

# Exploring the Relationship between Trust in Automation, Job Insecurity and Job Satisfaction among Government School Teachers

**Amina**

Doctoral Candidate, Psychology

## **Abstract**

The present study examines the relationship between trust in automation, job satisfaction, and job insecurity among government school teachers. With the growing use of digital attendance systems, online reporting platforms, learning management systems, automated assessment tools, and artificial intelligence-based educational applications, teachers increasingly interact with automation as part of their everyday professional duties. The study adopts a quantitative, correlational, and cross-sectional research design. The sample comprises 180 government school teachers from Delhi-NCR, including 90 female teachers and 90 male teachers. Trust in automation is measured using the Trust in Automation Scale developed by Jian, Bisantz, and Drury (2000), job insecurity is measured using the Job Insecurity Scale developed by De Witte (2014), and job satisfaction is measured using the Minnesota Satisfaction Questionnaire developed by Weiss, Dawis, England, and Lofquist (1967). The Job Demands-Resources Model provides the theoretical framework for the study by explaining automation as a potential job resource when it is trusted and as a potential job demand when it is experienced as threatening or unreliable. The study investigates associations among the variables, predictive relationships, and gender differences. The proposed findings are expected to contribute to educational psychology, occupational psychology, and teacher well-being literature by clarifying how technological trust relates to work satisfaction and insecurity in government school settings. Keywords: trust in automation, job satisfaction, job insecurity, government school teachers, JD-R model, educational technology

## **Chapter 1: Introduction**

### **Statement of the Problem**

The present study explores the relationship between trust in automation, job satisfaction, and job insecurity among government school teachers. The teaching profession is experiencing substantial change because digital systems, online administrative platforms, automated attendance mechanisms, learning management systems, smart classrooms, and artificial intelligence-based educational tools are becoming embedded in school functioning. Government school teachers are therefore required not only to teach but also to participate in technology-mediated reporting, assessment, documentation, training, and communication. This changing work environment makes automation an important psychological and organizational issue in education.

Trust in automation refers to an individual's belief that an automated system is reliable, useful,

dependable, accurate, and capable of supporting task performance. Jian, Bisantz, and Drury (2000) establish trust in automation as a measurable construct in human-automation interaction, while Lee and See (2004) argue that trust shapes the extent to which individuals appropriately rely on automated systems. In school contexts, trust in automation reflects the confidence teachers place in digital or automated systems used for instructional, administrative, and monitoring purposes.

Automation can function positively when teachers perceive it as a supportive tool. It may reduce repetitive administrative work, speed up communication, improve access to teaching resources, and support record management. However, automation can also be experienced negatively when teachers perceive it as unreliable, imposed, difficult to use, or connected with surveillance and evaluation. Parasuraman and Riley (1997) explain that human interaction with automation may involve use, misuse, disuse, or abuse, depending on trust, workload, perceived risk, and system design. Therefore, teachers' trust in automation becomes central to understanding whether automation supports or strains their work experience.

Job satisfaction is another major work-related variable in the teaching profession. It refers to the positive emotional and evaluative response that individuals hold toward their job and its conditions. Locke (1976) defines job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. The Minnesota Satisfaction Questionnaire further conceptualizes job satisfaction as a multidimensional construct that includes intrinsic and extrinsic dimensions, such as achievement, recognition, supervision, compensation, responsibility, working conditions, and organizational policies (Weiss et al., 1967). Among teachers, satisfaction is important because it relates to motivation, commitment, classroom engagement, institutional performance, and teacher retention.

Job insecurity refers to the subjective perception that one's job or valued job features may be threatened in the future. Greenhalgh and Rosenblatt (1984) conceptualize job insecurity as perceived powerlessness to maintain desired continuity in a threatened job situation. Later studies show that job insecurity is associated with lower job satisfaction, poorer well-being, reduced commitment, and negative work attitudes (Cheng & Chan, 2008; Sverke et al., 2002). Although government school teachers often work in comparatively stable employment conditions, insecurity may still arise from policy reforms, contractual employment arrangements, transfer systems, performance monitoring, role changes, workload expansion, and concerns about technology-driven restructuring.

The research problem therefore emerges from the need to understand how trust in automation relates to teachers' job satisfaction and job insecurity. Existing studies examine technology acceptance, trust in automation, teacher satisfaction, and job insecurity in separate bodies of literature, but limited attention is given to the combined relationship among these constructs in government school settings. This study addresses that gap by examining whether teachers who trust automation report higher job satisfaction and lower job insecurity and whether job satisfaction itself relates to teachers' feelings of insecurity. The study also examines gender differences among government school teachers, using a balanced sample of 90 female and 90 male teachers.

## **Definition of Terms**

### **Trust in Automation**

Trust in automation refers to the degree of confidence, reliance, and positive expectation an individual holds toward automated systems. It includes the belief that automation functions accurately, reliably, predictably, and beneficially in a given task context (Jian et al., 2000; Lee & See, 2004). In the present

study, trust in automation refers to the degree to which government school teachers trust digital and automated systems used in teaching, assessment, administrative reporting, student data management, attendance, and professional communication.

### **Job Satisfaction**

Job satisfaction refers to the extent to which an individual experiences positive feelings and evaluations toward their work. In the present study, job satisfaction refers to government school teachers' satisfaction with teaching responsibilities, school environment, recognition, supervision, salary, working conditions, professional growth, and institutional support. It is measured through the Minnesota Satisfaction Questionnaire, which assesses intrinsic, extrinsic, and general satisfaction (Weiss et al., 1967).

### **Job Insecurity**

Job insecurity refers to the subjective perception that one's job or valued job features may be threatened in the future. It includes concern about job continuity, role stability, professional autonomy, and valued work conditions (Greenhalgh & Rosenblatt, 1984; Sverke et al., 2002). In the present study, job insecurity refers to government school teachers' perceptions of uncertainty regarding job stability, professional role, autonomy, and future work conditions in a technology-mediated educational environment. It is measured through the Job Insecurity Scale developed by De Witte (2014).

### **Statement of Purpose**

The purpose of the present study is to examine the relationship between trust in automation, job satisfaction, and job insecurity among government school teachers. The study investigates whether trust in automation is associated with higher job satisfaction and lower job insecurity. It also examines whether job satisfaction is associated with and predicts job insecurity.

The study further aims to determine the predictive role of trust in automation in relation to job satisfaction and job insecurity. It explores whether teachers who place greater trust in automated systems experience greater satisfaction with their work and lower feelings of insecurity. In addition, the study examines gender differences in trust in automation, job satisfaction, and job insecurity among female and male government school teachers.

The broader purpose of the study is to understand whether automation functions as a supportive workplace resource or as a psychological demand in government school teaching. By focusing on teachers' perceptions, the study seeks to contribute to educational psychology, occupational health psychology, and technology acceptance research.

### **Theoretical Underpinning: Job Demands-Resources Model**

The present study is guided by the Job Demands-Resources Model. The JD-R Model proposes that every occupation contains specific job demands and job resources. Job demands are aspects of work that require sustained physical, cognitive, or emotional effort and may produce psychological strain. Job resources are aspects of work that help employees achieve work goals, reduce demands, and promote motivation, learning, and well-being (Bakker & Demerouti, 2007; Demerouti et al., 2001).

The JD-R Model identifies two major psychological processes. The first is a health impairment process, in which excessive job demands consume employees' physical and psychological resources and contribute to stress, exhaustion, and negative outcomes. The second is a motivational process, in which job resources strengthen engagement, satisfaction, and positive work functioning. This model is suitable for the present study because automation can be understood either as a resource or as a demand

depending on teachers' trust in it.

In government schools, job demands include heavy workload, large classes, administrative documentation, policy pressure, digital reporting, accountability systems, time constraints, and student-related responsibilities. Job resources include job stability, supportive leadership, professional training, peer support, autonomy, infrastructure, and useful technology. Trust in automation is treated as a psychological resource because teachers who trust automated systems may experience such systems as helpful, predictable, and supportive of their professional goals.

However, the JD-R Model also explains why automation may become a job demand. When teachers perceive automated systems as unreliable, difficult, imposed, or threatening, automation may increase cognitive and emotional burden. It may also generate insecurity if teachers believe that automation reduces the value of human judgment, increases surveillance, or changes the meaning of teaching work. Thus, the same technological system may operate as a job resource for teachers who trust it and as a job demand for teachers who distrust it.

The JD-R Model therefore provides a coherent theoretical basis for the present hypotheses. Trust in automation is expected to relate positively to job satisfaction because trusted automation may support work goals and reduce burdens. Trust in automation is expected to relate negatively to job insecurity because teachers who trust automation may experience it as complementary rather than threatening. Job satisfaction is expected to relate negatively to job insecurity because satisfied teachers are more likely to feel valued, stable, and professionally connected.

### **Rationale of the Study**

The rationale of the present study lies in the increasing technological transformation of education and the psychological implications of that transformation for teachers. Educational reforms increasingly expect teachers to use digital platforms for documentation, communication, assessment, attendance, training, and classroom support. These systems may create efficiency, but their success depends on teachers' acceptance, competence, and trust. Davis (1989) emphasizes perceived usefulness and perceived ease of use as central to technology acceptance, while Venkatesh, Morris, Davis, and Davis (2003) show that performance expectancy, effort expectancy, social influence, and facilitating conditions influence technology use. In the teaching profession, these acceptance-related factors may be closely connected with trust in automation.

The study is important because automation can become either a support or a stressor. When teachers trust automation, they may experience technology as a job resource that assists their work and reduces unnecessary burden. When teachers distrust automation, they may experience it as a job demand that increases pressure, confusion, and insecurity. The Job Demands-Resources Model provides a useful explanation for this dual role by distinguishing between work conditions that support motivation and work conditions that produce strain (Bakker & Demerouti, 2007; Demerouti et al., 2001).

The study is also justified because teachers' job satisfaction is closely connected with educational quality. Research on teachers indicates that school working conditions, workload, leadership, collegial relations, and professional support influence satisfaction and motivation to remain in teaching (Skaalvik & Skaalvik, 2011; Toropova et al., 2021). If automation reduces workload and supports teaching, it may strengthen satisfaction. If it increases monitoring, technical burden, or role ambiguity, it may weaken satisfaction.

Job insecurity is equally important because it may exist even in relatively stable public-sector

employment. Teachers may not always fear immediate job loss, but they may fear loss of autonomy, professional relevance, control over work, or valued features of their role. De Witte (2014) treats job insecurity as a subjective perception of uncertainty regarding job continuity, and Vander Elst, De Witte, and De Cuyper (2014) support the psychometric usefulness of the Job Insecurity Scale. In the context of automation, insecurity may emerge when teachers believe that technology replaces human judgment, intensifies surveillance, or changes the meaning of teaching work.

This study is useful for policymakers, school administrators, teacher educators, and psychologists because it highlights the human side of technological implementation. Its findings may help educational authorities design teacher-friendly technology systems, provide better training, reduce technology-related anxiety, and promote job satisfaction. The study contributes to occupational and educational psychology by examining trust in automation as a meaningful psychological variable within government school teaching.

### Objectives

1. To study the gender differences in trust in automation, job satisfaction, and job insecurity between female and male government school teachers.
2. To study the association between trust in automation, job satisfaction, and job insecurity among government school teachers.
3. To study the effect of trust in automation on job satisfaction among government school teachers.
4. To study the effect of trust in automation on job insecurity among government school teachers.
5. To study the effect of job satisfaction on job insecurity among government school teachers.

## Chapter 2: Review of Literature

### Trust in Automation

Scherer, Siddiq, and Tondeur (2019) conduct a meta-analytic structural equation modeling study on teachers' adoption of digital technology in education. Their findings show that technology acceptance models are meaningful in explaining teachers' intentions and use of digital technology. This research supports the present study because trust in automation may be considered closely related to teachers' acceptance of technology. When teachers view technology as useful and reliable, they are more likely to experience it positively.

Trust in automation is a central construct in human-automation interaction. Schaefer, Chen, Szalma, and Hancock (2016) further demonstrate through meta-analytic evidence that trust in automation is influenced by characteristics of the human user, the automated system, and the environment. This supports the view that teachers' trust is not simply a personal attitude but is shaped by school infrastructure, training, system design, reliability, and institutional communication. In the present study, trust in automation is examined as a work-related perception that may shape teachers' satisfaction and insecurity.

Venkatesh et al. (2003) integrate several technology acceptance models into the Unified Theory of Acceptance and Use of Technology. Their model emphasizes performance expectancy, effort expectancy, social influence, and facilitating conditions. These concepts are relevant for government school teachers because acceptance of automation may depend on whether teachers believe technology improves performance, is easy to use, is supported by the institution, and is valued by administrators and colleagues.

Lee and See (2004) provide a major theoretical review explaining that trust guides reliance when systems are complex and users cannot fully understand every internal process. They argue that appropriate reliance depends on calibrated trust, meaning that the level of trust should correspond to the actual capability of the automated system. Overtrust may produce complacency and automation bias, while undertrust may produce disuse of useful systems. This argument is relevant to teachers because educational technologies may be helpful only when teachers trust them appropriately and retain professional judgment.

Jian et al. (2000) develop an empirically grounded scale for measuring trust in automated systems and identify trust as a key factor influencing reliance on automation. Their work shows that people do not respond to automation only on the basis of technical availability; rather, they evaluate whether systems appear reliable, dependable, understandable, and trustworthy.

Parasuraman and Riley (1997) discuss the use, misuse, disuse, and abuse of automation. Their work suggests that automation-related behavior depends on factors such as trust, workload, perceived risk, training, and system reliability. In teaching, disuse may occur when teachers avoid digital platforms because they do not trust them, while misuse may occur when teachers depend on automated outputs without critical evaluation. Therefore, trust in automation must be understood as a balanced and context-sensitive psychological construct.

Davis (1989) proposes the Technology Acceptance Model and identifies perceived usefulness and perceived ease of use as major determinants of technology acceptance. These factors remain relevant in school contexts because teachers are more likely to use educational technology when they find it useful, manageable, and compatible with their work needs.

### **Job Satisfaction Among Teachers**

Toropova, Myrberg, and Johansson (2021) emphasize the role of school working conditions in teacher job satisfaction. Their findings indicate that working conditions, workload, leadership, and school climate matter for teachers' satisfaction. In government schools, automation becomes part of working conditions because teachers interact with digital systems for instructional and administrative tasks. Therefore, the quality and trustworthiness of automation may influence overall job satisfaction.

Skaalvik and Skaalvik (2011) examine teacher job satisfaction and motivation to leave teaching in relation to school context, belonging, and emotional exhaustion. Their study shows that teachers' perceptions of the school environment relate meaningfully to satisfaction and motivation to remain in the profession. This finding indicates that teacher satisfaction is shaped not only by individual characteristics but also by organizational conditions.

Klassen and Chiu (2010) study teacher self-efficacy, job satisfaction, gender, years of experience, and job stress. Their findings indicate that job stress and self-efficacy are meaningfully related to teacher satisfaction. The study is relevant because automation may affect teachers' sense of competence and stress. Teachers who trust automation may feel more capable of handling technology-mediated tasks, while teachers who distrust it may experience lower confidence and satisfaction.

Locke (1976) defines job satisfaction as a positive emotional state resulting from the appraisal of one's job or job experiences.

The Minnesota Satisfaction Questionnaire developed by Weiss et al. (1967) measures satisfaction across several aspects of work, including achievement, recognition, responsibility, supervision, working conditions, compensation, and organizational practices.

In teaching, job satisfaction is significant because teachers' attitudes toward their work influence classroom engagement, motivation, performance, and commitment. Teachers who experience satisfaction are more likely to invest energy in teaching, maintain positive relationships, and remain committed to students and institutions. Conversely, dissatisfaction may contribute to low morale, absenteeism, burnout, and intention to leave the profession.

### **Job Insecurity**

De Witte (2014) conceptualizes job insecurity as an employee's concern about future job continuity, and Vander Elst et al. (2014) validate the Job Insecurity Scale across multiple European countries. The scale is widely used because it offers a brief and focused measure of perceived job insecurity. In the present study, this construct is adapted to understand teachers' perceptions of insecurity within the context of automation and institutional change.

Cheng and Chan (2008) provide further meta-analytic evidence that the negative effects of job insecurity vary across individual and contextual factors such as age, tenure, and gender. These studies demonstrate that job insecurity is a serious psychological concern even in occupational groups where employment may appear outwardly stable.

Sverke et al. (2002) conduct a meta-analysis and show that job insecurity is negatively associated with job satisfaction, organizational commitment, mental health, and work attitudes.

Hellgren, Sverke, and Isaksson (1999) distinguish between quantitative job insecurity, which refers to fear of losing the job itself, and qualitative job insecurity, which refers to fear of losing valued job features. This distinction is important for government school teachers because they may not always fear job loss, but they may fear loss of autonomy, role clarity, professional status, or stable work conditions.

Ashford, Lee, and Bobko (1989) examine the content, causes, and consequences of job insecurity and show that job insecurity is connected with individual, job-related, and organizational realities.

Greenhalgh and Rosenblatt (1984) provide a classic conceptualization of job insecurity as perceived powerlessness to maintain desired continuity in a threatened job situation. This definition emphasizes that job insecurity is subjective. It depends not only on actual employment conditions but also on how employees interpret changes and threats in their work environment.

### **Trust in Automation and Job Satisfaction**

Trust in automation is expected to have a positive association with job satisfaction. When teachers perceive automated systems as reliable and supportive, they may experience technology as a tool that simplifies their work. Automation may reduce repetitive administrative effort, improve access to data, support lesson preparation, and streamline reporting. In the JD-R framework, such trusted automation functions as a job resource that supports work goals and strengthens satisfaction (Bakker & Demerouti, 2007).

However, the relationship between automation and satisfaction depends on implementation quality. If digital systems are difficult to operate, frequently malfunction, or create additional reporting work, teachers may experience automation as frustrating rather than helpful. Lee and See (2004) suggest that trust must be appropriately calibrated to system performance. Therefore, when automation is trusted because it performs well and is supported by training, it may improve satisfaction; when it is distrusted, it may decrease satisfaction.

Teachers' acceptance of digital systems is also influenced by perceived usefulness and ease of use (Davis, 1989; Scherer et al., 2019). These constructs are related to trust because teachers are unlikely to

trust systems that they perceive as useless, confusing, or unreliable.

Thus, the present study expects trust in automation to be positively related to job satisfaction.

### **Trust in Automation and Job Insecurity**

Trust in automation is expected to have a negative association with job insecurity.

Teachers who trust automation may view it as a complementary professional tool rather than a substitute for human teaching. They may believe that automation supports their work, improves efficiency, and allows them to focus more on instructional and relational aspects of teaching. In this case, automation reduces uncertainty and functions as a resource.

By contrast, teachers who distrust automation may perceive it as a threat. They may worry that automated systems increase surveillance, reduce autonomy, standardize professional judgment, or eventually replace some aspects of teachers' roles. Such perceptions may intensify job insecurity. Research on job insecurity emphasizes that perceived threats to valued job features can be psychologically harmful even when actual job loss is not imminent (Hellgren et al., 1999; Sverke et al., 2002).

This relationship is particularly relevant for government school teachers because their work is embedded in policy-driven systems and administrative accountability. If automation is introduced without adequate training, transparency, and teacher participation, it may generate anxiety and insecurity. If it is introduced as a supportive resource, trust may reduce insecurity.

### **Job Satisfaction and Job Insecurity**

Meta-analytic research consistently shows that job insecurity is negatively associated with job satisfaction (Cheng & Chan, 2008; Sverke et al., 2002). This suggests that teachers who perceive greater insecurity may experience lower satisfaction, while teachers who are more satisfied may perceive less threat. In the present study, job satisfaction is also examined as a predictor of job insecurity, based on the assumption that satisfied teachers may feel more valued, supported, and psychologically secure.

Within the JD-R Model, job satisfaction can be viewed as a positive outcome of sufficient resources and manageable demands. Job insecurity, on the other hand, represents a psychological demand or strain-related perception. Therefore, a negative relationship between these variables is theoretically expected.

Job satisfaction and job insecurity are generally expected to be negatively related.

Employees who feel satisfied with their work are more likely to experience belonging, stability, and confidence in their professional role. In contrast, employees who are dissatisfied may interpret organizational changes as threatening and may feel less secure in their work environment.

### **Gender Differences**

The present study examines gender differences because the sample includes an equal number of female and male teachers. Gender may influence trust in automation, job satisfaction, and job insecurity through differences in technology exposure, work-life responsibilities, institutional experiences, social expectations, and perceived support. Klassen and Chiu (2010) report gender-related patterns in teacher stress and job satisfaction, suggesting that gender may be meaningful in teacher well-being research.

In relation to technology, Venkatesh et al. (2003) identify gender as a possible moderator in technology acceptance. Male and female teachers may therefore differ in their experience of automation depending on access, confidence, training, workload, and institutional expectations. The present study does not assume that one gender necessarily experiences more satisfaction or insecurity than the other; rather, it empirically examines whether significant differences exist among government school teachers.

## Research Gap

The reviewed literature shows that trust in automation, job satisfaction, and job insecurity are individually important constructs in organizational and educational psychology. Research on automation emphasizes trust and appropriate reliance (Jian et al., 2000; Lee & See, 2004). Research on teacher satisfaction emphasizes school context, workload, support, and professional well-being (Skaalvik & Skaalvik, 2011; Toropova et al., 2021). Research on job insecurity emphasizes perceived threat, loss of continuity, and negative work outcomes (Greenhalgh & Rosenblatt, 1984; Sverke et al., 2002).

However, limited research examines the three variables together in the context of government school teachers. This gap is important because government teachers work within stable but highly regulated public education systems where technology is increasingly used for both support and accountability. The present study fills this gap by examining associations, predictive relationships, and gender differences in a balanced sample of 180 government school teachers.

## Chapter 3: Methodology

### Hypotheses

H1(a): There is a significant difference among female and male government school teachers in trust in automation.

H1(b): There is a significant difference among female and male government school teachers in job satisfaction.

H1(c): There is a significant difference among female and male government school teachers in job insecurity.

H2(a): There is a significant positive association between trust in automation and job satisfaction among government school teachers.

H2(b): There is a significant negative association between trust in automation and job insecurity among government school teachers.

H2(c): There is a significant negative association between job satisfaction and job insecurity among government school teachers.

H3: Trust in automation significantly predicts job satisfaction among government school teachers.

H4: Trust in automation significantly predicts job insecurity among government school teachers.

H5: Job satisfaction significantly predicts job insecurity among government school teachers.

### Research Design

The present study employs correlational research design. The quantitative design is appropriate because the study measures trust in automation, job satisfaction, and job insecurity through standardized psychometric instruments. The correlational design is suitable because the study examines the nature and direction of relationships among variables without manipulating them. The cross-sectional design is used because data are collected from participants at a single point in time.

Independent samples t-test is used to examine gender differences between female and male teachers. Pearson's correlation is used to examine associations among the variables. Simple linear regression analysis is used to examine the predictive effects of trust in automation on job satisfaction, trust in automation on job insecurity, and job satisfaction on job insecurity.

### Sample

The target population of the study consists of government school teachers. The sample comprises 180

government school teachers from Delhi-NCR of age range from 25 to 50 years. The sample includes 90 female teachers and 90 male teachers, ensuring equal gender representation for comparison. Participants are employed in government schools funded and administered by state or central government bodies. Purposive sampling is used because participants are selected on the basis of characteristics relevant to the study. The inclusion criteria are: (a) the participant is employed as a full-time government school teacher, (b) the participant is from Delhi-NCR, and (c) the participant voluntarily provides informed consent. Teachers who are not currently employed in government schools, non-teaching staff, and participants who provide incomplete responses are excluded from analysis.

### Sample Characteristics

| Category        | Frequency | Percentage |
|-----------------|-----------|------------|
| Female teachers | 90        | 50%        |
| Male teachers   | 90        | 50%        |
| Total           | 180       | 100%       |

### Procedure

The data collection procedure is conducted in an ethical and systematic manner. Permission is obtained from the concerned institutional authorities, school principals, or relevant administrative bodies before approaching participants. The researcher explains the purpose of the study to teachers and clarifies that the study examines their perceptions of automation, job satisfaction, and job insecurity.

Participants are informed that participation is voluntary and that they may withdraw from the study at any stage. Informed consent is obtained before the administration of the questionnaires. Participants are assured that their identities remain confidential and that the data are used only for academic research purposes.

The questionnaire booklet includes a demographic information sheet, the Trust in Automation Scale, the Job Insecurity Scale, and the Minnesota Satisfaction Questionnaire. The demographic includes details about gender and age. The questionnaires are administered either in paper-and-pencil format or through an online form, depending on accessibility and convenience. After data collection, responses are checked for completeness. Incomplete or invalid responses are removed before statistical analysis. The final data are coded and entered into statistical software for analysis.

### Tools Used

#### Minnesota Satisfaction Questionnaire

The Minnesota Satisfaction Questionnaire (MSQ) is developed by Weiss, Dawis, England, and Lofquist (1967). It measures job satisfaction across multiple facets of the work environment. The MSQ is grounded in the Theory of Work Adjustment and is widely used in organizational, vocational, and educational research.

In the present study, the MSQ is used to measure job satisfaction among government school teachers. The short form of the MSQ contains 20 items representing intrinsic and extrinsic dimensions of job satisfaction. Intrinsic satisfaction includes aspects such as achievement, responsibility, independence, creativity, moral values, social service, and variety. Extrinsic satisfaction includes aspects such as supervision, compensation, recognition, advancement, and organizational policies. Higher scores indicate higher job satisfaction.

The MSQ is relevant for the present study because it allows the researcher to understand whether teachers are satisfied with different aspects of their work, including professional responsibilities, supervision, working conditions, and institutional support. Since the study examines job satisfaction as both an outcome and a predictor, the MSQ provides an appropriate standardized measure.

### Reliability Analysis

| Cronbach's $\alpha$ | No. of Items |
|---------------------|--------------|
| 0.78                | 20           |

### Job Insecurity Scale

The Job Insecurity Scale (JIS) is developed by De Witte (2014) and is used to measure perceived job insecurity. It assesses the extent to which individuals feel uncertain or worried about the future continuity of their job. The JIS focuses on the subjective experience of insecurity, which means that the scale captures the individual's perception rather than only objective employment conditions.

In the present study, the JIS is used to measure government school teachers' perceived insecurity regarding job stability, professional role, autonomy, and future work conditions. Higher scores indicate higher perceived job insecurity. The scale is relevant because the study examines whether trust in automation and job satisfaction are related to teachers' feelings of insecurity. Psychometric work by Vander Elst et al. (2014) supports the reliability and validity of De Witte's Job Insecurity Scale across occupational contexts.

### Reliability Analysis

| Cronbach's $\alpha$ | No. of Items |
|---------------------|--------------|
| 0.73                | 11           |

### Trust in Automation Scale

The Trust in Automation Scale is developed by Jian, Bisantz, and Drury (2000). It measures the degree of trust individuals place in automated systems. The scale includes items related to reliability, dependability, predictability, confidence, accuracy, and trustworthiness of automated systems.

In the present study, the scale is used to measure government school teachers' trust in automation. It is relevant because teachers increasingly interact with automated or digital systems for teaching support, reporting, assessment, attendance, and administrative management. Higher scores indicate greater trust in automation, while lower scores indicate lower trust or distrust. The scale directly supports the central aim of the study because trust in automation is the major independent variable examined in relation to job satisfaction and job insecurity.

### Reliability Analysis

| Cronbach's $\alpha$ | No. of Items |
|---------------------|--------------|
| 0.62                | 12           |

### Statistical Analysis

The data was analyzed using statistical software such as IBM SPSS version 26. Descriptive statistics, including mean, standard deviation, minimum, maximum and skewness are computed to describe the

sample and the main study variables.

. Independent samples t-test is used to examine whether female and male teachers differ significantly in trust in automation, job satisfaction, and job insecurity. Pearson's product-moment correlation is used to examine the associations among trust in automation, job satisfaction, and job insecurity. Simple linear regression analysis is used to test whether trust in automation predicts job satisfaction, whether trust in automation predicts job insecurity, and whether job satisfaction predicts job insecurity.

## Chapter 4: Result and Interpretation

**Table 1**

***Descriptive Statistics for Trust in Automation, Job Insecurity and Job Satisfaction.***

| Variable                   | N   | Mean | SD   | Min | Max | Skewness | Kurtosis |
|----------------------------|-----|------|------|-----|-----|----------|----------|
| Trust in Automation        | 180 | 44.8 | 10.8 | 12  | 84  | 0.72     | 2.70     |
| Job Insecurity             | 180 | 31.6 | 9.72 | 11  | 60  | 0.64     | 0.08     |
| Intrinsic Job Satisfaction | 180 | 4.05 | 7.04 | 12  | 60  | -1.01    | 2.2      |
| Extrinsic Job Satisfaction | 180 | 27.2 | 5.38 | 9   | 40  | -0.64    | 1.56     |
| Job Satisfaction           | 180 | 68.7 | 11.1 | 21  | 100 | -0.99    | 1.91     |

*Note:* Skewness values between  $\pm 2$  indicate acceptable normality for inferential analyses.

**Table 2**

***Descriptive Statistics (Mean and SD) and t-value for Trust in Automation, Job Insecurity, Intrinsic Job Satisfaction, Extrinsic Job Satisfaction, and Total Job Satisfaction***

| Variables                  | Gender | Mean  | SD    | SE D | t value | p value |
|----------------------------|--------|-------|-------|------|---------|---------|
| Trust in Automation        | Male   | 45.80 | 10.55 | 1.61 | 1.25    | .213    |
|                            | Female | 43.80 | 11.05 |      |         |         |
| Job Insecurity             | Male   | 30.90 | 9.55  | 1.38 | -1.00   | .320    |
|                            | Female | 32.30 | 8.97  |      |         |         |
| Intrinsic Job Satisfaction | Male   | 42.40 | 6.67  | 1.04 | 1.78    | .077    |
|                            | Female | 40.50 | 7.30  |      |         |         |
| Extrinsic Job Satisfaction | Male   | 27.90 | 5.04  | 0.80 | 1.64    | .102    |
|                            | Female | 26.60 | 5.64  |      |         |         |
| Total Job Satisfaction     | Male   | 70.30 | 10.24 | 1.56 | 1.93    | .056    |
|                            | Female | 67.10 | 10.78 |      |         |         |

*Note.* n1 = 90 for males and n2= 90 for females.  $df = 178$ .  $p < .05$  indicates statistical significance.

**Table 3**

***Pearson's Correlation among Trust in Automation, Job Insecurity, Intrinsic Job Satisfaction, Extrinsic Job Satisfaction, and Total Job Satisfaction***

| Variables                     | 1      | 2       | 3       | 4       | 5 |
|-------------------------------|--------|---------|---------|---------|---|
| 1. Trust in Automation        | 1      | —       | —       | —       | — |
| 2. Job Insecurity             | 0.065  | 1       | —       | —       | — |
| 3. Intrinsic Job Satisfaction | 0.166* | -0.089  | 1       | —       | — |
| 4. Extrinsic Job Satisfaction | 0.065  | -0.160* | 0.594** | 1       | — |
| 5. Total Job Satisfaction     | 0.136  | -0.134  | 0.921** | 0.860** | 1 |

Note. N=180. Values represent Pearson's correlation ( $r$ ). \* $p < .05$ , \*\* $p < .001$ .

**Table 4**

**Analysis of Variance (ANOVA) between Job Satisfaction and Trust in Automation among Males**

| Source     | SS       | df | MS      | F    | p    |
|------------|----------|----|---------|------|------|
| Regression | 9.585    | 1  | 9.585   | .091 | .763 |
| Residual   | 9255.315 | 88 | 105.174 |      |      |
| Total      | 9264.900 | 89 |         |      |      |

Note. N=90. Dependent Variable: Job Satisfaction. Predictor: Trust in Automation.

**Table 4.1**

**Regression analysis using Trust in Automation as predictor and Job Satisfaction as criterion among males**

| Predictor           | B      | SE B  | $\beta$ | t      | R <sup>2</sup> | p    |
|---------------------|--------|-------|---------|--------|----------------|------|
| (Constant)          | 68.874 | 4.845 |         | 14.215 | .001           | .000 |
| Trust in Automation | .031   | .103  | .032    | .302   |                | .763 |

Note. N=90 Dependent Variable: Job Satisfaction.

**Table 4.2**

**Analysis of Variance (ANOVA) between Job Satisfaction and Trust in Automation among Females**

| Source     | SS        | df | MS       | F      | p    |
|------------|-----------|----|----------|--------|------|
| Regression | 2159.402  | 1  | 2159.402 | 13.113 | .000 |
| Residual   | 14656.357 | 89 | 164.678  |        |      |
| Total      | 16815.758 | 90 |          |        |      |

Note. N=90 Dependent Variable: Job Satisfaction. Predictor: Trust in Automation.

**Table 4.3**

**Regression analysis using Trust in Automation as predictor and Job Satisfaction as criterion among females**

| Predictor  | B      | SE B  | $\beta$ | t     | R <sup>2</sup> | p    |
|------------|--------|-------|---------|-------|----------------|------|
| (Constant) | 48.562 | 5.105 |         | 9.512 | .128           | .000 |

| Predictor           | B    | SE B | $\beta$ | t     | R <sup>2</sup> | p    |
|---------------------|------|------|---------|-------|----------------|------|
| Trust in Automation | .411 | .114 | .358    | 3.621 |                | .000 |

Note. N=90. Dependent Variable: Job Satisfaction.

**Table 4.4**

**Analysis of Variance (ANOVA) between Job Satisfaction and Trust in Automation**

| Source     | SS        | df  | MS      | F     | p    |
|------------|-----------|-----|---------|-------|------|
| Regression | 410.794   | 1   | 410.794 | 3.375 | .068 |
| Residual   | 21663.756 | 178 | 121.706 |       |      |
| Total      | 22074.550 | 179 |         |       |      |

Note. N=100. Dependent Variable: Job Satisfaction. Predictor: Trust in Automation.

**Table 4.5**

**Regression analysis using Trust in Automation as predictor and Job Satisfaction as criterion**

| Predictor           | B      | SE B  | $\beta$ | t      | R <sup>2</sup> | p    |
|---------------------|--------|-------|---------|--------|----------------|------|
| (Constant)          | 62.438 | 3.515 |         | 17.764 | .019           | .000 |
| Trust in Automation | .140   | .076  | .136    | 1.837  |                | .068 |

Note. N=100. Dependent Variable: Job Satisfaction.

**Table 5**

**Analysis of Variance (ANOVA) between Job Insecurity and Trust in Automation among males**

| Source     | SS       | df | MS     | F    | p    |
|------------|----------|----|--------|------|------|
| Regression | 33.819   | 1  | 33.819 | .368 | .545 |
| Residual   | 8080.637 | 88 | 91.825 |      |      |
| Total      | 8114.456 | 89 |        |      |      |

Note. N=90. Dependent Variable: Job Insecurity. Predictor: Trust in Automation.

**Table 5.1**

**Regression analysis using Trust in Automation as predictor and Job Insecurity as criterion Among males**

| Predictor           | B      | SE B  | $\beta$ | t     | R <sup>2</sup> | p    |
|---------------------|--------|-------|---------|-------|----------------|------|
| (Constant)          | 28.244 | 4.527 |         | 6.239 | .004           | .000 |
| Trust in Automation | .058   | .096  | .065    | .607  |                | .545 |

Note. N=90. Dependent Variable: Job Insecurity.

**Table 5.2**

**Analysis of Variance (ANOVA) between Job Insecurity and Trust in Automation among females**

| Source     | SS       | df | MS      | F     | p    |
|------------|----------|----|---------|-------|------|
| Regression | 351.461  | 1  | 351.461 | 3.986 | .049 |
| Residual   | 7847.265 | 89 | 88.172  |       |      |
| Total      | 8198.725 | 90 |         |       |      |

Note. N=90. Dependent Variable: Job Insecurity. Predictor: Trust in Automation.

**Table 5.3**

**Regression analysis using Trust in Automation as predictor and Job Insecurity as criterion Among females**

| Predictor           | B      | SE B  | $\beta$ | t     | R <sup>2</sup> | p    |
|---------------------|--------|-------|---------|-------|----------------|------|
| (Constant)          | 24.750 | 3.736 |         | 6.626 | .043           | .000 |
| Trust in Automation | .166   | .083  | .207    | 1.997 |                | .049 |

Note. N=90. Dependent Variable: Job Insecurity.

**Table 5.4**

**Analysis of Variance (ANOVA) between Job Insecurity and Trust in Automation**

| Source     | SS        | df  | MS     | F    | p    |
|------------|-----------|-----|--------|------|------|
| Regression | 65.527    | 1   | 65.527 | .762 | .384 |
| Residual   | 15301.251 | 178 | 85.962 |      |      |
| Total      | 15366.778 | 179 |        |      |      |

Note. N=100 Dependent Variable: Job Insecurity. Predictor: Trust in Automation.

**Table 5.5**

**Regression analysis using Trust in Automation as predictor and Job Insecurity as criterion**

| Predictor           | B      | SE B  | $\beta$ | t     | R <sup>2</sup> | p    |
|---------------------|--------|-------|---------|-------|----------------|------|
| (Constant)          | 29.104 | 2.954 |         | 9.852 | .004           | .000 |
| Trust in Automation | .056   | .064  | .065    | .873  |                | .384 |

Note. N=100 Dependent Variable: Job Insecurity.

**Table 6**

**Analysis of Variance (ANOVA) between Job Insecurity and Job Satisfaction among males**

| Source     | SS       | df | MS      | F     | p    |
|------------|----------|----|---------|-------|------|
| Regression | 202.552  | 1  | 202.552 | 2.253 | .137 |
| Residual   | 7911.903 | 88 | 89.908  |       |      |
| Total      | 8114.456 | 89 |         |       |      |

Note. N=90. Dependent Variable: Job Insecurity. Predictor: Job Satisfaction.

**Table 6.1**

**Regression analysis using Job Satisfaction as predictor and Job Insecurity as criterion among males**

| Predictor        | B      | SE B  | $\beta$ | t      | R <sup>2</sup> | p    |
|------------------|--------|-------|---------|--------|----------------|------|
| (Constant)       | 41.317 | 6.997 |         | 5.905  | .025           | .000 |
| Job Satisfaction | -.148  | .099  | -.158   | -1.501 |                | .137 |

Note. N=90. Dependent Variable: Job Insecurity.

**Table 6.2**

**Analysis of Variance (ANOVA) between Job Insecurity and Job Satisfaction among females**

| Source     | SS       | df | MS     | F     | p    |
|------------|----------|----|--------|-------|------|
| Regression | 92.322   | 1  | 92.322 | 1.014 | .317 |
| Residual   | 8106.403 | 89 | 91.083 |       |      |

|       |          |    |  |  |  |
|-------|----------|----|--|--|--|
| Total | 8198.725 | 90 |  |  |  |
|-------|----------|----|--|--|--|

Note. N=90. Dependent Variable: Job Insecurity. Predictor: Job Satisfaction.

**Table 6.3**

**Regression analysis using Job Satisfaction as predictor and Job Insecurity as criterion among females**

| Predictor        | B      | SE B  | $\beta$ | t     | R <sup>2</sup> | p    |
|------------------|--------|-------|---------|-------|----------------|------|
| (Constant)       | 27.025 | 4.988 |         | 5.418 | .011           | .000 |
| Job Satisfaction | .074   | .074  | .106    | 1.007 |                | .317 |

Note. N=90. Dependent Variable: Job Insecurity.

**Table 6.4**

**Analysis of Variance (ANOVA) between Job Insecurity and Job Satisfaction**

| Source     | SS        | df  | MS      | F     | p    |
|------------|-----------|-----|---------|-------|------|
| Regression | 275.222   | 1   | 275.222 | 3.246 | .073 |
| Residual   | 15091.556 | 178 | 84.784  |       |      |
| Total      | 15366.778 | 179 |         |       |      |

Note. N=100. Dependent Variable: Job Insecurity. Predictor: Job Satisfaction.

**Table 6.5**

**Regression analysis using Job Satisfaction as predictor and Job Insecurity as criterion**

| Predictor        | B      | SE B  | $\beta$ | t      | R <sup>2</sup> | p    |
|------------------|--------|-------|---------|--------|----------------|------|
| (Constant)       | 39.284 | 4.314 |         | 9.107  | .018           | .000 |
| Job Satisfaction | -.112  | .062  | -.134   | -1.802 |                | .073 |

Note. N=100. Dependent Variable: Job Insecurity.

## Chapter 5: Discussion

The present study investigated the relationships among trust in automation, job satisfaction, and job insecurity in a sample of 180 government school teachers from Delhi-NCR. The findings are interpreted in light of the hypotheses, the theoretical framework of the Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007; Demerouti et al., 2001), and the broader empirical literature on teacher well-being, technology acceptance, and occupational psychology. The discussion is organised around the five sets of hypotheses: gender differences in the study variables, associations among the variables, and the predictive relationships between trust in automation and job satisfaction, trust in automation and job insecurity, and job satisfaction and job insecurity. Findings that were consistent with expectations are explained through relevant theoretical and empirical support. Findings that diverged from predictions are examined critically, with attention to the contextual and methodological factors that may account for departures from the hypothesised directions.

### Gender Differences in Trust in Automation, Job Satisfaction, and Job Insecurity

Hypotheses H1(a), H1(b), and H1(c) predicted significant gender differences in trust in automation, job satisfaction, and job insecurity respectively. The independent samples t-test results presented in Table 2 indicate that none of these differences reached conventional statistical significance. Male teachers reported marginally higher mean trust in automation (M = 45.80, SD = 10.55) compared to female

teachers ( $M = 43.80$ ,  $SD = 11.05$ ), but this difference was non-significant ( $t(178) = 1.25$ ,  $p = .213$ ). Similarly, male teachers showed slightly higher total job satisfaction ( $M = 70.30$ ,  $SD = 10.24$ ) than female teachers ( $M = 67.10$ ,  $SD = 10.78$ ), with a  $t$ -value approaching but not reaching significance ( $t(178) = 1.93$ ,  $p = .056$ ). The difference in job insecurity between male ( $M = 30.90$ ,  $SD = 9.55$ ) and female ( $M = 32.30$ ,  $SD = 8.97$ ) teachers was also non-significant ( $t(178) = -1.00$ ,  $p = .320$ ). Accordingly, H1(a), H1(b), and H1(c) are not supported.

The absence of significant gender differences in trust in automation is theoretically noteworthy. Prior research by Venkatesh et al. (2003) identifies gender as a potential moderator in technology acceptance, with some studies suggesting that male users tend to report higher performance expectancy and greater confidence in technology use. The present findings do not corroborate such distinctions in this sample. This may reflect the increasingly uniform exposure to digital platforms in Delhi government schools, where both male and female teachers have been required by policy to engage with the same administrative and instructional technologies. The Delhi government's large-scale educational digitalisation initiatives, including digital attendance, e-learning platforms, and administrative portals, may have normalised technology use across gender lines, reducing the differential that earlier research identified in more varied occupational contexts.

The near-significant trend in total job satisfaction ( $p = .056$ ) warrants careful interpretation. Although this value does not cross the conventional threshold of  $p < .05$ , the effect cannot be entirely dismissed as a null finding. The descriptive data suggest that male teachers report somewhat higher satisfaction across both intrinsic ( $M = 42.40$  vs.  $40.50$ ) and extrinsic ( $M$

$= 27.90$  vs.  $26.60$ ) dimensions. Within the literature, Klassen and Chiu (2010) report gender-related variation in teacher job satisfaction, with female teachers in some contexts experiencing greater emotional demands and role overload, particularly when managing classroom responsibilities alongside domestic expectations. In the Indian socio-cultural context, female government school teachers frequently carry dual burdens of professional duty and household responsibilities, and the absence of adequate institutional support for these compounded demands may subtly depress their satisfaction levels. However, given that statistical significance was not achieved, caution is warranted in generalising this interpretation. Future research with larger samples may help clarify whether this trend reflects a meaningful gender-differentiated experience of teaching work.

The non-significant gender difference in job insecurity is also consistent with the nature of government school employment in India. Government school teachers occupy relatively protected public-sector positions, and within this population, both male and female teachers may experience broadly similar levels of perceived insecurity regarding policy-driven changes, performance monitoring, and technology-related role shifts. This finding is aligned with the conceptualisation of qualitative job insecurity offered by Hellgren, Sverke, and Isaksson (1999), who distinguish between fear of job loss and fear of losing valued features of one's role. In the present context, it is plausible that both male and female teachers experience comparable uncertainty about the changing nature of their professional roles under digitisation, rather than differential fear about job continuity per se.

### **Associations Among Trust in Automation, Job Satisfaction, and Job Insecurity**

Hypothesis H2(a) predicted a significant positive association between trust in automation and job satisfaction. The Pearson correlation matrix (Table 3) reveals a small positive association between trust in automation and intrinsic job satisfaction ( $r = .166$ ,  $p < .05$ ), while the correlation between trust in automation and total job satisfaction was positive but did not reach significance ( $r = .136$ ,  $p > .05$ ).

Therefore, H2(a) receives only partial support: the association is statistically significant when satisfaction is measured along its intrinsic dimension, but not at the level of overall satisfaction.

The significant positive correlation between trust in automation and intrinsic satisfaction is theoretically consistent with the JD-R Model's motivational process. When teachers perceive automated systems as reliable, dependable, and supportive, automation may function as a job resource that reduces administrative burden, facilitates task completion, and frees cognitive resources for the more pedagogically meaningful aspects of teaching. Intrinsic satisfaction, as operationalised by the Minnesota Satisfaction Questionnaire, captures satisfaction with dimensions such as achievement, creativity, independence, and the use of one's abilities — all of which may be enhanced when automation relieves routine work. This interpretation aligns with Davis's (1989) Technology Acceptance Model, which argues that perceived usefulness of technology is a primary driver of positive attitudes toward its use. Teachers who trust automation are more likely to perceive it as useful, and this perception of usefulness may translate into a greater sense of professional accomplishment and intrinsic fulfilment.

The non-significant association between trust in automation and extrinsic satisfaction is conceptually interpretable. Extrinsic satisfaction in the MSQ encompasses factors such as compensation, supervision, recognition, advancement, and organisational policy. These dimensions are shaped largely by institutional structures and administrative decisions that operate independently of individual teachers' trust in technology. A teacher who trusts digital attendance systems or learning management platforms would not necessarily derive greater satisfaction from salary, promotion prospects, or supervisory support, as these are determined by governmental policy rather than technological experience. This specificity of influence — whereby trust in automation touches the intrinsic rather than the extrinsic sphere of satisfaction

— reflects a theoretically coherent boundary condition that future studies should examine more explicitly.

Hypothesis H2(b) predicted a significant negative association between trust in automation and job insecurity. The correlation between trust in automation and job insecurity was positive and non-significant for the overall sample ( $r = .065$ ,  $p > .05$ ), while trust in automation showed a non-significant negative relationship with intrinsic satisfaction but a non-significant negative association with extrinsic satisfaction ( $r = -.160$ ,  $p < .05$ ). Thus, H2(b) is not supported at the level of the full sample.

The absence of the expected negative relationship between trust in automation and job insecurity is one of the most theoretically significant and nuanced findings of the present study. On initial inspection, it appears counter-intuitive: one might expect that teachers who trust automation would feel less threatened by it. However, the near-zero and even slightly positive correlation suggests that, within this sample, higher trust in automation does not correspond to lower insecurity. Several interpretations merit consideration. First, it is possible that teachers who are most exposed to and engaged with automated systems — and therefore most likely to trust them through experience — are simultaneously more acutely aware of the pace and scope of technological change in education. Their trust does not buffer insecurity because it coexists with a realistic appreciation of how rapidly automation is reshaping educational roles. This interpretation is consistent with Parasuraman and Riley's (1997) framework, in which experienced users calibrate their reliance on automation without becoming less concerned about its broader implications.

Second, in the Indian government school context, automation is frequently experienced as top-down and policy-mandated rather than as a freely chosen professional resource. Systems introduced for

surveillance, reporting, or administrative accountability — rather than pedagogical enrichment — may generate trust in the system's functionality without alleviating teachers' broader anxieties about their professional standing, autonomy, or relevance. In this sense, trusting that a system works correctly is not equivalent to trusting that the system serves teachers' professional interests. Lee and See (2004) make a similar distinction in their discussion of calibrated trust, arguing that appropriate trust must reflect not only the system's technical reliability but also its purpose and the degree to which it aligns with the user's goals. When automation is perceived as functioning efficiently but in service of institutional surveillance rather than professional empowerment, trust in the system and insecurity about one's role can coexist.

Hypothesis H2(c) predicted a significant negative association between job satisfaction and job insecurity. The correlation matrix (Table 3) shows that total job satisfaction and job insecurity are negatively but non-significantly correlated ( $r = -.134$ ,  $p > .05$ ), while extrinsic satisfaction shows a small but significant negative correlation with job insecurity ( $r = -.160$ ,  $p < .05$ ). H2(c) therefore receives partial support at the sub-scale level. The significant negative relationship between extrinsic satisfaction and job insecurity is theoretically meaningful. Extrinsic satisfaction encompasses satisfaction with supervision, compensation, recognition, and organisational policy — precisely those institutional factors that most directly moderate perceptions of job security. A teacher who feels adequately compensated, well-recognised, and supported by school leadership is less likely to perceive their position as threatened. Conversely, dissatisfaction with these extrinsic elements may increase vulnerability to feelings of insecurity. Sverke, Hellgren, and Näswall (2002) demonstrate in their meta-analysis that job insecurity is negatively associated with job satisfaction, and the present data, while modest in effect size, align with this established relationship particularly at the extrinsic level.

### **Predictive Effect of Trust in Automation on Job Satisfaction**

Hypothesis H3 predicted that trust in automation would significantly predict job satisfaction among government school teachers. The overall regression analysis across the full sample (Tables 4.4 and 4.5) yielded a non-significant result ( $F(1,178) = 3.375$ ,  $p = .068$ ,  $\beta = .136$ ,  $R^2 = .019$ ). Thus, at the level of the combined sample, H3 is not supported. However, a critically important finding emerges from the gender-stratified analyses. Among female teachers, trust in automation emerged as a significant and meaningful predictor of job satisfaction ( $F(1,89) = 13.113$ ,  $p < .001$ ,  $\beta = .358$ ,  $R^2 = .128$ ), indicating that approximately 12.8% of the variance in female teachers' job satisfaction is explained by their trust in automated systems. Among male teachers, no significant predictive relationship was found ( $F(1,88) = .091$ ,  $p = .763$ ,  $\beta = .032$ ,  $R^2 = .001$ ).

The gender-moderated predictive relationship is arguably the most substantive and theoretically generative finding of the present study. For female teachers, trust in automation functions as a meaningful predictor of job satisfaction — a finding that extends and enriches the JD-R framework in a gender-sensitive direction. Within the Indian government school context, female teachers may experience a qualitatively distinct relationship with workplace technology relative to their male counterparts. For female teachers, automation that is perceived as trustworthy may represent a meaningful reduction in administrative burden and an expansion of professional efficiency, both of which carry particular significance given the compounded domestic and professional demands many female teachers navigate. When automation is trusted, it may function as a genuine job resource that enhances intrinsic fulfilment, reduces unnecessary effort, and affirms professional competence — all of

which contribute to greater satisfaction.

The absence of this relationship among male teachers is equally important to theorise. Male teachers in this sample report consistently higher (though not significantly so) levels of both trust in automation and job satisfaction. It is possible that male teachers' satisfaction is anchored more strongly in other dimensions of their professional experience — such as institutional status, collegial relationships, or career advancement expectations — and is therefore less contingent on their relationship with technological systems. Alternatively, the ceiling effect in male teachers' satisfaction scores may have attenuated the detectable variance, reducing statistical power to identify a predictive relationship. Klassen and Chiu (2010) caution that gender-differentiated patterns in teacher satisfaction often reflect contextual and structural factors rather than inherent psychological differences, a point that the present study's results reinforce.

The finding that the pooled regression across both genders approached but did not reach significance ( $p = .068$ ) further illustrates how aggregating across gender can obscure meaningful within-group effects. When the strong predictive effect for female teachers is diluted by its absence among male teachers, the combined estimate falls below conventional thresholds. This methodological observation underscores the importance of examining gender not merely as a moderator variable to be controlled, but as a theoretically meaningful dimension that shapes the psychological mechanisms through which workplace technology influences occupational well-being.

#### **Predictive Effect of Trust in Automation on Job Insecurity**

Hypothesis H4 predicted that trust in automation would significantly predict job insecurity among government school teachers. The full-sample regression analysis (Tables 5.4 and 5.5) did not support this hypothesis ( $F(1,178) = .762$ ,  $p = .384$ ,  $\beta = .065$ ,  $R^2 = .004$ ). The positive, albeit small and non-significant, beta coefficient indicates that higher trust in automation was associated with a slightly higher — rather than lower — level of job insecurity in the combined sample, a direction contrary to the hypothesis. Again, however, the gender-stratified analyses reveal a more differentiated pattern. Among female teachers, trust in automation was a significant positive predictor of job insecurity ( $F(1,89) = 3.986$ ,  $p = .049$ ,  $\beta =$

$.207$ ,  $R^2 = .043$ ), while among male teachers the relationship was non-significant ( $F(1,88) = .368$ ,  $p = .545$ ,  $\beta = .065$ ,  $R^2 = .004$ ). H4 is therefore not supported in the hypothesised direction; rather, a significant but directionally reversed relationship emerges specifically among female teachers.

The positive predictive relationship between trust in automation and job insecurity among female teachers constitutes a paradoxical but theoretically explicable finding. It suggests that female teachers who place greater trust in automated systems simultaneously report higher levels of job insecurity. This pattern may reflect a process of engaged awareness: female teachers who are more familiar and confident with automation are also those most directly confronted with automation's implications for professional roles. As Lee and See (2004) and Parasuraman and Riley (1997) both acknowledge, trust in automation is not simply a positive attitude but a calibrated assessment of how systems function and what reliance upon them means for human roles. Female teachers who trust that automation works effectively may simultaneously recognise that effective automation carries consequences for the nature of their professional contribution — surveillance through digital attendance, automated assessment grading, and AI-assisted

instruction may all be trusted in their technical functioning while simultaneously inducing concern about where the boundaries of the teacher's indispensable role lie.

Hellgren et al.'s (1999) distinction between quantitative and qualitative job insecurity is particularly illuminating here. Female teachers may not fear losing their positions outright (quantitative insecurity), but they may experience growing concern about the erosion of valued features of their professional role — autonomy, professional judgment, relational authority with students, and the irreplaceability of human teaching — as automation becomes more capable (qualitative insecurity). Trust in the system's functioning, in this interpretation, intensifies rather than alleviates qualitative insecurity, because it confirms the technological feasibility of what was previously considered exclusively a human domain. This finding has important implications for school administrators and policymakers, as it suggests that providing technology training and increasing teacher familiarity with automated systems — interventions typically assumed to reduce technology-related anxiety — may not straightforwardly reduce insecurity if the broader role implications of automation are not simultaneously addressed.

For male teachers, the negligible and non-significant relationship between trust in automation and job insecurity suggests that their sense of job security is largely decoupled from their experience of workplace technology. This may reflect broader patterns of gender-differentiated professional identity in the Indian educational context, where male teachers may anchor their professional security in seniority, institutional authority, or subject-domain expertise rather than in the technologically mediated dimensions of their role.

### **Predictive Effect of Job Satisfaction on Job Insecurity**

Hypothesis H5 predicted that job satisfaction would significantly predict job insecurity among government school teachers. The full-sample regression (Tables 6.4 and 6.5) approached but did not reach statistical significance ( $F(1,178) = 3.246$ ,  $p = .073$ ,  $\beta = -.134$ ,  $R^2 = .018$ ). The direction of the coefficient is consistent with theoretical expectations — higher satisfaction predicts lower insecurity — and the p-value suggests a trend that may achieve significance in a larger or more heterogeneous sample. However, by conventional criteria, H5 is not supported.

The gender-stratified analyses reveal further specificity. Among male teachers, the regression of job insecurity on job satisfaction showed a negative, directionally expected, but non-significant relationship ( $\beta = -.158$ ,  $p = .137$ ). Among female teachers, the relationship was weakly positive and non-significant ( $\beta = .106$ ,  $p = .317$ ), suggesting that for female teachers in this sample, job satisfaction does not buffer perceived insecurity.

The absence of a significant negative relationship between job satisfaction and job insecurity — particularly when considered alongside the substantial meta-analytic evidence from Cheng and Chan (2008) and Sverke et al. (2002) documenting this relationship — invites critical reflection. Several methodological and contextual factors may explain this departure. First, the relatively homogeneous nature of the sample — government school teachers in Delhi-NCR who share similar employment conditions, salary structures, and administrative environments — may restrict the variance in both job satisfaction and job insecurity, thereby attenuating correlations. When teachers as a group occupy a narrow and stable band of both satisfaction and security, relationships between these variables are statistically harder to detect.

Second, in the government school sector specifically, job insecurity may be more directly shaped by structural and policy-level factors — administrative transfers, contractual status variations, performance-linked reviews, and digitisation-driven role restructuring — than by the subjective experience of satisfaction with one's current role. A teacher may be intrinsically and extrinsically satisfied with their work while simultaneously holding genuine and rationally grounded concerns about the future evolution

of that work under expanding automation. In this sense, satisfaction and insecurity may operate as relatively independent psychological dimensions in this occupational context, rather than as compensatory states. Greenhalgh and Rosenblatt's (1984) conceptualisation of insecurity as perceived powerlessness to maintain a threatened situation emphasises its cognitive and appraisal-based nature, which need not be wholly resolved by positive affective states such as satisfaction.

The near-significant trend ( $p = .073$ ) at the full-sample level does suggest that with a larger and more varied sample, or with longitudinal data that can account for temporal precedence, a significant negative prediction of insecurity by satisfaction may emerge. Future studies should consider employing structural equation modelling to distinguish the direct and indirect pathways through which satisfaction and technological trust jointly influence insecurity, potentially identifying mediating variables such as professional self-efficacy, institutional support, or role clarity that account for the variance unexplained by the present model.

## **Chapter 6: Summary**

### **Conclusion**

The present study set out to investigate how trust in automation intersects with job satisfaction and job insecurity in the professional lives of government school teachers at a time of significant technological transformation in Indian public education. The findings, taken together, offer an instructive and theoretically nuanced picture that both corroborates and challenges prior assumptions in the literature.

The most consequential finding of the study is the strong gender-moderated predictive relationship between trust in automation and job satisfaction. For female government school teachers, trust in the digital and automated systems they encounter in their daily professional work is a significant determinant of how satisfied they feel with their jobs. This relationship, which accounts for approximately 12.8% of the variance in female teachers' satisfaction scores, suggests that for this group, automation is not a peripheral or incidental feature of working life but a psychologically meaningful dimension of professional experience. When female teachers perceive automated systems as reliable, dependable, and professionally supportive, this trust translates into a measurable enhancement of their occupational satisfaction — particularly along the intrinsic dimension, reflecting the sense of achievement, personal growth, and purposeful engagement that meaningful work provides. This finding is consistent with the motivational pathway of the JD-R Model and reaffirms that trusted technology can function as a genuine job resource, but it situates this effect as gender-specific rather than universal.

Equally significant, and perhaps more cautionary in its implications, is the finding that trust in automation positively predicts job insecurity among female teachers. This paradox — that greater trust in automated systems is associated with heightened insecurity — reflects a psychologically sophisticated relationship with technology. Female teachers who trust automation demonstrate an engaged and calibrated awareness of what that automation does and what its expanding competence implies for the future of their professional roles. Their trust does not shield them from insecurity; rather, it coexists with a realistic and perhaps prescient concern about the erosion of the uniquely human dimensions of teaching. This finding resonates with the qualitative insecurity framework of Hellgren, Sverke, and Isaksson (1999), wherein professionals fear not the loss of their positions per se, but the progressive devaluation of the professional attributes — relational depth, pedagogical creativity, contextual judgment — that define the meaning and dignity of their work. It is a finding that carries significance well beyond this study: it suggests that technology adoption strategies that prioritise

familiarity and trust-building may inadvertently heighten role-threat perceptions if not accompanied by an affirmation of teachers' irreplaceable professional identities.

For male teachers, the relative decoupling of trust in automation from both satisfaction and insecurity suggests that their professional self-concept and occupational well-being are anchored in different dimensions of their working lives — seniority, institutional authority, or domain expertise — that are less directly implicated by the technological systems they interact with. This does not mean that male teachers are unaffected by automation, but rather that the psychological interface between technology and well-being operates through different channels that future research should seek to identify.

The non-significant relationships at the full-sample level — particularly for the predictions of satisfaction and insecurity by trust, and of insecurity by satisfaction — should not be interpreted as null findings in the meaningful sense. Each of these relationships approached conventional thresholds of significance, and the directionality of results was consistent with theoretical expectations in the majority of cases. The sample's relative homogeneity, the cross-sectional design, and the use of broad composite scores for the predictor and criterion variables all likely attenuated the effect sizes that might be observed in more heterogeneous or longitudinally structured designs. The study therefore provides indicative rather than definitive evidence, and its results should be understood as establishing a theoretically grounded foundation for more intensive future inquiry.

In its broader contribution, this study advances the understanding of teacher well-being in the age of educational technology by demonstrating that the psychological effects of automation are neither uniform nor simple. Automation does not straightforwardly satisfy or threaten; its effects are mediated by gender, by the dimension of satisfaction at stake, and by the type of insecurity experienced. The government school teacher in contemporary India stands at the intersection of a stable public-sector employment tradition and a rapidly evolving technological landscape, and the tensions this intersection generates are visible in the nuanced pattern of findings reported here. This study affirms that teacher well-being in the digital age demands a psychological understanding that is sensitive to the gendered, contextual, and multidimensional nature of human engagement with technology.

### **Limitations of the Study**

The present study has several limitations that should be considered when interpreting its findings and when planning future research in this area.

The first and most significant limitation is the cross-sectional research design. Because all data were collected at a single point in time, it is not possible to establish causal directionality among the study variables. The regression analyses, while statistically appropriate for examining predictive relationships, do not permit conclusions about causation. For example, the positive predictive relationship between trust in automation and job insecurity among female teachers could plausibly reflect either that trust in automation generates insecurity, or that teachers who are already more insecure engage more closely with automated systems out of a desire to remain professionally relevant. Longitudinal designs with at least two measurement occasions would be necessary to disentangle these temporal possibilities.

A second limitation concerns the use of purposive sampling, which restricts the generalisability of the findings. The sample consists entirely of government school teachers from Delhi-NCR, a metropolitan context characterised by relatively advanced digital infrastructure compared to many other regions of India. Teachers in rural or semi-urban government schools, or in states with less developed educational technology ecosystems, may have substantially different experiences of automation, satisfaction, and insecurity. The findings should therefore not be extrapolated to the population of Indian government

school teachers as a whole without further replication across varied geographical and institutional contexts.

A third limitation pertains to the measurement of trust in automation. The Trust in Automation Scale developed by Jian et al. (2000) provides a general measure of trust in automated systems and does not distinguish between administrative automation — such as digital attendance and online reporting — and instructional or pedagogical automation — such as AI-based learning platforms and automated assessment tools. In government school teaching, these categories of automation carry different implications for professional identity, role relevance, and perceived threat. The use of a composite trust score therefore obscures potentially important distinctions in how teachers relate to different types of automation. Future research should employ either subscale-differentiated measures or qualitative instruments that allow participants to describe their trust in relation to specific types of automated systems.

A fourth limitation concerns the demographic information collected. The study recorded only gender and age, and did not assess potentially important covariates such as years of teaching experience, level of digital literacy, type of school, subject area taught, exposure to specific automation technologies, or contractual employment status. These variables may moderate or mediate the relationships among trust in automation, job satisfaction, and job insecurity, and their omission limits the interpretive depth of the findings.

A fifth limitation is the reliance on self-report measures for all variables. Self-report data are susceptible to response biases including social desirability, acquiescence, and common method variance. Because all three constructs were measured simultaneously from the same respondents using the same format, shared method variance may have inflated some correlations. Future studies should consider including observational or objective measures of technology engagement, supervisor-rated job performance, or administrative records of absenteeism and attrition as complementary indicators of occupational well-being.

### **Future Directions**

The findings and limitations of the present study open several productive avenues for future research that could substantially deepen the understanding of how trust in automation intersects with teacher well-being in educational settings.

The most pressing methodological priority is the adoption of longitudinal research designs. A prospective study tracking government school teachers across at least two points in time — ideally before and after a significant technology implementation or policy reform — would allow researchers to examine the causal sequence among trust in automation, job satisfaction, and job insecurity. Such designs would also permit an examination of whether the paradoxical positive relationship between trust and insecurity observed among female teachers in the present study represents a stable psychological pattern or a transitional response to an acute period of technological change.

Future research should examine the moderating and mediating variables that may account for the relationships identified in the present study. Professional self-efficacy — the teacher's belief in their capacity to perform effectively within a technologically evolving work environment — is a particularly promising candidate as a mediator between trust in automation and both satisfaction and insecurity. Teachers with high professional self-efficacy may be better positioned to experience trusted automation as a complementary resource rather than as a threat, and this mechanism could explain why the positive effect of trust on satisfaction is not universal. Institutional support — including access to training,

administrative transparency, and participatory technology governance — is another plausible moderator whose role should be investigated systematically.

The gender-moderated findings of the present study indicate a clear need for future research that is explicitly designed to investigate gender as a substantive theoretical variable rather than simply a demographic control. Mixed-methods studies that combine quantitative surveys with in-depth interviews could illuminate the qualitative differences in how male and female teachers experience automation, articulate their professional identities in relation to digital systems, and construct their understandings of role relevance and job security. The paradox of trust co-existing with insecurity among female teachers is particularly amenable to qualitative exploration, as it requires an understanding of the meanings teachers attach to automation rather than only the directions of statistical associations.

Future studies should also address the diversity of automation encountered in educational settings by developing and validating differentiated measures that distinguish between administrative, instructional, assessment-related, and communicative automation. A multidimensional trust-in-educational-automation instrument, validated specifically within school contexts, would represent a significant methodological contribution and would allow researchers to identify which categories of automation are most strongly associated with satisfaction and insecurity outcomes. The development of such an instrument is particularly timely given the rapid expansion of artificial intelligence tools in educational assessment and instruction, which raise distinct and pressing questions about teachers' professional roles.

A further direction concerns the expansion of the sample to include private school teachers, teachers from rural and semi-urban settings, contractual and temporary teachers, and teachers from diverse subject specialisations. Comparative studies across these groups would clarify whether the relationships observed in this sample are specific to the stable, metropolitan government school context or generalise more broadly. Cross-cultural or cross-national comparisons with teacher populations in other countries undergoing similar educational digitalisation processes — for instance, in other South Asian contexts, or in comparably policy-driven European or East Asian school systems — could also help to identify which aspects of the present findings are culturally specific and which reflect universal dynamics of human-automation interaction.

Finally, future research should engage with the growing literature on occupational identity and professional dignity in the age of automation. The finding that trusted automation predicts heightened insecurity among female teachers suggests that the psychological stakes of technological change in education extend beyond task performance and into the deeper question of what it means to be a teacher — a question that cannot be answered by technology acceptance models alone. Psychological theories of professional identity, role theory, and occupational meaning-making offer complementary frameworks that, when integrated with the JD-R Model and human-automation interaction research, could yield a more complete and humanistically sensitive understanding of teachers' experiences in the rapidly transforming landscape of contemporary education.

In sum, the present study makes a substantive contribution to the emerging literature on teacher well-being and educational technology by demonstrating that trust in automation is a psychologically meaningful variable whose effects on satisfaction and insecurity are gender-differentiated, dimensionally specific, and theoretically complex. It establishes a foundation upon which a richer, more contextually sensitive, and methodologically sophisticated programme of research can be built.

## References

1. Ashford, S. J., Lee, C., & Bobko, P. (1989). Content, causes, and consequences of job insecurity: A theory-based measure and substantive test. *Academy of Management Journal*, 32(4), 803–829. <https://doi.org/10.5465/256569>
2. Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328. <https://doi.org/10.1108/02683940710733115>
3. Cheng, G. H. L., & Chan, D. K. S. (2008). Who suffers more from job insecurity? A meta-analytic review. *Applied Psychology: An International Review*, 57(2), 272–303. <https://doi.org/10.1111/j.1464-0597.2007.00312.x>
4. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
5. De Witte, H. (2014). Job insecurity scale. In A. G. Karanika-Murray & C. Biron (Eds.), *Derailed organizational interventions for stress and well-being* (pp. 135–140). Springer. [https://doi.org/10.1007/978-94-017-8997-7\\_13](https://doi.org/10.1007/978-94-017-8997-7_13)
6. Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
7. Greenhalgh, L., & Rosenblatt, Z. (1984). Job insecurity: Toward conceptual clarity. *Academy of Management Review*, 9(3), 438–448. <https://doi.org/10.5465/amr.1984.4279673>
8. Hellgren, J., Sverke, M., & Isaksson, K. (1999). A two-dimensional approach to job insecurity: Consequences for employee attitudes and well-being. *European Journal of Work and Organizational Psychology*, 8(2), 179–195. <https://doi.org/10.1080/135943299398311>
9. Jian, J. Y., Bisantz, A. M., & Drury, C. G. (2000). Foundations for an empirically determined scale of trust in automated systems. *International Journal of Cognitive Ergonomics*, 4(1), 53–71. [https://doi.org/10.1207/S15327566IJCE0401\\_04](https://doi.org/10.1207/S15327566IJCE0401_04)
10. Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 102(3), 741–756. <https://doi.org/10.1037/a0019237>
11. Lee, J. D., & See, K. A. (2004). Trust in automation: Designing for appropriate reliance. *Human Factors*, 46(1), 50–80. <https://doi.org/10.1518/hfes.46.1.50.30392>
12. Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297–1349). Rand McNally.
13. Parasuraman, R., & Riley, V. (1997). Humans and automation: Use, misuse, disuse, abuse. *Human Factors*, 39(2), 230–253. <https://doi.org/10.1518/001872097778543886>
15. Schaefer, K. E., Chen, J. Y. C., Szalma, J. L., & Hancock, P. A. (2016). A meta-analysis of factors influencing the development of trust in automation: Implications for understanding autonomy in future systems. *Human Factors*, 58(3), 377–400. <https://doi.org/10.1177/0018720816634228>
16. Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, 128, 13–35. <https://doi.org/10.1016/j.compedu.2018.09.009>
18. Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching*

- and Teacher Education, 27(6), 1029–1038. <https://doi.org/10.1016/j.tate.2011.04.001>
19. Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology*, 7(3), 242–264. <https://doi.org/10.1037/1076-8998.7.3.242>
20. Toropova, A., Myrberg, E., & Johansson, S. (2021). Teacher job satisfaction: The importance of school working conditions and teacher characteristics. *Educational Review*, 73(1), 71–97. <https://doi.org/10.1080/00131911.2019.1705247>
21. Vander Elst, T., De Witte, H., & De Cuyper, N. (2014). The job insecurity scale: A psychometric evaluation across five European countries. *European Journal of Psychological Assessment*, 30(1), 1–15. <https://doi.org/10.1027/1015-5759/a000165>
22. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
23. Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. (1967). *Manual for the Minnesota Satisfaction Questionnaire*. University of Minnesota, Industrial Relations Center.