immediately displays frequently visited or recently used locations, reducing the cognitive load required to re-enter the same information. This aligns with research indicating that recognition memory facilitated by usage history can speed up interaction processes and enhance user satisfaction (Venkatesh et al., 2012).

However, the evaluation also identified several limitations that need to be addressed to further enhance flexibility and efficiency of use. One such limitation is the occasionally slow responsiveness of the interactive map when users zoom in or out to select specific locations, especially in areas with weak GPS signals. This issue can reduce users' flexibility in accurately determining pickup locations. Additionally, the option for manual location adjustment via the map remains limited, particularly in areas with many high-rise buildings that affect GPS accuracy.

To address these limitations, several recommendations can be implemented, including adding a drag-and-drop feature on the map to more accurately adjust pickup locations. Furthermore, developing an offline mode with stored location data can improve the application's accuracy and efficiency in areas with weak signals. This mode would allow users to adjust locations more easily, reducing dependence on internet connectivity or GPS signals (Garrett, 2010).

Optimizing the implementation of the **Flexibility and Efficiency of Use** principle in GoRide's location search feature has proven to enhance user satisfaction. Users can complete the location search and selection process more quickly, especially those who are already familiar with the application's interface. Flexibility in various input methods and efficiency in accessing history and

favorite data directly contribute to a more comfortable and responsive user experience, ultimately increasing user loyalty to the GoRide application (Venkatesh et al., 2012).

4.8. The Aesthetic and Minimalist Design of GoRide's Location Search Feature Supports a Comfortable User Experiencen

Evaluation of the **Aesthetic and Minimalist Design** principle in GoRide's location search feature indicates that the application successfully implements a simple yet aesthetic interface design, which supports a comfortable and non-confusing user experience. This principle emphasizes presenting essential visual elements and reducing unnecessary components, allowing users to focus on their primary tasks without excessive distractions.

The location search interface in GoRide is designed with a clean and minimalist appearance. Key elements such as the search bar, interactive map, and confirmation button are neatly arranged without any excessive visual components. The use of Gojek's signature green color as the primary color contrasting with a white background creates a simple yet attractive aesthetic, helping users immediately recognize important elements without confusion. Uniform and easy-to-read typography further enhances accessibility and information readability on the screen (Garrett, 2010).

In addition to the simplicity of the design, GoRide also utilizes an intuitive layout. The search bar is placed at the top of the screen, naturally becoming the first point of attention when users open the application, while the interactive map occupies the main portion of the screen to provide a broad and clear location context. The placement of navigation and control buttons in easily reachable positions keeps the interface tidy and functional, making it easy for users to find and understand the available functions. An intuitive layout that leverages visual hierarchy effectively reduces cognitive load, especially in online transportation applications.

However, the evaluation also revealed several areas that could be improved to further optimize GoRide's minimalist design. One such area is the better utilization of white space, especially in the map area, which sometimes appears cluttered with location information and icons. A more proportional arrangement of white space can create a more spacious impression and focus on truly important elements. Additionally, some users reported that certain icons or symbols on the map, such as location pins and favorite icons, could be clarified by using slightly more contrasting visuals or additional labels to avoid confusion.

To further enhance aesthetics and minimalism, it is recommended that GoRide implement the principle of progressive disclosure, which presents additional information only when needed, thereby maintaining a clean appearance. Additionally, using clearer and more proportionate icons will help users recognize their functions better without compromising the visual aspect.

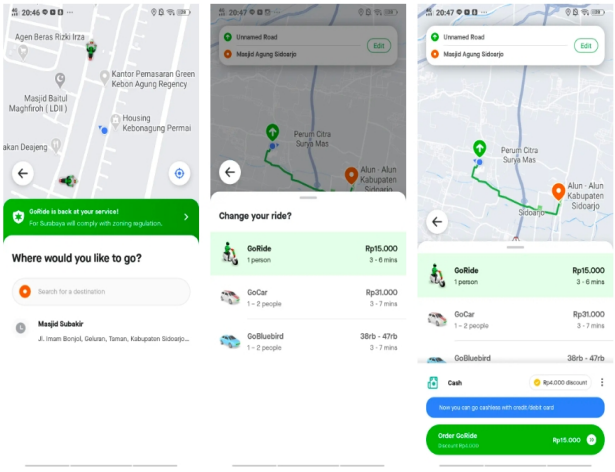

Image 7. The Aesthetic and Minimalist Design of GoRide's Features Supports a Comfortable User Experience

Overall, as shown in **Image 7**, the implementation of the **Aesthetic and Minimalist Design** principle in GoRide's location search feature has created an enjoyable and efficient user experience. This minimalist design helps users focus on their main tasks without being distracted by unnecessary elements, while also reinforcing GoRide's visual identity as a simple yet functional application. By enhancing white space and refining icons, GoRide can further improve the visual comfort and effectiveness of its minimalist design, providing a more user-friendly and professional experience for its users (Garrett, 2010).

4.9. Help Users Recognize, Diagnose, and Recover from Errors

The accuracy of pickup location determination in the GoRide application is identified as a crucial aspect in this study due to its direct impact on user experience, service efficiency, and customer satisfaction. One of the main challenges faced by GoRide users in Semarang is the inaccuracy in determining pickup locations. It has been found that the application sometimes struggles to precisely detect user locations, especially in areas with limited GPS signal coverage or when users are indoors.

This inaccuracy leads to user frustration as they are required to manually enter locations, which is not only time-consuming but also increases the risk of input errors. These errors can cause drivers difficulty in locating users, slow down the pickup process, and reduce overall service efficiency. According to Parasuraman et al. (2005), ease of use and efficiency are key factors influencing user satisfaction with electronic services. Therefore, improving location accuracy is essential to enhance the GoRide user experience in Semarang.

In the context of heuristic usability, the application of the **Help Users Recognize, Diagnose, and Recover from Errors** principle is highly relevant in assisting users to identify and address location inaccuracy issues. To align with this principle, GoRide should provide real-time notifications or messages that explain when the system is having difficulty accurately detecting a location. For example, the application could inform users if the GPS signal is weak or suggest alternative steps, such as manually entering the location or checking their internet connection.

Additionally, the messages displayed to users should include clear instructions to help them take corrective actions, such as selecting the pickup location manually or moving the pickup point to an area with a stronger GPS signal. By implementing these mechanisms, the application not only helps users recognize the causes of errors but also enables them to recover from situations without feeling frustrated.

Highlighting that geolocation inaccuracy is a common issue faced by users of online transportation applications across various regions in Indonesia, especially in areas with low GPS signal quality, underscores the importance of system accuracy in influencing user satisfaction. The higher the system's accuracy in determining user locations, the higher the level of satisfaction experienced.

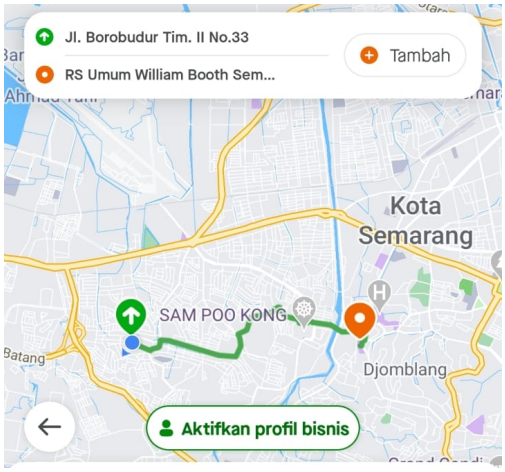

Image 8. GoRide Maps Accuracy

By applying this principle, GoRide is able to provide a better experience for all users, as illustrated in **Image 8**, enhancing service efficiency and strengthening user trust and loyalty towards the application. This demonstrates that trust is a significant factor in customer satisfaction with online transportation services in Semarang. Positive experiences related to the application's support in addressing location errors will increase user trust, making them more likely to continue using GoRide's services in the future.

4.10. Help and Documentation Features in GoRide Support More Effective Usage for Users

Evaluation of the **Help and Documentation** aspect in GoRide's location search feature reveals the presence of assistance systems and guides designed to help users understand and optimize the use of the application. This principle emphasizes the importance of providing easily accessible information support to assist users when they encounter difficulties operating the app. Effective help and documentation not only enhance the user experience but also enable users to resolve issues without requiring additional interaction with customer service.

The help features in GoRide can be accessed through the help menu within the application, which provides step-by-step guides on how to use the main features, including location search and pickup point settings. These guides are concise yet informative, using easily understandable language. Additionally, there is an FAQ feature that addresses common user questions, such as how to change the pickup point or the steps to take if the GPS is not functioning properly. This documentation helps users independently resolve basic issues and improves the efficiency of using the application (Nielsen, 1994).

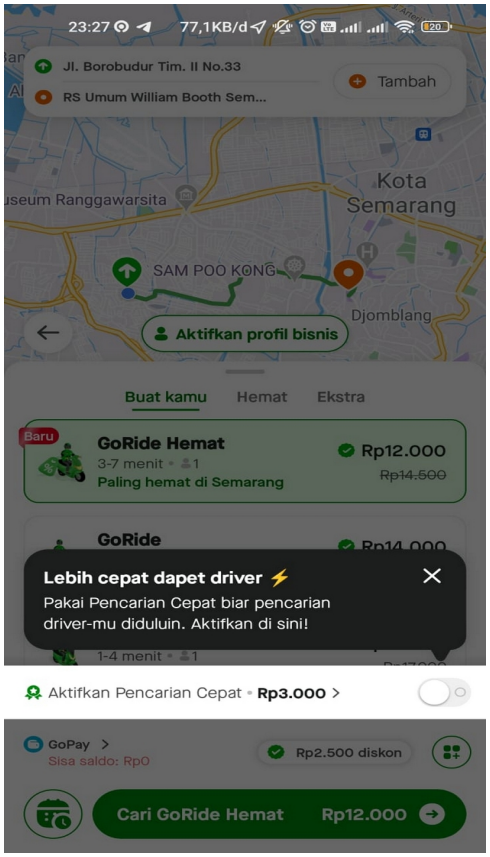

Image 9. GoRide Provides Assistance to Enable Quick Search

Image 9 illustrates how GoRide provides assistance to enable quick search. This documentation has proven beneficial for new users who may not be familiar with the application's interface, as well as for experienced users who need guidance when facing specific situations. Testing shows that users who utilize the in-app help features feel more confident and are able to complete their tasks more quickly. According to Venkatesh et al. (2012), easily accessible and relevant documentation can reduce confusion and increase user satisfaction.

However, the evaluation also identified several areas for improvement, particularly regarding the accessibility of help information during critical moments. For instance, some users find it difficult to locate guides related to GPS signal issues or challenges in adjusting pickup points while on the location search map page. A suggested solution is to add contextual help—assistance that is directly available on the location search or map pages—so users can access the necessary information without leaving the current page.

Additionally, another improvement is to enhance the content of visual guides, such as short tutorial videos or illustrations, which can help users quickly understand how certain features work. Help information presented in a visual and engaging manner will be easier for users from various backgrounds to comprehend.

Overall, the implementation of the Help and Documentation principle in GoRide's location search feature has successfully provided users with the necessary tools to navigate and utilize the application more effectively. By addressing the identified areas for enhancement, GoRide can further improve user support, leading to a more seamless and satisfying user experience.

5. CONCLUSION AND RECOMMENDATIONS

In the development of digital-based applications, particularly in online transportation services like GoRide, various design and functionality aspects are crucial for creating an optimal user experience. Based on observations and interviews with GoRide users in Semarang, several important findings have been identified, encompassing the application of interface design and usability principles focused on ease of use, efficiency, and enhanced user satisfaction (Nielsen, 1994; Venkatesh, Thong, & Xu, 2012).

This study identified ten key components that support each other in creating an effective user experience. These ten findings are then grouped into three main categories: system visibility and user control, error prevention and efficiency of use, and aesthetic design and contextual assistance. The details of these three groups are as follows :

5.1. Aspect of System Visibility and User Control :

Findings one through four highlight the importance of system status visibility, documentation, and user control. The principles of **Visibility of System Status** and **Help and Documentation** effectively enhance user awareness of application features, such as location-sharing features, and provide direct guidance. Additionally, the implementation of **User Control and Freedom** and interface design consistency ensures that users can easily understand and operate application features without confusion. Flexible user control in setting pickup and destination locations, along with consistent visual elements, reinforces a cohesive and intuitive user experience, which in turn increases user satisfaction (Garrett, 2010).

5.2. Aspect of Error Prevention and Efficiency of Use :

In findings five through seven, the GoRide application successfully implements various methods to reduce user errors through features such as auto-complete and location suggestions, as well as flexibility in determining pickup locations. Proactive error prevention and the principle of **Recognition Rather Than Recall** provide a smoother user experience by reducing users' cognitive load (Parasuraman, Zeithaml, & Malhotra, 2005). GoRide also supports user efficiency through a flexible search system, whether through manual input, location history, or an interactive map. This

ensures that users can complete the booking process more quickly and accurately, thereby increasing the reliability of GoRide's services.

5.3. Aspect of Aesthetic, Minimalist Design, and Contextual Assistance :

In findings eight through ten, aesthetic and minimalist design aspects are well-implemented in the location search feature, creating a clean and functional interface without excessive visual elements. This minimalist design helps users stay focused on their primary tasks and minimizes distractions. The application of the **Help Users Recognize, Diagnose, and Recover from Errors** principle also demonstrates how the application supports users in understanding and overcoming technical constraints, such as location accuracy in areas with weak signals. The addition of direct contextual assistance on the location search pages and richer visual guides is expected to further facilitate users in operating the application without requiring external help.

Overall, this study confirms that through the implementation of good design principles, high system visibility, user control and freedom, and comprehensive assistance support, the GoRide application is capable of significantly enhancing user satisfaction. Implementing improvements such as offline mode for areas with weak signals and refining visual elements to support navigation can also strengthen GoRide's competitiveness. By adhering to proven design principles and empirical evidence from this research, it is expected that GoRide's services will continue to evolve into a more effective, efficient, and satisfying transportation solution for its users, while also reinforcing customer loyalty (Garrett, 2010; Venkatesh, Thong, & Xu, 2012).

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