Malaysian Journal of Social Sciences and Humanities (MJSSH) (e-ISSN : 2504-8562)
2026, Volume 11, Issue 3, e003852
DOI: https://doi.org/10.47405/mjssh.v11i3.3852

RESEARCH ARTICLE

Job Satisfaction as an Evaluative Regulatory Mechanism of Turnover Intention in Semi-Mechanised Plantation Employment

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KEYWORDS:
Job satisfaction
Turnover intention
Evaluative regulation
Work conditions
Local machine operators

CITATION:
Siti Zuwairiah, A., & Selvakkumar, K. N. V. (2026). Job Satisfaction as an Evaluative Regulatory Mechanism of Turnover Intention in Semi-Mechanised Plantation Employment. *Malaysian Journal of Social Sciences and Humanities (MJSSH), 11*(3), e003852. https://doi.org/10.47405/mjssh.v11i3.3852

ABSTRACT

Workforce stability in semi-mechanised plantation employment remains fragile despite improvements in work manageability under mechanised systems. Turnover research has frequently treated job satisfaction as a proxy for employee retention, implicitly equating favourable work evaluation with durable workforce attachment. This study re-examines that assumption by assessing whether job satisfaction reflects sustained employment commitment or operates as an evaluative mechanism linking work conditions to turnover intention. Data were obtained from a cross-sectional survey of 418 local machine operators and analysed using partial least squares structural equation modelling. Four work-condition dimensions were examined: technological perceptions of mechanisation, intrinsic factors, extrinsic factors, and psychological needs. Technological perceptions and extrinsic factors are positively associated with job satisfaction, whereas intrinsic factors and psychological needs do not demonstrate statistically significant associations. Job satisfaction demonstrates a substantial negative association with turnover intention within the observed evaluative structure and mediates the effects of technological perceptions and extrinsic factors. No work-condition dimension exhibits a significant direct association with turnover intention. The findings indicate that favourable evaluation of daily work may coexist with continued reassessment of employment viability. Job satisfaction therefore functions as an acceptance-oriented evaluative regulator that stabilises short-term employment presence without signalling durable workforce attachment in operator-dependent mechanised settings. Interpreting elevated job satisfaction as evidence of long-term retention may result in misjudging workforce stability and obscuring structural constraints that shape employees' longer-horizon employment decisions.

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Contribution/Originality: This study contributes to the existing literature by examining workforce stability in semi-mechanised plantation employment. It is one of very few studies which have investigated local machine operators' job satisfaction and turnover intention. The paper's primary contribution is finding that improved operational conditions do not necessarily reduce turnover intention, thereby documenting an evaluative disconnect in employment decisions.

1. Introduction

Why do employees who evaluate their daily work favourably still intend to leave? Prior research has consistently demonstrated a negative association between job satisfaction and turnover intention, and job satisfaction is often treated as a proxy for employee retention (Tett & Meyer, 1993; Hom et al., 2017). This interpretation assumes that favourable evaluation of current work conditions reflects a stable and enduring attachment to employment. However, such an assumption may conflate distinct evaluative processes. Job satisfaction reflects appraisal of present work arrangements, whereas retention and continued employment involve longer-horizon considerations shaped by broader psychological and structural factors (Meyer & Allen, 1991; Mitchell et al., 2001). As a result, the equivalence between satisfaction and sustained attachment remains conceptually uncertain.

Appraisal of present work arrangements and judgement regarding continued employment represent related but distinct evaluative domains. Job satisfaction captures employees' evaluation of their current work environment, while turnover intention reflects a conscious and deliberate consideration of leaving employment (Mobley et al., 1979; Hom et al., 2017). Employees may perceive their tasks as manageable and acceptable while simultaneously reassessing the longer-term desirability of remaining in their roles. Favourable daily work experiences do not necessarily eliminate forward-looking evaluation of employment continuity. Treating immediate acceptance as synonymous with durable attachment may therefore oversimplify the interpretation of workforce stability, particularly in contexts where structural conditions shape employment decisions (Hom et al., 2017).

This distinction is particularly relevant in Malaysian oil palm estates operating under semi-mechanised, operator-dependent harvesting systems. Mechanisation has reorganised task execution and improved coordination of field operations, contributing to more manageable and predictable work routines. Under such conditions, machine operators may evaluate their daily work positively. However, workforce continuity within these systems remains fragile. Improvements in task manageability do not always translate into sustained attachment, especially in contexts characterised by constrained career mobility, geographically bounded employment, and limited progression pathways. Such conditions create a disconnect between satisfactory work experiences and longer-term employment decisions, as employees continue to reassess their future prospects despite stable daily routines (Meyer & Allen, 1991; Hom et al., 2017).

Within semi-mechanised plantation settings, labour is reorganised rather than displaced. Skilled machine operators remain integral to operational reliability, as they manage mechanised processes across varying terrain and production conditions. Their continued presence supports the effective utilisation of equipment and the stability of

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harvesting cycles. Conversely, operator exit may disrupt operations, increase training demands, and introduce scheduling instability. Workforce stability is therefore closely tied to the functioning of mechanised operations, consistent with prior research on the organisational implications of employee turnover (Hom et al., 2017).

Although turnover scholarship acknowledges that job satisfaction and withdrawal-oriented cognition may coexist (Tett & Meyer, 1993; Hom et al., 2017), prior frameworks have often positioned job satisfaction as a direct antecedent or proxy for retention outcomes. Insufficient attention has been devoted to differentiating the evaluative domains represented by job satisfaction and turnover intention. Job satisfaction reflects appraisal of prevailing work arrangements, whereas turnover intention captures forward-looking judgement concerning employment continuity (Mobley et al., 1979; Hom et al., 2017). The simultaneous operation of these domains within structured, operator-dependent systems remains under-specified.

This study addresses this gap by conceptualising job satisfaction not as evidence of enduring attachment but as an acceptance-based regulatory layer linking work-condition appraisals to turnover intention. Regulation refers to the structuring of withdrawal-oriented judgement under conditions deemed acceptable, rather than behavioural prediction or temporal sequencing. By distinguishing short-term evaluation of daily work from longer-horizon appraisal of employment continuity, the study advances a more precise account of workforce stability in semi-mechanised plantation employment.

1.1. Research Objectives

Building on the distinction between acceptance of prevailing work arrangements and appraisal of employment continuity, this study examines the evaluative configuration linking work conditions, job satisfaction, and turnover intention among local machine operators in semi-mechanised plantation systems. The analysis assesses the associations between differentiated work-condition dimensions and job satisfaction as appraisal of daily work arrangements, evaluates the relationship between job satisfaction and turnover intention as forward-looking employment judgement, and determines whether job satisfaction functions as a regulatory layer within the indirect association between work-condition appraisals and withdrawal-oriented cognition. Through this analytical framing, the study refines understanding of workforce stability in operator-dependent mechanised contexts by separating favourable daily evaluation from durable employment attachment.

2. Literature Review

2.1. Turnover Intention as Forward-Looking Employment Judgement

Turnover intention refers to an employee's conscious and deliberate consideration of leaving current employment. It represents a forward-looking judgement concerning employment continuity rather than an immediate behavioural act (Mobley et al., 1979; Hom et al., 2017). As a cognitive construct, turnover intention reflects evaluation of employment desirability and viability over time.

Extensive research distinguishes turnover intention from actual turnover behaviour. Employees may remain behaviourally present while simultaneously reassessing their

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employment prospects, particularly in contexts characterised by constrained labour mobility or limited external opportunities (Tett & Meyer, 1993). Behavioural presence therefore does not necessarily indicate durable attachment. Turnover intention captures underlying reassessment of employment continuity even in the absence of observable exit.

This distinction is especially relevant in semi-mechanised plantation systems, where operational reliability depends on sustained operator presence within structured environments offering limited vertical mobility and geographically bounded employment. In such contexts, turnover intention provides insight into workforce stability beyond retention statistics alone.

2.2. Job Satisfaction as Appraisal of Current Work Arrangements

Job satisfaction is defined as an employee's overall appraisal of prevailing work conditions (Locke, 1976). It reflects evaluation of daily experiences, task characteristics, and organisational practices. Early turnover models positioned job satisfaction as a proximal antecedent of turnover intention, implying that higher satisfaction reduces withdrawal orientation (Tett & Meyer, 1993).

However, subsequent scholarship clarifies that job satisfaction is conceptually distinct from durable employment attachment (Hom et al., 2017). Satisfaction concerns appraisal of current work acceptability, whereas constructs such as organisational commitment and job embeddedness reflect longer-horizon attachment shaped by identity alignment, accumulated investment, and perceived exit costs (Meyer & Allen, 1991; Mitchell et al., 2001).

This conceptual distinction suggests that job satisfaction and turnover intention represent related but separate domains. Employees may evaluate present work arrangements positively while continuing to reassess longer-term employment prospects. In structured, operator-dependent contexts, job satisfaction may stabilise short-term presence without eliminating forward-looking judgement regarding employment continuity.

Meta-analytic findings consistently demonstrate a negative association between job satisfaction and turnover intention (Tett & Meyer, 1993; Hom et al., 2017). Based on this established evidence, job satisfaction is expected to be negatively associated with turnover intention, although it does not fully resolve reassessment of employment viability.

2.3. Work Conditions as Antecedents of Job Satisfaction

Work conditions shape employees' appraisal of their daily work environment. The Job Characteristics Model and related perspectives indicate that task design, structure, and contextual factors influence job satisfaction (Hackman & Oldham, 1976, 1980). In semi-mechanised plantation settings, work conditions include technological arrangements, intrinsic rewards, extrinsic rewards, and fulfilment of psychological needs.

2.3.1. Technological Perceptions of Mechanisation

Technology acceptance research shows that perceived usefulness and ease of use influence individuals' evaluation of work systems (Davis, 1989; Venkatesh et al., 2003).

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In operator-dependent mechanised environments, technology directly affects work manageability, predictability, and physical effort. When mechanisation is perceived as useful and manageable, employees are more likely to evaluate their daily work positively. Prior research therefore supports a positive association between favourable technological perceptions and job satisfaction.

2.3.2. Intrinsic Factors

Intrinsic factors such as achievement, recognition, and opportunities for growth influence employees' sense of accomplishment and work meaning (Herzberg et al., 1959). Empirical studies across occupational contexts have linked intrinsic rewards to job satisfaction. In structured plantation systems with limited advancement pathways, the strength of this association warrants empirical examination but remains theoretically supported.

2.3.3. Extrinsic Factors

Extrinsic factors including salary, job security, and working conditions provide material reassurance and stability. Organisational research consistently associates favourable extrinsic conditions with higher job satisfaction (Herzberg et al., 1959; Tett & Meyer, 1993). In contexts characterised by constrained labour mobility, extrinsic rewards may exert a particularly strong influence on appraisal of work adequacy.

2.3.4. Psychological Needs

Self-determination theory posits that fulfilment of three basic psychological needs, namely autonomy, competence, and relatedness, enhances positive evaluation of work experiences (Deci & Ryan, 2000). Autonomy refers to perceived discretion in performing tasks, competence reflects the sense of effectiveness in carrying out work successfully, and relatedness denotes meaningful connection with others at work. When employees feel capable, connected, and able to exercise some control over their work, they are more likely to appraise daily work arrangements positively, thereby increasing job satisfaction.

Unlike intrinsic factors grounded in achievement and recognition (Herzberg et al., 1959), psychological needs reflect basic psychological functioning rather than motivational rewards. Empirical research consistently associates need fulfilment with higher job satisfaction across occupational settings.

In semi-mechanised plantation systems, competence in operating machinery and limited discretion within structured task routines may influence work appraisal. However, tightly standardised operations may constrain experienced autonomy, potentially reducing the overall impact of psychological need fulfilment on job satisfaction.

Collectively, prior research indicates that technological perceptions, intrinsic factors, extrinsic factors, and psychological needs shape appraisal of prevailing work conditions and are therefore theorised to be associated with job satisfaction.

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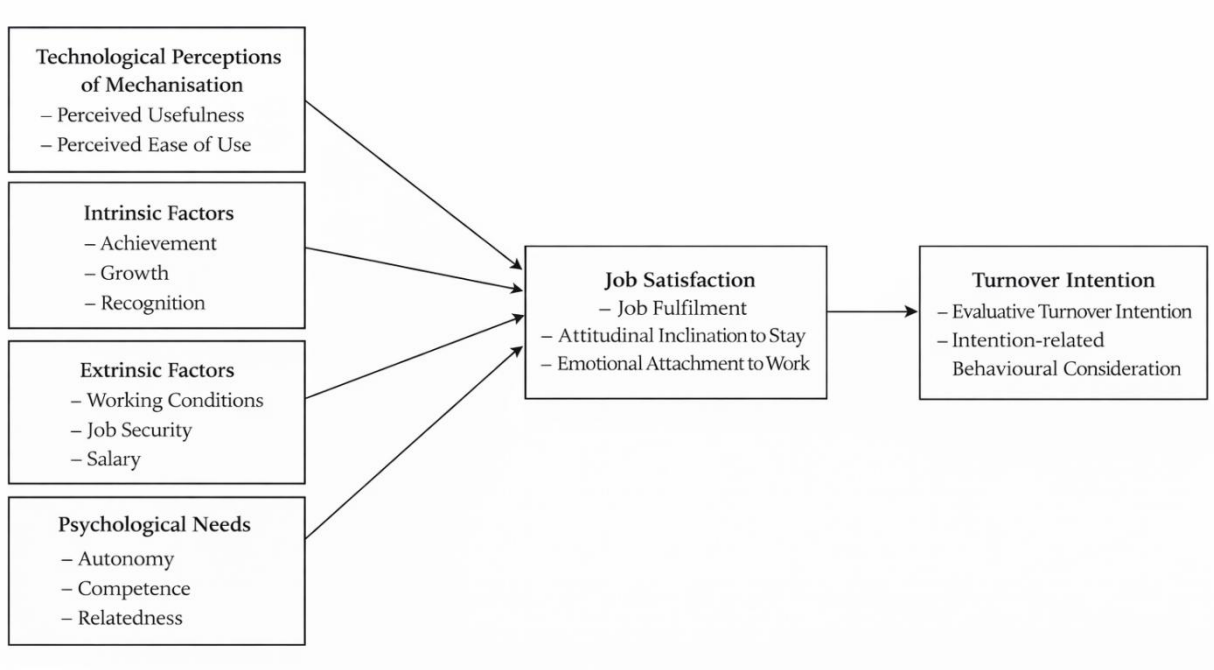
2.4. Integrating Work Conditions, Job Satisfaction, and Turnover Intention

The preceding review establishes two core relationships. First, work conditions influence job satisfaction as appraisal of current work arrangements. Second, job satisfaction is negatively associated with turnover intention as forward-looking employment judgement.

When these relationships are considered together, job satisfaction can be positioned as an intervening mechanism linking work-condition appraisal to turnover intention. Work conditions shape employees' evaluation of their daily work environment, and this evaluation in turn influences reassessment of employment continuity. Mediation analysis provides the empirical basis for examining this indirect association (Hayes, 2017).

Accordingly, technological perceptions of mechanisation, intrinsic factors, extrinsic factors, and psychological needs are specified as antecedents of job satisfaction. Job satisfaction functions as the intervening construct associated with turnover intention. Direct paths from work conditions to turnover intention are examined for completeness, but the primary theoretical emphasis rests on the indirect pathway through job satisfaction. Figure 1 presents the conceptual framework derived from the preceding literature.

Figure 1: Conceptual framework linking work conditions, job satisfaction, and turnover intention



2.5. Hypotheses Development

H1a: Technological perceptions of mechanisation are associated with job satisfaction.
H1b: Intrinsic factors are associated with job satisfaction.
H1c: Extrinsic factors are associated with job satisfaction.
H1d: Psychological needs are associated with job satisfaction.
H2: Job satisfaction is associated with turnover intention.
H3a: Job satisfaction mediates the association between technological perceptions of mechanisation and turnover intention.

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H3b: Job satisfaction mediates the association between intrinsic factors and turnover intention.
H3c: Job satisfaction mediates the association between extrinsic factors and turnover intention.
H3d: Job satisfaction mediates the association between psychological needs and turnover intention.

3. Research Methods

3.1. Research Design

This study adopted a quantitative, cross-sectional survey design to examine evaluative associations among work conditions, job satisfaction, and turnover intention. Cross-sectional designs are widely applied in organisational research to examine relational patterns among constructs within a defined time frame, particularly when the analytical focus concerns evaluative configurations rather than temporal dynamics or change processes (Spector, 2019).

The design is appropriate for mediation analysis using structural equation modelling when the objective is to examine theoretically specified indirect associations rather than to establish causal or temporal ordering (Hayes, 2017; Kline, 2023). Structural equation modelling enables simultaneous estimation of multiple relationships within an integrated configuration, supporting examination of indirect evaluative linkages aligned with process-oriented interpretations of employee withdrawal.

The analytical orientation of the study is evaluative and association-based. No causal inference, behavioural prediction, or temporal sequencing among constructs is implied or tested. Mediation is treated as an analytical representation of a theoretically grounded evaluative structure rather than evidence of causal transmission over time, which would require longitudinal or experimental designs (Maxwell & Cole, 2007). The structural estimates are therefore interpreted as theory-consistent evaluative associations rather than evidence of temporal or causal sequencing.

Accordingly, the analysis focuses on assessing the configuration of relationships among constructs within the observed employment context rather than predictive optimisation or causal modelling.

3.2. Study Context and Participants

The study was conducted in semi-mechanised plantation estates where mechanised work systems constitute a core component of daily operations. These environments are characterised by structured task allocation, standardised work routines, and sustained reliance on machinery to support harvesting and field activities. Although mechanisation reduces physical labour demands, production under semi-mechanised systems remains highly dependent on skilled machine operators who manage, operate, and adapt mechanised processes across variable field conditions. Operator continuity therefore remains central to operational reliability.

The target population comprised local machine operators whose roles are integral to technology-dependent work systems. Participants were eligible if they were employed as machine operators in semi-mechanised plantation estates and had direct operational

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involvement with mechanised systems as part of their daily work. These criteria ensured close alignment between the employment context and the evaluative constructs examined, allowing work-condition appraisals, job satisfaction, and turnover intention to be assessed within observed operator-dependent employment arrangements.

3.3. Sampling and Data Collection

Data were collected using a structured self-administered questionnaire distributed to eligible local machine operators. A purposive sampling approach was employed to ensure alignment between the research objectives and the specialised employment context under investigation. This approach is commonly used in organisational and field-based research when access to defined occupational groups with specific experiential characteristics is required and probability sampling is impractical due to contextual constraints (Palinkas et al., 2015; Etikan et al., 2016). The sampling strategy prioritised construct–context alignment over population representativeness, consistent with theory-testing objectives.

Participation was voluntary, and respondents were informed of the study purpose prior to data collection. Estate supervisors assisted only with logistical coordination of survey distribution schedules. They did not access individual responses, were not involved in data collection decisions, and did not participate in data handling. Completed questionnaires were returned directly to the researchers using sealed collection procedures, ensuring respondent anonymity and reducing the potential for perceived coercion.

Following data screening for response completeness, internal consistency, and suitability for multivariate analysis, 418 valid responses were retained for analysis. This sample size exceeds commonly cited minimum requirements for mediation analysis using partial least squares structural equation modelling, supporting stable parameter estimation and adequate statistical power for evaluating indirect evaluative associations among constructs (Hair et al., 2017; Hair et al., 2021).

3.4. Measurement of Variables

All variables were measured using established multi-item scales, with responses recorded on a Likert-type agreement format. Multi-item measures are appropriate for capturing evaluative constructs and enhance measurement reliability by reducing random measurement error (Nunnally & Bernstein, 1994).

Technological perceptions of mechanisation were measured using items adapted from technology acceptance research, capturing perceived usefulness and perceived ease of use associated with mechanised task execution. Item wording was adapted to reflect plantation-based operations while retaining the original evaluative meaning of the constructs (Davis, 1989; Venkatesh et al., 2003).

Intrinsic factors were measured using items reflecting achievement, growth, and recognition, consistent with motivation-based conceptualisations of intrinsic work rewards (Herzberg et al., 1959). Extrinsic factors were measured using items capturing working conditions, job security, and salary. These factors represent contextual conditions that stabilise acceptance of prevailing work arrangements rather than generate intrinsic attachment.

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Psychological needs were measured using items assessing autonomy, competence, and relatedness at work, reflecting evaluative appraisal of need fulfilment within the work environment (Deci & Ryan, 2000).

Job satisfaction was measured as a global evaluative construct using indicators reflecting job fulfilment, attitudinal inclination to stay, and emotional attachment to work. These indicators capture acceptance-oriented evaluation of prevailing work conditions rather than longer-horizon attachment constructs typically examined in retention research (Brayfield & Rothe, 1951; Locke, 1976).

Turnover intention was measured as an evaluative construct using items reflecting withdrawal-oriented cognitive appraisal and behaviourally framed intention statements. These measures capture evaluative assessment of employment continuity rather than actual turnover behaviour (Mobley et al., 1979; Tett & Meyer, 1993).

3.5. Common Method Considerations and Procedural Safeguards

Several procedural and statistical steps were implemented to address potential common method bias. Participation was voluntary and anonymous, respondents were informed that there were no right or wrong answers, and questionnaire items were neutrally worded. Items were organised by construct to reduce evaluation apprehension and response patterning, consistent with recommended practices for minimising method-related artefacts in self-report survey research (Podsakoff et al., 2003; Podsakoff et al., 2012).

Full collinearity variance inflation factors at the higher-order construct level were examined as a diagnostic check. All values were below the recommended threshold of five, indicating that common method bias is unlikely to materially influence the observed associations. Full collinearity assessment provides a conservative post-hoc diagnostic for detecting method-related variance in structural equation modelling contexts (Kock, 2015).

3.6. Data Analysis Strategy

Data analysis was conducted using partial least squares structural equation modelling. This approach is appropriate for examining mediation and indirect associations within complex models, particularly when the research objective emphasises explanation and theory development rather than global model fit comparison (Hair et al., 2017; Hair et al., 2021).

The analysis followed a two-stage procedure consistent with established PLS-SEM guidelines. Higher-order constructs were specified using a two-stage approach appropriate for reflective–reflective higher-order models. The measurement model was first evaluated to establish construct reliability and validity, including internal consistency reliability, convergent validity, and discriminant validity. The structural model was then estimated to examine the specified evaluative associations among work conditions, job satisfaction, and turnover intention (Hair et al., 2017; Kline, 2023). In addition to the theoretically specified indirect configuration, direct paths from work-condition dimensions to turnover intention were estimated to allow comprehensive structural assessment. These paths were included for model completeness and

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robustness testing rather than as central elements of the evaluative regulatory framework.

The mediating role of job satisfaction was assessed through indirect effect estimation using a non-parametric bootstrapping procedure with 10,000 resamples. Bootstrapping supports robust inference for mediation effects in PLS-SEM by generating empirical sampling distributions without reliance on normality assumptions (Hayes, 2017; Hair et al., 2021). All analyses were conducted using SmartPLS software.

3.7. Ethical Considerations

Ethical principles were observed throughout the study. Informed consent was obtained from all participants, confidentiality of responses was maintained, and participation involved no known risks. Data were used solely for research purposes and handled in accordance with established ethical standards for social science research involving human participants.

3.8. Transition to Results

The methodological procedures outlined above provide the basis for the empirical findings presented in the following section. The results focus on evaluation of measurement properties and assessment of the specified evaluative associations and mediation relationships among the study variables.

4. Results and Discussion

4.1. Respondent Profile and Contextual Characteristics

Respondent characteristics are reported to provide contextual grounding for interpreting evaluative associations observed in the structural model. Only attributes relevant to work acceptance, technological exposure, and withdrawal-oriented appraisal are highlighted.

As presented in Table 1, the sample reflects a predominantly young and early-career workforce, with most respondents aged between 20 and 35 years. This distribution indicates that the evaluative judgements captured reflect active participation in mechanised operations rather than late-career or transitional employment phases. The workforce is overwhelmingly male, consistent with labour composition in mechanised plantation field operations. Most respondents possess vocational, technical, or secondary education and are permanently employed, indicating that turnover intention reflects evaluative reassessment within relatively stable employment arrangements.

Career and economic characteristics further indicate constrained progression conditions. As summarised in Table 2, most respondents report monthly incomes concentrated within RM2,001–RM2,500 and limited work tenure, with the majority having between one and five years of experience. Employment is predominantly permanent, reinforcing the interpretation that withdrawal-oriented appraisal occurs within relatively stable arrangements.

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Table 1: Demographic characteristics of respondents (N = 418)

Variable	Category	Frequency	Percentage (%)
Age group (years)	20–25	112	26.79
	26–30	129	30.86
	31–35	87	20.81
	36 and above	90	21.54
Gender	Male	400	95.69
	Female	18	4.31
Highest education	Secondary (SPM/O-Level)	112	26.80
	Vocational / Technical	195	46.65
	Diploma and above	91	21.77

Table 2: Career and economic background of respondents (N = 418)

Variable	Category	Frequency	Percentage (%)
Monthly income (RM)	1,501–2,000	75	17.9
	2,001–2,500	230	55.0
	Above 2,500	113	27.1
Work experience (years)	1–5	363	86.8
	6 and above	55	13.2
Employment type	Permanent	395	94.5
	Contract	23	5.5

Respondents also report sustained exposure to mechanised systems. As shown in Table 3, most interact with machinery daily and have used their current machines for one to four years. Training exposure is concentrated at basic to intermediate levels, suggesting operational familiarity without extensive professional specialisation.

Table 3: Mechanisation use and training profile (N = 418)

Variable	Category	Frequency	Percentage (%)
Years using current machine	1–2 years	280	67.0
	3–4 years	120	28.7
	5 years and above	18	4.3
Frequency of interaction	Daily	310	74.2
	Less than daily	108	25.8
Training level	Basic / Intermediate	269	64.4
	Advanced / Expert	144	34.4

Collectively, Tables 1–3 describe a workforce characterised by routine technological exposure, stable employment arrangements, and limited progression depth, providing an appropriate context for examining job satisfaction as acceptance-oriented evaluation and turnover intention as withdrawal-oriented appraisal within operator-dependent mechanised systems.

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4.2. Measurement Model Assessment

The measurement model was assessed prior to structural analysis to establish reliability and validity. The results are reported in Table 4.

All constructs demonstrate satisfactory internal consistency. Cronbach's alpha values range from 0.771 to 0.953, and composite reliability values range from 0.866 to 0.977, exceeding recommended thresholds for reflective measurement models. Convergent validity is supported, as average variance extracted (AVE) values range from 0.684 to 0.955, indicating that each construct explains more than half of the variance of its indicators (Fornell & Larcker, 1981).

Discriminant validity was evaluated using the heterotrait–monotrait (HTMT) ratio and corroborated using the Fornell–Larcker criterion. Certain HTMT values between job satisfaction and turnover intention approached or slightly exceeded the recommended threshold of 0.90, which may arise when conceptually adjacent constructs are specified within the same evaluative appraisal domain (Henseler et al., 2015). However, the square root of AVE for each construct exceeds the corresponding inter-construct correlations under the Fornell–Larcker criterion, supporting acceptable discriminant validity. This pattern reflects evaluative proximity rather than construct redundancy.

Collinearity diagnostics were also examined. All inner-model variance inflation factor values fall below the recommended threshold of five, suggesting that multicollinearity and common method inflation are unlikely to materially distort the structural estimates (Kock, 2015).
Taken together, the reliability, convergent validity, discriminant validity, and collinearity assessments indicate that the measurement model is adequate for subsequent structural analysis.

Table 4: Measurement model assessment

Construct	Cronbach's α	Composite Reliability	AVE
Technological perceptions of mechanisation	0.817	0.915	0.843
Intrinsic factors	0.861	0.915	0.781
Extrinsic factors	0.771	0.866	0.684
Psychological needs	0.861	0.915	0.781
Job satisfaction	0.945	0.965	0.901
Turnover intention	0.953	0.977	0.955

4.3. Direct Structural Associations

Direct structural associations were examined to assess the relationships between work-condition dimensions and job satisfaction, as well as their direct associations with turnover intention. The results are summarised in Table 5.

Extrinsic factors demonstrate a strong positive association with job satisfaction (β = 0.430, t = 6.027, $p < 0.001$), indicating that pay, job security, and working conditions constitute a central basis of satisfaction-based acceptance in semi-mechanised plantation employment. Technological perceptions of mechanisation are likewise

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positively associated with job satisfaction (β = 0.247, t = 3.665, p < 0.001), suggesting that perceived usefulness and manageability reinforce favourable appraisal of daily work arrangements.

In contrast, intrinsic factors (β = −0.028, p = 0.704) and psychological needs (β = −0.051, p = 0.542) do not exhibit statistically significant associations with job satisfaction. Within structured and routine-based work systems, internally oriented motivational evaluations exert comparatively weaker influence on satisfaction than operational feasibility and extrinsic stability. Job satisfaction exhibits a strong negative association with turnover intention (β = −0.958, t = 54.604, p < 0.001), consistent with its role as an acceptance-oriented regulator of withdrawal-oriented judgement within the evaluative configuration examined.

Among the direct paths to turnover intention, extrinsic factors are negatively associated (β = −0.093, p = 0.026), whereas intrinsic factors (β = 0.129, p = 0.001) and psychological needs (β = 0.110, p = 0.025) are positively associated. Although counter-intuitive under conventional retention assumptions, this pattern reflects structural constraints within the employment system. Motivational elevation does not necessarily translate into retention stability within constrained employment systems. In contexts characterised by limited advancement pathways and restricted progression depth, stronger intrinsic aspiration or heightened perceptions of competence may sharpen awareness of constrained growth opportunities, thereby intensifying reassessment of employment continuity.

Technological perceptions of mechanisation (β = 0.011, p = 0.766) do not demonstrate a statistically significant direct association with turnover intention, indicating that technology-related evaluations influence withdrawal-oriented appraisal primarily through satisfaction-based acceptance rather than through a direct evaluative linkage. These direct structural estimates provide the empirical basis for examining the mediating role of job satisfaction in the subsequent analysis.

Table 5: Direct structural associations

Structural Path	β	t-value	p-value	Result
Extrinsic factors → job satisfaction	0.430	6.027	<0.001	Supported
Intrinsic factors → job satisfaction	−0.028	0.381	0.704	Not supported
Technological perceptions of mechanisation → job satisfaction	0.247	3.665	<0.001	Supported
Psychological needs → job satisfaction	−0.051	0.610	0.542	Not supported
Job satisfaction → turnover intention	−0.958	54.604	<0.001	Supported
Extrinsic factors → turnover intention	−0.093	2.220	0.026	Supported
Intrinsic factors → turnover intention	0.129	3.186	0.001	Supported
Technological perceptions of mechanisation → turnover intention	0.011	0.297	0.766	Not supported
Psychological needs → turnover intention	0.110	2.241	0.025	Supported

Note: Discriminant validity between job satisfaction and turnover intention was supported under the Fornell–Larcker criterion (Fornell & Larcker, 1981), despite elevated HTMT values attributable to conceptual proximity (Henseler et al., 2015).

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4.4. Mediation Effects of Job Satisfaction

The indirect effects assessing the mediating role of job satisfaction are summarised in Table 6.

Job satisfaction significantly mediates the relationship between extrinsic factors and turnover intention ($\beta = -0.412$, $t = 6.019$, $p < 0.001$), indicating that the influence of extrinsic employment conditions on withdrawal-oriented appraisal operates primarily through satisfaction-based acceptance.

Job satisfaction also mediates the association between technological perceptions of mechanisation and turnover intention ($\beta = -0.237$, $t = 3.661$, $p < 0.001$). In the absence of a significant direct effect, this pattern indicates full mediation, suggesting that favourable technology evaluations reduce withdrawal-oriented appraisal only when they translate into acceptance of prevailing work conditions.

No statistically significant mediation effects are observed for intrinsic factors or psychological needs, indicating that these evaluative dimensions do not operate through satisfaction to structure turnover intention within the observed employment context.
Table 6 summarises the magnitude, significance, and mediation classification of the estimated indirect effects.

Table 6: Indirect (mediation) effects via job satisfaction

Indirect Path	Indirect β	t-value	p-value	Mediation
Extrinsic factors → job satisfaction → turnover intention	−0.412	6.019	<0.001	Supported
Intrinsic factors → job satisfaction → turnover intention	0.027	0.381	0.703	Not supported
Technological perceptions of mechanisation → job satisfaction → turnover intention	−0.237	3.661	<0.001	Supported (Full)
Psychological needs → job satisfaction → turnover intention	0.049	0.610	0.542	Not supported

4.5. Integrated Interpretation of Findings

The findings reveal a differentiated evaluative configuration underlying turnover intention in semi-mechanised plantation employment. Acceptance-oriented evaluation, reflected in job satisfaction, is anchored primarily in operational manageability and extrinsic reassurance. Technological perceptions of mechanisation and extrinsic factors relate to turnover intention indirectly through satisfaction-based acceptance, whereas intrinsic motivation and psychological need fulfilment demonstrate direct associations with withdrawal-oriented judgement independent of job satisfaction within the observed employment structure.

The strong negative association between job satisfaction and turnover intention supports conceptualising job satisfaction as a regulatory mechanism rather than as a proxy for durable employment attachment. Although the magnitude of the association is substantial, it is theoretically consistent with the close alignment of acceptance-oriented and withdrawal-oriented appraisal within the same evaluative domain and does not

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imply construct redundancy. Elevated HTMT values between these constructs are therefore compatible with their evaluative proximity (Henseler et al., 2015), while discriminant validity remains supported under the Fornell–Larcker criterion (Fornell & Larcker, 1981). Turnover intention items capture forward-looking behavioural-intent judgement concerning employment continuity, whereas job satisfaction items reflect appraisal of prevailing work arrangements. The strength of the association thus reflects evaluative proximity rather than measurement overlap or methodological artefact.

The positive associations of intrinsic factors and psychological needs with turnover intention further illuminate structural constraints within the employment system. In systems characterised by constrained progression pathways and limited advancement depth, stronger intrinsic aspiration or heightened perceptions of competence may heighten awareness of restricted growth opportunities. Under such conditions, internal motivation and psychological fulfilment do not necessarily secure attachment but may intensify forward-looking reassessment of employment continuity.

Taken together, the results indicate that acceptance of prevailing work conditions stabilises short-term employment presence by regulating withdrawal-oriented judgement without resolving longer-horizon evaluations of employment viability. This configuration clarifies why workforce continuity in operator-dependent mechanised systems may appear stable in the short term while remaining vulnerable over extended employment horizons. It further clarifies why observable operational continuity may mask underlying withdrawal-oriented reassessment in mechanised plantation systems.

5. Conclusion

This study demonstrates that job satisfaction should not be interpreted as evidence of durable workforce attachment in semi-mechanised plantation employment. While operational manageability and extrinsic reassurance enhance favourable appraisal of daily work arrangements, such improvements do not eliminate reassessment of longer-term employment viability.

By positioning job satisfaction as a bounded evaluative regulator rather than a retention proxy, the study challenges prevailing assumptions that equate favourable work evaluation with sustained workforce stability. In operator-dependent mechanised systems, short-term operational continuity may coexist with withdrawal-oriented reassessment that remains structurally embedded within the employment system.

From a managerial perspective, reliance on satisfaction metrics alone may create a misleading perception of stability, particularly where structural constraints limit progression depth, career development, and long-term employment pathways. Sustaining workforce continuity therefore requires attention not only to immediate work manageability but also to the broader structural conditions shaping employees' longer-horizon employment judgements.

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Research Ethics Committee of Universiti Teknologi MARA (Ref: REC/07/2025 (PG/MR/397). All procedures performed in this study involving human participants were conducted in accordance

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with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to the Declaration of Helsinki.

Acknowledgement

Part of this article was extracted from a doctoral thesis submitted to Universiti Teknologi MARA (UiTM), Malaysia.

Funding

This study received publication support from Universiti Teknologi MARA (UiTM) through the Journal Support Fund. The funding body had no involvement in the study design, data collection, analysis, interpretation, or manuscript preparation.

Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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