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Qingmin Kong , [PENG LIN](#)^{*} , Tingting Gu

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Article

The Impact of New Energy Enterprises' Service-Oriented Transformation on Employee Performance Evaluation Satisfaction under the Background of China's Electricity Market Reform: Based on the Grounded Theory Method

Qingmin Kong ¹, Peng Lin ^{2,*} and TingTing Gu ³

¹ School of Business Administration, School of China Frontier Economic Research Institute, GuangXi University, GuangXi, China

² School of Business Administration, GuangXi University, GuangXi, China

³ School of Business Administration, GuangXi University, GuangXi, China

* Correspondence: 2329391037@st.gxu.edu.cn

Abstract: This study explores the impact mechanism of the service-oriented transformation of new energy enterprises on the satisfaction of employee performance evaluation systems under the background of China's electricity market reform. Using CGN New Energy's Guangxi branch as a case study, and adopting the grounded theory method, this research systematically analyzes the influencing factors and action paths of the service-oriented transformation on the satisfaction of employee performance evaluation systems through in-depth interviews and questionnaires. The study finds that the service-oriented transformation significantly enhances employees' sense of professional achievement and skill levels but also increases work pressure and psychological burden. Optimizing the performance evaluation system and improving its fairness and transparency are key to enhancing employee satisfaction. The research results provide a scientific basis for the management practices of new energy enterprises and hold significant reference value for relevant policy-making.

Keywords: new energy enterprises; service-oriented transformation; employee performance evaluation; grounded theory; china's electricity market reform

1. Introduction

In the context of the global transition towards a green economy, new energy enterprises play a pivotal role in driving sustainable development and are instrumental in achieving carbon peak and carbon neutrality targets. The swift shift towards green development is crucial for attaining these goals. This strategic direction not only guides the growth of Chinese energy companies but also injects new vitality and poses fresh challenges to the global energy sector (Deng et al., 2022) [1].

As public awareness of environmental protection continues to rise and environmental regulations become increasingly stringent, the importance of green issues in the manufacturing sector has become more prominent (Zhang et al., 2022) [2]. Simultaneously, the ongoing deepening of China's electricity market reform, particularly with the introduction of market-based trading mechanisms and the construction of a unified national electricity market, has intensified market competition (Guo et al., 2022)[3]. In this context, sales personnel within new energy companies face the challenge of transitioning from production roles to marketing and service roles, which involves not only a shift in work concepts but also an update of business skills (Sadjadi et al., 2023) [4].

Servitization transformation represents a significant change in the role of enterprises, evolving from traditional energy suppliers to providers of comprehensive energy solutions (Baines et al., 2020)

[5]. This transformation process requires the use of digital technologies to shift from a product-centric to a service-oriented model (Kwiatkowski et al., 2017) [6]. However, the servitization transformation poses new challenges to the performance evaluation system within enterprises. Employee performance evaluation system satisfaction is a critical indicator of corporate management level and employee satisfaction (Jang et al., 2023) [7]. An efficient and fair performance evaluation system can not only motivate employees and enhance work enthusiasm and organizational loyalty but also promote the overall performance of the enterprise (Dangol, 2021) [8]. Therefore, in the process of servitization transformation, how to construct and optimize the performance evaluation system to improve employee satisfaction has become an essential issue for new energy power companies.

This study takes CGN New Energy's Guangxi branch as the research subject to explore the impact mechanism of servitization transformation on employee performance evaluation system satisfaction within the context of China's electricity market reform. Using grounded theory, combined with in-depth interviews and questionnaire survey data, this study systematically analyzes the factors and pathways through which servitization transformation affects employee performance evaluation system satisfaction. The research aims to provide scientific evidence and practical recommendations for the management practices of new energy power companies, as well as to offer new perspectives and references for related theoretical research.

2. Literature Review

2.1. Electricity Market Liberalization

Electricity market liberalization refers to the introduction of market mechanisms to transform the electricity industry from a monopolistic structure to a competitive one, thereby improving resource allocation efficiency and service quality (Joskow, 2008) [9]. Amid the growing global energy demand and rapid development of renewable energy, electricity market liberalization has become an indispensable part of the energy policies of many countries. The primary drivers of this reform include enhancing industry efficiency, reducing operational costs, and meeting the increasingly diverse energy demands (Borenstein et al., 2015) [10]. The implementation paths and models of electricity market liberalization vary by country or region, encompassing various aspects such as the unbundling of vertically integrated companies, the establishment of electricity trading markets, and the introduction of third-party competition (Green, 2006) [11].

As electricity market liberalization progresses, power generation companies must proactively adapt to new trends by enhancing their value creation capabilities through management innovation and the upgrade of digital and intelligent technologies (Parida et al., 2019)[12]. Moreover, the successful implementation of electricity market liberalization depends on the cultivation and reserve of multi-disciplinary talents. These talents need to possess expertise in electricity, finance, and mathematics, and improve the theoretical level and practical experience of electricity marketing personnel (Yang et al., 2024) [13]. Under the goal of carbon peaking, it is crucial to build a new electricity market system and pricing mechanism that align with China's national conditions, enhance the stability and flexible regulation capabilities of the electricity system, and promote the formation of a new electricity system dominated by renewable energy (Cheng et al., 2023) [14].

2.2. Servitization

Servitization refers to the integration of services into a company's products as a strategy to enhance market competitiveness, increase revenue, and improve market influence (Vandermerwe et al., 1988) [15]. As global manufacturing market competition intensifies, the transition from a "product economy" to a "service economy" has become a critical strategy for enhancing corporate competitiveness (Baines et al., 2017) [16]. In the study of manufacturing servitization models, scholars have proposed three main models: product extension services, product function services, and integrated solutions (Pei-Ju et al., 2014) [17]. The servitization process involves manufacturers transitioning from product-centric processes, organizational capabilities, and culture to a greater emphasis on service processes (Brax et al., 2017) [18]. Research indicates that the servitization strategy

is more suitable for larger enterprises, and its impact on operational performance is more significant once the level of servitization exceeds a certain threshold (Li et al., 2015) [19].

However, the progress of embedded servitization in China's manufacturing industry remains relatively slow, with a low proportion of embedded service businesses and a limited variety of services offered. Therefore, manufacturing enterprises should focus on integrating service elements into their products, shifting from a product-dominated to a service-dominated logic. This entails innovating not only on the product side but also on the service end, promoting the combination of tangible products and intangible services (Lindhult et al., 2018) [20].

The rise of servitization in the energy sector is manifested through the implementation of customer-centric smart services and innovative business models that decouple the energy value chain. This transformation not only enhances corporate competitiveness but also attracts significant investment and financing (Singh et al., 2022) [21]. During the transition from product-oriented to service-oriented enterprises, employee response and engagement are critical factors. Studies have shown that employee acceptance and participation in the servitization strategy directly affect the success of the transition. Management needs to actively respond to employee feedback, implement effective communication and training measures, and ensure that employees feel supported and recognized during the transition, thereby enhancing their satisfaction and work motivation (Xie et al., 2023) [22].

2.3. Performance Evaluation System Satisfaction

Performance evaluation system satisfaction refers to employees' satisfaction with the company's performance evaluation system, encompassing various aspects such as evaluation criteria, process transparency, feedback mechanisms, and incentive measures (Locke et al., 1969) [23]. An efficient and fair performance evaluation system can motivate employees, enhance their work enthusiasm and organizational loyalty, and significantly promote overall corporate performance (Judge et al., 2001) [24]. Research indicates that university teachers are generally dissatisfied with the current performance evaluation system, especially when it fails to clearly link performance with salary, promotion, and rewards. This dissatisfaction can negatively impact teachers' overall job performance and career satisfaction (Dasanayaka et al., 2021) [25]. There is a significant positive correlation between a fair performance evaluation system and employees' job satisfaction and job performance. Studies have found that in Pakistan's construction industry, job satisfaction is a key factor in improving employee performance. By improving the work environment and providing fair performance evaluations, employee satisfaction and performance can be significantly enhanced (Memon et al., 2023) [26].

An effective performance management system should include planning and goal setting, continuous communication, performance appraisal, rewards and recognition, and feedback and suggestions. Planning and goal setting typically use the SMART framework to ensure that each goal is clear and measurable. Continuous communication and feedback helps employees understand company goals and expectations, thereby increasing work engagement and commitment (Vuong et al., 2022) [27]. In terms of fully evaluating talent and technical contributions, photovoltaic new energy enterprises should develop scientific and standardized talent evaluation standards and processes. Based on the actual situation of the enterprise, it is necessary to formulate practical talent evaluation indicators and weight proportion, and conduct comprehensive, objective, and scientific evaluations of talents' education, professional skills, work attitudes, and performance. Through career planning, training, and incentives, the potential and creativity of talents can be fully realized, enhancing their work enthusiasm and creativity (Arcelay et al., 2021) [28].

2.4. Literature Review Summary

Existing research has revealed the basic concepts and interrelationships of electricity market liberalization, servitization transformation, and performance evaluation system satisfaction. However, there is still a lack of research on the specific impact mechanisms of servitization transformation on employee performance evaluation system satisfaction within the context of

China's electricity market reform, particularly in the new energy sector. This study employs the grounded theory method, combining in-depth interviews and questionnaire survey, to explore this complex relationship. The aim is to provide robust support for theoretical research and practical applications in related fields.

3. Research and Data Methodology

3.1. Research Subjects

This study selects CGN New Energy's Guangxi branch as the research subject for the following reasons:

Representativeness: CGN New Energy Guangxi Branch is an important subsidiary of China General Nuclear Power Group, dedicated to developing and utilizing the abundant renewable energy resources in Guangxi, including wind, solar, and biomass energy. Under the backdrop of China's electricity market reform, the company is actively promoting servitization transformation, providing rich empirical data for the study.

Geographical Advantage: Guangxi is located at the core of the China-ASEAN Free Trade Area, serving as a bridgehead for economic cooperation between China and ASEAN countries. Studying the impact of CGN New Energy Guangxi Branch's servitization transformation on employee performance evaluation system satisfaction not only helps understand management mechanisms within the Chinese context but also has representational and promotional value.

Industry Status: Guangxi plays a crucial role in China's electricity market. As a significant energy base in the country, Guangxi holds an important position in electricity output and allocation. The development of new energy electricity in Guangxi is vital for optimizing the national energy structure and promoting low-carbon transformation.

3.2. Ethical Approval

This study has been reviewed and approved by the Academic Committee of the School of Business Administration, Guangxi University, ensuring compliance with all ethical standards.

This study recruited employees from CGN New Energy Guangxi Branch as subjects for questionnaires and interviews. The recruitment period started on July 10, 2024, and ended on July 20, 2024. All participants voluntarily participated in the study and could withdraw at any time without providing any explanation; participation or withdrawal would not adversely affect their position, salary, or other benefits at the company. Participants were informed of the purpose, process, and potential impact of the study and had the right to refuse to answer any questions they did not wish to answer.

The survey and interview procedures of this study were acknowledged and approved by the Academic Committee of the School of Business Administration at Guangxi University. All interviews were conducted under the witness of teachers appointed by the Student Committee of the School of Business Administration at Guangxi University, and oral consent was obtained from all participants. For the online questionnaire survey, a statement was provided in the introduction section indicating that those unwilling to participate could opt out, thus eliminating the need for written consent.

During or after data collection, the authors were unable to obtain any information that could identify individual participants. All data were de-identified and collected anonymously to ensure the full protection of participants' privacy.

3.3. Research Methods

This study employs the grounded theory research method to explore the impact mechanism of servitization transformation on employee performance evaluation system satisfaction in new energy power enterprises within the context of China's electricity market reform. Developed by Anselm Strauss and Barney Glaser in the 1960s, grounded theory is a qualitative research method that develops and inducts theory about a phenomenon through systematic analytical procedures (Glaser,2017) [29]. The reasons for choosing this method are as follows:

Exploratory Research: This study aims to investigate how servitization transformation affects employee performance evaluation system satisfaction. This is a typical qualitative research question that requires an in-depth understanding of “how” issues. Grounded theory is renowned for its unique ability to address “how” and “why” questions.

Unique Context: Although existing studies have discussed the relationship between servitization transformation and employee performance evaluation system satisfaction, these studies mostly focus on other industries and regions, primarily from Western developed countries. In contrast, new energy power enterprises in China under the backdrop of electricity market reform possess unique characteristics in their servitization transformation.

Theory Generation: As an exploratory research method, grounded theory can extract new theories from actual data, providing profound insights into understanding this complex relationship. Using the grounded theory method, theoretical models suitable for China’s national conditions can be generated, further promoting the application and innovation of servitization transformation in China and other developing countries.

3.4. Data Collection

To better explain the impact mechanism of servitization transformation on employee performance evaluation system satisfaction in new energy power enterprises under the backdrop of China’s electricity market reform, and to enhance the scientific rigor of the study, this paper employs two different data collection methods.

In-depth Interviews: Randomly sampled in-depth interviews were conducted with employees at various levels of the power marketing department of CGN New Energy Guangxi Branch. The interview content mainly covered the rationality of the performance evaluation system, specific issues and improvement suggestions of performance evaluation indicators, transparency of performance evaluation execution, and mechanisms for handling disputes and feedback on performance evaluation results.

Interview Design and Implementation: When designing the interview outline, it strictly followed relevant literature and theoretical frameworks to ensure that the questions comprehensively reflected the research theme. Pilot interviews were conducted to verify the effectiveness and clarity of the questions. During the actual interviews, efforts were made to ensure that interviewees expressed their true views in a stress-free environment, and all interviews were recorded and transcribed verbatim to ensure data accuracy.

Sample Selection: Following the principle of theoretical sampling, five interviewees were randomly selected from CGN New Energy Guangxi Branch to ensure the representativeness and comprehensiveness of the data.

Second Round of Data Collection:

Questionnaire Survey: An online questionnaire survey on the satisfaction of the performance evaluation system was conducted using the Questionnaire Star platform, targeting employees from both the headquarters and national dispatch employees of CGN New Energy Guangxi Branch. Participant information for the questionnaire survey is shown in Table 1. The questionnaire design was based on the results of the first round of interviews and the Balanced Scorecard theory, covering various key dimensions of the performance evaluation system.

Questionnaire Design and Implementation: The questionnaire content underwent expert review and a small-scale pre-survey to ensure its reliability and validity. Ultimately, 125 valid performance evaluation satisfaction questionnaires were collected.

To ensure the scientificity and rigor of the data collection process, the following measures were taken:

Theoretical Sampling: Ensuring the sample’s representativeness by covering employees of different levels and positions to reflect diverse perspectives.

Triangulation: Using two different data collection methods (in-depth interviews and questionnaire surveys) to cross-verify the results and enhance the reliability of the conclusions.

Table 1. Information of Experts Participating in the Questionnaire Survey.

Category	Item	Number of Participants	Proportion (%)
Gender	Male	82	66%
	Female	43	34%
Age Group	20-30years old	66	53%
	30-40years old	52	41%
	40-50years old	7	6%
	Above 50 years old	0	0%
Education Level	Doctoral	0	0%
	Master's	7	6%
	Bachelor's	92	74%
	Associate's	26	20%
Job Level	Senior Leadership	2	2%
	Department Manager	9	7%
	Department Staff	114	91%

4. Data Analysis

4.1. Open Coding

Open coding is a critical step in qualitative research for structuring data, aimed at abstracting initial concepts and categories from textual data through line-by-line analysis, thereby constructing theory. According to the research methodology (Gioia et al., 2013) [30], the coding process typically includes three stages: open coding, axial coding, and selective coding. As the first step, open coding involves line-by-line analysis of raw textual data to extract initial concepts and categories. To minimize the impact of researcher bias, this study uses respondents' original statements to form initial concepts and, based on these statements, refines initial categories that reflect the true information and relationships between concepts.

In this study, we organized data from 5 interviews and 125 questionnaire responses, ultimately abstracting 15 initial categories, as shown in Table 2. Open coding requires researchers to maintain an open mindset, analyze data collected through open sampling line by line, summarize concepts, and organize them into categories based on relevance or similarity. During this process, researchers first transcribe interview recordings into written material, then analyze the text line by line to extract concepts.

By adhering to the principles of open coding, researchers systematically deconstruct the data, ensuring that the emergent concepts are rooted in the respondents' actual statements, thus maintaining the integrity and authenticity of the information extracted. This meticulous approach allows for the formation of robust initial categories that serve as the foundation for subsequent stages of coding and theory development.

Table 2. Initial Categories and Indicators.

Initial Categories	Original Data
Work-life balance	"In our marketing department, you have to be on call even after hours. We start at 8:30 AM, and although our official workday ends at 5:30 PM, many of us continue working beyond that"
Career development opportunities	"I have been with the company for two months and feel quite fulfilled. I have been thinking about my career growth and future direction. Our manager often discusses our plans and ideas, which I find motivating despite the inevitable challenges."
Customer relationship management	"When talking to clients, I noticed significant differences. For instance, one client, a leader in a listed company, has a remarkable depth of

	understanding and ability to grasp the essence of matters, which highlighted the gap between us.”
Context of market-oriented reforms	“Our products are simple, characterized by the attributes of the store. Under the 3060 renewable energy development backdrop, our leading department focuses on continuous construction of new power generation units.”
Employee mental health	“I have been in marketing since 2017 before our department was established in 2021. Unlike other roles where you might have regular hospital visits or childcare responsibilities, our job does not easily accommodate such personal time.”
Technical training and support	“Technical skills are crucial., especially in our trading center. Your sales price depends on your judgment and forecasts, along with communication with peers.”
Organizational management style	“Starting as a sales intern involves supporting sales staff, handling orders, and daily administrative tasks, which might differ from one’s expectations of a marketing role.”
Career achievement	“Our peak sales period is from October to December each year, preparing for the next year’s market. Initially, the targets from headquarters might seem daunting, but our excellent leadership makes the process manageable.”
Interpersonal communication	“The main difference lies in interaction. While production deals with machinery, marketing involves much human interaction, requiring higher interpersonal skills.”
Sales strategies	“Our marketing center focuses on market development, finding clients to purchase our power, followed by trading center activities to manage transactions.”
Employee benefits	“Both men and women are equally assigned tasks, but considering women’s additional family responsibilities, a more accommodating work arrangement for women would be beneficial.”
Customer satisfaction	“Our clients are mostly enterprises with high-level decision-making needs. It is essential to visit these companies, understand their power needs from their perspective, and address their core requirements.”
Personal life challenges	“Our industry is predominantly male, which creates challenges, especially for personal issues. Unlike sectors with a balanced gender ratio, here men often face difficulties in resolving personal matters.”
Professional skills	“Both technical and sales skills are crucial in our field. Despite focusing on trading, we continuously engage in customer development, highlighting the importance of diverse skills.”
Innovation capability	“Given the unique nature of electricity as a policy-driven commodity, it is vital to stay updated with regulations and continuously learn and adapt to changes.”

4.2. Axial Coding

Based on the results of open coding analysis, axial coding further increases the density of categories, clarifies the differences between categories, and establishes relationships between them. Through clustering the 15 initial categories obtained from the open coding analysis, axial coding integrates four major categories through reclassification. These major categories, derived from the attributes and intrinsic connections of the initial categories, are overall employee well-being, career development and skill enhancement, customer and market relations, and organizational management within a market context, as shown in Table 3.

Table 3. Major Category Coding Indicators.

Major Category	Initial Category	Category Connotation
Work-life balance	Work-Life Balance	The indistinguishability between work and life, arrangements for work during and after office hours
	Employee Mental Health	Psychological support and care, attending to employees' family responsibilities
	Personal Life Challenges	Inclusivity in work arrangements, especially for female employees, balancing life and work
	Employee Benefits	Health and welfare benefits, working conditions, and employee welfare policies
Career Development and Skill Enhancement	Career Development Opportunities	Individual development paths, regular communication with management about career goals and progress
	Sense of Career Achievement	Impact of role transitions on personal growth and character, challenges, and achievements in meeting career goals
	Professional Skills	Enhancement and application of professional skills, support for obtaining relevant professional certifications
	Technical Training and Support	Providing technical training and support, adapting to and applying new technologies
Customer and Market Relations	Customer Relationship Management	Managing and maintaining customer relationships, impact of customer interactions on employees
	Customer Satisfaction	Understanding and meeting customer needs, managing and improving customer feedback
	Customer Acquisition Strategies	Strategies for market development and customer acquisition, transaction and contract management
	Interpersonal Relationships	Building and maintaining relationships with customers and colleagues, teamwork, and cross-departmental collaboration
Organizational Management and Market Context	Market Reform Background	Impact of electricity market reform, strategic adjustments of enterprises in the context of market reform
	Organizational Management Methods	Management approaches and decision-making transparency, sales cycle, and management rhythm
	Innovation Capability	Innovative marketing strategies in the market, ability to respond to market demands

4.3. Selective Coding

Selective coding is conducted based on open and axial coding. It systematically organizes the relationships between different categories to identify core categories around which other categories are structured, ultimately constructing an organic theoretical framework. Based on the original interview materials, we conducted an in-depth comparative analysis of the relationships between the categories obtained from open and axial coding. The analysis results indicate that the most important categories for employee performance evaluation satisfaction are work environment and work-life balance, as well as career development and skill enhancement. These categories are highly explanatory and can serve as core categories.

The impacts of work environment and life balance, as well as career development and skill enhancement, can be further divided into multiple dimensions, including work environment, mental health, life challenges, welfare benefits, career development paths, and skill enhancement. By integrating the management practices of case enterprises and the relationships identified through

grounded theory coding, we summarize the three stages of servitization transformation under the backdrop of China's electricity market reform: adaptation stage, implementation stage, and optimization stage. At different stages, enterprises are influenced by market, customer, and internal management factors and form corresponding transformational behaviors under various institutional pressures to achieve specific transformational performance. Detailed information is shown in Table 4.

Table 4. Typical Structural Relationships.

Typical Structural Relationship		Relationship Connotation
Adaptation Stage	China's Electricity market reform → Corresponding increase in service-oriented job demands	China's electricity market reform signifies a shift from a traditional, government-controlled model to a more open and competitive market environment. As a result, new energy power enterprises are evolving from traditional energy suppliers to providers of integrated energy solutions, thereby increasing the demand for service-oriented roles.
	Service-oriented job demand increase → Enterprise servitization transformation	As the demand for service-oriented roles increases, enterprises need to adjust their service models to meet market demands better. This necessitates innovation in service delivery methods and improvements in service quality to adapt to the continually evolving market environment.
	Enterprise servitization transformation → Adjusting organizational management and adapting to market background	In the process of servitization transformation, enterprises must adjust their organizational management structures to adapt to the new market context. This includes optimizing internal management processes and enhancing organizational flexibility to better respond to market changes and customer needs.
Implementation Stage	Adjusting organizational management and adapting to market background → Enhancing enterprise competitiveness	Adjusting organizational management structures and processes enhances enterprise efficiency and agility, thereby boosting competitiveness and positioning the enterprise advantageously in a highly competitive market.
	Enhancing enterprise competitiveness → New requirements for customer and market relationship management	As enterprise competitiveness improves, customers' and the market's expectations also rise. Enterprises need to manage customer and market relationships better to maintain and enhance customer satisfaction and market share.
	New requirements for customer and market relationship management → Expectations for employee performance evaluation systems	New customer and market management requirements increase the workload and changes in job content, leading to new expectations for employee performance evaluation systems. Enterprises need to develop more comprehensive and fair performance evaluation systems to motivate employees to serve customer and market needs better.
Optimization Stage	Expectations for employee performance evaluation systems → Overall employee well-being	Employees' expectations of the performance evaluation system typically reflect their pursuit of a favorable work environment and work-life balance, which are crucial to their overall well-being. To enhance employee satisfaction with the performance evaluation system, enterprises need

	to create a positive work environment and pay attention to the quality of employees' lives.
Expectations for employee performance evaluation systems → Career development and skill enhancement	Employees expect a fair and transparent performance evaluation system and seek opportunities for career development and skill enhancement through their work. Enterprises should provide training and development opportunities to help employees improve their skills and achieve career growth, thereby increasing their satisfaction with the performance evaluation system.

4.4. Theoretical Saturation Test

In the process of testing the theoretical saturation of the interview records, 1/5 of the records were selected for analysis. The results indicated that for the four main categories influencing the satisfaction of the employee performance evaluation system in the servitization transformation of new energy power enterprises—work environment and work-life balance, career development and skill enhancement, customer and market relations, and organizational management within a market context—no new significant categories or their related relationships were identified. Additionally, no new constituent factors were formed within the main categories. Therefore, this study concludes that the grounded theory coding process has achieved theoretical saturation, the sampling is complete, and a saturated and comprehensive theoretical model has been obtained, as shown in Figure 1 (Theoretical Saturation Test Model).

To ensure the reliability and validity of the research data, this study employed a diverse range of data sources, including internal company interviews, corporate policy documents, and external news reports and media materials. Through comprehensive analysis and cross-validation of these diverse data sources, the reliability and validity of the research findings were further reinforced. Specifically, internal interviews provided first-hand practical experiences and concrete cases, corporate policy documents offered institutional background and formal frameworks, and external news reports and media materials provided a macro perspective and external evaluations. This multifaceted approach to data collection and analysis not only enhanced the reliability and validity of the research conclusions but also provided a robust foundation for the construction of the theoretical model.

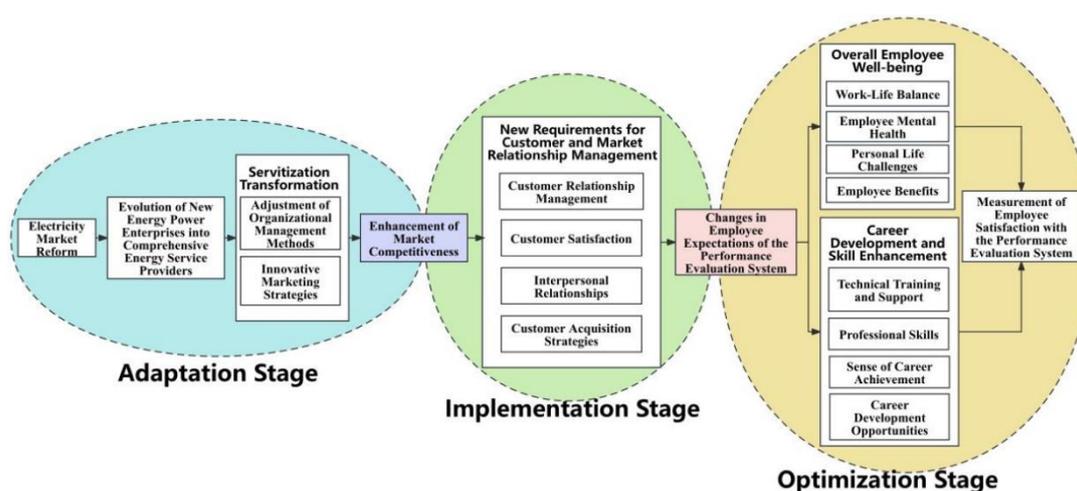


Figure 1. Theoretical Saturation Test Model.

5. Model Analysis

5.1. Adaptation Stage

In the adaptation stage, China's electricity market reform has driven new energy power enterprises to transition from traditional power suppliers to integrated energy service providers. This strategic transformation requires profound changes not only in sales and service models but also in enhancing their competitiveness in the market. The specific manifestations are as follows:

Organizational Management Adjustments: To adapt to the new market environment, companies must make corresponding adjustments in organizational management, including optimizing internal processes, improving management efficiency, and enhancing organizational flexibility. In rapidly changing market conditions, the success of an organization largely depends on the competitiveness of its products and services. Research indicates that organizational flexibility positively impacts corporate competitiveness, with organizational innovation playing a mediating role. The conclusion is that Chinese project-based enterprises need new organizational strategies to maintain competitiveness and achieve sustainable development (Ni et al., 2020) [31].

Strategy Innovation: The servitization transformation requires new energy power enterprises to evolve from mere product providers to comprehensive solution providers, necessitating a heightened awareness of marketing strategies among employees. Marketing strategies must be developed to support servitization, including emphasizing co-creation with customers, utilizing data analytics, and fostering strong partnerships. Innovative marketing approaches are crucial for effectively conveying the added value of integrated solutions and services. Successful manufacturing firms have transitioned from product-centric to service-centric models, highlighting the need for new marketing strategies focused on operational excellence, leadership, and digital technologies. These factors are essential for achieving and sustaining servitization (Perona et al., 2017) [32].

5.2. Implementation Stage

In the implementation stage, servitization transformation significantly enhances market competitiveness while introducing new requirements for customer relationship management and expectations for employee performance evaluation systems.

New Requirements for Customer Relationship Management: Companies must prioritize customer relationship management to improve customer satisfaction and address intensifying market competition through service innovation and value addition. Customer relationship management plays a crucial role in the servitization transformation of enterprises. It not only serves as a precursor to strategic online reputation management but also positively impacts brand equity (Peco-Torres et al., 2023) [33]. CRM is vital for SMEs, aiding in customer satisfaction, sales growth, and operational efficiency optimization. With proper planning and effective execution, SMEs can successfully implement CRM systems, thereby enhancing competitiveness and market position (Štverková et al., 2023) [34]. Servitization helps companies attract and retain new customers by providing value-added services and personalized solutions, thereby expanding market share (Geissinger et al., 2023) [35].

Expectations for Employee Performance Evaluation Systems: As servitization progresses, employees' expectations for performance evaluation systems increase, with a greater emphasis on fairness and transparency. Servitization demands higher service awareness and customer orientation, necessitating corresponding adjustments to performance evaluation criteria. For example, employee performance evaluation must go beyond sales figures or production efficiency to include customer satisfaction, service quality, and customer relationship management (Rabetino et al., 2021) [36]. The application of digital technologies in servitization enables more precise and comprehensive performance evaluation systems. By monitoring and analyzing product operation data, companies can better assess employee performance in the service process and develop more scientific performance appraisal indicators (Bustinza et al., 2019) [37].

5.3. Optimization Stage

In the optimization stage, employees further express their expectations for the existing performance evaluation systems, primarily focusing on the following aspects:

Employee Well-being: Employee well-being encompasses work-life balance, mental health, personal life challenges, and employee benefits. Servitization transformation typically accompanies increased work intensity and role overload. Studies show that during the servitization process, employees undertake more tasks and face tighter deadlines, significantly affecting their work-life balance. The perceived fairness of performance evaluations is crucial; employees who recognize the existence and implementation of work-life balance policies feel that their personal lives are valued by the organization, leading to higher satisfaction and recognition in performance evaluations (Malik et al., 2023) [38]. Companies should enhance psychological support and welfare, providing comprehensive psychological services like counseling and stress management training. Additionally, increasing paid leave and offering employee health plans are important means to enhance well-being (Wood, 2018) [39]. In supporting family and social responsibilities, companies can implement family-friendly policies, such as parental leave, caregiver leave, and flexible working hours, helping employees better balance work and family responsibilities. This not only supports mental health but also increases employee loyalty to the company (Skinner et al., 2018) [40].

Career Development and Skill Enhancement: Servitization transformation provides more career development opportunities and skill training for employees, enhancing their sense of achievement and professional capabilities, thus improving satisfaction with performance evaluation systems. The transformation often accompanies digital upgrades, requiring systematic skill training for employees, particularly in information technology and service management. This training not only improves professional abilities but also boosts confidence and satisfaction in their work (Cetindamar et al., 2021) [41]. Organizational support and performance evaluation involve providing employees with training and development opportunities, which can enhance their satisfaction with performance evaluation systems. Employees who feel organizational care and support tend to perform better and have a positive attitude toward performance evaluation results (Ismail et al., 2018) [42].

5.4. Model Application and Practical Guidance

Against the backdrop of China's electricity market reform, the theoretical model constructed in this study not only deeply explores the impact mechanism of servitization transformation on employee performance evaluation system satisfaction but also provides practical and feasible guidance for management practices in new energy enterprises. Specifically, companies should strive to enhance the fairness and transparency of performance evaluation systems to stimulate employee motivation. Additionally, they should focus on employee well-being by implementing measures for work-life balance, psychological support, and welfare benefits to enhance employee satisfaction. Furthermore, companies should bolster support for career development by offering abundant career development opportunities and necessary skill training to improve employees' professional competence and sense of career achievement. By implementing these measures, companies can effectively enhance employee satisfaction with performance evaluation systems during the servitization transformation process, thereby driving overall corporate performance improvement.

6. Conclusions and Discussion

6.1. Conclusions

Through the grounded theory approach, this study systematically explores the impact mechanism of servitization transformation on employee performance evaluation system satisfaction within the context of China's electricity market reform. The findings indicate that servitization transformation significantly influences employees' satisfaction with performance evaluation systems by affecting their work environment and life balance, career development and skill enhancement, customer and market relationships, and organizational management and market context. Specifically, the study draws the following key conclusions:

1. Enhancing Employees' Sense of Career Achievement

Servitization transformation necessitates providing employees with ample career development opportunities and systematic skill training, thereby enhancing their sense of career achievement and professional competence. Companies should continue to strengthen support for career development by offering clear career paths and development opportunities, which effectively enhance employees' satisfaction with performance evaluation systems.

2. Strengthening Customer Relationship Management

Servitization transformation requires more frequent and in-depth interactions between employees and customers to fully understand customer needs and provide personalized services, thereby enhancing customer satisfaction. Effective customer relationship management not only increases customer loyalty but also brings greater market share and long-term benefits to the company.

3. Optimizing Organizational Management

Under the backdrop of China's electricity market reform, companies must optimize management processes and organizational structures to adapt to the new market environment. A scientific, transparent performance evaluation mechanism can significantly enhance employees' satisfaction and sense of recognition, thereby improving overall corporate performance.

6.2. Discussion

This study exhibits notable innovation and practical significance in the following aspects:

Integrated Perspective: This research comprehensively analyzes the combined impact of China's electricity market reform and servitization transformation on the satisfaction of performance evaluation systems for employees in new energy power enterprises. Previous studies have often focused on a single perspective, while this research reveals a more comprehensive and complex impact mechanism through multi-angle analysis.

Grounded Theory Approach: By employing the grounded theory method, this study constructs a theoretical model of how servitization transformation affects employees' satisfaction with performance evaluation systems through systematic coding and analysis of in-depth interview and survey data. This method not only enhances the theoretical depth of the study but also provides a strong empirical foundation for the research conclusions.

Empirical Data Support: Using CGN New Energy Guangxi Branch as the research subject, this study validates the theoretical model's effectiveness and applicability through empirical data, which not only provides strong support for related theoretical research but also offers practical and feasible recommendations for corporate management practices.

The results of this study hold significant practical implications for managers of new energy power enterprises. By establishing transparent, fair, and scientific performance evaluation systems, companies can effectively motivate employees, improve work efficiency, and thus enhance overall performance. Additionally, policymakers can draw from the study's findings to better balance the needs of both enterprises and employees in policy formulation, thereby promoting high-quality corporate development.

6.3. Research Limitations and Future Directions

Despite deriving valuable conclusions, this study has certain limitations:

Limited Sample Scope: The research subjects were limited to CGN New Energy Guangxi Branch, with a relatively small sample size, potentially limiting the generalizability of the findings. Future research could expand the sample scope to include more regions and companies to verify the universality of the conclusions and enhance the external validity of the study.

Single Methodology: This study primarily employed qualitative research methods. Future research could integrate quantitative methods to conduct a more comprehensive and in-depth exploration of the impact mechanism of servitization transformation on employee performance evaluation satisfaction. Quantitative analysis could more precisely measure the relationships between variables, providing more operational management recommendations for companies.

Future research should continue to focus on the following areas:

Research on Different Types of Enterprises: The impact of servitization transformation on employee performance evaluation system satisfaction may vary under different market environments and cultural contexts. Future studies could conduct comparative research on different types of new energy enterprises to uncover commonalities and differences.

Long-term Effect Studies: The impact of servitization transformation on employee performance evaluation system satisfaction may change over time. Future research could undertake longitudinal studies to explore its long-term effects.

Application of Comprehensive Research Methods: Combining qualitative and quantitative research methods to conduct larger-scale empirical studies could improve the reliability and applicability of research conclusions.

Through further research, we can provide more comprehensive and in-depth guidance for the management practices and policy formulation of new energy power enterprises, promoting efficient and sustainable development within the context of China's electricity market reform.

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