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Analysis Of Non-Physical Work Environment And Work-Life Balance On Employee Productivity At Coffeenatics

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Abstract. This study aims to analyze the influence of the non-physical work environment and work-life balance on the productivity of operational employees at Coffeenatics. The methodology employed is mixed methods with a sequential explanatory approach, where the quantitative phase involved 40 employees using saturated sampling (census), and the qualitative phase utilized in-depth interviews with three key informants from the Bar, Kitchen, and Floor departments. Quantitative data were tested using multiple linear regression analysis via SPSS, while qualitative data were processed through thematic analysis. Statistical result indicate that, partially, the non-physical work environment has a positive but non-significant effect on productivity ($p=0.057 > 0.05$) because daily output is primarily dictated by standardized SOPs and order volume rather than social proximity. Conversely, work-life balance shows a significant positive influence ($p=0.038 < 0.05$) as the assurance of rest time and physical recovery is crucial for shift workers to maintain mental focus and minimize human error. Simultaneously, both variables significantly affect productivity with a contribution (R-Square) of 42%, while the remaining 58% is influenced by other external factors. This research concludes that the synergy between physical-mental fitness through life balance and emotional support in the workplace is the fundamental pillar in optimizing operational efficiency within the specialty coffee industry.

Keywords: *Non-Physical Work Environment, Work-Life Balance, Employee Productivity, Mixed Methods, Coffee Industry.*

INTRODUCTION

According to Andika, Widjarnako, and Ahmad (2019), work productivity is fundamentally defined as the comparison between output and input, where the produced output must possess added value and reflect efficient resource utilization through superior work techniques. Employee productivity stands as a fundamental variable determining organizational competitiveness, particularly within the service sector such as the coffee industry, which currently contributes 15% to Indonesia's national GDP. According to Insan and Batubara (2025), human resources are the most critical factor influencing organizational success, where the cultivation of work discipline and motivation is paramount to achieving high job satisfaction and optimal work quality. Coffeenatics, a pioneer in Medan's specialty coffee scene, faces operational challenges where productivity often fluctuates under peak-hour workload pressures that trigger stress along with physical and mental fatigue. Field phenomena indicate a disconnect: while interpersonal relationships among staff remain harmonious, pre-survey result from April 2026 revealed that 52.9% of employees feel psychological pressure, 47.1% experience post-work exhaustion, and 58.8% admit their work volume has not reached an optimal level. Theoretically, productivity is influenced by internal factors such as work-life balance and external factors like the non-physical work environment, where role imbalances often result in cognitive fatigue while healthy social support acts as a motivational catalyst.

Driven by this urgency, this study intends to fill a literature gap, given that prior research has largely focused on the manufacturing industry, by employing a mixed-methods approach with a sequential explanatory design to analyze how the synergy between psychosocial comfort and life balance can drive tangible work output in a dynamic hospitality environment.

The primary focus of this research is formulated to test whether the non-physical work environment and work-life balance have a positive and significant effect on employee productivity, both partially and simultaneously, while exploring employees' subjective perceptions of their daily work experiences to obtain a comprehensive operational overview. The integration if these concept is grounded in the theoretical foundation that productivity is a manifestation of an individual's success in managing time and skills, which heavily depends on the alignment between individual mental readliness (work-life balance) and the support of a conducive work atmosphere (non-physical environment).

Based on this conceptual framework, it is hypothesized that the non-physical work environment and work-life balance are expected to have a positive and significant effect on employee productivity at Coffeenatics, both when tested independently and when tested together within a regression model. This study is expected not only to provide a theoretical contribution to human resource management science but also to offer practical solutions for management in balancing the company's professional targets with the psyschological well-being of the team.

LITERATURE REVIEW

Work productivity is understood as the comparison between output and input in which the resulting output reflects added value and efficient resource utilization, as cited from Andika, Widjarnako, and Ahmad (2019). In the Coffeenatics context, the study positions work-life balance as an internal factor related to physical and mental readiness and the non-physical work environment as an external factor related to social and psychological support. The conceptual framework therefore examines how these two factors influence employee productivity, both independently and simultaneously, within a dynamic specialty coffee work setting.

METHODS

According to Setiawan and Jailani (2025), the application of mixed methods provides significant advantages in data triangulation, which enriches the analytical process and enhances the overall validity of research outcomes by integrating both quantitative and qualitative elements. This research employs a mixed methods design with a sequential explanatory approach, integrating the strengths of quantitative statistical analysis with the depth of qualitative analysis to provide a comprehensive explanation of the phenomena under study. The research structure is built upon three primary variables, consisting of the Non-Physical Work Environment (X1) and Work-Life Balance (X2) as independent variables, and Employee Productivity (Y) as the dependent variable. The non-physical work environment is measured through indicators of co-worker relationships, supervisor-subordinate relationships, and work atmosphere, while work-life balance is examined through dimensions of mutual interference and enhancement between work and personal life.

The operational definitions and specific indicators for each variable are detailed in Table 1 as follows:

Table 1. Operational Definitions of Variables

Variable	Operational Definition	Indicators	Scale
Employee	Productivity is the ratio between work results	1. Quality of Work	Likert

Productivity (Y)	(output) and the total resources used (input), measured through quality, quantity, and time lines. Sedarmayanti (2017)	2. Quantity of Work 3. Timeliness	1-5
Non-Physical Work Environment (X1)	Non-physical work environment refers to all occurring circumstances related to work relationships, including those with superiors, colleagues, or subordinates. Sedarmayanti (2017)	1. Co-worker Relationships 2. Supervisor-Subordinate Relationships 3. Work Atmosphere	Likert 1-5
Work-Life Balance (X2)	Work-Life Balance is an individual's effort to balance two or more roles performed, encompassing dimensions of interference and enhancement between work and personal life. Fisher, Bulger, and Smith (2009)	1. Work Interference with Personal Life (WIPL) 2. Personal Life Interference with Work (PLIW) 3. Personal Life Enhancement of Work (PLEW) 4. Work Enhancement of Personal Life (WEPL)	Likert 1-5

Source : Processed by the Researcher (2026)

The population in this study includes all 40 operational employees at Coffeenatics. Given the relatively limited population size, the researcher utilized a saturated sampling (census) technique, where every member of the population was included as a research sample to achieve perfect data representation. Primary data were collected through two main techniques: the distribution of questionnaires using a 5-point Likert scale for the quantitative phase, and the conduct of semi-structured in-depth interviews with three key informants from the Bar, Kitchen, and Floor departments for the qualitative phase.

The measurement of respondents answers for the quantitative phase uses a Likert scale with a weight of 1 to 5, as shown in Table 2:

Table 2. Likert Scale Instrument

No	Scale	Score
1	Strongly Agree (SA)	5
2	Agree (A)	4
3	Neutral (N)	3
4	Disagree (D)	2
5	Strongly Disagree (SD)	1

Source : Processed by the Researcher (2026)

The data analysis process was carried out in stages, beginning with quantitative data processing using SPSS software. The series of tests included validity testing (Product Moment), reliability testing (Cronbach's Alpha), and classic assumption test, comprising normality, multicollinearity, and heteroscedasticity tests, to ensure the model is a Best Liner Unbiased Estimator (BLUE). Hypothesis testing was permorfed through multiple linear regression analysis, t-tests (partial), F-test (simultaneous), and the analysis of the coefficient of determination (R-Square). These statistical results were subsequently deepened through thematic analysis of the qualitative data, involving verbatim transcription, coding, and theme categorization to achieve data triangulation, thereby allowing the generated statistical figures to be interpreted more meaningfully through the direct perspectives of informants in the field.

RESULTS

According to Yanti, Sari, Ardian, and Hasibuan (2024), improving the quality of human resources through the development of skills, knowledge, and positive attitudes is considered a strategic investment essential for increasing organizational competitiveness and work productivity. According to Setiawan and Ritonga (2017), a comfortable and supportive work environment is a crucial factor that encourages employees to work more diligently, as positive interpersonal relationships and workplace comfort directly lead to improved daily performance.

Respondent Characteristics

This study involved 40 operational employees at Coffeenatics, all of whom hold contract employment status. Demographic data indicate a predominant presence of young, dynamic workers, aligning with the characteristics of the specialty coffee industry. The detailed respondent profiles are presented in the following table:

Table 3. Characteristic of Respondents

No	Characteristic	Category	Frequency (n)	Percentage (%)
1	Gender	Male	26	65%
		Female	14	35%
2	Age	18-25 years old	36	90%
		26-30 years old	4	10%
3	Tenure (Length of Service)	> 3 years	10	25%
		1-3 years	16	40%
		< 1 year	14	35%
4	Job Position	Supervisor	2	5%
		Junior Supervisor	2	5%
		Barista	12	30%
		Kitchen	14	35%
		Waitress	10	25%
5	Employment Status	Contract	40	100%
6	Education Level	High School (SMA)	30	75%

	Bachelor's Degree (S1)	10	25%

Source : Processed by the Researcher (2026)

Based on Table 3, the majority of respondents are male (65%), with 90% falling within the productive age range of 18-25 years. This reflects the industry's demand for high physical energy to manage workloads during peak hours. Regarding education, 75% of respondents are high school graduates who typically fill technical field positions such as baristas and waitresses.

Classic Assumption and Regression Test Results

Before testing the hypotheses, the regression model was ensured to meet the Best Linear Unbiased Estimator (BLUE) criteria. The Kolmogorov-Smirnov normality test yielded a significance value of 0.117 (> 0.05), indicating normally distributed residuals. The multicollinearity test showed a VIF value of 1.882 (<10), confirming no significant correlation between independent variables. Subsequently, the results of the multiple linear regression and partial significance test (t-test) are presented as follows:

Table 4. Multiple Linear Regression and t-Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.299	7.389		.853	.399
	LINGKUNGAN_KERJA_NON_FISIK	.530	.270	.337	1.963	.057
	WORK_LIFE_BALANCE	.409	.190	.369	2.151	.038

a. Dependent Variable: PRODUKTIVITAS_KARYAWAN

Source : Processed by the Researcher (2026)

The t-test results in Table 4 indicate that the Non-Physical Work Environment (X1) has a positive but non-significant effect on productivity (p=0.057 > 0.05). Conversely, Work-Life Balance (X2) is proven to have positive and significant effect on productivity (p=0.038 < 0.05).

For simultaneous testing, the F-test and coefficient of determination results are presented in the table below:

Table 5. Simultaneous Test (F-Test)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	228.653	2	114.326	13.415	.000[b]
	Residual	315.322	37	8.522		
	Total	543.975	39			

a. Dependent Variable: PRODUKTIVITAS_KARYAWAN

b. Predictors: (Constant), WORK_LIFE_BALANCE, LINGKUNGAN_KERJA_NON_FISIK

Source : Processed by the Researcher (2026)

Table 6. Coefficient of Determination (R2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.648[a]	.420	.389	2.919

a. Predictors: (Constant), WORK_LIFE_BALANCE, LINGKUNGAN_KERJA_NON_FISIK

Source : Processed by the Researcher (2026)

The F-value of 13.415 with a significance of 0.000 demonstrates that X1 and X2 simultaneously have a significant effect on productivity. The R-Square value of 0.420 means that these two variables contribute 42% to the variation in productivity among Coffeenatics employees, while the remaining 58% is influenced by other factors such as compensation or physical workload.

DISCUSSION

The results of this mixed-methods research reveal unique dynamics within the specialty coffee industry. The non-significant influence of the non-physical environment (X1) is explained through the qualitative theme “Standardization of Operating System (SOP) and Product Serving Standards”. Informants stated that regardless of how harmonious the team relationship is, work output is locked by standard operating procedures, espresso extraction still requires the same duration and precise weighing according to company standards.

In contrast, the significance of Work-Life Balance (X2) is reinforced by the theme “Physical Stamina Recovery and Focus Needs of Shift Staff”. Empolyees experiencing physical exhaustion or personal stress are prone to human error, such as coffee calibration mistakes or misreading order tickets. This finding confirms that in a physically demanding work ecosystem, guaranteed rest time and mental well-being are primary productivity drivers that are far more sensitive than social proximity factors.

CONCLUSION

Based on a comprehensive analysis using a mixed methods approach at Coffeenatics, this research concludes that employee productivity is the result of the interaction between individual physical-mental readiness and the prevailing operational systems. Regarding the influence of the non-physical work environment, it was found that this variable has a positive but non-significant effect on employee productivity partially. Field phenomena indicate that although interpersonal relationships, vertical communication with supervisors, and team cohesion are highly harmonious, they function more as a hygiene factor that maintains loyalty. However, actual work output in the specialty coffee industry remains locked by standard operationg procedures (SOPs) and order volume, meaning that social proximity does not automatically double daily service speed.

Conversely, work-life balance is proven to have a positive and significant influence on employee productivity partially. Balancing professional responsibilities with personal life,

especially the guarantee of fair rest time and stamina recovery, is vital for shift workers to maintain sharp mental focus. Achieving this life balance effectively minimizes human error and keeps the service rhythm alers amidst peak hour pressures. Simultaneously, these two variables provide a significant contribution of 42% to productivity variation, confirming that the synergy between emotional support in the workplace and employees' physical-mental well-being creates optimal collective operational efficiency.

In-depth employee experiences reinforce that a fresh physical and mental condition is the primary pillar of productivity compared to mere social closeness in the work environment. As a strategic step, management is advised to maintain fair shift scheduling and provide adequate rest areas to suppress the risk of physical burnout and keep service standards consistent. For future academic development, researchers are encouraged to expand the scope of variables to other factors such as compensation systems or physical workload, which may have a more sensitive impact within the service industry.

LIMITATION

This study is limited to 40 operational employees at Coffeenatics and three key informants from the Bar, Kitchen, and Floor departments, with analysis focused on the non-physical work environment, work-life balance, and employee productivity. The R-Square value of 42% also shows that the remaining 58% of productivity variation is related to other factors outside the model examined in this study.

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