**Factors Associated with Housekeeping Implementation Behavior in The Production Department at PT. X, Batam City, in 2024**

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| **Article Information***Submitted:* **06 August 2025***Accepted:* **11 August 2025***Publish:* **30 August 2025** | ***Abstract******Introduction:*** *Housekeeping is a fundamental aspect of Occupational Safety and Health, contributing to improved workplace organization, reduced hazards, and enhanced productivity. Effective housekeeping implementation is influenced by multiple factors, including supervisory oversight and the availability of adequate facilities.* ***Objective:*** *This study aimed to determine the relationship between supervision and facility availability with housekeeping implementation behavior among production workers at PT X, Batam City.* ***Method:*** *A quantitative research design with a cross-sectional approach was employed, and data collection was conducted from May to June 2024. The study population comprised 150 production workers, with a sample size of 109 respondents determined using Slovin’s formula. A simple random sampling technique was applied. Research instruments included questionnaires, interviews, mobile devices, observation sheets, and documentation tools. The Chi-square test was used for statistical analysis.* ***Result and Discussion:*** *The results showed a significant relationship between supervision and housekeeping behavior (p = 0.001) as well as between facility availability and housekeeping behavior (p < 0.001). These findings indicate that both adequate supervision and sufficient facility provision play a crucial role in promoting effective housekeeping practices in the production area.* ***Conclusion:*** *The study concludes that strengthening supervisory roles and improving facility availability are essential strategies for enhancing occupational safety and housekeeping behavior among industrial workers.* |
| **Keyword:** Housekeeping; Occupational Safety and Health; Supervision; |
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**Introduction**

Housekeeping is derived from two words: house and keeping. House refers to a residence, while keeping denotes maintaining, caring for, and ensuring cleanliness within a work environment. One form of effective housekeeping is the application of Good Housekeeping in accordance with OSHAS 18001 (Occupational Safety and Health Assessment Series) standards, which is directly related to Occupational Safety and Health (OSH). The benefits of implementing Good Housekeeping include enhancing comfort, reducing workplace risks, and improving worker productivity. The behavioral approach to Good Housekeeping—characterized by the principles of 5R (Ringkas, Rapi, Resik, Rawat, and Rajin)—represents an efficient work practice that leads to a cleaner and more organized workplace (Almakki, 2023). The 5R principle is categorized as a behavioral concept because it can be identified through employee knowledge assessments and regulatory compliance, with its application serving as the primary factor (Safitri & Wahyuningsih, 2021). Any company aiming to enhance its operational quality should begin with the fundamental adoption of the 5R habit in the workplace. This process requires stability and adaptability to achieve efficient work performance (Sari, 2023). Japanese companies are often cited as exemplary in this regard. Despite limited natural resources—lacking vast forests, mines, or arable land sufficient to feed their population—Japanese workers have developed methods to perform their tasks more efficiently and achieve better results. This has led to some of the most harmonious workplace relationships in the world.

Workplace accidents remain a critical issue, potentially occurring at any time (Gusti & Wiguna, 2021). According to the United Nations Global Compact (UNGC) in 2021, industrial accidents occur at a substantial rate, with an estimated 2.78 million workers losing their lives annually due to work-related incidents. Additionally, approximately 374 million workers suffer non-fatal occupational accidents each year. These figures indicate that, on average, around 7,500 people die every day due to hazardous working conditions.

Elyanti (2017), in her study “Determinan Perilaku 5R (Ringkas, Rapi, Resik, Rawat, Rajin) pada Perawat Kelas III di RSUD Pasar Rebo Jakarta Tahun 2017”, found that supervision plays a significant role in influencing individual behavior in the implementation of 5R practices. Supervision not only affects performance but also has a substantial impact on improving the quality of outputs (Samoling, Saputra, & Triyono, 2023). Similarly, Wahyuni (2019), in her study “Hubungan Perilaku dan Pengawasan Terhadap Penerapan 5S Pada Pekerja Bagian Produksi PT Vuteq Indonesia, Bekasi Tahun 2019”, reported that production workers under supervision demonstrated a positive correlation with 5S implementation, with p-values of 0.002 and 0.009, both lower than the significance level of 0.005.

Based on the study by Sarbiah et al. (2019), the analysis findings indicate a statistically significant relationship between the availability of workplace facilities and the implementation of the 5R principles among workers in the workshop and trailer workshop areas of PT X. The obtained *p*-value of 0.024, which is lower than the alpha value of 0.050, demonstrates that the availability of facilities is positively associated with 5R implementation. The researchers recommended that the company expand the 5R program and provide education to employees regarding its proper application (Sarbiah, Maulina, & Pramawati, 2019)

Worker behavior that neglects housekeeping practices can have adverse consequences, particularly in the context of Occupational Safety and Health (OSH). Non-compliance—such as failing to maintain cleanliness, allowing disorganized work areas, and leaving the workplace in an untidy state—can hinder efficiency and productivity. Furthermore, an unclean work environment may negatively affect the company’s public image (Rahman, Irawati, & Arianto, 2021). According to Lawrence Green’s PRECEDE model, three key factors influence such behaviors: predisposing factors, reinforcing factors, and enabling factors, all of which can be applied to understanding workers’ housekeeping practices

Preliminary observations at PT X, Batam City, revealed that 5R activities remain inadequate, particularly in the production area. Instances were recorded of scattered food waste, unused materials obstructing walkways (leading to tripping hazards), and four workers falling as a result. Additionally, excessive material accumulation was observed, causing inefficient space utilization. The absence of effective supervision was corroborated through interviews with several field workers, who reported a lack of monitoring by their supervisors.

In light of these findings, the researchers were motivated to conduct a study entitled: “**Factors Associated with Housekeeping Implementation Behavior in The Production Department at PT. X, Batam City, in 2024”**

**Method**

In this study, a cross-sectional research strategy was employed in conjunction with a quantitative research methodology. In a cross-sectional study, researchers examine various factors that may influence the variables of interest by collecting data from a large number of individuals at a single point in time. This type of research design is referred to as *cross-sectional* (Hayati, R., 2021)

The study population comprised production workers in the barge manufacturing area at PT X, Batam City, in 2024. According to Mardiastuti, A. (2022), the total population consisted of 150 production workers. The accuracy and quality of research findings increase as the margin of error decreases, and a smaller margin of error generally requires a larger sample size. Using Slovin’s formula to determine sample size, the researchers selected 109 respondents through a random sampling technique.

According to Notoatmodjo (2018:182), the objective of univariate analysis is to describe or characterize each of the research variables. In general, the output of univariate analysis consists of percentages and frequency distributions for each variable, while measures such as the mean and median are applied to numerical data. As stated by Notoatmodjo (2018:183), after conducting univariate analysis, researchers may proceed with bivariate analysis to determine the relationship between independent and dependent variables.

Given that this study involved nominal and ordinal scale data, the Chi-square test was applied for statistical analysis. The decision-making criteria were as follows: if *p*-value ≤ α (0.05), this indicated a statistically significant association between the independent and dependent variables; conversely, if *p*-value > α (0.05), this indicated no significant association between the variables.

**Results and Discussion**

1. **Result**

**Univariate Results: Frequency Distribution of Housekeeping Supervision**

**Table 1**

Distribution of Supervision Frequency to workers in the Production section of PT. X

|  |  |  |
| --- | --- | --- |
| **Supervision** | **Frequency** | **Percentage (%)** |
| Unsupervised | 74 | 67.9 |
| Supervised | 35 | 32.1 |
| **Total** | **109** | **100.0** |

Based on table 1 above, it is known that from the results of the study on the variables of supervision of workers in the production section amounted to 109 respondents, in the variable of supervision of workers who were not supervised amounted to 74 (67.9%) workers, while those supervised by the supervisory party totaled 35 (32.1%) workers.

**Frequency Distribution of Availability of Housekeeping Facilities**

**Table 2**

|  |  |  |
| --- | --- | --- |
| **Availability of Facilities** | **Frequency** | **Percentage (%)** |
| Inadequate | 70 | 64.2 |
| Adequate | 39 | 35.8 |
| **Total** | **109** | **100.0** |

Distribution of Frequency of Facility Availability to workers in the Production section of PT. X

Based on table 2 above, it is known that from the results of the study on the variable Availability of facilities to workers in the production section amounted to 109 respondents, in the variable of inadequate availability of worker facilities amounted to 70 (64.2%) respondents, while those who stated that they were adequate amounted to 39 (35.8%) respondents.

**Frequency Distribution of Housekeeping Implementation Behavior**

**Table 3**

Frequency Distribution of Behavior Implementation of Housekeeping to Workers in the Production Department of PT.X

|  |  |  |
| --- | --- | --- |
| **Deployment behavior*****Housekeepinng*** | **Frequency** | **Percentage (%)** |
| Not Applying | 77 | 70.6 |
| Apply | 32 | 29.4 |
| **Total** | **109** | **100.0** |

Based on table 3 above, it is known that from the results of the study on the behavior of implementing *housekeeping* to workers in the production section amounting to 109 respondents, there are workers who do not implement the behavior of *implementing housekeeping* amounting to 77 (70.6%) respondents, while those who apply the behavior of *implementing housekeeping* total 39 (29.4%) respondents.

1. **Discussion**

**Relationship Between Supervision and the Implementation of Housekeeping Practices**

Based on the results of the Chi-square statistical test, a *p*-value of 0.001 was obtained, which is less than α = 0.05. This indicates a statistically significant relationship between supervision and the implementation of housekeeping practices.

According to George’s theory, as cited in Wahyuni (2019), supervision refers to the observation of the execution of all activities, serving as a mechanism for evaluating work performance to ensure that tasks are carried out according to established plans. Supervision can influence and modify an individual’s behavior in performing tasks (Wahyuni, 2019). Elyanti (2017) also emphasized the important role of supervision in shaping a person’s behavior.

This finding is consistent with the study conducted by Aulia, S. N. (2022) [10], entitled *Factors Associated with the Implementation of 5R among Production Workers at PT Abaisiat Raya, Padang, 2022*, which reported a significant relationship between supervision and the implementation of 5R, with a *p*-value of 0.000, less than 0.005.

However, the present study contrasts with the findings of Samoling et al. (2023) [10] in their research *Hubungan Pengawasan, Sikap, dan Prasarana dengan Perilaku 5r (Ringkas, Rapi, Resik, Rawat, dan Rajin)*, which reported a *p*-value of 1.111 (> 0.05) and an OR of 0.957 (CI = 0.299–3.067). This result indicates no significant relationship between supervision and 5R behavior in the LRT Station Project at Jatimulya, East Bekasi, in 2019 (Samoling et al., 2023)

Based on these results, the researchers posit that there is indeed a relationship between supervision and housekeeping implementation behavior. This may be attributed to the lack of consistent supervision in ensuring regular monitoring of workers, which in turn affects their behavior and may lead to deviations from housekeeping standards in the workplace. Additionally, the absence of effective coordination between the Health, Safety, and Environment (HSE) department, supervisors, foremen, and team leaders further contributes to deviations from housekeeping practices in the work area.

**Relationship Between Facility Availability and the Implementation of Housekeeping Practices**

Based on the results of the Chi-square statistical test, a *p*-value of 0.002 was obtained, which is less than α = 0.05. This indicates a statistically significant relationship between facility availability and the implementation of housekeeping practices.

According to Green’s predisposing factor theory, as cited in Irawan (2017), predisposing factors encompass beliefs, values, knowledge, and attitudes, which often stem from existing cultural traditions. Such traditions and beliefs can be associated with various aspects, including health and safety. In a 2023 study by Konny et al., entitled *Factors Influencing Routine Health Screening Examinations*, enabling factors were identified as playing an important role in shaping individual behavior. The availability of facilities to support the 5R principles can positively influence workers’ behavior at PT X. As Green explained in Irawan (2017), facility availability is one of the variables that can determine changes in attitudes or behaviors—manifesting in aspirations or motivation—which can be highly beneficial for organizations or institutions. Therefore, adequate facilities, such as infrastructure and tools to support workplace organization and cleanliness, are essential (Konny et al., 2023).

The findings of this study are consistent with those of Konny et al. (2023), who, in their bivariate analysis of 5R facilities and 5R behavior in the Injection Molding (IMM) unit at PT X, found that workers who perceived the availability of 5R facilities as adequate demonstrated better 5R behavior compared to those who perceived the facilities as inadequate. Their Chi-square analysis yielded a *p*-value of 0.019, which is less than α = 0.050, confirming the significant association.

Adequate facility availability has also been shown to enhance worker performance. For instance, Mansur et al. (2020) reported that sufficient work facilities at the Disaster Preparedness Brigade Office in Bantaeng Regency led to improved work output and faster processes, which in turn positively influenced worker behavior (Mansur, Setiawati, & Parawu, 2020). Similarly, Monde et al. (2022) found that work facilities significantly impacted both job performance (*p*-value = 0.023 < 0.050) and job satisfaction (*p*-value = 0.035) among employees at PT PLN. Likewise, Pratiwi (2022), in her study on the *Pengaruh Disiplin Kerja dan Fasilitas Kerja Terhadap Produktivitas Kerja Buruh Divisi Produksi PT. Multi Elektrik Sejahtrindo, Citeurup Kabupaten Bogor*, reported a positive and significant influence of work facilities on productivity (Pratiwi & Permatasari, 2022)

However, contrasting results were reported by Elyanti (2017) in her study*. Determinan Perilaku 5R (Ringkas, Rapi, Resik, Rawat, Rajin) pada Perawat Kelas III di RSUD Pasar Rebo Jakarta Tahun 2017*. Her multivariate analysis showed no association between facility availability and 5R behavior. Among 72 nurses surveyed, those who perceived facilities as inadequate—45 respondents (62.5%)—tended to have negative attitudes, and 71 respondents (98.6%) exhibited low motivation, suggesting that adequacy of facilities alone did not necessarily improve behavior.

Based on these findings, the researchers conclude that there is a relationship between facility availability and the implementation of housekeeping practices. This may be due to inadequate infrastructure, such as an insufficient number of trash bins, bins located far from work areas—leading workers to mix material waste with food waste and dispose of materials improperly, sometimes blocking pathways—and the absence of cleaning equipment, such as brooms and brushes, in the work area. These deficiencies contribute to deviations from proper housekeeping practices.

**Conclusion**

The results of this study, conducted among 109 production workers at PT X in 2024, revealed that the majority of respondents (67.9%, *n* = 74) reported the absence of supervisory oversight in housekeeping practices, while only 32.1% (*n* = 35) reported being supervised. In terms of facility availability, 64.2% (*n* = 70) of respondents perceived the housekeeping facilities as inadequate, whereas 35.8% (*n* = 39) considered them adequate. Regarding housekeeping implementation behavior, 70.6% (*n* = 77) of workers reported not practicing housekeeping behaviors, while only 29.4% (*n* = 32) reported adherence to such practices. Statistical analysis demonstrated a significant relationship between supervision and housekeeping behavior (χ² test, *p* = 0.001, *p* < α, α = 0.05), indicating acceptance of the alternative hypothesis (Ha). Similarly, a significant relationship was found between facility availability and housekeeping behavior (χ² test, *p* = 0.002, *p* < α, α = 0.05), further supporting the acceptance of Ha. These findings underscore the importance of consistent supervision and adequate facility provision in promoting effective housekeeping practices in the production sector of PT X.

**Reference**

Almakki, M. A. (2023). [Analisis Penerapan Housekeeping 5R (Ringkas, Rapi, Resik, Rawat, Rajin) Pada Kantor PT. Pelabuhan Indonesia (PERSERO) Regional 3](https://scholar.google.com/scholar?q=Almakki,+M.+A.+(2023).+Analisis+Penerapan+Housekeeping+5R+(Ringkas,+Rapi,+Resik,+Rawat,+Rajin)+Pada+Kantor+PT.+Pelabuhan+Indonesia+(PERSERO)+Regional+3&hl=id&as_sdt=0,5). UNIVERSITAS AIRLANGGA.

Gusti, R. N., & Wiguna, P. A. (2021). [Analisis Risiko Kecelakaan Kerja pada Proyek Pembangunan Gedung Kampus II UINSA Surabaya.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Gusti%2C+R.+N.%2C+%26+Wiguna%2C+P.+A.+%282021%29.+Analisis+Risiko+Kecelakaan+Kerja+pada+Proyek+Pembangunan+Gedung+Kampus+II+UINSA+Surabaya.&btnG=) *Jurnal Teknik ITS*, *10*(2), C185–C191.

Mansur, D. R. M., Setiawati, B., & Parawu, H. E. (2020). [Pengaruh Ketersediaan Fasilitas Kerja Terhadap Kinerja Pegawai di Kantor Brigade Siaga Bencana Kabupaten Bantaeng.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Mansur%2C+D.+R.+M.%2C+Setiawati%2C+B.%2C+%26+Parawu%2C+H.+E.+%282020%29.+Pengaruh+Ketersediaan+Fasilitas+Kerja+Terhadap+Kinerja+Pegawai+di+Kantor+Brigade+Siaga+Bencana+Kabupaten+Bantaeng.&btnG=) *Kajian Ilmiah Mahasiswa Administrasi Publik (KIMAP)*, *1*(1), 14–29.

Pratiwi, A., & Permatasari, R. I. (2022). [PENGARUH DISIPLIN KERJA DAN FASILITAS KERJA TERHADAP PRODUKTIVITAS KERJA BURUH DIVISI PRODUKSI PT. MULTI ELEKTRIKSEJAHTRINDO, CITEUREUP KABUPATEN BOGOR.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Pratiwi%2C+A.%2C+%26+Permatasari%2C+R.+I.+%282022%29.+PENGARUH+DISIPLIN+KERJA+DAN+FASILITAS+KERJA+TERHADAP+PRODUKTIVITAS+KERJA+BURUH+DIVISI+PRODUKSI+PT.+MULTI+ELEKTRIKSEJAHTRINDO%2C+CITEUREUP+KABUPATEN+BOGOR.&btnG=) *Jurnal Inovatif Mahasiswa Manajemen*, *3*(1), 14–26.

Rahman, I., Irawati, I., & Arianto, M. F. (2021). [Pengaruh Penerapan 5R (Housekeeping) terhadap Perilaku Keselamatan dan Kesehatan Kerja (K3) pada Perawat di Ruangan Perawatan.](https://scholar.google.com/scholar?q=Rahman,+I.,+Irawati,+I.,+%26+Arianto,+M.+F.+(2021).+Pengaruh+Penerapan+5R+(Housekeeping)+terhadap+Perilaku+Keselamatan+dan+Kesehatan+Kerja+(K3)+pada+Perawat+di+Ruangan+Perawatan.&hl=id&as_sdt=0,5) *Window of Health: Jurnal Kesehatan*, 289–295.

Safitri, N. N., & Wahyuningsih, A. S. (2021). [Penerapan 5R pegawai di ruang penyimpanan.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Safitri%2C+N.+N.%2C+%26+Wahyuningsih%2C+A.+S.+%282021%29.+Penerapan+5R+pegawai+di+ruang+penyimpanan.&btnG=) *HIGEIA (Journal of Public Health Research and Development)*, *5*(4), 515–524.

Samoling, I. K., Saputra, F., & Triyono, A. (2023). [Hubungan Pengawasan, Sikap, dan Prasarana dengan Perilaku 5R (Ringkas, Rapi, Resik, Rawat, dan Rajin): The Relationship between Supervision, Attitudes and Infrastructure with 5R Behavior (Ringkas, Rapi, Resik, Rawat, dan Rajin).](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Samoling%2C+I.+K.%2C+Saputra%2C+F.%2C+%26+Triyono%2C+A.+%282023%29.+Hubungan+Pengawasan%2C+Sikap%2C+dan+Prasarana+dengan+Perilaku+5R+%28Ringkas%2C+Rapi%2C+Resik%2C+Rawat%2C+dan+Rajin%29%3A+The+Relationship+between+Supervision%2C+Attitudes+and+Infrastructure+with+5R+Behavior+%28Ringkas%2C+Rapi%2C+Resik%2C+Rawat%2C+dan+Rajin%29.&btnG=) *Journal of Public Health Education*, *3*(1), 418–424.

Sarbiah, A., Maulina, D., & Pramawati, A. (2019). [Faktor Yang Berhubungan Dengan Penerapan 5R Pada Karyawan Bagian Bengkel Trailer Dan Workshop Area PT. X.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Sarbiah%2C+A.%2C+Maulina%2C+D.%2C+%26+Pramawati%2C+A.+%282019%29.+Faktor+Yang+Berhubungan+Dengan+Penerapan+5R+Pada+Karyawan+Bagian+Bengkel+Trailer+Dan+Workshop+Area+PT.+X.&btnG=) *Jurnal Kesehatan Ibnu Sina (J-KIS)*, *1*(01).

Sari, O. D. (2023). [Analisis implementasi budaya 5r (ringkas, rapi, resik, rawat, rajin) pada pt. sukses mitra sejahtera kediri.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Sari%2C+O.+D.+%282023%29.+Analisis+implementasi+budaya+5r+%28ringkas%2C+rapi%2C+resik%2C+rawat%2C+rajin%29+pada+pt.+sukses+mitra+sejahtera+kediri.&btnG=) *Prosiding Simposium Nasional Manajemen Dan Bisnis*, *2*, 1376–1385.

Wahyuni, A. T. (2019). [Hubungan Perilaku dan Pengawasan Terhadap Penerapan 5S Pada Pekerja Bagian Produksi PT Vuteq Indonesia, Bekasi Tahun 2019.](https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=Wahyuni%2C+A.+T.+%282019%29.+Hubungan+Perilaku+dan+Pengawasan+Terhadap+Penerapan+5S+Pada+Pekerja+Bagian+Produksi+PT+Vuteq+Indonesia%2C+Bekasi+Tahun+2019.&btnG=) Universitas Binawan.