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THE INFLUENCE OF STANDARD OPERATING PROCEDURE IMPLEMENTATION ON PRODUCT QUALITY WITH EMPLOYEE PERFORMANCE AS A MEDIATING VARIABLE (A CASE STUDY OF MIXUE FRANCHISE IN TASIKMALAYA CITY)

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Abstract: This research analyzes the influence of Standard Operating Procedure (SOP) implementation on product quality with employee performance as a mediating variable in the Mixue franchise business in Tasikmalaya City. The research was conducted with a quantitative approach involving 43 employees as respondents. Data were collected through structured questionnaires and analyzed using path analysis and the Sobel test to assess direct and indirect effects. The empirical results from the path analysis show that SOP implementation has a significant effect on employee performance (sig. 0.004) and on product quality (sig. 0.004). In addition, employee performance also has a significant effect on product quality (sig. 0.009). The Sobel test confirms the mediating role, with a calculated z-value of 2.040 (> 1.96), which indicates that employee performance significantly mediates the influence of SOP implementation on product quality. The coefficient of determination (R-square) analysis reveals that SOP implementation contributes an influence of 18.4% to employee performance, while SOP implementation and employee performance together have an influence of 42.1% on product quality. This finding confirms that a well-implemented SOP not only serves as a work reference, but also as a driver for performance consistency that ultimately maintains product quality standards.

Keywords: standard operational procedure (SOP); product quality; employee performance.

1. Introduction

The franchise business in Indonesia continues to show strong growth, particularly in the food and beverage sector. According to the Indonesian Franchise Association (2023), more than 2,500 franchise units operate across the country, contributing approximately 3.5% to the national GDP. At the regional level, this expansion is also evident in the rapid development of Mixue outlets in Tasikmalaya City. A key element behind the success of this business model is its ability to maintain consistent customer experience and standardized product quality across all branches.

Standard Operating Procedures (SOPs) serve as the primary mechanism to achieve this consistency, providing clear and detailed instructions that guide employees from ingredient preparation to final product presentation. However, SOPs can only function effectively when they are accurately interpreted, internalized, and executed by employees. This highlights the central role of employee performance as the operational bridge linking procedural standards to actual product outcomes.

Despite the expectation of uniformity, real conditions in the field suggest otherwise, particularly in the case of Mixue Tasikmalaya. Several customer reviews posted on Google explicitly mention noticeable differences in taste between one Mixue Tasikmalaya outlet and another. These remarks reveal an important discrepancy although all outlets

operate under identical SOPs, the resulting product experience is not always the same. This inconsistency signals a potential gap between written procedures and their practical implementation, likely influenced by variations in employee performance across Mixue Tasikmalaya outlets. Such observations highlight a relevant research opportunity, as limited empirical studies have examined why standardized SOPs may still produce inconsistent product quality within a localized franchise context.

Therefore, this study seeks to address this gap by examining the influence of SOP implementation on product quality in Mixue Tasikmalaya while analyzing the mediating role of employee performance. Beyond statistical verification, this research aims to contribute to a deeper theoretical understanding of how formal operational structures interact with human behavior in shaping product consistency within franchise operations.

2. Research Method

The research method employed in this study is a quantitative approach. According to Sugiyono (2023), quantitative research is a method characterized by a systematic, planned, and structured research design based on the philosophy of positivism. This method is used to study a sample drawn randomly from a specific population, with data collected in numerical form. The resulting data are then analyzed statistically to test the predetermined hypotheses.

The population in this study includes all Mixue employees in Tasikmalaya City who have received training and possess knowledge regarding the Standard Operating Procedures (SOPs) implemented by the company. Sugiyono (2023) defines a sample as a part of the population that possesses similar characteristics to represent the entire group. To determine the sample, a sampling technique is used to select a portion of the population. This study applied probability sampling with the simple random sampling method, in which members of the population are selected randomly without considering existing strata. Since the total population was not precisely known, the sample size was determined using Cochran's formula as follows:

$$n = \frac{z^2 pq}{e^2}$$

Based on the formula above, the sample size was determined as follows:

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.15)^2} \approx 42.68$$

Based on this calculation, the number of samples used in this study was 43 respondents.

The data collection in this study was carried out using a questionnaire, which is a data-gathering technique that involves providing respondents with a set of written questions or statements to be answered. The measurement scale used in this research is the Likert scale, which is based on the cumulative responses of participants toward statements related to the indicators of the variables being measured. The alternative responses and corresponding values used in the Likert scale are as follows:

Strongly Disagree (SD)	= 1
Disagree (D)	= 2
Neutral (N)	= 3
Agree (A)	= 4

Strongly Agree (SA) = 5

Based on the theory presented by Ghozali (2021), the data analysis techniques used in this study include several stages. The first stage is the instrument testing, which consists of a validity test to determine whether each statement in the instrument is valid, and a reliability test to measure the consistency of the questionnaire items that serve as indicators of the variables or constructs. The next stage is the classical assumption testing, which includes of a normality test, multicollinearity test and heteroscedasticity test. After these tests, hypothesis testing is carried out, which includes of a coefficient of determination test (R^2), path analysis and Sobel test.

3. Result and Discussion

3.1 Validity Test

The comparison between the r-calculated and r-table values is based on the degree of freedom (df) = $n - 2$, where n represents the number of samples. In this study, $df = 43 - 2 = 41$, and with a significance level (α) of 5% or 0.05, the r-table value obtained was 0.308.

Table 1. Validity Test of SOP Implementation Variable (X)

Items	r-calculated	r-table	Description
P01	0,338	0,308	Valid
P02	0,685	0,308	Valid
P03	0,561	0,308	Valid
P04	0,337	0,308	Valid
P05	0,591	0,308	Valid
P06	0,656	0,308	Valid
P07	0,522	0,308	Valid
P08	0,430	0,308	Valid

Source: SPSS Output Result

Table 2. Validity Test of Employee Performance Variable (M)

Items	r-calculated	r-table	Description
P09	0,577	0,308	Valid
P10	0,555	0,308	Valid
P11	0,456	0,308	Valid
P12	0,417	0,308	Valid

Source: SPSS Output Result

Table 3. Validity Test of Product Quality Variable (Y)

Items	r-calculated	r-table	Description
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P13	0,560	0,308	Valid
P14	0,564	0,308	Valid
P15	0,342	0,308	Valid
P16	0,453	0,308	Valid
P17	0,508	0,308	Valid
P18	0,667	0,308	Valid

Source: SPSS Output Result

Based on the table above, it can be seen that each statement used to measure the variables of SOP implementation, product quality, and employee performance is valid.

3.2 Reliability Test

The level of reliability is measured using the Cronbach's Alpha coefficient, where an instrument is considered reliable if it has a Cronbach's Alpha value greater than 0.70 (Ghozali, 2021).

Table 4. Reliability Test of SOP Implementation Variable (X)

Items	Cronbach's Alpha	Reliability Standard	Description
P01	0,800	0,70	Reliable
P02	0,785	0,70	Reliable
P03	0,788	0,70	Reliable
P04	0,833	0,70	Reliable
P05	0,786	0,70	Reliable
P06	0,785	0,70	Reliable
P07	0,792	0,70	Reliable
P08	0,797	0,70	Reliable

Source: SPSS Output Result

Table 5. Reliability Test of Employee Performance Variable (M)

Items	Cronbach's Alpha	Reliability Standard	Description
P09	0,787	0,70	Reliable
P10	0,789	0,70	Reliable
P11	0,795	0,70	Reliable
P12	0,796	0,70	Reliable

Source: SPSS Output Result

Table 6. Reliability Test of Product Quality Variable (Y)

Items	Cronbach's Alpha	Reliability Standard	Description
P13	0,788	0,7	Reliable
P14	0,788	0,7	Reliable
P15	0,801	0,7	Reliable
P16	0,796	0,7	Reliable
P17	0,797	0,7	Reliable
P18	0,782	0,7	Reliable

Source: SPSS Output Result

Based on the tables above, it can be seen that each statement used to measure the variables of SOP implementation, employee performance, and product quality is reliable and consistent.

3.3 Normality Test

The test was conducted using the non-parametric Kolmogorov–Smirnov (K-S) statistical test. If the significance value of the residual data is greater than 0.05 (or 5%), the data can be considered normally distributed.

Table 7. Normality Test

	Unstandardized Residual
N	43
Asymp. Sig. (2-tailed)	,200c,d

Source: SPSS Output Result

Based on the table above, it can be concluded that the data are normally distributed. This assumption is supported by the Asymp. Sig. value, which is greater than the significance level α ($0.200 > 0.05$).

3.4 Multicollinearity Test

To examine the presence of multicollinearity, the criteria used are a Tolerance value greater than the significance level ($\text{Sig. Tolerance} > \alpha$) and a Variance Inflation Factor (VIF) value less than 10.

Table 8. Multicollinearity Test

Variable	Sig. Tolerance	Collinearity Statistics VIF	α	Description
X	0,816	1,226	0,10 10	No multicollinearity detected
M	0,816	1,226	0,10 10	No multicollinearity detected

Source: SPSS Output Result

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Based on the results presented in the table, it can be concluded that there is no indication of multicollinearity among the independent and mediating variables in the regression model.

3.5 Heteroscedasticity Test

To assess the presence or absence of heteroscedasticity, the significance value is examined, where a significance value greater than $\alpha = 5\%$ (Sig. > 0.05) indicates no heteroscedasticity.

Table 9. Heteroscedasticity Test

Variable	Sig.	α	Description
X	0,262	0,05	No heteroscedasticity detected
M	0,716	0,05	No heteroscedasticity detected

Source: SPSS Output Result

Based on the results presented in the table, it can be concluded that no heteroscedasticity occurred among the independent and mediating variables in the regression model.

3.6 Coefficient of Determination Test (R^2)

To determine the extent to which the independent variables contribute to the dependent variables, a coefficient of determine (R^2) test was conducted. This test aims to measure how much variation in employee performance and product quality can be explained by the implementation of SOP.

Table 10. Coefficient of Determination Test

Model	Variable	R	R Square
1	SOP on Employee Performance	0,429	0,184
2	SOP and Employee Performance on Product Quality	0,649	0,421

Source: SPSS Output Result

The R Square value in the first model is 0.184, indicating that the implementation of SOP influences employee performance by 18.4%, while the remaining 81.6% is affected by other variables outside the study. In the second model, the R Square value of 0.421 shows that the implementation of SOP and employee performance simultaneously affect product quality by 42.1%, with the remaining 57.9% influenced by factors beyond this research.

3.7 Path Analysis

The path analysis was conducted to determine the direct and indirect effects of SOP implementation (X) on employee performance (M) and product quality (Y).

Table 11. Path Analysis

Relationship	Coefficient (β)	t-value	Sig.	Description
SOP on Employee Performance	0,429	3,045	0,004	Significant
SOP on Product Quality	0,404	3,035	0,004	Significant
Employee Performance on Product Quality	0,363	2,725	0,009	Significant

Source: SPSS Output Result

Based on the results, the implementation of SOP (X) has a significant positive effect on employee performance (M) with a significance value of 0.004 (< 0.05). Furthermore, both SOP implementation (X) and employee performance (M) significantly influence product quality (Y), with significance values of 0.004 and 0.009, respectively. These findings indicate that well implemented SOPs improve employee performance, which in turn enhances product quality.

3.8 Sobel Test

The Sobel test is used to analyze whether the regression path through a mediating variable significantly serves as a mediator in the regression model. The following table provides a summary to facilitate the calculation using the z-test formula:

Table 12. Sobel Test

		S
a	0,230	0,075
b	0,541	0,198

Source: SPSS Output Result

In determining the analysis criteria, the z-calculated (z-count) and z-table values are required to compare the t-calculated (t-count) value with the t-table. The calculation of the z-calculated and z-table values, respectively, is as follows:

Formula for z-calculated (z-count):

$$z - calculated = \frac{a \cdot b}{\sqrt{b^2 S_a^2 + a^2 S_b^2}}$$

$$z - calculated = \frac{0,230 \cdot 0,541}{\sqrt{(0,541)^2 (0,075)^2 + (0,230)^2 (0,198)^2}}$$

$$z - calculated = 2,040$$

Formula for z-table:

$$Z_{1-\frac{\alpha}{2}} = Z_{1-\frac{0,05}{2}}$$

$$Z_{1-\frac{\alpha}{2}} = Z_{1-0,025}$$

$$Z_{1-\frac{\alpha}{2}} = Z_{0,975}$$

$$Z_{1-\frac{\alpha}{2}} = 1,96$$

Based on the results of the Sobel test calculation above, the obtained z-value is 2.040 ($z\text{-calculated} > 1.96$), indicating that employee performance mediates the effect of SOP implementation on product quality.

Based on the results of testing, the implementation of Standard Operating Procedures (SOPs) has a significant effect on product quality in Mixue Franchise outlets. SOPs play a crucial role in eliminating ambiguity and subjectivity in the production process by providing clear and standardized guidelines from ingredient preparation to final product presentation. Furthermore, SOP implementation significantly affects employee performance by offering structured guidance and reducing uncertainty in task execution. Employees who adhere to SOPs tend to work more efficiently, accurately, and consistently. In turn, employee performance significantly influences product quality, as high performing employees follow procedures carefully and produce consistent, high-quality outcomes. Therefore, it can be concluded that SOP implementation indirectly affects product quality through improved employee performance, which serves as a key mediating variable in this relationship.

4. Conclusion and Recommendations

The results of this study show that SOP implementation significantly improves employee performance and product quality. Path analysis indicates that SOPs positively affect employee performance (sig. 0.004) and directly enhance product quality (sig. 0.004), while employee performance also contributes significantly to product quality (sig. 0.009). Furthermore, the Sobel test ($z = 2.040 > 1.96$) confirms that employee performance mediates the influence of SOP implementation on product quality, indicating that SOPs affect quality both directly and through improved employee performance.

These empirical results underscore that SOP implementation plays a crucial role in shaping consistent employee behavior and ensuring reliable product outcomes within franchise operations. Beyond these statistical findings, this study offers a broader theoretical contribution by illustrating how formalized procedures interact with human performance; SOPs alone are insufficient without employee internalization and disciplined execution. In essence, the operational value of SOPs is realized only when they successfully guide employee actions toward stable and high-quality outputs. Nevertheless, this study has limitations that should be noted, as the research was conducted exclusively at Mixue outlets in Tasikmalaya City. Differences in managerial practices, employee characteristics, or operational environments across regions may limit the generalizability of the results. Therefore, future research is encouraged to include a wider geographical scope or compare multiple franchise brands to provide deeper and more comprehensive insights into the dynamics of SOP implementation and product quality.

References

- Budihardjo, M. (2014). *Panduan Praktis Menyusun SOP*. Jakarta: Raih Asa Sukses. Retrieved from <https://books.google.co.id/books?id=wzQBgAAQBAJ&lpg=PP1&ots=1xCXP3EY0m&dq=sop&lr&hl=id&pg=PP5#v=onepage&q=sop&f=false>
- Daga, R. (2017). *Citra, Kualitas Produk, dan Kepuasan Pelanggan*. Makassar: Global-RCTI.

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- Dhian, A. F., et al. (2021). Dampak Standar Operasional Prosedur terhadap Kinerja Karyawan dalam Meningkatkan Kualitas Produk (Makanan) serta Kepuasan Tamu di Hotel Yellow Star Ambarukmo. *Mabha Jurnal (Vol. 2)*.
- Ghozali, I. (2021). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 26*. Semarang: Badan Penerbit Universitas Diponegoro.
- Heizer, J., & Render, B. (2015). *Operations Management: Sustainability and Supply Chain Management*. New York: Pearson education.
- Heizer, J., & Render, B. (2016). *Manajemen Operasi: Manajemen Keberlangsungan dan Rantai Pasokan*. Jakarta: Salemba Empat.
- Hernalis, A. Y., et al. (2023). Pengaruh Penerapan Standar Operasional Prosedur Dan Lingkungan Kerja Terhadap Produktivitas Kerja Karyawan (Suatu Studi pada Karyawan Mayasi Cabang Tasikmalaya). *Business Management and Entrepreneurship Journal (Vol. 5)*.
- Institut Teknologi Bandung. (2023). *Pedoman Penyusunan Prosedur Operasional Standar*.
- Juhaeti. (2024). Pengaruh Penerapan Standar Operasional Prosedur dan Quality Control terhadap Kualitas Produk PT. IK Precision Indonesia Cikarang Jawa Barat. *Jurnal Ilmiah M-Progress (vol. 14)*.
- Krajewski, L. J., Malhotra, M. K., & Ritzman, L. P. (2015). *Management: Processes and Supply Chains*. Upper Saddle River, New Jersey: Prentice Hall.
- Salsabila, A., et al. (2025). Pengaruh Penerapan Standar Operasional Prosedur (SOP) dan Efektivitas Pelatihan terhadap Kinerja Karyawan. *EKOMA: Jurnal Ekonomi, 4(2)*.
- Sinambela, L. P. (2016). *Manajemen Sumber Daya Manusia*. Jakarta: Bumi Aksara.
- Sugiyono. (2023). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Yogyakarta: Alfabeta, cv.
- Supatmi, M. E., et al. (2023).). Pengaruh Pelatihan, Kompensasi terhadap Kepuasan Kerja Karyawan dan Kinerja Karyawan. *Profit: Jurnal Administrasi Bisnis Universitas Brawijaya Vol. 7, No. 1*.
- Tjiptono, F., & Diana, A. (2001). *Total Quality Management*. Yogyakarta: Andi.
- Wahyuni, N., et al (2025). Analysis of the Development and Influence of Standard Operating Procedures (SOP) to Assess the Effectiveness of the Work of Employees of the Production Department of PT. X Sumedang Regency, Indonesia. *The 2nd Intenational Student Conference on Economic and Business Excellence (Vol. 2, Issue 1)*.
- Yani, A. S (2022). Pengaruh Perencanaan Produksi Dan Kualitas Produk Terhadap Kinerja Operasional Yang Dimoderasi Oleh Standar Operasional Prosedur (SOP) Pada PT. Tritunggal Sinarjaya. *Jurnal EBI, 4(2)*.
- Yuwono, V. K., et al. (2025). Pengaruh Penerapan SOP terhadap Efektivitas Kinerja Internal dan Dampaknya terhadap Kualitas Produk UMKM Kuliner di Surabaya. *Jurnal Manajemen Perhotelan (Vol. 11), 59-66*.