

A Comparative Study of Employees' Perception towards AI-Based Decision-Making in Public and Private Sector Organisations

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Abstract:

Artificial intelligence is increasingly becoming part of organisational decision-making, yet employees' perception of such technology may vary according to organisational context. This study examines whether employees' perception towards AI-based decision-making differs between public sector and private sector organisations. The study focuses on sector of employment as the independent grouping variable and employees' perception towards AI-based decision-making as the dependent variable. A quantitative approach was adopted, and perception was measured through 15 Likert-scale statements covering accuracy, bias reduction, reliability, speed, transparency, fairness, trust, human supervision, confidence and acceptance of AI-supported decisions. The sample consisted of 203 employees, including 68 public sector employees and 135 private sector employees. Descriptive statistics and an independent samples t-test were used to analyse the data. The results indicated that private sector employees reported a higher perception mean score than public sector employees. The t-test confirmed a statistically significant difference between the two groups. The findings suggest that employees generally recognise the value of AI in improving decision quality, speed and data-driven planning, although transparency, comfort, training and human supervision remain important for strengthening acceptance.

Keywords: AI-Based Decision-Making; Employee Perception; Public Sector; Private Sector; Human AI Collaboration.

INTRODUCTION

Over the past few years, more and more organisations have started leaning on artificial intelligence to help with decisions that used to be made purely by people. Managers use these tools to go through large amounts of data quickly, spot errors that might otherwise slip through, and generally speed up choices that once took much longer to make. But just because a tool works well on paper doesn't mean people in the organisation will actually trust it or use it properly. That part depends a lot on the employees themselves

how they see the technology, whether they feel comfortable with it, and whether they believe it's being used fairly.

This is really what employee perception is about. If workers feel that an AI system is fair, makes sense to them, and actually helps rather than replaces their own thinking, they tend to accept it without much fuss. But if they start noticing things like unexplained results, possible bias, or unclear answers about who's responsible when something goes wrong, they naturally become more hesitant. So looking at how employees actually feel about these systems, rather than just how well the systems perform technically, tells us a lot about whether AI adoption will succeed in real workplaces.

It also seems to make a difference whether someone works in the public sector or the private sector. Government and public organisations usually follow strict procedures, established rules, and slower-moving processes, which means employees there might not be as used to new technology. Private companies, on the other hand, often move faster, adopt new tools sooner, and put more pressure on staff to keep up with change. Because of this, employees in each sector are likely to have different comfort levels and different amounts of trust when it comes to AI-based decisions. Comparing the two groups can show whether the type of organisation someone works in actually changes how they respond to AI.

None of this means AI isn't useful – it clearly helps with accuracy, speed and planning. The point is that employees won't necessarily accept it just because it's efficient. They're more likely to trust it when they can see it's fair, when it improves the quality of decisions, and when there's still some human control involved. On the flip side, if training is missing or the system feels like a "black box," people tend to pull back and rely on it less.

This study focuses exactly on that gap. It looks at how employees in public and private sector organisations feel about AI-supported decision-making, and whether their views actually differ depending on where they work. The aim is to add some real, sector-specific understanding to a topic that's often talked about in very broad, general terms

REVIEW OF LITERATURE

(Marocco et al., 2025) examined attitudes towards artificial intelligence in organisational contexts, with particular attention to how organisational ethical culture, innovativeness and perceived job performance relate to workers' acceptance of AI. The study adopted an empirical organisational approach and tested relationships among observed workplace variables. Its results indicated that employees' attitudes towards AI are shaped not only by the technology itself but also by the ethical and innovative climate of the organisation. This is directly relevant to the present study because employees' perception towards AI-based decision-making may vary across organisational settings where exposure to innovation, ethical assurance and confidence in AI-supported work processes differ.

(Daly et al., 2025) explored how trust in AI influences organisational AI adoption, using qualitative data collected from AI developers, managers and users. The research identified positive, negative and instrumental attitudes towards AI, showing that trust is not fixed but develops through experience, organisational support and visible benefits. The study is useful for the present research because it explains why employees may not perceive AI-based decision-making uniformly. It supports the view that acceptance of AI depends on trust, familiarity and the organisational conditions under which AI is introduced.

(Golgeci et al., 2025) reviewed AI resistance in the workplace and developed a process framework for understanding and reducing employee resistance to artificial intelligence. The integrative review highlighted that resistance may arise from fear, perceived inefficacy and unfavourable attitudes towards AI, while organisational communication, training and supportive implementation practices can reduce such resistance. The study has clear relevance to the present research because employee perception towards AI-based decision-making may be shaped by concerns about reliability, role displacement, transparency and readiness. It also supports the need to compare organisational contexts when examining employee acceptance of AI.

(Haesevoets et al., 2024) investigated public perceptions of AI use in public sector decisions. The study focused on how people evaluate the role of AI in government decision-making and found that respondents generally preferred AI to support rather than replace human decision-makers. AI was viewed more favourably when it contributed to decision outputs, but less favourably when it carried strong decisional authority, especially in sensitive or ideological decisions. This study is important for the present work because it shows that perceptions of AI-based decision-making are closely connected with institutional context, human oversight and the acceptable level of AI involvement.

(Biswas et al., 2024) examined employees' perceptions of artificial intelligence compared with humans in performance feedback. The study focused on AI versus human feedback in an organisational performance context and reported that employees' trust in AI increased when the decision process followed a predefined and fixed formula. The findings are relevant to the present study because they indicate that employees may accept AI-supported decisions when rules, criteria and decision logic are clear. This supports the inclusion of transparency, fairness and trust as important dimensions in understanding perception towards AI-based decision-making.

(Shamim et al., 2023) investigated the development of cognitive trust in AI among front-line employees in a developing economy. The research used two empirical studies, beginning with interviews and followed by a survey of employees, to examine how AI features, work routine disruption and data governance affect trust in AI. The findings showed that positive AI features can strengthen employees' cognitive trust, while disruption in work routines may weaken it. The study is closely aligned with the present research because trust, reliability and organisational readiness are central to employees' perception of AI-based decision-making.

(Choung et al., 2023) analysed trust in AI and its role in the acceptance of AI technologies. The study was grounded in technology acceptance thinking and examined how trust contributes to users' willingness to accept AI-enabled systems. The findings indicated that trust is a significant psychological condition for AI acceptance and that acceptance cannot be understood only through usefulness or ease of use. This study is relevant to the present research because employees' perception towards AI-based decision-making is likely to depend on whether AI is considered reliable, understandable and suitable for organisational decisions.

(Yu & Li, 2022) studied the effect of AI decision-making transparency on employees' trust in AI through an experimental vignette design involving participants with work experience. The research showed that transparency increased perceived transparency and perceived effectiveness, which supported trust, although it could also increase discomfort in some cases. This finding is especially relevant to the present study because it indicates that transparency does not produce a simple or automatic improvement in

employee trust. Instead, employees may accept AI-based decisions more positively when transparency is combined with clarity, perceived effectiveness and reduced discomfort.

(Starke et al., 2022) conducted a systematic review of empirical literature on fairness perceptions of algorithmic decision-making. The review synthesised studies across different domains and showed that fairness perceptions are influenced by algorithmic features, human characteristics, comparison with human decision-making and the consequences of automated decisions. The study is directly relevant to the present research because fairness is an important dimension of employees' perception towards AI-based decision-making. It also suggests that acceptance of AI depends not only on technical accuracy but also on whether decision processes are perceived as fair and accountable.

(Cao et al., 2021) examined managers' attitudes and behavioural intentions towards using AI for organisational decision-making. The study developed and tested an integrated AI acceptance-avoidance model through a questionnaire survey of 269 UK business managers. The results showed that attitudes towards AI decision-making are shaped by both positive acceptance-related factors and negative avoidance-related concerns. This study is highly relevant to the present research because it directly addresses AI use in organisational decision-making and shows that workplace acceptance of AI involves both perceived benefits and perceived risks.

(Lichtenthaler, 2020) discussed employee attitudes towards artificial intelligence by focusing on the paradoxical nature of AI acceptance in organisations. The conceptual paper argued that employees may simultaneously recognise the benefits of AI and resist its implementation because of uncertainty, fear or not-invented-here attitudes. The study is relevant to the present research because it helps explain why employee perception towards AI-based decision-making may not be uniformly favourable, even when AI is associated with efficiency, accuracy and improved decision quality. It also supports the need to study employee-level perception rather than assuming automatic acceptance of AI in organisations.

RESEARCH OBJECTIVE

To examine whether there is a significant difference in employees' perception towards AI-based decision-making between public sector and private sector organisations.

RESEARCH METHODOLOGY

A. Research Design

The study adopted a comparative research design to examine whether employees' perception towards AI-based decision-making differs between public sector and private sector organisations. This design was suitable because the central objective of the study was not to establish causality, but to compare the perception mean scores of two independent employee groups. The design therefore allowed a focused assessment of sector-wise variation in employees' views regarding AI-supported organisational decision-making.

B. Research Approach

The study followed a quantitative approach, as employees' perception towards AI-based decision-making was measured through structured Likert-scale responses and examined using statistical procedures. The quantitative approach enabled the calculation of item-wise mean scores, construct-level perception scores, reliability values, descriptive statistics and hypothesis testing results. While the research design was

comparative in nature, the research approach was quantitative because the study relied on measurable variables and statistical analysis.

C. Population and Sample

The target population comprised employees working in public sector and private sector organisations. The study used purposive sampling, as respondents were selected on the basis of their employment in either of the two organisational sectors. This technique was considered suitable because the study required responses from employees who could provide relevant opinions on AI-based decision-making in organisational settings. The final sample consisted of 203 respondents, including 68 public sector employees and 135 private sector employees. The sample size was adequate for comparing two independent groups through mean-based statistical analysis.

D. Research Variables

The independent variable of the study was sector of employment, operationally classified into public sector and private sector organisations. The dependent variable was employees' perception towards AI-based decision-making, measured through the overall perception mean score. For each respondent, the construct mean score was obtained by averaging responses across the 15 Likert-scale statements related to AI-based decision-making. This construct-level score represented the respondent's overall perception and was used for descriptive analysis and hypothesis testing. The grouping variable was type of organisation, consisting of public sector employees and private sector employees.

E. Instrument Development and Measurement

Data were collected through a structured questionnaire designed to measure employees' perception towards AI-based decision-making. The instrument included 15 Likert-scale statements covering key aspects such as accuracy, bias reduction, reliability, speed, transparency, fairness, trust, human supervision, confidence and acceptance of AI-supported decisions. Each statement was measured on a five-point Likert scale, where 1 represented Strongly Disagree, 2 represented Disagree, 3 represented Neutral, 4 represented Agree and 5 represented Strongly Agree. Higher mean scores indicated a more favourable perception towards AI-based decision-making.

F. Data Collection Procedure

Responses were collected from employees belonging to public sector and private sector organisations using the structured questionnaire. Responses were collected from employees working in public sector and private sector organisations through a structured questionnaire. The collected responses were coded numerically according to the five-point Likert scale and used for item-level and construct-level analysis.

G. Reliability of the Instrument

The reliability of the 15-item perception scale was assessed using Cronbach's alpha. The obtained Cronbach's alpha value was 0.87, indicating excellent internal consistency among the items. This result suggests that the statements used to measure employees' perception towards AI-based decision-making were highly consistent with one another and suitable for further statistical analysis. The interpretation was made cautiously, as reliability indicates internal consistency of the scale and does not, by itself, establish validity.

LIKERT SCALE STATEMENT ANALYSIS

The following section presents the statement-wise analysis of responses obtained from 15 Likert-scale items measuring employees' perception towards AI-based decision-making.

Table 1.1: Likert Scale Statement Analysis

St	Likert Statement	SD	D	N	A	SA	$\bar{X}$	σ
1	AI-based decision-making can improve the accuracy of organisational decisions.	9 (4.4%)	18 (8.9%)	49 (24.1%)	60 (29.6%)	67 (33.0%)	3.78	1.13
2	AI-supported decisions are useful for reducing human bias in workplace decisions.	6 (3.0%)	18 (8.9%)	54 (26.6%)	56 (27.6%)	69 (34.0%)	3.81	1.09
3	Employees can rely on AI-based systems for routine organisational decision-making.	10 (4.9%)	23 (11.3%)	57 (28.1%)	60 (29.6%)	53 (26.1%)	3.61	1.14
4	AI-based decision-making helps organisations make faster decisions.	4 (2.0%)	14 (6.9%)	48 (23.6%)	63 (31.0%)	74 (36.5%)	3.93	1.03
5	AI-based decision-making improves transparency in organisational processes.	13 (6.4%)	26 (12.8%)	65 (32.0%)	58 (28.6%)	41 (20.2%)	3.43	1.14
6	Employees feel comfortable when AI tools are used to support managerial decisions.	14 (6.9%)	28 (13.8%)	46 (22.7%)	69 (34.0%)	46 (22.7%)	3.52	1.18
7	AI-based decision-making is suitable for complex business decisions when human judgement is also involved.	8 (3.9%)	26 (12.8%)	41 (20.2%)	63 (31.0%)	65 (32.0%)	3.74	1.15
8	AI-based decision-making can enhance fairness in employee-related decisions.	8 (3.9%)	31 (15.3%)	45 (22.2%)	55 (27.1%)	64 (31.5%)	3.67	1.18
9	Employees trust decisions when AI recommendations are clearly explained.	11 (5.4%)	31 (15.3%)	34 (16.7%)	68 (33.5%)	59 (29.1%)	3.66	1.2
10	AI-based decision-making improves the quality of data-driven planning.	9 (4.4%)	20 (9.9%)	52 (25.6%)	57 (28.1%)	65 (32.0%)	3.73	1.14

St	Likert Statement	SD	D	N	A	SA	$\bar{X}$	σ
11	Human supervision is necessary for effective AI-based decision-making.	3 (1.5%)	20 (9.9%)	48 (23.6%)	64 (31.5%)	68 (33.5%)	3.86	1.04
12	AI-based decision-making can increase employee confidence in organisational decisions.	12 (5.9%)	25 (12.3%)	57 (28.1%)	52 (25.6%)	57 (28.1%)	3.58	1.19
13	AI tools should be integrated into organisational decision-making processes.	8 (3.9%)	30 (14.8%)	48 (23.6%)	49 (24.1%)	68 (33.5%)	3.68	1.19
14	AI-based decision-making helps minimise errors in organisational decisions.	10 (4.9%)	25 (12.3%)	48 (23.6%)	62 (30.5%)	58 (28.6%)	3.66	1.16
15	Employees are willing to accept AI-supported decisions when proper training is provided.	7 (3.4%)	24 (11.8%)	41 (20.2%)	56 (27.6%)	75 (36.9%)	3.83	1.15

The Likert-scale results indicate that employees generally held a favourable perception of AI-based decision-making. Most statements recorded mean values above the neutral level, reflecting agreement with the role of AI in improving accuracy, speed, bias reduction, data-driven planning and decision quality. At the same time, comparatively moderate responses on transparency, comfort and confidence suggest that acceptance of AI remains stronger when supported by clarity, human supervision and proper training.

HYPOTHESIS

H₀₁: There is no significant difference in employees' perception towards AI-based decision-making between public sector and private sector organisations.

For testing H₀₁, sector of employment was used as the independent grouping variable, with two categories, namely public sector employees and private sector employees, while employees' perception towards AI-based decision-making mean score was used as the dependent variable.

An independent samples t-test was applied to examine whether employees' perception towards AI-based decision-making differed significantly between public sector and private sector organisations. This test was appropriate because the study compared the mean perception scores of two independent groups.

Table 1.2: Descriptive Statistics

	Employee	n	Mean	Std. Deviation	Std. Error Mean
Perception Mean Score	Public	68	3.49	0.74	0.09
	Private	135	3.80	0.78	0.07



Figure 1.1: Group-wise Mean Perception Scores of Public and Private Sector Employees

The descriptive results show that private sector employees reported a higher perception mean score ($M = 3.80$, $SD = 0.78$, $n = 135$) than public sector employees ($M = 3.49$, $SD = 0.74$, $n = 68$). This indicates that private sector employees showed a comparatively more favourable perception towards AI-based decision-making.

Table 1.3: Levene's Test (Mean)

Test	F	df1	df2	p
Levene's Test (Mean)	0.63	1	201	.427

Levene's test was not significant, $F(1, 201) = 0.63$, $p = .427$, which suggests that the assumption of equality of variances was acceptable. Therefore, the equal variances assumed result was considered for interpretation.

Table 1.4: Independent Samples t-test

	Variance	t	df	p
Perception Mean Score	Equal variances	-2.79	201.00	.006
	Unequal variances	-2.83	140.56	.005

The independent samples t-test showed a statistically significant difference in perception scores between the two groups, $t(201) = -2.79$, $p = .006$. Since the p-value was below the 5% level of significance, the difference between public and private sector employees' perception towards AI-based decision-making was statistically significant.

Decision

For H_{01} , an independent samples t-test was applied to examine the difference in employees' perception towards AI-based decision-making between public sector and private sector organisations. The result was statistically significant at the 5% level. The null hypothesis is rejected.

Finding

Private sector employees showed a higher level of perception towards AI-based decision-making than public sector employees. This suggests that employees in private sector organisations may be comparatively more receptive towards AI-supported decision-making within the organisational context.

Conclusion

Since the null hypothesis is rejected, the researcher concludes that there is a significant difference of sector of employment on employees' perception towards AI-based decision-making.

OVERALL CONCLUSION

The study examined whether employees' perception towards AI-based decision-making differed between public sector and private sector organisations. The empirical results show that private sector employees reported a higher perception mean score than public sector employees, indicating a comparatively more favourable orientation towards AI-supported decision-making in private sector settings. The independent samples t-test confirmed that this difference was statistically significant at the 5% level. Accordingly, the null hypothesis was rejected, and the study concludes that sector of employment is associated with a significant difference in employees' perception towards AI-based decision-making.

Overall, the findings suggest that employees do not reject AI-based decision-making; rather, they appear to recognise its usefulness in improving decision accuracy, speed, fairness and data-driven planning. However, the results also indicate that AI acceptance is not unconditional. Employees' responses reflect the need for explainable AI recommendations, managerial support, human supervision and adequate training. The study therefore contributes to understanding sector-wise differences in employee perception and highlights the importance of organisational readiness in the effective adoption of AI-supported decision systems.

SUGGESTIONS BASED ON FINDINGS

1. Organisations should introduce AI-based decision-making systems gradually so that employees can understand their purpose, scope and relevance before such systems are used for important organisational decisions.
2. Public sector organisations should give special attention to awareness-building programmes, as the findings indicate that public sector employees reported a comparatively lower perception mean score than private sector employees.
3. Training programmes should be organised to improve employees' confidence in using and accepting AI-supported decisions, particularly because acceptance appears stronger when proper training is provided.
4. Organisations should ensure that AI recommendations are clearly explained to employees, as trust in AI-supported decisions is closely linked with the clarity and transparency of such recommendations.
5. Human supervision should remain an essential part of AI-based decision-making, since employees showed strong agreement with the need for human judgement in effective AI-supported decisions.

6. Managers should communicate that AI is intended to support decision-making rather than completely replace human judgement, as this may reduce apprehension and improve employee acceptance.
7. AI-based systems should be used first in routine and data-driven decision areas where employees may find them easier to understand, evaluate and accept.
8. Organisations should develop transparent procedures for using AI in employee-related decisions so that concerns about fairness, bias and accountability can be minimised.
9. Decision-makers should regularly review AI-supported decisions to ensure that the use of AI remains aligned with organisational goals, employee expectations and ethical standards.
10. Private sector organisations should continue strengthening AI-readiness practices, as their employees showed relatively more favourable perception towards AI-based decision-making.

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