Data Visualization Analysis of Bajolbae Application Users Using Tableau

Paris Olivia[1*]

Abstract

The Bajolbae application was developed to facilitate small traders and the general public in fulfilling their basic food needs online without requiring face-to-face interaction. The primary issue identified is the absence of a comprehensive analysis of user characteristics, including the level of application utilization based on demographic factors. This study aims to analyze user patterns of the Bajolbae application through data visualization using Tableau based on age, gender, and residential district. The research data were obtained from Pasar DHD (Darsa Hakam Darussalam) as the manager of the Bajolbae application and were processed using Tableau visualization techniques to produce informative graphical representations. The results indicate that adults constitute the dominant age group of users, women represent the largest group of users, and Sako District has the highest number of users. These findings are expected to assist the company in formulating strategies to increase the number of users and to support the development of application features.

Keywords

Bajolbae; Pasar DHD (Darsa Hakam Darussalam); Tableau; data visualization

Article History

Received 21 July 2025
Accepted 26 October 2025

How to Cite

Olivia, P, (2025). Data Visualization Analysis of Bajolbae Application Users Using Tableau, Jurnal Ilmu Komputer dan Sistem Informasi (JIKSI), 6(3), [88-95].

[1*] Universitas Bina Darma, Indonesia, Corresponding email: oliviafarisiaa@gmail.com

Introduction

The rapid development of digital technology has significantly transformed various sectors, including commerce, logistics, and the fulfillment of basic food needs. The shift toward digital-based economic activities has changed consumer behavior from conventional in-store shopping to more practical online transactions. In the retail and grocery sector, digital platforms enable faster access to daily necessities, reduce physical interaction, and improve transaction efficiency. This digital transformation has become even more relevant in urban environments where mobility limitations, time efficiency, and convenience are critical factors influencing consumer choices.

Pasar DHD (Darsa Hakam Darussalam) is one of the companies in Palembang City that has responded to this transformation by developing the Bajolbae application as an online grocery shopping platform. This application is designed to facilitate the public in obtaining basic food and household necessities without needing to visit physical markets. Through a mobile-based platform, consumers can browse products, place orders, and receive deliveries directly to their homes. This digital innovation not only expands market reach but also strengthens Pasar DHD's competitiveness in the increasingly dynamic retail industry.

In addition to serving consumers, the Bajolbae application also plays an important role in empowering small traders and micro-business actors by providing them with a digital marketplace to promote and sell their products. By integrating traditional traders into an online ecosystem, Bajolbae helps bridge the digital divide between conventional markets and modern e-commerce platforms. This integration is expected to increase traders' sales volume, expand their customer base, and enhance overall economic resilience at the local level. However, the success of such a platform is highly dependent on understanding user behavior and characteristics.

Despite the growth of the Bajolbae application, a comprehensive analysis of user characteristics and demographic distribution has not yet been conducted systematically. As a result, the company faces challenges in measuring the effectiveness of its marketing strategies and determining which user segments are most dominant and which regions require greater promotional focus. Information such as user age, gender, and geographic location is essential for designing targeted marketing campaigns, improving service quality, and optimizing the application's development strategy. Without accurate demographic insights, business decisions tend to rely on assumptions rather than data-driven evidence.

Data visualization is widely recognized as an effective approach for simplifying complex datasets and revealing hidden patterns in user behavior. Through visualization, large volumes of user data can be transformed into clear, interactive, and easily interpretable information. In this study, Tableau was selected as the main visualization tool due to its powerful capabilities in presenting interactive dashboards, integrating multiple data sources, and supporting in-depth analytical exploration. By utilizing Tableau, Pasar DHD can observe user distribution trends based on demographic variables and identify strategic opportunities for business growth.

Based on these considerations, this study aims to analyze and visualize user data of the Bajolbae application based on demographic variables such as age, gender, and location in order to support data-driven business development strategies. The results of this study are expected to assist management in understanding user segmentation more accurately, strengthening

marketing effectiveness, and formulating strategic decisions to increase the number of application users. Ultimately, this visualization-based analysis is expected to contribute to the sustainable development of the Bajolbae platform as a digital solution for fulfilling basic food needs in Palembang City.

Methodology

Literature Review

Evaluation

Evaluation is a process of collecting data that are useful for determining the quality of an object, process, or program and can serve as the basis for decision-making (Mahmudi, 2011; Gunawan, 2011).

Information System

An information system is a combination of human resources, hardware, software, data, and communication networks that work together to collect, process, and disseminate information (Indrajani, 2014; Rohmat & Taufiq, 2013; Pratama, 2014).

Information

Information is the result of processed data that has meaning and value for decision-making (Djahir & Pratita, 2014).

Data

Data are collections of raw facts that require processing to produce meaningful information (Edi & Betshani, 2015).

Data Visualization

Data visualization is a technique for presenting data in visual forms such as graphs, tables, and charts in order to facilitate analysis and improve data comprehension (Nana & Surahman, 2019; Camila et al., 2018; Fernando, 2018).

Tableau

Tableau is a Business Intelligence software tool that functions to process and present data in the form of interactive visualizations, thereby facilitating data analysis and decision-making (Hartama, 2018; Silvana et al., 2017).

Research Object

The object of this study is the Bajolbae application developed by Pasar DHD. Since its official launch on April 9, 2020, this application has operated in 56 urban villages and 11 districts in Palembang City and has created employment opportunities for the community as couriers.

Research Design

The research was conducted through the following stages:

1. Data collection of Bajolbae application users from Pasar DHD.

2. Data processing using Tableau.
3. Dashboard creation based on three variables, namely age, gender, and residential district.
4. Visualization pattern analysis.

Data Collection Techniques

Data collection was carried out through the following methods: Interviews with representatives of Pasar DHD. Observation of application usage. Literature study from relevant journals and books.

Results

Sample Data Description

An example of Bajolbae user data is presented as follows:

Name	District	Age	Gender
Anas	Alang-Alang Lebar	35	Male
Yurika	Alang-Alang Lebar	36	Female
Muhammad Husin	Alang-Alang Lebar	27	Male
Fadhillah Fitria	Alang-Alang Lebar	29	Female
Ari Nurlia	Alang-Alang Lebar	37	Female
Ilyas Fahmi	Alang-Alang Lebar	44	Male
Selvy Dwi Utami	Alang-Alang Lebar	28	Female
Nidia Nova Riena	Alang-Alang Lebar	33	Female
Wulan	Alang-Alang Lebar	32	Male
Tika	Alang-Alang Lebar	29	Female
Nanik Muyassaroh	Alang-Alang Lebar	41	Female
Selvi	Alang-Alang Lebar	31	Female
Yunike Rinelda	Alang-Alang Lebar	42	Male
Amelia	Alang-Alang Lebar	31	Female
Tati Arisandi	Alang-Alang Lebar	0	Female
Wulan	Alang-Alang Lebar	30	Female
Thandry	Alang-Alang Lebar	43	Female
Indah Hamida	Alang-Alang Lebar	31	Female
Sarah Wanss	Alang-Alang Lebar	24	Female

Visualization by District

The visualization results indicate that Sako District has the highest number of users. Conversely, the lowest number of users originates from Ilir Timur I and Ilir Timur II Districts.

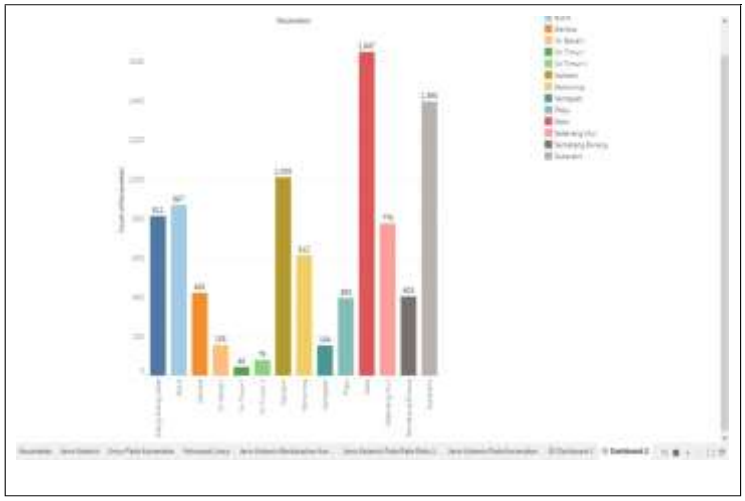

Figure 1. District Data Graph

Visualization by Gender

The visualization shows that female users dominate the Bajolbae application user base, while male users constitute a smaller proportion.

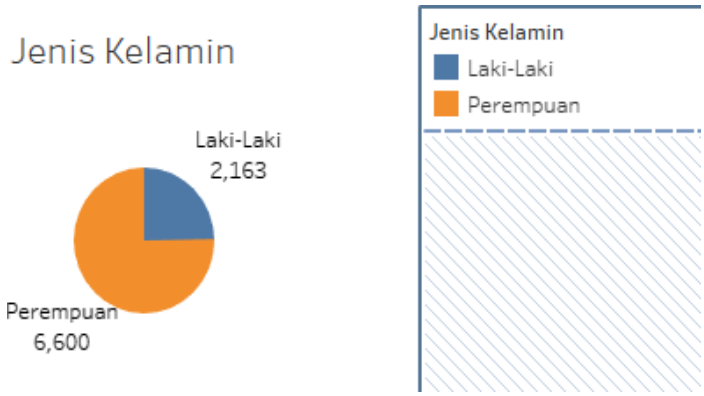

Figure 2. Graphs by Gender

Visualization by Age

The 25–40-year age group represents the dominant group of Bajolbae application users. Meanwhile, teenage users constitute the smallest group.

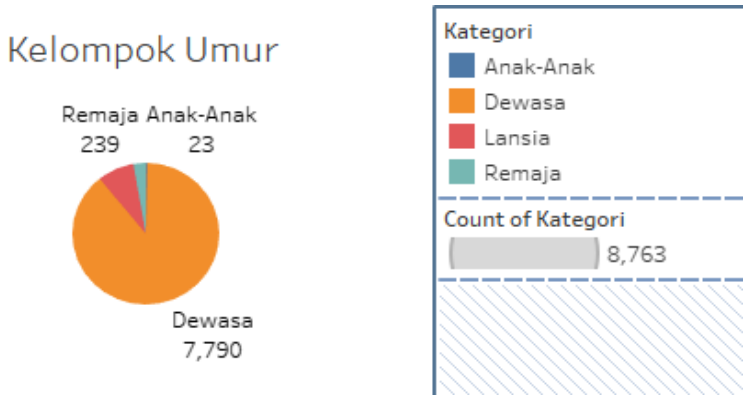

Figure 3. Graphs by Age

Discussion

The results of the visualization clearly indicate that Bajolbae application users exhibit distinct and consistent demographic patterns. The dominance of female users suggests that purchasing decisions for basic food necessities are largely made by women, particularly housewives and adult female consumers who manage daily household needs. This pattern aligns with common consumer behavior in the basic-needs market, where women typically act as primary decision-makers. From a business perspective, this finding provides valuable insight for Pasar DHD to tailor product offerings, promotional messages, and user-interface design to better match the preferences and behaviors of this dominant user group.

In addition to gender dominance, the geographic distribution of users reveals that the Sako District represents the highest concentration of Bajolbae application users. This indicates that service adoption and brand recognition in this area are already well established. High user density in a single district suggests the presence of favorable supporting factors such as population density, internet accessibility, purchasing habits, and trust in the application. As a result, Sako can be considered a core market area that should be maintained through consistent service quality, fast delivery time, and customer loyalty programs.

Conversely, districts with lower user numbers represent substantial growth potential. These areas may have limited awareness of the Bajolbae application, weaker digital marketing exposure, or logistical constraints affecting service quality. Therefore, targeted promotional strategies such as localized advertising, discount campaigns, partnerships with local vendors, and community-based marketing should be prioritized in these regions. Expanding service reach in underrepresented districts will support more even market penetration across Palembang City.

The dominance of adult users indicates that the Bajolbae application is primarily utilized by consumers who have stable purchasing power and routine needs for basic food commodities. This implies that the platform is perceived not merely as a supplementary shopping option but as a practical solution for daily household necessities. From a strategic standpoint, Pasar DHD can strengthen this segment by offering subscription-based grocery services, periodic promotions for staple products, and loyalty-based incentives tailored to routine shoppers.

The use of Tableau as a data visualization tool has proven to be highly effective in transforming raw user data into meaningful and interpretable information. Through interactive dashboards, decision-makers can easily identify market trends, observe shifts in user behavior, and evaluate the effectiveness of marketing strategies over time. Compared to traditional reporting methods, Tableau provides faster insight generation, greater analytical depth, and enhanced flexibility in exploring demographic patterns.

Overall, the findings confirm that demographic-based data visualization provides a strong foundation for data-driven decision-making at Pasar DHD. By understanding who the users are and where they are concentrated, the company can design more precise, efficient, and sustainable business strategies. The integration of demographic analytics into marketing and service planning is expected to improve user acquisition, strengthen customer retention, and enhance the long-term competitiveness of the Bajolbae application in the online grocery marketplace.

Conclusion and Recommendations

This study concludes that Bajolbae application user data were successfully analyzed and visualized using Tableau. The application users are predominantly female, belong to the adult age group, and are concentrated in Sako District. The results of the data visualization can serve as a strategic basis for decision-making to increase the utilization and further development of the Bajolbae application.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Acknowledgments

The author would like to express sincere gratitude to Pasar DHD (Darsa Hakam Darussalam) for providing access to the research data and for supporting the implementation of this study. Appreciation is also extended to Universitas Bina Darma for institutional support.

References

Camila, C., Akbar, R., Sutria, M. I., Suri, N., & Chairunnissa, S. D. A. (2018). *Visualization of the comparison between regional budgets and budget realization of regencies/cities in West Sumatra using Tableau Public. JTI MURA*, 10(2), 75. https://doi.org/10.32767/jti.v10i2.390

Djahir, Y., & Pratita, D. (2014). *Management information systems*. Deepublish.

Edi, D., & Betshani, S. (2015). *Data analysis using ERD and conceptual data warehouse models*. *Jurnal Informatika*.

Fernando, D. (2018). *Data visualization using Google Data Studio*. National Seminar SNARTISI.

Gunawan, I. (2011). *Evaluation of learning programs*. *Jurnal Ilmu Pendidikan*, 1, 1–13.

Hartama, D. (2018). *Analysis of academic data visualization using Tableau Big Data*. *Jurasik*, 3(3), 46. https://doi.org/10.30645/jurasik.v3i0.65

Indrajani. (2014). *Database systems: All-in-one case study*. PT Elex Media Komputindo.

Mahmudi, I. (2011). *CIPP: A model for educational program evaluation*.

Nana, & Surahman, E. (2019). *Development of digital learning innovation using the blended POE2WE model in the era of the Industrial Revolution 4.0*. *Proceedings of SNFA*, 4, 82. https://doi.org/10.20961/prosidingsnfa.v4i0.35915

Pratama, I. P. A. E. (2014). *Information systems and their implementation*.

Rohmat, & Taufiq. (2013). *Management information systems: Basic concepts, analysis, and development methods*.

Silvana, M., Akbar, R., & Tifani, R. (2017). *Implementation of a dashboard system at the Andalas University library using Tableau Public*. National Seminar on Science and Technology, 1–6.

Biographical Notes

PARIS OLIVIA is a graduate of the Information Systems Study Program, Universitas Bina Darma, Palembang, Indonesia. Her research interests include data visualization, business intelligence, information systems analysis, and digital applications for retail services.