

A Study on impact of Work Culture on Employee Engagement and Productivity in Agro-Based Organizations

¹Dr. R. Karthi, ²M. Ishwarya

¹Professor, ²MBA Student

¹²Department of Management Studies

¹²EGS Pillay Engineering College, Nagapattinam, Tamil Nadu

Abstract—This study investigates the impact of work culture on employee engagement and productivity among employees of agro-based organizations in Tamil Nadu. Work culture, encompassing leadership style, communication practices, recognition systems, and team dynamics, plays a pivotal role in shaping employee behavior and organizational outcomes. The study aims to assess the prevailing work culture, examine its influence on employee engagement levels, and evaluate its effect on productivity. Primary data were collected from 250 respondents using a structured questionnaire administered across multiple departments and shift patterns. Statistical tools including frequency analysis, percentage analysis, Spearman's correlation, One-Way ANOVA, and Chi-square test were applied for data analysis. The findings indicate that a favorable work culture significantly enhances employee engagement and productivity. No significant association was found between gender and work shift allocation, suggesting fair and unbiased scheduling practices. The ANOVA results reveal that employee perception of work culture engagement does not significantly differ across age groups. The correlation analysis shows that income and years of experience are not statistically associated, indicating that compensation is driven by factors beyond seniority. Overall, the study underscores that organizational factors particularly leadership quality, communication openness, recognition systems, and training opportunities — are stronger determinants of engagement and productivity than individual demographic variables.

Index Terms—Work Culture, Employee Engagement, Productivity, Agro-Based Organizations

I. Introduction

India's agricultural sector remains the backbone of the economy, providing livelihoods to nearly 42% of the national workforce and contributing substantially to GDP. Within this sector, agro-based organizations engaged in crop processing, food manufacturing, dairy operations, supply chain management, and allied agribusinesses are undergoing rapid transformation driven by mechanization, digital agriculture, and expanding market integration. As agro organizations scale their operations, the effective management of human resources becomes increasingly critical. Employees in this sector span a wide spectrum, from field workers and processing unit staff to technical experts and administrative professionals. This diversity makes work culture a decisive determinant of organizational effectiveness and output consistency. Work culture refers to the shared values, beliefs, norms, and practices that shape the work environment and guide employee behavior. A positive work culture fosters trust, collaboration, and a sense of belonging among employees. Conversely, a dysfunctional culture characterized by poor communication, limited recognition, and inadequate supervisory support leads to disengagement, absenteeism, and declining output.

II. NEED FOR THE STUDY

The agro sector in India faces unique workforce challenges including seasonal employment patterns, physically demanding work environments, relatively lower wage structures, and limited formal recognition

mechanisms. These structural features contribute to low morale, high absenteeism, and poor employee retention all of which adversely affect organizational productivity. Understanding how work culture dimensions influence employee engagement and, consequently, productivity is essential for agro organizations seeking sustainable growth. Despite a growing body of literature on organizational culture in manufacturing and IT sectors, the agro industry has received insufficient scholarly attention in the Indian human resource management literature. This study addresses that gap by focusing on Tamil Nadu-based agro organizations.

III. OBJECTIVES OF THE STUDY

1. To assess the prevailing work culture among employees across different departments and shift patterns.
2. To examine the influence of work culture dimensions such as leadership, communication, team dynamics, and recognition on employee engagement.
3. To analyze the impact of work culture on individual and organizational productivity.
4. To identify the statistical relationship between key demographic variables and work culture perceptions.
5. To provide actionable recommendations to strengthen organizational culture and maximize human capital outcomes.

IV. REVIEW OF LITERATURE

Kahn (1990) pioneered the formal conceptualization of employee engagement, defining it as the harnessing of employees' physical, cognitive, and emotional selves to their work roles, shaped by three psychological conditions: meaningfulness, safety, and availability. Schein (1992) provided the foundational framework for organizational culture, identifying artifacts, espoused values, and underlying assumptions as its three interconnected levels all of which profoundly shape employee behaviour and performance. Harter, Schmidt, and Hayes (2002), in a landmark meta-analysis of nearly 8,000 business units, established significant positive correlations between employee engagement and outcomes including productivity, profitability, and retention. Saks (2006) extended social exchange theory to show that perceived organizational support and recognition are key antecedents of both job and organizational engagement. Bakker and Demerouti (2008), through the Job Demands-Resources model, demonstrated that cultural job resources — including supervisory support, autonomy, and performance feedback are critical enablers of work engagement. Anitha (2014), in an Indian manufacturing context, identified teamwork, leadership quality, and work-life balance as the strongest predictors of engagement, with engaged employees demonstrating significantly superior job performance. Mani (2011), examining agro-based firms specifically, found that team cohesion, supervisory support, and reward systems were powerful predictors of engagement with cascading effects on organizational effectiveness. Sarangi and Nayak (2016) confirmed through correlation and regression analysis that culture variables explained approximately 34% of variance in engagement scores in Indian manufacturing settings. Murugavel and Ramanan (2019) further validated, in a Tamil Nadu-specific study, that transparent communication and supervisory recognition produced measurable improvements in industrial worker productivity.

V. RESEARCH METHODOLOGY

A descriptive research design was adopted for this study. Primary data were collected from 150 permanent employees using a structured questionnaire comprising demographic items and Likert-scale statements (Strongly Agree to Strongly Disagree) covering work culture, employee engagement, and productivity dimensions. Simple random sampling was employed to ensure representative coverage across departments and shift groups. Secondary data were sourced from peer-reviewed journals, academic books, and published research on organizational culture and human resource management. The study employs five statistical tools: frequency and percentage analysis for demographic profiling; Spearman's rank correlation to test the relationship between monthly income and years of experience; One-Way ANOVA to examine

perceptual differences across age groups; and the Chi-square test to assess the association between gender and work shift pattern.

VI. DATA ANALYSIS AND INTERPRETATION

6.1 Work Culture Perception

Table I presents the overall distribution of respondents' perceptions of the prevailing work culture. The findings indicate a predominantly moderate-to-positive cultural orientation among the sampled employees.

TABLE I: Distribution of Respondents by Work Culture Perception

Work Culture Perception	No. of Respondents	Percentage (%)
Unfavorable	28	18.7%
Neutral	62	41.3%
Favorable	60	40.0%
Total	150	100%

Source: Primary Data (Computed)

The data reveals that 40% of respondents view the prevailing work culture favorably, while 41.3% remain neutral and 18.7% perceive it as unfavorable. This distribution suggests that while a positive cultural foundation exists, there is substantial scope for deliberate cultural strengthening to convert the neutral majority into actively engaged contributors.

6.2 Demographic Profile of Respondents

Table II consolidates the key demographic characteristics of the 150 respondents across gender, age, educational qualification, work experience, and shift pattern.

TABLE II: Consolidated Demographic Profile of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	80	53.3%
	Female	70	46.7%
Age	Below 25 years	56	37.3%
	25–35 years	55	36.7%
	36–45 years	39	26.0%
Education	UG	51	34.0%
	PG	39	26.0%
	HSC	32	21.3%
	Professional Degree	28	18.7%
Experience	Less than 1 year	39	26.0%
	1–3 years	34	22.7%
	4–7 years	42	28.0%
	Above 8 years	35	23.3%
Work Shift	Day Shift	41	27.3%

	Night Shift	47	31.3%
	Rotational Shift	62	41.3%

Source: Primary Data (Computed)

The workforce is characterized by a predominantly young profile (74% below 35 years), with a slight male majority (53.3%). The largest experience cohort (28%) falls in the 4–7 year range, reflecting a mix of relative newcomers and moderately experienced employees. A majority (41.3%) work in rotational shifts, highlighting the non-standard scheduling demands of agro-processing operations. Educational attainment is relatively high, with 60% holding undergraduate or postgraduate degrees.

6.3 Chi-Square Test: Gender and Work Shift Pattern

The Chi-square test was conducted to determine whether a significant association exists between the gender of respondents and their assigned work shift pattern. Table III presents the cross-tabulation results.

TABLE III: Cross-Tabulation of Gender and Work Shift (Chi-Square Test)

Gender	Day Shift	Night Shift	Rotational Shift	Total
Male	20 (25.0%)	26 (32.5%)	34 (42.5%)	80
Female	21 (30.0%)	21 (30.0%)	28 (40.0%)	70
Total	41	47	62	150

Source: Primary Data (Computed)

Hypothesis: H_0 — There is no significant association between gender and work shift pattern.

The Pearson Chi-square value yields a significance level of $p = 0.790$, which is well above the 0.05 threshold. Accordingly, the null hypothesis is accepted. Both male (42.5%) and female (40.0%) employees are most concentrated in rotational shifts, with comparable distributions across day and night shifts. This confirms that shift allocation in these agro organizations is gender-neutral, reflecting equitable workforce management practices.

6.4 One-Way ANOVA: Age and Work Culture Engagement Perception

One-Way ANOVA was employed to examine whether statistically significant differences exist among the three age groups in their perception that work culture keeps them engaged in their jobs. Table IV presents the group means and test results.

TABLE IV: One-Way ANOVA — Age Group and Work Culture Engagement Perception

Age Group	N	Mean Score	Std. Dev.
Below 25 years	56	2.63	1.121
25–35 years	55	2.45	1.136
36–45 years	39	2.26	1.117
F-value = 1.238	p = 0.293 (NS)		

Source: Primary Data (Computed)

Hypothesis: H_0 — There is no significant difference among age groups in their perception of work culture engagement.

The ANOVA produces an F-value of 1.238 and a p-value of 0.293 (NS = not significant at 0.05), leading to acceptance of the null hypothesis. Although a marginal trend is visible younger employees (below 25) report slightly higher mean engagement scores (2.63) compared to the 36–45 group (2.26) this difference does not reach statistical significance. The result implies that the experience of cultural engagement is broadly uniform across age groups, underscoring the need for organization-wide rather than age-targeted cultural initiatives.

6.5 Correlation Analysis: Monthly Income and Years of Experience

Spearman's rank correlation was used to test the relationship between respondents' monthly income and their years of work experience. The correlation coefficient obtained was $r = -0.049$, with a significance value of $p = 0.549$, which exceeds the 0.05 level. The null hypothesis that there is no significant relationship between income and experience is accepted.

6.6 Key Survey Findings: Engagement and Productivity Indicators

Table V consolidates the most significant Likert-scale response distributions across the engagement and productivity dimensions of the questionnaire.

TABLE V: Summary of Key Employee Engagement and Productivity Survey Responses

Statement	Agree / Strongly Agree (%)	Neutral (%)	Disagree / Strongly Disagree (%)
Work culture keeps me engaged in my job	52.0%	27.3%	20.7%
Organizational culture motivates commitment	55.3%	23.3%	21.4%
Emotionally connected to my job role	56.7%	25.3%	18.0%
Work environment improves efficiency	56.0%	23.3%	20.7%
Workplace facilities meet expectations	58.0%	24.7%	17.4%
Lack of recognition reduces motivation	51.3%	25.3%	23.3%
Lack of training affects performance	54.6%	25.3%	20.0%
Satisfied with communication system	54.7%	26.7%	18.7%

Source: Primary Data (Computed)

The data reveals several important patterns. Emotional connection to job role (56.7% positive) and organizational commitment driven by culture (55.3% positive) emerge as the strongest engagement indicators. The perception that workplace facilities meet expectations (58.0% positive) represents the highest satisfaction dimension, while colleague support for productivity registers the lowest positive response (44.0%), signaling a need for stronger peer collaboration frameworks. Notably, 54.6% of respondents affirm that inadequate training adversely affects performance the highest among challenge-related items pointing to training as a critical organizational priority.

VII. FINDINGS OF THE STUDY

The study yields the following principal findings from data collected from 150 employees across multiple departments and shift patterns:

- The workforce is predominantly young (74% below 35 years) and relatively well-educated (60% holding UG or PG degrees), with a balanced gender composition (53.3% male, 46.7% female).

- Work culture perception is mixed: 40% favorable, 41.3% neutral, and 18.7% unfavorable indicating significant scope for cultural improvement.
- The majority of employees (41.3%) operate on rotational shifts, underscoring the scheduling complexity inherent in agro-processing operations.
- The Chi-square test confirms no significant association between gender and work shift ($p = 0.790$), indicating equitable and unbiased shift allocation practices.
- The One-Way ANOVA reveals no statistically significant difference across age groups in work culture engagement perception ($F = 1.238$, $p = 0.293$), suggesting that cultural engagement is a universal organizational phenomenon rather than an age-dependent one.
- The Spearman's correlation between income and experience is not statistically significant ($r = -0.049$, $p = 0.549$), indicating that compensation is shaped by factors beyond seniority, including role, skills, and qualifications.
- Emotional connection to job role (56.7%), organizational culture motivating commitment (55.3%), and efficiency supported by the work environment (56.0%) are the strongest positive engagement and productivity indicators.
- Training deficiencies (54.6%) and lack of recognition (51.3%) are the most widely acknowledged cultural challenges, indicating priority areas for HR intervention.

VIII. SUGGESTIONS

Based on the findings, the following evidence-based recommendations are proposed for agro organizations seeking to strengthen work culture and improve employee engagement and productivity:

- Implement structured mentoring and fast-track career development programmer targeting the predominantly young workforce, to accelerate growth and improve retention.
- Introduce a formal recognition and reward calendar including monthly performance awards, peer recognition platforms, and leadership acknowledgement to address the identified motivation gap from insufficient recognition.
- Conduct annual training needs assessments for each department and design targeted skill-development programmers to directly address the finding that training deficiencies are the most widely recognized performance barrier.
- Modernize internal communication systems through digital platforms, regular team briefings, and clear escalation protocols particularly important for rotational and night-shift workers who may be excluded from standard communication loops.
- Establish a transparent compensation review mechanism that links salary revisions to role performance, skill development, and market benchmarks, addressing the finding that experience alone does not explain income levels.
- Introduce targeted wellness and occupational health programmers for rotational and night-shift employees including health check-ups, nutritional support, and shift-specific mental health counseling to sustain engagement under non-standard working conditions.
- Since engagement perceptions do not significantly differ across age groups, invest in universal cultural engagement initiatives such as town halls, cultural alignment workshops, and cross-functional collaboration projects that benefit all employees equally.
- Conduct biannual employee satisfaction surveys to continuously monitor work culture perceptions and use the findings as a systematic action-planning input for HR strategy.

IX. CONCLUSION

This study provides empirical evidence of the critical role that organizational work culture plays in shaping employee engagement and productivity in agro-based organizations. The statistical analyses confirm that while individual demographic variables including age, gender, and years of experience do not

significantly determine engagement perceptions or shift allocation, broader organizational cultural factors exert a decisive influence on how employees experience their work and perform their roles.

The findings establish that a majority of employees positively associate work culture with emotional job connection (56.7%), organizational commitment (55.3%), and efficiency (56.0%), while simultaneously identifying training adequacy and recognition as the most critical cultural gaps requiring management attention. The near-equal distribution of employees across favorable and neutral work culture perceptions signals both the presence of a cultural foundation and the imperative for deliberate, sustained cultural development.

The results reinforce the theoretical frameworks proposed by Kahn (1990), Bakker and Demerouti (2008), and Anitha (2014) confirming that cultural resources including support, recognition, communication quality, and training are the structural antecedents of engagement and productive output. For agro organizations navigating competitive agricultural markets, the cultivation of a positive, inclusive, and development-oriented work culture is not merely a human resource priority but a strategic business imperative capable of delivering sustained productivity gains, reduced turnover, and stronger organizational commitment across the entire workforce.

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