



## Ergonomic Evaluation of Dining Furniture at Gultik Street, Taman Labuai Citywalk, Pekanbaru

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### ABSTRACT

Public spaces foster social interaction and support culinary micro, small, and medium enterprises (UMKM) that rely on accessible settings. Taman Labuai Citywalk in Pekanbaru is one such space where tenants, including Gultik Street, use portable dining furniture. Variations in furniture types and dimensions can lead to different levels of user comfort. This study evaluates the ergonomic suitability of dining furniture at Gultik Street to assess user comfort in an outdoor dining context. A descriptive-comparative approach was employed, supported by qualitative data and direct measurements of four table types and five chair types. The dimensions were compared with anthropometric and ergonomic references from Neufert (1996), Dartford (1990), and Puslitbang PUPR (2020). Only a few items, such as the black chair with a backrest, the blue metal chair, and several dining tables, met the recommended dimensional ranges. Plastic chairs, trailtop chair (camping chair), and bar stools did not comply with ergonomic standards, mainly due to unsuitable seat height, limited seat dimensions, and insufficient back support, which may reduce comfort during prolonged sitting. The findings emphasize the importance of ergonomically compliant furniture for improving user comfort in outdoor public dining areas.

**Keywords:** Ergonomics, Public Space, Furniture Evaluation, Seating comfort, Pekanbaru

### ABSTRAK

Ruang publik mendorong interaksi sosial sekaligus mendukung aktivitas usaha mikro, kecil, dan menengah (UMKM) kuliner yang bergantung pada lingkungan yang mudah diakses. Taman Labuai Citywalk di Pekanbaru merupakan salah satu ruang publik tersebut, di mana tenant termasuk Gultik Street menggunakan furnitur makan portabel. Variasi jenis dan dimensi furnitur dapat menimbulkan tingkat kenyamanan yang berbeda bagi pengguna. Penelitian ini bertujuan mengevaluasi kesesuaian ergonomi furnitur makan pada area Gultik Street untuk menilai kenyamanan pengguna dalam konteks ruang makan luar ruang. Metode yang digunakan adalah deskriptif-komparatif dengan dukungan data kualitatif dan pengukuran langsung terhadap empat jenis meja dan lima jenis kursi. Dimensi furnitur kemudian dibandingkan dengan standar antropometri dan ergonomi berdasarkan Neufert (1996), Dartford (1990), dan Puslitbang PUPR (2020). Hasil penelitian menunjukkan hanya beberapa item, seperti kursi hitam dengan sandaran, kursi besi biru, dan beberapa meja makan, yang berada dalam rentang dimensi yang direkomendasikan. Kursi plastik, kursi trailtop (kursi kemping), dan kursi bar tidak memenuhi standar ergonomi, terutama pada tinggi dudukan, ukuran dudukan yang terbatas, serta dukungan sandaran yang kurang memadai, sehingga berpotensi menurunkan kenyamanan saat digunakan dalam durasi yang lama. Temuan penelitian ini menekankan pentingnya penggunaan furnitur yang memenuhi standar ergonomi untuk meningkatkan kenyamanan pengguna di area makan publik luar ruang.

**Kata kunci:** Ergonomi, Ruang Publik, Evaluasi Furnitur, Kenyamanan Duduk, Pekanbaru



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## **1. Introduction**

Public spaces play an important role in supporting social, economic, and cultural activities, including the sustainability of culinary micro, small, and medium enterprises (UMKM) that often have limited access to formal business premises. Pratiwi and Yusran (2025) show that public spaces such as Stasiun Lambuang in Bukittinggi function not only as places to gather but also as strategic nodes that improve accessibility, visibility, and operational efficiency for small vendors. This suggests that spatial quality and design configuration can shape interaction patterns and contribute to local economic performance.

In Pekanbaru, the need for public space continues to grow alongside rapid population increase. BPS (2024) reports an overall population growth rate of 3.23%, with Kulim (8.65%), Rumbai Barat (7.41%), and Tuahmadani (6.22%) showing the highest increases. This trend underscores the need for inclusive public spaces that accommodate social and recreational activities while also supporting UMKM that depend on accessible and affordable locations.

One emerging example is Taman Labuai Citywalk, a public culinary area that hosts 23 active tenants, including Gultik Street, and attracts a high number of visitors. The dining area relies on portable tables and chairs that can be rearranged to respond to changing visitor numbers, creating flexible spatial configurations. However, the use of varied furniture types and dimensions may lead to uneven comfort levels, especially when visitor density increases and circulation becomes more constrained.

In this context, ergonomic fit between furniture dimensions and user anthropometry is essential to support comfort, safety, and efficient movement. Design guidelines for dining spaces outline recommended ranges for seating and table dimensions, including considerations relevant to outdoor settings that rely on portable furniture, as described by Dartford (1990), Neufert (1996) and Puslitbang PUPR (2020). These recommendations align with widely used interior space references that emphasize anthropometric fit during seated activities (Panero & Zelnik, 1979). Moreover, inadequate seating configuration particularly limited back support and non-neutral sitting posture may increase muscular discomfort during prolonged sitting (Curran et al., 2015).

Previous studies in Indonesian café settings further highlight the importance of ergonomic compliance in dining environments. Riandy et al. (2020) found that anthropometric mismatches in café furniture affected user comfort and activity performance, while Gerald and Darmayanti (2023) emphasize that the relationship between furniture size, form, and user activity strongly influences spatial comfort and satisfaction. Laksitarini and Nugroho (2021) similarly argue that ergonomic considerations are necessary to prevent postural strain and support functional efficiency. In Pekanbaru, Nurfadillah et al. (2025) reported variations in seating and table dimensions across indoor and outdoor areas; although some items met ergonomic standards, others deviated from recommended measurements, particularly in seat height, depth, and back support.

Despite the growing body of research on ergonomic evaluation in café interiors, most studies focus on enclosed indoor environments. Less attention has been given to portable dining furniture in semi-outdoor public culinary spaces where flexibility, circulation dynamics, and environmental conditions may influence user experience. Accordingly, this study evaluates the ergonomic suitability of dining furniture and spatial layout at the Gultik Street tenant in Taman Labuai Citywalk, Pekanbaru, by examining the conformity of furniture dimensions with established anthropometric references and considering implications for visitor comfort in an outdoor dining environment.

## **2. Method**

This study employed a descriptive-comparative approach supported by qualitative data and direct measurements to evaluate the ergonomic suitability of dining furniture used by tenants at Gultik Street, Taman Labuai Citywalk, Pekanbaru. The descriptive approach was used to characterize the existing physical conditions of the furniture, while the comparative approach was applied to compare the dimensions of the existing furniture with established anthropometric and ergonomic standards. This approach enables the identification of the extent to which the furniture meets users' needs based on ergonomic principles. In

addition, qualitative data were utilized to interpret field conditions within their real-world context without manipulating any research variables (Creswell, 2014).

Data collection was conducted in November 2025 at Taman Labuai Citywalk, Pekanbaru, a semi-open public culinary space consisting of approximately 23 tenants and supporting facilities such as a prayer room (musholla) and public restrooms. The dining area utilizes portable tables and chairs that can be rearranged according to visitor demand and seating requirements.

A purposive sampling technique was employed to select furniture representing the full range of table and chair variations used by the Jalan Gultik tenant. The identification process revealed four different table types and five different chair types; therefore, all variations were included as research objects. Consequently, the sample consisted of four tables and five chairs, representing the entire range of furniture types utilized by the tenant.



Figure 1. Gultik Street Tenant at Taman Labuai City  
(Source: Author, 2025)

The study followed a systematic research procedure consisting of a problem identification, literature review, field data collection, and comparative analysis using established ergonomic standards. The overall research Research Methodology Flowchart is illustrated in Figure 2.

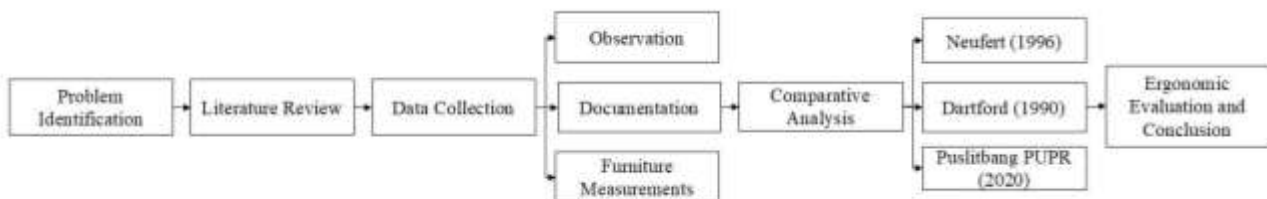


Figure 2. Research Methodology Flowchart  
(Source: Author, 2025)

Primary data were collected through direct observation, visual documentation, and dimensional measurements of the furniture using a measuring tape. Each furniture item was identified, documented, and measured to obtain its actual dimensions. Measurements were conducted on furniture components that influence user comfort during sitting, eating, and drinking activities, including seat height, seat depth, seat width, backrest height, table height, table length, table width, and user capacity. This measurement approach was based on dimension-based ergonomic evaluation methods commonly applied in furniture studies (Fitrianto et al., 2025). The furniture variations observed in this study are presented in Figure 3.



Figure 3. Furniture Observed at Gultik Street  
(Source: Author, 2025)

The anthropometric and ergonomic standards used in this study were derived from Neufert (1996), Dartford (1990), and the book *Antropometri dan Ergonomi di Hunian Sederhana* (Puslitbang Perumahan dan Permukiman, 2020). These references were used as the basis for understanding the anthropometric characteristics of the Indonesian population.

The evaluation of furniture dimensions was based on anthropometric parameters relevant to sitting, eating, and drinking activities, including popliteal height, buttock–popliteal length, seated hip breadth, sitting shoulder height, and sitting elbow height. These parameters were used as the basis for assessing the suitability of chair and table dimensions with respect to users’ body characteristics. The ergonomic standards for chair and dining table anthropometry derived from the three references are presented in Tables 1 and 2.

Table 1. Ergonomic Standards in Chair Anthropometry

Description	Neufert Theory (1996)	James Dartford Theory (1990)	Puslitbang PUPR (2020)
Seat height	40 - 45 cm	43 - 46 cm	40 - 45 cm
Seat depth	40 - 45 cm	45 cm	40 - 48 cm
Seat width	45 cm	45 cm	42 - 50 cm
Backrest height	40 - 50 cm	38 - 45 cm	50 - 60 cm

(Source: Data Arsitek (1996), *Dining Space*. London: Architecture Design and Technology Press (1990), and *Antropometri dan Ergonomi di Hunian Sederhana*. Puslitbang Perumahan dan Permukiman (2020))

Table 2. Ergonomic Standards in Dining Table Anthropometry

Description	Neufert Theory (1996)	James Dartford Theory (1990)	Puslitbang PUPR (2020)
Table length	120-140 cm	80 cm	120 - 140 cm
Table width	80 cm	60 cm	75 - 90 cm
Table height	78 cm	75 - 85 cm	72 – 75 cm
Capacity	4-6 person	4 person	4 person

(Source: Data Arsitek (1996), *Dining Space*. London: Architecture Design and Technology Press (1990), and *Antropometri dan Ergonomi di Hunian Sederhana*. Puslitbang Perumahan dan Permukiman (2020))

Data analysis was conducted using a comparative method by comparing the measured dimensions of the furniture with the ergonomic standards recommended by Neufert (1996), Dartford (1990), and Puslitbang PUPR (2020). Each furniture dimension was analyzed to determine its level of conformity with the recommended dimensional ranges. To enhance transparency and facilitate verification of the research findings, all measurement data were presented in comparative tables containing the actual furniture dimensions, the ergonomic standards used as references, and their corresponding levels of compliance.

The comparison results were subsequently interpreted to identify the strengths, weaknesses, and potential ergonomic issues associated with the furniture. This evaluation aimed to assess the extent to which the furniture supports proper sitting posture, user comfort, and optimal interaction between users and the dining table during eating and drinking activities. Therefore, the comparative analysis provides an overview of the furniture’s

compliance with ergonomic principles based on the anthropometric characteristics of Indonesian users and the applicable furniture design standards.

### 3. Discussion

This section presents the measured dimensions of the furniture used at Gultik Street, Taman Labuai Citywalk, along with a comparative analysis of their ergonomic compliance. Figure 4 illustrates the site plan of Taman Labuai Citywalk, showing the spatial arrangement of key facilities and the locations where furniture measurements were conducted. The study area is situated along Gultik Street and includes several supporting facilities such as the main gates, security post, public toilet, amphitheater, mosque, and the central culinary area. The furniture evaluated in this study consists of five chair types and four table types distributed throughout the seating zones within the citywalk.

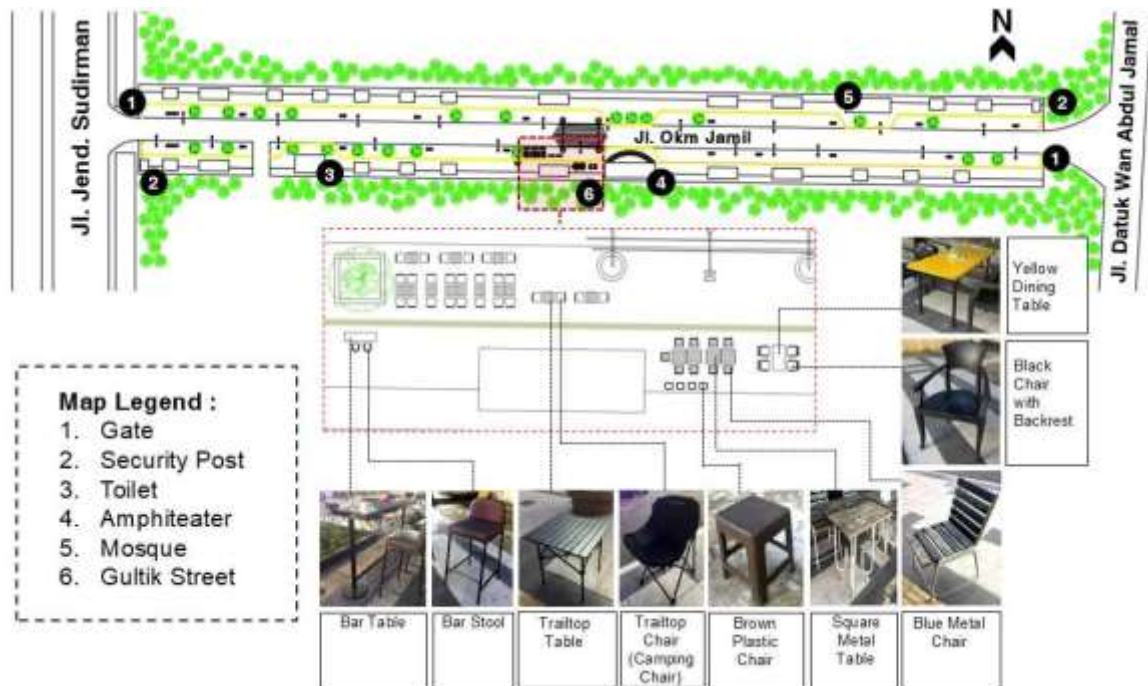





Figure 4. The siteplan of Taman Labuai Citywalk  
(Source: Author, 2025)



The assessment compares field data with established anthropometric standards proposed by Neufert (1996), Dartford (1990), and Puslitbang PUPR (2020) as well as supporting ergonomic references that emphasize dimensional accuracy and postural suitability in seating design (Niebel & Freivalds, 2002). Measurements include five types of chairs and four types of tables, with complete dimensions shown in Table 3.


Table 3. Measured Dimensions and Ergonomic Compliance of Dining Furniture at Gultik Street

Documentation of Furniture and Furniture Types	Measured Dimensions	Chair and Table Ergonomics Based on Neufert (1996)	Chair and Table Ergonomics Based on James Dartford (1990)	Chair and Table Ergonomics Based on Puslitbang PUPR (2020)	Comparison Results
Black Chair with Backrest	Height 46 cm Depth 50 cm Widht 50 cm	Height 40-45 cm Depth 40-45 cm Widht 45 cm	Height 43-46 cm Depth 45 cm Widht 45 cm	Height 40 - 45 cm Depth 40 - 48 cm Widht 42 - 50 cm	Partially compliant with ergonomic standards. While the seat width and backrest height are generally consistent with the

Documentation of Furniture and Furniture Types	Measured Dimensions	Chair and Table Ergonomics Based on Neufert (1996)	Chair and Table Ergonomics Based on James Dartford (1990)	Chair and Table Ergonomics Based on Puslitbang PUPR (2020)	Comparison Results
	Backrest Height 50 cm	Backrest Height 40 - 50 cm	Backrest Height 38 - 45 cm	Backrest Height 50 - 60 cm	recommended standards, the seat height slightly exceeds the ranges suggested by Neufert (1996) and PUPR (2020), and the seat depth is greater than the recommended values in all reference standards.
Brown Plastic Chair 	Height 46 cm Depth 28 cm Widht 28 cm	Height 40-45 cm Depth 40-45 cm Widht 45 cm Backrest Height 40 - 50 cm	Height 43-46 cm Depth 45 cm Widht 45 cm Backrest Height 38 - 45 cm	Height 40 - 45 cm Depth 40 - 48 cm Widht 42 - 50 cm Backrest Height 50 - 60 cm	Non-compliant, as the seat surface is significantly undersized and lacks a backrest, resulting in inadequate body support. Consequently, the chair does not meet ergonomic standards and is only suitable for very short-term use.
Blue Metal Chair 	Height 45 cm Depth 40 cm Widht 44 cm Backrest Height 38 cm	Height 40-45 cm Depth 40-45 cm Widht 45 cm Backrest Height 40 - 50 cm	Height 43-46 cm Depth 45 cm Widht 45 cm Backrest Height 38 - 45 cm	Height 40 - 45 cm Depth 40 - 48 cm Widht 42 - 50 cm Backrest Height 50 - 60 cm	Partially compliant with ergonomic standards. The seat height, depth, and width generally conform to the recommended dimensions; however, the backrest height is below the standards proposed by Neufert (1996) and Puslitbang PUPR (2020). This limitation may reduce postural support and overall seating comfort compared with fully compliant chair designs

Documentation of Furniture and Furniture Types	Measured Dimensions	Chair and Table Ergonomics Based on Neufert (1996)	Chair and Table Ergonomics Based on James Dartford (1990)	Chair and Table Ergonomics Based on Puslitbang PUPR (2020)	Comparison Results
Trailtop Chair (Camping Chair) 	Height 30 cm Depth 40 cm Widht 55 cm Backrest Height 35 cm	Height 40-45 cm Depth 40-45 cm Widht 45 cm Backrest Height 40 - 50 cm	Height 43-46 cm Depth 45 cm Widht 45 cm Backrest Height 38 - 45 cm	Height 40 - 45 cm Depth 40 - 48 cm Widht 42 - 50 cm Backrest Height 50 - 60 cm	Non-compliant with ergonomic standards. The seat height of 30 cm is substantially below the recommended range, while the backrest height is also lower than the established standards. These dimensional deviations may reduce postural support and ergonomic suitability for dining activities.
Bar Stool 	Height 80 cm Depth 40 cm Widht 33 cm Backrest Height 23 cm	Height 40-45 cm Depth 40-45 cm Widht 45 cm Backrest Height 40 - 50 cm	Height 43-46 cm Depth 45 cm Widht 45 cm Backrest Height 38 - 45 cm	Height 40 - 45 cm Depth 40 - 48 cm Widht 42 - 50 cm Backrest Height 50 - 60 cm	Non-compliant with ergonomic standards. The seat height considerably exceeds the recommended range, while the seat width and backrest height are substantially below the reference dimensions. Consequently, the stool does not conform to ergonomic criteria established for dining furniture.
Square Metal Table 	Length 70 cm Width 70 cm Height 75 cm	Length 120-140 cm Width 80 cm Height 75 cm	Length 80 cm Width 60 cm Height 75 - 85 cm	Length 120 - 140 cm Width 75 - 90 cm Height 72 - 75 cm	Partially compliant with ergonomic standards. The table height of 75 cm conforms to the recommended ergonomic range; however, the tabletop dimensions (70 × 70 cm) are smaller than those suggested by most reference standards.

Documentation of Furniture and Furniture Types	Measured Dimensions	Chair and Table Ergonomics Based on Neufert (1996)	Chair and Table Ergonomics Based on James Dartford (1990)	Chair and Table Ergonomics Based on Puslitbang PUPR (2020)	Comparison Results
					Nevertheless, the table may remain functional for limited occupancy and dining activities.
Trailtop Table 	Length 50 cm Width 50 cm Height 50 cm	Length 120-140 cm Width 80 cm Height 75 cm	Length 80 cm Width 60 cm Height 75 - 85 cm	Length 120 - 140 cm Width 75 - 90 cm Height 72 - 75 cm	Non-compliant with ergonomic standards. The table height is substantially below the recommended range, and the tabletop dimensions are considerably smaller than the reference standards. As a result, the table does not conform to ergonomic requirements for dining furniture.
Bar Table 	Length 153 cm Width 43 cm Height 1 m	Length 120-140 cm Width 80 cm Height 75 cm	Length 80 cm Width 60 cm Height 75 - 85 cm	Length 120 - 140 cm Width 75 - 90 cm Height 72 - 75 cm	Non-compliant with the ergonomic standards. The table height (100 cm) exceeds the recommended range for dining tables, while the width (43 cm) is below the reference dimensions. Although the table may be functional for bar-style seating, its dimensions do not conform to the ergonomic criteria established for dining furniture.
Yellow Dining Table	Length 60 cm Width 120 cm Height 73 cm	Length 120-140 cm Width 80 cm Height 75 cm	Length 80 cm Width 60 cm Height 75 - 85 cm	Length 120 - 140 cm Width 75 - 90 cm Height 72 - 75 cm	Partially compliant with ergonomic standards. The table length meets the recommended standards, whereas

Documentation of Furniture and Furniture Types	Measured Dimensions	Chair and Table Ergonomics Based on Neufert (1996)	Chair and Table Ergonomics Based on James Dartford (1990)	Chair and Table Ergonomics Based on Puslitbang PUPR (2020)	Comparison Results
					the width and height show minor deviations from some reference dimensions. Overall, the table demonstrates moderate conformity with ergonomic dining table standards.

(Source: Author, 2025)

The assessment of five chair types and four table types at Gultik Street shows varying levels of ergonomic suitability. Based on comparisons with dimensional guidelines for dining furniture proposed by Dartford (1990), Neufert (1996), and Puslitbang PUPR (2020), the black chair with a backrest and the blue metal chair demonstrate the highest level of conformity among the evaluated seating types. Although some dimensions slightly deviate from particular reference standards, these chairs generally meet several recommended anthropometric criteria related to seat height, seat depth, and backrest dimensions, indicating better ergonomic suitability for dining activities than the other chair types evaluated. Proper alignment between seat height and lower-limb dimensions helps reduce thigh pressure and improves stability during seated activities (Hoque et al., 2003).

In contrast, the plastic chair, trailtop chair (camping chair), and bar stool do not conform to several key ergonomic criteria identified across the reference standards. The main issues include inadequate seat dimensions, insufficient backrest support, and seat heights that differ substantially from the recommendations of Neufert (1996), Dartford (1990), and Puslitbang PUPR (2020). Inadequate back support can increase discomfort over time (Curran et al., 2015), while extreme seat-height deviations may encourage non-neutral postures compared with preferred sitting positions (Kamp et al., 2011). These dimensional mismatches may reduce ergonomic suitability and limit the accommodation of users based on established anthropometric requirements. The bar stool, in particular, exhibits dimensions that differ considerably from conventional dining furniture standards and therefore demonstrates lower ergonomic conformity.

For tables, ergonomic conformity also varies among furniture types. The square metal table and yellow dining table demonstrate partial compliance with the dimensional recommendations proposed by Neufert (1996), Dartford (1990), and Puslitbang PUPR (2020), whereas the trailtop table exhibits substantial deviations, particularly in table height and tabletop dimensions. The bar table, although functional for bar-style seating, exceeds the height range recommended for dining tables and therefore cannot be considered compliant with the standards applied in this study. Previous studies have emphasized that appropriate table dimensions facilitate effective interaction between seated users and the tabletop (Dartford, 1990; Niebel & Freivalds, 2002). Conversely, table heights that deviate considerably from recommended anthropometric standards may require users to adopt less favorable working or dining positions, potentially affecting functional comfort during use (Riandy et al., 2020; Gerald & Darmayanti, 2023). Overall, the findings support previous research indicating that dimensional conformity contributes to ergonomic suitability and activity performance (Lakstiarini & Nugroho, 2021) and should be considered alongside spatial layout integration in flexible dining environments (Wardani, 2003; Wajdi & Winarno, 2014).

**4. Conclusion**

This study evaluated the ergonomic suitability of dining furniture and spatial layout at the Gultik Street tenant in Taman Labuai Citywalk, Pekanbaru, using field measurements and comparisons with established anthropometric and ergonomic references (Dartford, 1990; Neufert, 1996; Puslitbang PUPR, 2020). The results indicate varying levels of ergonomic conformity among the evaluated furniture types. The black chair with a backrest and the blue metal chair demonstrate the highest level of ergonomic compliance among the seating furniture assessed, so can better support neutral sitting posture during dining activities (Panero & Zelnik, 1979). While the plastic chair, camping chair, and bar stool exhibit substantial dimensional deviations from recommended standards. Among the tables evaluated, the square metal table and yellow dining table show partial conformity, whereas the trailtop table and bar table do not fully comply with the dining table standards used in this study.

The results also highlight the role of spatial configuration. While portable furniture supports flexible arrangements and adjustment to fluctuating visitor numbers, circulation tends to become constrained during peak hours when spacing between tables and chairs decreases, potentially lowering overall comfort (Wardani, 2003). This pattern is consistent with café-based studies showing that both dimensional mismatch and furniture placement influence comfort and activity efficiency (Riandy et al., 2020). The present study contributes local evidence from Pekanbaru on the ergonomic implications of portable furniture in semi-outdoor public culinary settings (Nurfadillah et al., 2025).

This study has limitations. The assessment focused primarily on dimensional conformity and did not directly capture visitors' subjective comfort through surveys or interviews, and the analysis was limited to a single tenant, which restricts generalization to other settings (de Looze et al., 2003). Future research is recommended to integrate dimensional assessment with user surveys, anthropometric sampling, and/or posture-based evaluation to provide a more comprehensive understanding of comfort in outdoor dining contexts (Laksitarini & Nugroho, 2021). Practically, tenants and public space managers should prioritize seating with appropriate seat height and adequate back support and maintain sufficient circulation space especially during peak hours to improve comfort, safety, and functionality in outdoor public dining areas (Hoque et al., 2003).

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## References

- Badan Pusat Statistik Kota Pekanbaru. (2024). *Kota Pekanbaru dalam angka 2024*. BPS Kota Pekanbaru.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Curran, M., O'Sullivan, L., O'Sullivan, P., Dankaerts, W., & O'Sullivan, K. (2015). Does using a chair backrest or reducing seated hip flexion influence trunk muscle activity and discomfort? A systematic review. *Human Factors*, 57(7), 1115–1148. <https://doi.org/10.1177/0018720815591905>
- Dartford, J. (1990). *Architect data sheets: Dining space*. Architecture Design and Technology Press.
- de Looze, M. P., Kuijt-Evers, L. F. M., & van Dieën, J. H. (2003). Sitting comfort and discomfort and the relationships with objective measures. *Ergonomics*, 46(10), 985–997. <https://doi.org/10.1080/0014013031000121977>
- Fitrianto, T. R., Rahmat, B., Nugroho, A. R., Prakoso, G., Afifah, A. S., Anggiriani, S., & Juwitasari, D. (2025). Evaluation of office chair design from ergonomic and anthropometric perspectives. *J@ti Undip: Jurnal Teknik Industri*, 20(3), 148–154. <https://doi.org/10.14710/jati.20.3.148-154>
- Gerald, M., & Darmayanti, T. E. (2023). Tinjauan faktor ergonomi meja & fasilitas duduk terkait kenyamanan Kafe Fullmoon Coffee Bandung. *Jurnal Desain*, 11(1), 68–81. <https://doi.org/10.30998/jd.v11i1.15616>
- Hoque, M., Hossain, M. A., & Rahman, M. A. (2003). The impact of seat height and depth on sitting comfort. *Journal of Occupational Health*, 45(4), 202–208. <https://doi.org/10.1539/joh.45.202>
- Kamp, I., Kilincsoy, U., & Vink, P. (2011). Chosen postures during specific sitting activities. *Ergonomics*, 54(11), 1029–1042. <https://doi.org/10.1080/00140139.2011.618230>

- Laksitarini, N., & Nugroho, I. C. (2021). Analisis ergonomi dan antropometri kursi dan meja makan pada Dialoog Cafe & Eatery Ambon. *ARS: Jurnal Seni Rupa dan Desain*, 24(3), 143–148. <https://doi.org/10.24821/ars.v24i3.4254>
- Liu, Y., Hu, W., Kasal, A., & Erdil, Y. Z. (2023). The state of the art of biomechanics applied in ergonomic furniture design. *Applied Sciences*, 13(22), 12120. <https://doi.org/10.3390/app132212120>
- Neufert, E. (1996). *Data arsitek* (Terj.). Erlangga.
- Niebel, B., & Freivalds, A. (2002). *Methods, standards, and work design* (11th ed.). McGraw-Hill.
- Nurfadillah, A. T., Ilmi, M. R., Harimardika, M. R., Pratiwi, I. A., & Handri, H. (2025). Evaluasi penerapan prinsip ergonomi pada desain interior Kafe Lafera Space Pekanbaru. *DESA: Jurnal Desain dan Arsitektur*, 6(2), 83–94. <https://doi.org/10.34010/desa.v6i2.17310>
- Panero, J., & Zelnik, M. (1979). *Human dimension and interior space*. Whitney Library of Design.
- Prasetyo, Yuri Hermawan., & Sari, Wulani Enggar. (2020). *Antropometri dan Ergonomi di Hunian Sederhana*. Bandung: Puslitbang Perumahan dan Permukiman.
- Pratiwi, S. D., & Yusran, R. (2025). *The effectiveness of Stasiun Lambuang as a public space for empowering micro, small, and medium enterprises (MSMEs) in Bukittinggi City: Efektivitas ruang publik Stasiun Lambuang untuk usaha mikro, kecil dan menengah (UMKM) di Kota Bukittinggi*. *Santhet: Jurnal Sejarah, Pendidikan dan Humaniora*, 9(4), 1239–1246. <https://doi.org/10.36526/santhet.v9i4.5841>
- Riandy, F., Yuwono, A. A., & Suhardja, G. (2020). Ergonomic furniture study in café Greens & Bean towards user comfort. *Idealog: Ide dan Dialog Desain Indonesia*, 5(1), 39–50. <https://doi.org/10.25124/idealog.v5i1.2861>
- Wardani, L. K. (2003). Evaluasi ergonomi dalam perancangan desain. *Dimensi Interior*, 1(1), 61–73.
- Wajdi, F., & Winarno, H. (2014). Perancangan ergonomi kursi kafe dengan participatory design. *Prosiding Seminar Nasional Sains dan Teknologi*, 1(1), 1–5. <https://jurnal.umj.ac.id/index.php/semnastek/issue/view/54>