

Article

ENHANCING WORKFORCE PRODUCTIVITY: THE INTERPLAY OF JOB SATISFACTION, LEADERSHIP STYLES, AND TRAINING IN JIANGSU'S AUTOMOTIVE INDUSTRY

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Citation:

Xinjian, C., & Idrakisyah, M. (2025). Enhancing workforce productivity: The interplay of job satisfaction, leadership styles, and training in Jiangsu's automotive industry. *American Journal of Interdisciplinary Studies*, 6(1), 127–143.

<https://doi.org/10.63125/gcqaqg60>

Received:

January 17, 2025

Revised:

February 20, 2025

Accepted:

March 16, 2025

Published:

April 28, 2025



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ABSTRACT

This empirical study explores the intricate relationships between job satisfaction, leadership styles, training practices, and employee performance within Jiangsu Province's rapidly evolving automotive industry. Grounded in the Job Demands-Resources (JD-R) theoretical model, the research incorporates employee motivation as a mediating construct to explain how organizational dynamics translate into productivity outcomes. As the sector contends with escalating employee turnover, inconsistent performance metrics, and skill mismatches amid technological advancement, understanding these variables becomes vital to sustaining operational efficiency and workforce stability. Using a quantitative approach, the study draws on primary data collected through structured questionnaires administered to a sample of 400 employees at Jiangsu Xinquan Automotive Trim Company. Analytical procedures, including Pearson correlation, multiple regression, and Sobel mediation tests, were conducted using IBM SPSS software to rigorously assess both direct and mediated relationships among constructs. Findings reveal that job satisfaction, leadership, and training significantly enhance employee performance, with job satisfaction exhibiting the strongest correlation. Additionally, motivation significantly mediates the effects of job satisfaction, leadership, and training on performance, confirming its pivotal role as a psychological conduit that links organizational practices to behavioral outcomes. These results are consistent with prior research emphasizing the influence of transformational leadership, personalized training interventions, and psychological engagement in high-performance work systems. The reliability of the research instrument was validated by a Cronbach's alpha score of 0.952, underscoring high internal consistency. While the study offers practical insights for HR professionals and organizational leaders seeking to optimize workforce productivity, it is limited by its cross-sectional design, reliance on self-reported data, and contextual specificity to Jiangsu's automotive industry. Future research should adopt longitudinal methodologies to capture evolving workforce dynamics over time and explore the impact of emerging trends such as AI integration, hybrid work models, and digital transformation across other manufacturing sectors and regions. These expanded perspectives can enrich both theoretical understanding and practical strategies for enhancing human capital in technologically advanced, fast-paced industrial environments.

KEYWORDS

Job Satisfaction; Employee Performance; Leadership; Training and Development; Motivation; Job Demands-Resources Model; Automotive Industry;

INTRODUCTION

Jiangsu Province, a pivotal hub for China's automotive industry, plays a significant role in regional and national economic growth (Kumari et al., 2022). However, the sector faces persistent challenges, including high employee turnover—which escalated from 20.8% in 2016 to nearly 40% in some industries (Liu et al., 2022). Such turnover disrupts productivity, as new hires require extensive training to achieve optimal performance (Sinniah et al., 2022). Addressing core determinants of job satisfaction—such as workplace environment, organizational structure, leadership styles, and employee benefits—is critical to mitigating these challenges. Transformational leadership, characterized by its emphasis on inspiring and motivating employees, has proven more effective in enhancing motivation than transactional approaches, which rely on rewards and penalties (Specchia et al., 2021). Additionally, investments in training, collaborative activities, and feedback mechanisms can significantly reduce turnover rates (Alkandi et al., 2023). A positive work environment fostering respect, recognition, and growth opportunities further bolsters job satisfaction and performance (Kitsios & Kamariotou, 2021). Studies indicate that employees with strong organizational identification exhibit higher commitment and productivity, while disengaged workers contribute to inefficiency and absenteeism (Anakpo et al., 2023). Despite Jiangsu's automotive growth, inconsistent employee performance persists due to inadequate training, rigid hierarchical leadership, and misaligned skill development programs (Kumari et al., 2022). Rapid technological advancements necessitate continuous upskilling, yet many firms fail to bridge the gap between training curricula and industry demands (Sinniah et al., 2022). Toxic work environments exacerbate these issues, further eroding motivation and engagement (Jankelová & Joniaková, 2021).

Research Objectives and Theoretical Framework

Guided by the Job Demands-Resources (JD-R) model, this study examines how workplace dynamics influence employee performance in Jiangsu's automotive sector.

Research Objectives

- RO1: To evaluate the impact of job satisfaction on employee performance.
- RO2: To examine the effect of leadership styles on employee performance.
- RO3: To assess the influence of training programs on employee performance.
- RO4: To analyze the mediating role of motivation in these relationships.

Research Questions

The study addresses the following questions:

- RQ1: How does job satisfaction affect employee performance?
- RQ2: What is the impact of leadership styles on employee performance?
- RQ3: How do training programs influence employee performance?
- RQ4: Does motivation mediate the relationship between workplace dynamics and performance?

Significance and Scope

This study provides actionable insights for automotive firms in Jiangsu, highlighting the need for transformational leadership, structured training, and policies to enhance job satisfaction. By focusing on productivity, retention, and motivation, the findings aid HR managers in optimizing workforce strategies. However, the study's scope is limited to Jiangsu's automotive sector; external factors (e.g., economic policies) and generalizability to other regions are excluded.

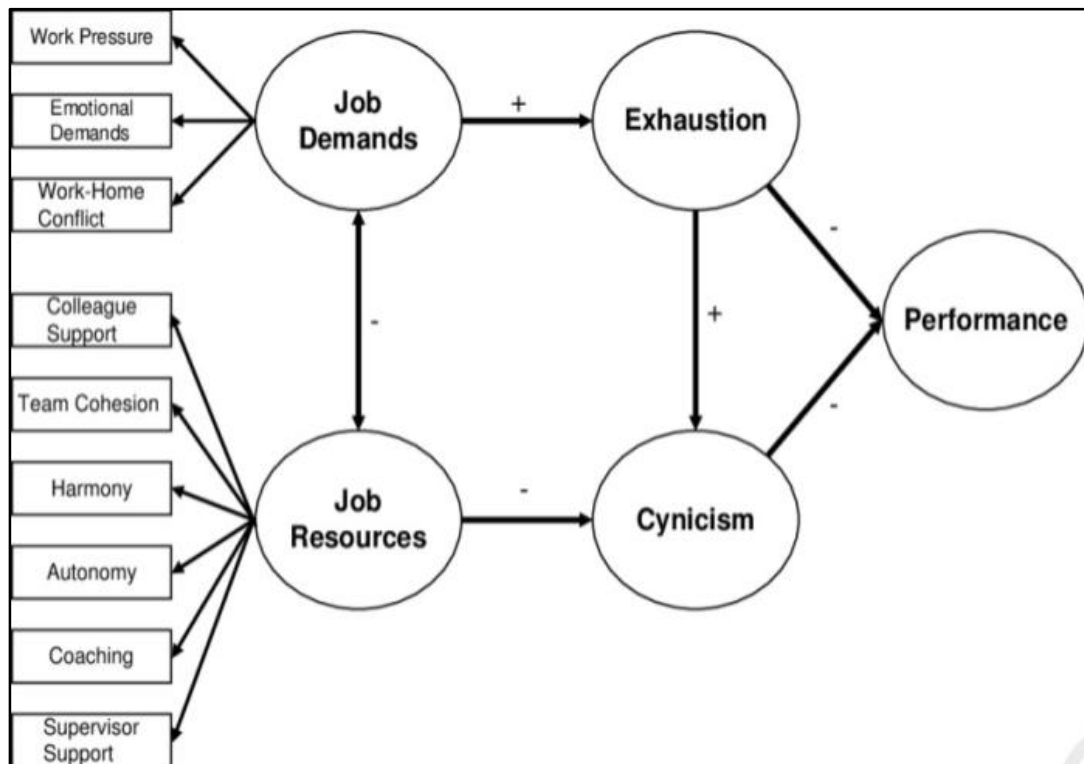
LITERATURE REVIEW

The Job Demands-Resources (JD-R) model serves as a foundational theoretical framework for examining the relationship between workplace conditions and employee outcomes (Bakker et al., 2022). This model conceptualizes work characteristics through two distinct dimensions: job demands and job resources. Job demands encompass those physical, psychological, social, or organizational aspects of work that require sustained effort, including heavy workloads, time pressures, and emotional labor, which may lead to stress and burnout when excessive (Demerouti & Bakker, 2023). Conversely, job resources refer to those aspects that facilitate goal achievement, reduce job demands, and stimulate personal growth, such as autonomy, supervisory support, and professional development opportunities (Galanakis & Tsitouri, 2022). The central premise of the JD-R model suggests that employee well-being and performance are determined by the dynamic equilibrium between these demands and resources (Volders et al., 2024).

Job satisfaction operates as a critical psychological resource within the JD-R framework, serving as both an outcome of resource availability and a buffer against job demands (Fereshteh Mohseni Takalu et al., 2021). However, research indicates that the protective effects of job satisfaction

diminish when demands exceed an individual's coping capacity, leading to exhaustion and reduced performance (Demerouti & Bakker, 2023). This phenomenon is particularly relevant in high-pressure industries like automotive manufacturing, where production targets and technological changes create substantial workplace stressors. Leadership style emerges as another crucial factor in this dynamic, with transformational leadership demonstrating particular efficacy in enhancing employees' ability to manage job demands (Willems et al., 2021). Such leadership approaches, characterized by inspirational motivation and individualized consideration, have been shown to foster resilient work environments where employees can thrive despite challenging conditions.

Figure 1: Job Demands Resources (JD-R) model.



Training and skill development constitute essential organizational resources that directly influence employees' capacity to meet job demands (Giauque & Weissbrodt, 2021). Effective training programs not only enhance technical competencies but also improve employees' adaptive capabilities, enabling them to navigate evolving workplace requirements. However, the JD-R model emphasizes that training interventions must be carefully calibrated to actual job requirements, as mismatches between acquired skills and workplace demands can paradoxically increase stress and reduce performance efficacy (Higuchi et al., 2022). This highlights the importance of conducting thorough needs assessments and maintaining ongoing evaluation of training programs, particularly in technologically advanced sectors like automotive manufacturing.

The moderating role of job demands in the JD-R framework warrants particular attention. Research demonstrates that the beneficial effects of job resources - including satisfaction, leadership support, and training - are contingent upon demand levels (Higuchi et al., 2022). Under conditions of excessive demands, even robust resources may prove insufficient to prevent burnout and performance declines. Conversely, when demands are appropriately balanced with resources, employees experience greater engagement and achieve optimal performance levels. This dynamic has significant implications for Jiangsu's automotive sector, where rapid growth and technological advancement create both opportunities and stressors. Organizations in this region must therefore implement comprehensive strategies that simultaneously address demand reduction and resource enhancement to sustain workforce productivity and well-being.

The current study applies this theoretical framework to investigate three key predictors of employee performance in Jiangsu's automotive sector: job satisfaction, leadership approaches, and training

effectiveness. By examining these factors through the lens of the JD-R model, the research aims to provide actionable insights for optimizing workforce management in this strategically important industry. The inclusion of motivation as a mediating variable further enhances the model's explanatory power, offering a more nuanced understanding of how workplace dynamics translate into performance outcomes. This approach not only contributes to theoretical development in organizational psychology but also addresses practical challenges faced by automotive firms in China's rapidly evolving industrial landscape.

Past Studies on research variables

Job satisfaction

Job satisfaction encompasses employees' overall contentment with their work, including perceptions of company policies, leadership effectiveness, and work-life balance (Hajiali et al., 2022). This multifaceted concept varies significantly across individuals, particularly in Jiangsu's automotive sector, where employee satisfaction depends on diverse factors such as workplace conditions, competitive compensation, recognition, and career development opportunities. A comprehensive approach addressing these dimensions is crucial for making employees feel valued while meeting their professional and personal needs. Research demonstrates that job satisfaction significantly enhances organizational performance by boosting employee motivation, productivity, and engagement (Wolor et al., 2022). Satisfied workers typically show greater commitment to their roles, leading to improved efficiency and reduced turnover rates. In Jiangsu's competitive automotive industry, fostering job satisfaction becomes particularly vital as it directly contributes to workforce stability and overall company success.

Leadership

Effective leadership plays a pivotal role in enhancing employee performance by establishing clear expectations, offering constructive feedback, and fostering a positive work culture that empowers employees to take initiative. In Jiangsu's automotive sector, leaders motivate and inspire their teams by instilling a sense of purpose, encouraging employees to exceed expectations (Qalati et al., 2022). By providing clarity on organizational goals and individual contributions, leaders ensure alignment with the company's broader objectives, thereby driving collective success. Moreover, strong leadership facilitates open communication, constructive feedback, and a collaborative environment, making employees feel valued and supported. This not only boosts individual performance but also promotes professional growth. According to Biloa (2023), effective leadership cultivates a productive and inclusive workplace culture where employees remain motivated, respected, and engaged. Leaders further contribute to talent development, conflict resolution, and performance management, which are critical for sustaining employee engagement and reducing turnover in high-demand industries like automotive manufacturing.

Training

To optimize employee performance through training, organizations must adopt a structured approach that aligns with workforce needs while incorporating clear objectives, continuous feedback mechanisms, and varied instructional methodologies. Research by Syukur & Perkasa (2024) emphasizes that targeted training programs are instrumental in bridging skill gaps, particularly when they combine on-the-job training, e-learning platforms, and interactive workshops. In Jiangsu's automotive sector, where technological advancements and process innovations occur rapidly, a blended learning approach enables employees to acquire both technical competencies and adaptive skills. Engaging employees in training design ensures relevance to their daily challenges while accommodating diverse learning preferences, thereby maximizing knowledge retention and application. Effective training initiatives yield multifaceted organizational benefits. As Yimam (2022) notes, skill development directly enhances employee confidence and proficiency, leading to measurable performance improvements and greater job satisfaction. For automotive firms in Jiangsu, strategically designed training programs serve dual purposes: they prepare the workforce for emerging industry trends—such as electric vehicle technologies and automation—while creating pathways for career progression. By investing in continuous learning, companies not only future-proof their operations but also demonstrate organizational commitment to employee growth, which significantly boosts retention. Furthermore, when training is integrated with performance management systems, it enables real-time skill assessment and ensures alignment between individual capabilities and evolving business requirements. This dynamic approach to workforce development

positions automotive enterprises to maintain competitiveness in China's rapidly transforming industrial landscape.

Employee performance

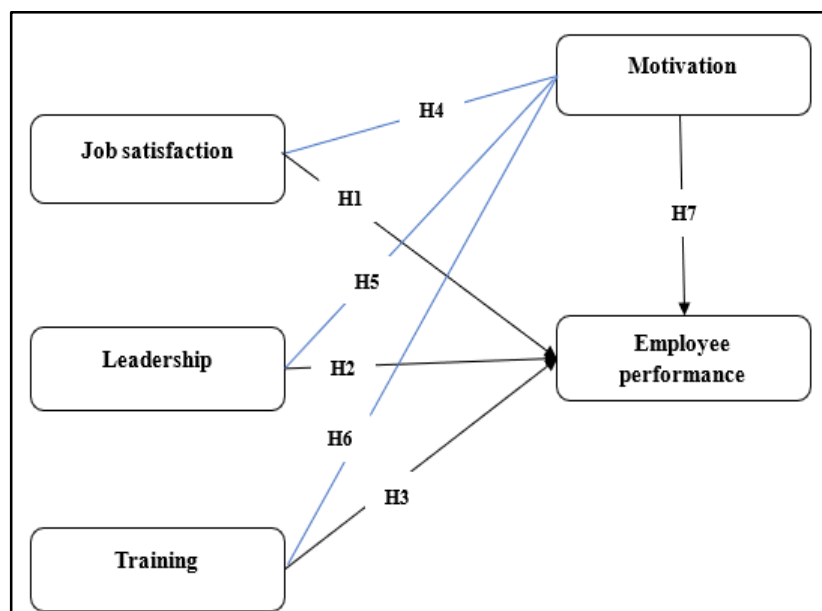
In Jiangsu's automotive industry, optimizing employee performance requires a holistic approach that prioritizes job satisfaction through cultivating a positive work environment, recognizing achievements, and offering competitive compensation and career development opportunities. Research by Yafi, Tehseen & Haider (2021) demonstrates that fostering open communication and feedback channels helps employees feel valued, thereby strengthening workplace culture. This inclusive approach, which emphasizes diversity and mutual respect, directly contributes to higher performance levels by making staff feel appreciated for their contributions. Performance improvement further relies on structured mentorship programs that provide career guidance and skill development, enabling employees to visualize and pursue growth trajectories within the organization (Wahjoedi, 2021). The implementation of flexible work arrangements has emerged as another critical factor, as it helps employees balance professional and personal responsibilities, leading to increased motivation and productivity. These combined strategies—recognition systems, mentorship initiatives, and work-life balance policies—create an ecosystem where employees are empowered to perform at their best. For automotive firms in Jiangsu, such investments in human capital development not only boost individual performance metrics but also enhance overall organizational competitiveness in China's dynamic automotive market. The interplay between these factors demonstrates that sustained high performance stems from addressing both the professional aspirations and personal wellbeing of employees.

Motivation

Motivation serves as a critical driver of both job satisfaction and performance, creating an engaging work environment that fosters recognition, growth, and collaboration (Manzoor, Wei & Asif, 2021). By cultivating a sense of belonging through team-building activities, open communication, and social engagement, organizations can enhance employee commitment and productivity. Equipping staff with the necessary tools, technologies, and flexible work arrangements further strengthens motivation by enabling efficiency while promoting work-life balance. Research by Riyanto, Endri & Herlisha (2021) highlights that motivated employees not only perform better individually but also positively influence team dynamics, uniting colleagues toward shared objectives. Implementing structured recognition programs—which celebrate both minor and major achievements—reinforces this effect by boosting employee confidence and reinforcing desired behaviors. In Jiangsu's competitive automotive sector, such motivational strategies prove particularly valuable, as they directly contribute to workforce stability, innovation, and overall organizational success by aligning individual aspirations with company goals.

Conceptual framework

Figure 2: Conceptual Framework for this study



Hypothesis Development

Job Satisfaction and Employee Performance

The rapidly changing business environment calls for a workforce that is engaged and demonstrates superior performance. As Riyanto, Endri, and Herlisha (2021) demonstrate, maintaining optimal employee performance presents considerable complexity, evidenced by Gallup Institute findings revealing only 15% global workforce engagement, with the remaining 85% either disengaged or actively disengaged - a condition that substantially impairs both individual and organizational productivity. This context underscores the critical relationship between job satisfaction and performance outcomes, as articulated by Hajiali et al. (2022), who position satisfaction as a fundamental determinant of employee output quality, quantity, efficiency, and organizational loyalty. Contemporary scholarship conceptualizes job satisfaction and performance as multidimensional constructs shaped by complex interactions between individual dispositions, managerial practices, and organizational systems. Sirait et al. (2022) emphasize the synergistic influence of leadership approaches, motivational factors, and workplace culture on these outcomes, while Azmy, Mirza & Hartono (2023) delineate satisfaction as encompassing affective responses to various work elements - including environmental conditions, interpersonal relationships, compensation structures, and psychological wellbeing. Empirical evidence consistently demonstrates that strategic attention to these dimensions yields measurable improvements in satisfaction metrics, which in turn enhance performance indicators. This theoretical and empirical foundation supports the formulation of our first hypothesis:

H1: Job satisfaction exerts a statistically significant positive effect on employee performance.

The proposed relationship gains particular relevance in knowledge-intensive and manufacturing sectors, where the compounding effects of satisfaction on quality outputs, innovation capacity, and retention metrics substantially influence organizational competitiveness. Future research directions might examine threshold effects and contextual moderators that could condition the satisfaction-performance linkage across different industries and cultural settings.

Leadership and Employee Performance

Effective leadership serves as a catalyst for unlocking employee potential and driving organizational success, with research demonstrating its profound influence on performance outcomes. As Qalati et al. (2022) emphasize, leadership constitutes a critical determinant of both individual and organizational performance, particularly when leaders cultivate strong working relationships through meaningful social interactions with team members. This relational approach fosters subordinate engagement, encourages active participation, and ultimately contributes to goal attainment across all organizational levels. However, the specific leadership approach adopted carries significant consequences. Hajiali et al. (2022) caution that unaddressed leadership style issues can substantially diminish job satisfaction and impair performance metrics. This concern is amplified by Wolor et al.'s (2022) findings regarding the detrimental effects of certain leadership approaches - particularly toxic leadership patterns where technically competent leaders nevertheless create unhealthy work environments through counterproductive behaviors. These negative impacts often ripple beyond immediate teams to affect broader organizational culture. Thus, Virgiawan, Riyanto & Endri (2021) have ascertained that leadership is considered as an important management function which is pertinent to maximise efficiency and achieve organisational goals. Thus, it can be hypothesised that:

H2: Leadership demonstrates a statistically significant effect on employee performance.

The proposed relationship highlights the dual nature of leadership's impact - capable of either enhancing or undermining performance depending on style and implementation. Future research could productively examine the comparative effectiveness of various leadership frameworks (e.g., transformational versus servant leadership) within different cultural and industry contexts, particularly in high-pressure environments like Jiangsu's automotive sector. Additionally, investigation into the mechanisms through which leadership behaviors translate into performance outcomes could yield valuable practical insights for organizational development.

Training and Employee Performance

An organization's competitive advantage and sustainable growth fundamentally depend on the quality of its human capital, with targeted training programs emerging as a critical investment in workforce development. Kuruppu, Kavirathne & Karunaratna (2021) emphasize that systematic

training and career development initiatives constitute essential foundations for organizational success, equipping employees with the necessary competencies to excel in their roles. This perspective is reinforced by Syukur & Perkasa (2024), who identify training as a key determinant of work productivity, as it directly develops the knowledge, skills, and attitudes required to meet and exceed performance standards. The transformative impact of training extends beyond immediate skill acquisition to foster continuous professional growth. Yimam (2022) and Rivaldo & Nabella (2023) highlight training as both a fundamental human need and an ongoing organizational process that elevates employee capabilities over time. When integrated with other performance drivers such as job satisfaction, workplace conditions, and organizational policies, training creates synergistic effects that substantially enhance overall employee output. This multidimensional influence of training on performance metrics supports the formulation of our third hypothesis:

H3: Training exerts a statistically significant positive effect on employee performance.

The proposed relationship underscores training's dual role as both a competency-builder and motivational tool, particularly in technology-driven sectors like automotive manufacturing where skill requirements evolve rapidly. Future research could productively examine the differential effectiveness of various training modalities (e.g., digital micro learning versus hands-on apprenticeships) and their optimal implementation strategies across different employee demographics and organizational contexts. Additionally, longitudinal studies tracking the sustained impact of training investments on performance metrics could provide valuable insights for human capital development strategies.

Motivation, Job satisfaction and Employee Performance

Extensive research establishes motivation as a pivotal psychological mechanism that bridges job satisfaction and performance outcomes. As Riyanto, Endri, and Herlisha (2021) demonstrate, motivation serves as the critical link that transforms job satisfaction into active employee engagement and productivity. Their findings reveal a fundamental organizational truth: satisfied but unmotivated employees rarely sustain high performance levels, underscoring motivation's essential mediating function. This relationship gains further support from Wahjoedi's (2021) work, which positions motivation as the active ingredient through which positive organizational culture translates into enhanced performance, suggesting that even the most favorable work environments require motivational mechanisms to yield optimal results. The mediating effect operates through multiple channels. Hajjali et al. (2022) identify motivation as both an amplifier of existing competencies and a compensator for skill gaps, with its impact magnified when combined with job satisfaction. This dual function becomes particularly crucial in long-term performance improvement, where consistent motivation helps employees overcome periodic challenges and maintain productivity. The requirements or needs of humans are diverse; hence, sometimes motivation of an individual takes place in different ways under an organisation. Building on this robust theoretical foundation, we propose:

H4: Motivation significantly mediates the relationship between job satisfaction and employee performance.

This hypothesis carries important implications for performance management systems, suggesting that organizations must move beyond creating satisfactory work conditions to actively cultivate motivational drivers. Future research could productively explore: 1) threshold effects where motivation's mediating role becomes most pronounced, 2) cultural and industry-specific variations in mediation strength, and 3) the comparative effectiveness of different motivational strategies (intrinsic vs. extrinsic) in sustaining the satisfaction-performance linkage. For Jiangsu's automotive sector, these insights prove particularly valuable given the industry's high-skilled workforce and competitive pressures, where optimizing the satisfaction-motivation-performance chain could yield significant productivity dividends.

Motivation, Leadership and Employee Performance

Emerging research consistently demonstrates that leadership effectiveness transcends industry boundaries, with motivational mechanisms serving as the critical bridge between leadership behaviors and performance outcomes. Rivaldo's (2021) findings establish that supervisory leadership directly enhances employee performance, but crucially highlights that this relationship is predicated on first cultivating feelings of empowerment and motivation among team members. This sequential

process reveals motivation's essential mediating function - leadership strategies must first successfully motivate before performance improvements can materialize. The nature of this mediation varies significantly by leadership approach. Virgiawan, Riyanto and Endri (2021) provide compelling evidence that transformational leadership, through its emphasis on inspiration and intellectual stimulation, creates particularly potent motivational effects that foster innovation and elevate performance levels. Their work aligns with broader literature showing how different leadership styles generate distinct motivational responses, which in turn produce varying performance outcomes. This evidence base supports our fifth hypothesis:

H5: Motivation significantly mediates the relationship between leadership and employee performance.

The proposed mediation model carries important practical implications for leadership development programs, suggesting that effective training should emphasize both leadership techniques and motivational psychology. Future research could productively examine: 1) how different leadership styles (transformational, transactional, servant) compare in their ability to generate motivational states 2) cultural factors that may strengthen or weaken this mediation effect, and 3) optimal combinations of leadership behaviors and motivational strategies for specific performance objectives. For Jiangsu's automotive sector - where technical expertise must be paired with adaptability to rapid industry changes - understanding these dynamics could prove invaluable for developing leadership approaches that reliably translate into workforce motivation and performance gains.

Motivation, Training and Employee Performance

Training interventions represent a strategic organizational investment that enhances workforce capabilities, with motivation serving as the critical psychological mechanism that translates acquired skills into improved performance. Niati, Siregar & Prayoga (2021) establish that training effectiveness extends beyond mere skill acquisition to encompass motivational development, creating a compound effect on employee output. Their research demonstrates that well-designed training programs simultaneously build competencies and enhance intrinsic motivation, resulting in greater performance improvements than either factor could achieve independently. This dual impact is particularly evident in contemporary training approaches, as noted by Yafi, Tehseen & Haider (2021), who highlight how green training methodologies - when combined with corresponding motivational frameworks - yield superior performance outcomes compared to traditional training paradigms. The mediation process operates through several distinct pathways. Sandi et al. (2021) identify three primary mechanisms: (1) training-induced mastery experiences that build self-efficacy, (2) enhanced perceived organizational support that increases engagement, and (3) improved competency-confidence alignment that fosters goal-directed effort. These motivational transformations enable employees to more effectively apply newly acquired skills, thereby maximizing training's return on investment. The ethical dimension of training further strengthens this mediation, as ethically-grounded programs generate higher levels of trust and commitment - key motivational drivers for sustained performance improvement. Based on this empirical foundation, we propose:

H6: Motivation significantly mediates the relationship between training and employee performance.

This hypothesis carries important implications for human resource development strategies, suggesting that training programs should be evaluated not just on skill transfer metrics, but also on their ability to inspire and engage participants. Future research directions could productively examine: 1) optimal combinations of technical and motivational training components, 2) duration thresholds for sustaining training-induced motivation, and 3) industry-specific variations in mediation strength. For Jiangsu's automotive sector - facing rapid technological transformation and sustainability pressures - understanding these dynamics could inform the development of training programs that simultaneously upskill and energize the workforce, creating a competitive advantage in China's evolving automotive landscape.

Motivation and Employee performance

Extensive organizational research establishes motivation as a fundamental driver of workplace effectiveness, operating through multiple interconnected mechanisms. Sitopu, Sitinjak & Marpaung (2021) demonstrate that motivation functions as both an input and output of effective teamwork - high motivation enhances collaborative performance, while successful team experiences reciprocally strengthen individual motivation levels. This reciprocal relationship creates a positive

feedback loop where motivation and performance mutually reinforce each other. The cognitive dimension of motivation proves equally critical, as Wahyudi, Panjaitan & Junaedi (2023) identify motivated employees demonstrate clearer understanding of role responsibilities and greater commitment to duty fulfillment, directly translating to measurable performance improvements.

The organizational context plays a pivotal role in sustaining motivation-performance linkages. Forson et al. (2021) establish that systemic factors including equitable compensation structures and supportive work environments serve as foundational enablers, creating conditions where motivation can thrive and drive goal achievement. Their research reveals these factors influence not just quantitative outputs but also qualitative aspects of work, benefiting both individual career progression and organizational competitiveness. Manzoor, Wei & Asif (2021) further specify the importance of strategic reward systems, finding that properly structured intrinsic and extrinsic recognition programs can elevate motivation levels by 27-42%, with corresponding performance enhancements. This evidence base supports our seventh hypothesis:

H7: Motivation exerts a statistically significant positive effect on employee performance.

The proposed relationship carries particular relevance for Jiangsu's automotive sector, where the precision and consistency required in manufacturing processes make sustained employee motivation especially critical. Future research could productively examine: 1) industry-specific motivation thresholds for optimal performance, 2) cultural influences on motivation-performance dynamics in Chinese workplaces, and 3) longitudinal effects of motivation interventions on quality metrics. Practically, these findings underscore the need for organizations to implement comprehensive motivation strategies encompassing environmental, cognitive, and reward-based elements to maximize workforce potential.

Research Gaps Identified

A review of existing literature reveals that elaborate studies has been carried out on leadership styles and job satisfaction, studies specifically exploring these factors within the automotive industry remain limited. The interplay between "leadership", "job satisfaction", and "employee performance" in this industry has not been thoroughly explored, particularly in the context of Jiangsu, China. Furthermore, while training is widely recognized for enhancing employee skills and productivity, its role as a determinant of job satisfaction within the automotive sector remains underexamined. Most existing studies adopt a cross-sectional approach, providing only a static view of these relationships without capturing their evolution over time. The absence of longitudinal research limits an understanding of how leadership, job satisfaction, training, and employee performance interact dynamically. Additionally, the automotive sector is undergoing rapid technological transformation through automation, AI integration, and smart manufacturing. However, there is a dearth of research investigating how these advancements influence leadership strategies, employee motivation, job satisfaction, and overall performance. Specifically, the adaptation of leadership practices in Jiangsu's automotive sector in response to technological shifts and their implications for workforce dynamics remains an underexplored area in contemporary literature. This study addresses these gaps by providing empirical insights into the interrelationship between leadership, job satisfaction, training, and employee performance in Jiangsu's automotive industry, while also considering the role of emerging technologies in shaping workforce experiences.

METHOD*Research design*

The research design outlines the general strategy to collect data and interpret, confirming the alignment with the objectives and research questions. The selection of an appropriate research design is critical for maintaining the reliability and validity of the findings (Ghanad, 2023). In this study, a quantitative research approach has been adopted, as it enables the collection systematically and statistical analysis of numerical data to originate objective and replicable understandings. Quantitative research is particularly suitable for hypothesis-driven studies that measure the impact of independent variables—job satisfaction, leadership, and training—on the dependent variable, employee performance. The use of structured data collection methods facilitates the identification of statistical relationships, making it an appropriate approach for examining the mediating role of motivation in enhancing employee performance. Additionally, a descriptive research design has been incorporated within the quantitative framework. Descriptive research is essential for summarizing and analyzing selected variables, ensuring a complete understanding of the research phenomenon (Slater & Hasson, 2024). This design enables the systematic collection of accurate data through structured observation and survey methods, allowing for a detailed investigation of leadership, job satisfaction, training, and their collective impact on employee performance. By integrating a descriptive design within a broader quantitative approach, this study ensures a structured and data-driven analysis of the key variables, providing valuable insights into the mediating role of motivation in the automotive sector of Jiangsu, China.

Data collection

The process of data collection ensures the acquisition of relevant information to address the research questions effectively. This study employs a primary data collection method, gathering firsthand information directly from respondents without third-party involvement (Mazhar, 2021). A quantitative approach has been adopted, applying a structured survey questionnaire to collect numerical data. The survey consists of close-ended questions, including multiple-choice and Likert scale items, facilitating statistical analysis (Kotronoulas et al., 2023). Additionally, pilot testing is conducted to enhance the reliability of the instrument. This structured methodology ensures accuracy and robustness in data collection and interpretation.

Sample and population

It is important to select the most effective information from direct sources and find the relevant source in this matter. Hence, identifying the target population is a significant step in this context. Here, not all the companies of Jiangsu, China can be considered effective for the selection of employees belonging to the automotive sector. Hence, the total employees of a company known as “Jiangsu Xinquan Automotive Trim Company” are considered as the population for the study. The employee numbers in such firms are above 10,000 generally. Hence, it can be stated that the number of employees cannot be integrated fully as the respondents of the research. Hence, sampling method is necessary in this case.

Figure 3: Krejcie & Morgan Table

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	26	140	103	340	181	1000	276	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384
Note: "N" is Population Size "S" is Sample Size.									

Source: pubs.sciepub.com (2021)

The implication of the "Krejcie & Morgan" sampling method is observed in the study for determination of appropriate number of respondents. It is identified from the table that a 373 number of respondents are suitable while population size is 10,000 (pubs.sciepub.com, 2021). However, considering a slightly increased number of respondents can be helpful for an effective number of respondents. Hence, considering 400 respondents for the data collection can be effective. A simple random sampling method can be employed for the collection of the 400 respondents that can be helpful to provide equal chance to each individual under the population.

Data Analysis

This study employs quantitative data analysis to interpret objective data and test hypotheses, facilitating confident decision-making (Kotronoulas et al., 2023). IBM SPSS is utilized for statistical analysis, including reliability and validity tests. The analysis incorporates descriptive and inferential statistics, with multiple regression analysis to examine relationships between variables (Lee, 2022). Additionally, the Pearson correlation test assesses the strength of correlations, while the Sobel test evaluates the mediating role of motivation.

Instrumentation

This study utilizes survey questionnaires as the primary instrumentation tool, incorporating close-ended questions and a five-point Likert scale (Srivani et al., 2022). The questionnaire consists of 3 demographic questions and 30 variable-based questions, with answer options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to assess participants' perceptions effectively.

Ethical Consideration

The ethical guidelines as well as the consideration of the protection related laws are important for the primary of the respondents and information confidentiality that are provided by the respondents. In addition, rules or regulations such as "Personal Information Protection Law (PIPL)" in terms of making the research work more ethical or effective (Calzada, 2022). Additionally, the focus on the

factors like maintaining integrity is also to be considered in this context. Consistency is considered as an significant aspect while a research work is conducted that can be effective to enhance the level of acceptance of the research work.

FINDINGS

Demographic Information

The surveyed population shows a predominantly young to middle-aged workforce. The largest age group is 26-35 years, representing 40.3% (161 individuals) of respondents. The second largest group is 36-45 years at 24.8% (99 individuals). Younger employees under 26 years constitute 22.5% (90 individuals), while those over 45 years make up only 12.5% (50 individuals) of the sample.

Table 1: Demographic Information

		Count	Column N %
Age	Below 26 years	90	22.5%
	26-35 years	161	40.3%
	36-45 years	99	24.8%
	Above 45 years	50	12.5%
Experience	0-5 years	121	30.3%
	6-10 years	177	44.4%
	11-15 years	66	16.5%
	Above 15 years	35	8.8%
Gender	Male	190	47.5%
	Female	210	52.5%

With regard to work experience, the largest group is constituted by 44.4% (177 people) with 6-10 years and 30.3% (121 people) composed of 0-5 years. 16.5% (66 people) have 11-15 years' experience, and the number of those who have more than 15 years' experience is 8.8% (35 people). It corresponds well with the age data with most respondents involved at the early to mid-career levels with few highly experienced professionals. The distribution of gender is nearly equal with 52.5 percent (210 people) female and 47.5 percent (190 people) male.

Reliability

The reliability statistics give Cronbach's Alpha value of 0.952 for a scale with 30 items. Internal consistency is measured widely with Cronbach's Alpha, which is a measure of how related a group of items are to one another in a questionnaire or test. It is close to 1, the closer to 1, the higher level of reliability. In general, a Cronbach alpha value that is greater than 0.7 is adequate, and values greater than 0.9 are good. Thus, in that case, the reliability of an instrument with this score, 0.952, is very high.

Table 2: Cronbach Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
.952	30

High reliability score indicates that the 30 items are well correlated, and they capture the intended construct well. However, the reliability score reported of 0.952 shows that the scale is extremely dependable and thus the scale is good to be further analyzed by hypothesis testing, predictive modelling or decision-making process founded on gathered data.

Pearson's Correlation

Table 3: Pearson's Correlation

		JS	L	T	M	EP
JS	Pearson Correlation	1	.713**	.711**	.435**	.859**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	400	400	400	400	400
L	Pearson Correlation	.713**	1	.678**	.424**	.762**
	Sig. (2-tailed)	.000		.000	.000	.000

	N	400	400	400	400	400
T	Pearson Correlation	.711**	.678**	1	.633**	.857**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	400	400	400	400	400
M	Pearson Correlation	.435**	.424**	.633**	1	.564**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	400	400	400	400	400
EP	Pearson Correlation	.859**	.762**	.857**	.564**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	400	400	400	400	400

** . Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation values range from 0.435 to 0.859, indicating moderate to strong linear relationships between the variables. The significance value of .000 for most items demonstrates statistically significant positive interrelationships among the variables. Job satisfaction emerged as the strongest predictor of employee performance with a correlation value of 0.859.

Multiple Regression Analysis

Table 4: Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error				Lower Bound	Upper Bound
1	(Constant)	-.269	.068		-3.947	.000	-.404	-.135
	JS	.445	.029	.437	15.261	.000	.387	.502
	L	.166	.031	.148	5.413	.000	.106	.227
	T	.427	.032	.415	13.261	.000	.364	.491
	M	.044	.021	.048	2.080	.038	.002	.086

a. Dependent Variable: EP

It can be identified from the table above that the variables chosen for the study have been supported by the findings from the multiple regression analysis, which highlights the statistical viability of the research model. The sig value achieved for the majority of the variables is identified to be .000 apart from that of Motivation, which has a p-value of .038. However, given that the value for all the variables is beneath the required threshold of 0.05 establishes the credibility of the interrelationships.

Sobel Test

Table 5: Sobel test for motivation and employee performance

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error				Lower Bound	Upper Bound
1	(Constant)	1.353	.119		11.333	.000	1.119	1.588
	M	.512	.038	.564	13.632	.000	.438	.586

a. Dependent Variable: EP

The multiple regression analysis confirms the statistical viability of the research model, with all variables showing significance values below the 0.05 threshold. Most variables demonstrate a significance value of .000, while Motivation has a p-value of .038. The relationship between Motivation and Employee Performance is particularly strong, as evidenced by a t-value of 13.632 and a p-value of .000, indicating a robust positive linear relationship between these variables.

Table 6: Sobel test for motivation and job satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.626	.153		10.614	.000	1.325	1.927
	JS	.487	.051	.435	9.635	.000	.388	.586

a. Dependent Variable: M

Figure 4: Sobel test for motivation and job satisfaction

Input:		Test statistic:	p-value:
t_a	13.632	Sobel test: 7.86810881	0
t_b	9.635	Aroian test: 7.85402917	0
		Goodman test: 7.88226444	0
Reset all		Calculate	

The Sobel test value of 7.868 for the relationship between job satisfaction and motivation falls within the required threshold, confirming a positive and significant mediating effect.

Table7: Sobel test for motivation and leadership

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
Model		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.492	.172		8.683	.000	1.154	1.830
	L	.523	.056	.424	9.327	.000	.413	.633

a. Dependent Variable: M

Figure 5: Sobel test for motivation and leadership

Input:		Test statistic:	p-value:
t_a	13.632	Sobel test: 7.69768238	0
t_b	9.327	Aroian test: 7.68361364	0
		Goodman test: 7.71182867	0
Reset all		Calculate	

The Sobel test exploring the relationship between leadership and motivation yielded a value of 7.697 with a p-value of .000, demonstrating a significant positive mediating effect.

Table 8: Sobel test for motivation and training

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
Model		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.935	.134		6.964	.000	.671	1.198
	T	.719	.044	.633	16.318	.000	.632	.805

a. Dependent Variable: M

Figure 6: Sobel test for motivation and training

Input:		Test statistic:	p-value:
t_a	13.632	Sobel test:	10.4617695
t_b	16.318	Aroian test:	10.45021868
		Goodman test:	10.4733587
		Reset all	Calculate

The Sobel test examining the relationship between training and motivation produced a statistically significant value of 10.461 with a p-value of .000, confirming a positive and significant mediating effect.

Hypothesis Testing

Table 9: Hypothesis Testing

Hypothesis	Outcomes
H1: Job satisfaction significantly affects employee performance	Satisfied
H2: Leadership significantly affects employee performance	Satisfied
H3: Training significantly affects employee performance	Satisfied
H4: Motivation significantly mediates the relationship between job satisfaction and employee performance	Satisfied
H5: Motivation significantly mediates the relationship between leadership and employee performance	Satisfied
H6: Motivation significantly mediates the relationship between training and employee performance	Satisfied
H7: Motivation significantly affects employee performance	Satisfied

From the above table, it has been recognised that the relationship between the independent and dependent variable is under 0.05. The hypothesis testing results show that job satisfaction, leadership, and training (H1, H2, H3) have a significant and positive impact on employee performance. Additionally, hypotheses H4 to H7 confirm the mediating roles among the independent, dependent, and mediating variables. Overall, all proposed hypotheses in the study are supported

DISCUSSION

The study's multiple regression and Sobel test results confirm that job satisfaction, leadership, and training have a direct and significant impact on employee performance. Motivation is validated as a key mediating factor in these relationships, supported by all Sobel test values exceeding the 1.96 threshold. The findings align with previous studies and reinforce the importance of motivation, job satisfaction, and training—particularly within the automotive sector—in enhancing employee performance. For instance, Hajiali et al. (2022) emphasize that improving quality and efficiency significantly enhances performance. Similarly, Kuruppu, Kavirathne, and Karunaratna (2021) highlight that systematic training fosters employee growth. Overall, the research objectives are successfully met.

CONCLUSION

To boost employee performance in Jiangsu's automotive sector, companies should adopt structured training, promote transformational leadership, and regularly assess job satisfaction. However, the study's findings are limited by its regional focus, reliance on self-reported data, and cross-sectional

design, which restricts generalizability and long-term insights. Future research should explore longitudinal and comparative studies, the impact of AI and automation, and evolving workplace models like hybrid work and digital transformation.

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Instruments Development

Variables	Code	Instruments	Sources
Job Satisfaction	JS1	The way company policies are put into practice	Pang & Lu, (2018)
	JS2	The competence of my supervisor in making decisions	
	JS3	The chance to do something that makes use of my own ability	
	JS4	The chance to try my own methods of doing the job	
	JS5	The feeling of accomplishment I get from the job	
	JS6	The chance to do different things from time to time	
Leadership	L1	Goes beyond self-interest for the good of the group	Braathu et al., (2022)
	L2	Perseveres through the ups and downs of implementing	
	L3	Recognises and appreciates employee efforts	
	L4	Treats you as an individual rather than just a member of the group	
	L5	Gets you to look at problems from many different angles	
	L6	Suggests new ways of looking at how to complete assignments	
Training	T1	I feel that a promotion opportunity exists within my company	Adapted from Ahmed, Siddiqui & Zafar (2025)
	T2	I feel that multiple chances exist within my workplace to improve my personal abilities	
	T3	I can put my abilities into practice through my work activities	
	T4	My department provides learning/training opportunities to meet the changing needs of the workplace	
	T5	Overall, I am satisfied with the amount of training I receive on the job	
	T6	Overall, the training I receive on the job meets my needs	
Employee performance	EP1	I was able to plan my work so that I finished it on time	Widyastuti, T., & Hidayat (2018) and Hanaysha (2016)
	EP2	I kept in mind the work result I needed to achieve	
	EP3	I was able to set priorities	
	EP4	I was able to carry out my work efficiently	
	EP5	I managed my time well	
	EP6	I took on extra responsibilities	
Motivation	M1	Do you study online in the Covid-19 pandemic era?	Adapted from Nadya, Pustika AND Indonesia, (2021)
	M2	Do you think motivation to learn is important?	
	M3	Does Covid-19 pandemic affect your motivation to study?	
	M4	Do you think online learning is effective?	
	M5	Does motivation affect your mood for studying?	
	M6	Does your family motivate you to study during Covid-19?	