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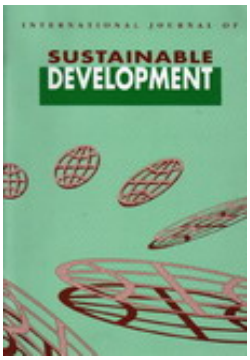

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The impact of innovative management models on the improvement of service efficiency of power supply stations in the context of digital transformation

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Abstract: In order to improve the service quality, efficiency, and user satisfaction of power supply stations, this study investigates the impact of innovative management models on the improvement of service efficiency of power supply stations in the context of digital transformation. Firstly, analyse the limitations of the development of service efficiency in power supply stations under traditional management models. Secondly, analyse the opportunities and challenges faced by the service efficiency development of power supply stations in the context of digital transformation. Finally, analyse the impact of innovative management models on the improvement of service efficiency in power supply stations from five aspects: improving service efficiency, optimising resource allocation, personalised services, improving power supply reliability, and optimising service experience. Through case analysis, it can be seen that innovative management models can effectively improve the service efficiency, reliability, and user satisfaction of power supply stations.

Keywords: digital transformation; innovative management mode; service efficiency; opportunities and challenges; data-driven decision-making.

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1 Introduction

In the context of digital transformation, innovative management models have had a positive impact on improving the service efficiency of power supply stations. The traditional management mode of power supply stations is no longer able to cope with the challenges brought by rapidly changing market demand and technological progress (Wang et al., 2021; Wen et al., 2021; Chi et al., 2022). Adopting innovative management models, such as the application of digital technology, data-driven decision-making, and flexible organisational structures, can help power supply stations improve operational efficiency, reduce costs, optimise resource allocation, and thus improve service efficiency. This transformation can not only meet the needs of users for more convenient and reliable power services, but also promote the continuous growth and innovative development of power supply stations' business (Zhu et al., 2022; Wang et al., 2023; Wei et al., 2023). Therefore, the significance of studying innovative management models for improving the service efficiency of power supply stations lies in providing feasible management strategies and guidance for power supply stations, and promoting sustainable development of the power industry.

In the current context of digital transformation, domestic scholars have conducted preliminary research on the impact of innovative management models on the improvement of service efficiency in power supply stations. These studies explore the roles of digital technology, data analysis, and organisational structure in improving the service efficiency of power supply stations from different perspectives. On the one hand, the application of digital technology is considered the key to improving the service efficiency of power supply stations. For example, power supply stations can utilise IoT

technology to achieve remote monitoring and fault warning of equipment, effectively reducing fault handling time and power outage time, and improving service reliability and stability (Ying and Chen, 2023; Jia et al., 2022; Jin et al., 2022). Data analysis has become an important means of optimising the operation of power supply stations. By analysing and mining a large amount of data, power supply stations can deeply understand user needs and behaviours, refine operations, and provide personalised services. On the other hand, innovative management models are also considered to have played a positive role in improving the service efficiency of power supply stations. The flexible organisational structure and decision-making mechanism enable the power supply station to adapt to market changes faster, make decisions quickly, and implement improvement measures. Innovative management thinking and methods can also stimulate employees' innovative potential, promote team collaboration and knowledge sharing, and improve service quality and customer satisfaction. However, current research in China is relatively limited and has some limitations. Firstly, the rapid development of digital transformation makes research results quickly outdated, requiring continuous attention and adjustment of research direction. Secondly, the power supply station is a complex system that involves multiple links and stakeholders, and further research needs to consider the impact and interaction of these factors. Overall, research by domestic scholars on the impact of innovative management models on the improvement of service efficiency in power supply stations is still in its infancy, and it is necessary to explore the mechanisms of various factors in depth. Case studies and empirical analysis should be conducted based on actual situations to provide more operational and feasible management strategies and suggestions (Ren and Zhao, 2022; Kong, 2021; Yan et al., 2021).

Foreign scholars have gradually increased their research on the impact of innovative management models on improving the service efficiency of power supply stations in the context of digital transformation. These studies explore the impact of innovative management models on improving the service efficiency of power supply stations through case analysis, empirical research, and literature review. Research has found that the widespread application of digital technology has had a significant impact on the service efficiency of power supply stations. For example, with the help of smart grid technology, power supply stations can monitor the status of the power network in real-time, quickly identify faults and take timely measures to improve the reliability and stability of the power network. The application of data analysis and artificial intelligence enables power supply stations to better predict user needs, optimise operational plans and resource allocation, thereby improving service responsiveness and efficiency. Innovative management models also have a positive impact on the service efficiency of power supply stations. The flexible organisational structure and decision-making mechanism enable the power supply station to adapt more quickly to constantly changing market demands and technological developments, and to adjust operational strategies more flexibly. Innovative management thinking and methods can also stimulate employees' innovative awareness and teamwork, promote the improvement of service quality and increase customer satisfaction. Although these studies have made some important discoveries, there are still some challenges and opportunities (Zhang and Li, 2022; Feng et al., 2020; Zhang and Li, 2022). For example, the power supply station faces issues such as data security, privacy protection, and technical standards. The power supply station also needs to strengthen cooperation with other fields, such as cross departmental cooperation and public-private cooperation in the energy field.

On the basis of existing research, this paper will further analyse the impact of innovative management models on the improvement of service efficiency of power supply stations in the context of digital transformation, in order to provide more effective paths and methods for the continuous improvement of service efficiency of power supply stations. In the context of digital transformation, innovative management models have a significant impact on improving the service efficiency of power supply stations. Firstly, when analysing the limitations of the development of service efficiency in power supply stations under traditional management models, there may be issues such as cumbersome manual operations, insufficient resource allocation, and low level of service standardisation. Secondly, in the context of digital transformation, the development of service efficiency in power supply stations faces opportunities and challenges, including changes in data-driven decision-making, intelligent operation and maintenance, and personalised user needs. Finally, innovative management models can improve the service efficiency of power supply stations in the following five aspects: improve service efficiency and achieving more efficient service processes through automation and intelligent technologies; optimise resource allocation, utilise big data analysis and prediction models to optimise power supply equipment maintenance and distribution network planning; personalised services that meet users' personalised needs through data analysis and intelligent systems; improve power supply reliability, identify and solve power supply problems in advance through fault prediction and monitoring systems; optimise the service experience and improve user satisfaction by providing convenient and efficient service channels and personalised communication methods. Through case analysis, it can be concluded that the application of innovative management models can effectively improve the service efficiency of power supply stations, improve service quality, efficiency, and user satisfaction.

2 Limitations of service efficiency development of power supply stations under traditional management mode

Under the traditional management mode, the development of service efficiency in power supply stations faces some challenges and limitations. The following are some current developments in the service efficiency of power supply stations under traditional management models:

1 *Limited operational efficiency*

Due to cumbersome administrative processes and long decision-making chains, the operation process of power supply stations often requires complex and lengthy approval and reporting procedures, resulting in low decision-making efficiency. The lack of technological support and automation systems also limits the improvement of operational efficiency in power supply stations. Under traditional management models, many power supply stations still rely on manual operations and paper document processing, which increases labour costs, reduces work efficiency, and is prone to errors and delays (Bai et al., 2022; Huang et al., 2021; Wang and Jiang, 2022). The lack of real-time data and intelligent analysis support makes it difficult to accurately grasp operational conditions and user needs, making it difficult to make correct decisions and adjustments quickly.

2 *Lack of flexibility and adaptability*

The traditional hierarchical decision-making structure limits the ability of power supply stations to respond to market changes and make quick decisions. The decision-making process usually requires multiple levels of approval, resulting in a complex and slow decision-making process that is difficult to adapt to rapidly changing market demands and technological innovation. Innovation awareness and flexibility are often constrained in traditional models, with fewer employees participating in the decision-making process, which limits the exertion of organisational flexibility and the vigorous development of innovative thinking.

3 *Limited data management and analysis capabilities*

Due to the lack of modern information systems and data collection tools, the process of data collection, storage, and integration in power supply stations is often difficult. This makes it difficult for power supply stations to obtain accurate, real-time, and comprehensive data, and to have a comprehensive understanding of operational conditions and user needs (Ma et al., 2022; Yan et al., 2022). Due to the lack of professional data analysts and tools, power supply stations often cannot fully utilise data for in-depth analysis and insight. The lack of data analysis capabilities limits the accuracy of power supply stations in optimising business operations and making decisions.

4 *The user experience needs improvement*

Due to the cumbersome procedures and processes, users need to spend more time and effort to handle various procedures and businesses, resulting in poor user experience. Poor information transmission is also one of the factors affecting user experience. Under traditional management models, communication between power supply stations and users often relies on traditional methods, such as phone calls, emails, etc. This method causes problems with delayed information transmission and limited information volume, making it difficult for users to obtain the required information in a timely manner. The speed and efficiency of problem handling are also key factors that affect user experience. In traditional management models, problem handling often requires multiple stages, resulting in time delays and user dissatisfaction.

3 Opportunities for the development of service efficiency in power supply stations under the background of digital transformation

3.1 Digital transformation of power supply station services

The digital transformation of power supply station services refers to the transformation and optimisation of traditional power supply station service modes and processes using modern information technology to achieve more efficient, intelligent, and sustainable power supply services. By introducing technologies such as the Internet of Things, big data, and artificial intelligence, power supply stations can achieve functions such as equipment intelligent monitoring, fault warning, and electricity data analysis. Through automation, intelligence, and remote means, they can provide faster, more convenient, and reliable power supply services. The digital transformation enables power supply stations to monitor the operation status of the power grid in real time, prevent or timely

handle power grid faults through big data analysis and prediction, and provide accurate energy management guidance. At the same time, customers can also query electricity information, apply for activation/modification of services, pay electricity bills, etc. through online platforms or mobile applications, facilitating interaction between users and the power supply station. Digital transformation can also enable power supply stations to achieve more efficient energy dispatch and load management, allocate power resources reasonably, and improve energy utilisation efficiency and power supply reliability. By connecting with other intelligent devices, power supply stations can achieve more intelligent and efficient energy allocation and management, reducing energy waste.

3.2 Innovative management model

1 *Improve service quality*. The digital transformation has brought more precise and efficient monitoring and management capabilities to power supply, enabling power supply stations to grasp the status and operation of power equipment in real-time, quickly identify faults and repair them, thereby reducing power outage time and increasing power supply reliability. Digital transformation also provides more data collection and analysis methods, enabling power supply stations to use big data technology for user behaviour analysis and electricity demand prediction, thereby better meeting the personalised needs of users and providing customised service experiences. Digital transformation has also promoted intelligent operation. Through the application of technologies such as the Internet of Things and artificial intelligence, power supply stations can achieve automation and intelligence of the power system, improve operational efficiency and energy utilisation efficiency, and further improve service quality. The digital transformation also provides a stronger communication and interaction platform for power supply stations, making the connection between power supply stations and users closer, enabling timely response to user feedback and needs, solving problems, and improving services. The digital transformation provides excellent opportunities for power supply stations to improve service quality. Through real-time monitoring, data analysis, intelligent operation, and closer user interaction, power supply stations can continuously improve service processes and levels, meet user expectations, and provide more reliable and efficient power services.

2 *Intelligent operation*. Intelligent operation is an important way to achieve automation, intelligent management, and optimised operation of the power system in power supply stations through the application of technologies such as the Internet of Things and artificial intelligence in the context of digital transformation. Intelligent operation utilises Internet of Things technology to interconnect sensors, devices, and systems, achieving remote monitoring and control of power equipment. This enables the power supply station to obtain real-time data such as equipment status and energy consumption information, timely detect abnormal situations, and take corresponding measures to improve power supply reliability and reduce operation and maintenance costs. Through artificial intelligence and data analysis technology, intelligent operations can quickly process and analyse a large amount of data, identify relevant patterns and patterns, and achieve load forecasting, optimise distribution networks, and improve control strategies. This helps to improve the efficiency and

sustainability of the power grid, reducing power consumption and losses. Intelligent operation also enables power supply stations to respond to personalised and differentiated user needs, accurately understanding users' electricity consumption behaviour and needs through smart meters and other devices, providing customised power services, and improving user satisfaction and loyalty. Intelligent operation can also achieve fault prediction and intelligent maintenance. Through data analysis and algorithm models, it helps power supply stations detect potential problems in advance and take maintenance measures in a timely manner, reducing the occurrence rate of faults and power outage time. Intelligent operation, through the application of technologies such as the Internet of Things and artificial intelligence, enables power supply stations to manage and operate power systems more intelligently, improve power supply reliability, save energy and reduce consumption, optimise operational efficiency, provide personalised services, and achieve higher levels of operation and maintenance management.

3 *Personalised service experience*. Personalised service experience is a customised and personalised power service provided by power supply stations to users in digital transformation. By collecting and analysing a large amount of user data, including information on electricity consumption behaviour, preferences, needs, and other aspects, power supply stations can more accurately understand the characteristics and needs of each user, thereby providing personalised services for users. For example, based on users' electricity habits and preferences, power supply stations can provide customised electricity plans to help users save energy and reduce costs. By utilising digital technology and intelligent devices, power supply stations can provide convenient and intelligent service experiences, such as online payment and querying electricity data through mobile applications. The power supply station can also provide personalised recommendation services based on user preferences, such as specific energy optimisation suggestions or energy products suitable for their needs. The power supply station can also maintain close interaction with users through multi-channel and multi-channel communication, timely answer questions, solve problems, and provide comprehensive user support. Personalised service experience also includes opportunities for user participation. Power supply stations can invite users to participate in the planning, design, and improvement of the power system, fully considering their voices and needs, and increasing user satisfaction and loyalty. Personalised service experience can provide customised, intelligent, and interactive power services by utilising user data, digital technology, and user participation, meeting users' personalised needs, enhancing user experience, and promoting good relationships and sustainable development between power supply stations and users.

4 Challenges faced by the development of service efficiency in power supply stations under the background of digital transformation

1 *Security and privacy risks*. With the widespread application of digital technology, power supply needs to process a large amount of data, including sensitive information such as user information and power equipment data. In this context, protecting the security of data and the privacy of users has become a problem that power supply companies must attach importance to and solve. The power supply

station needs to strengthen network security protection measures, including the use of secure hardware and software devices, the establishment of strict access rights and identity verification mechanisms, monitoring and timely response to any potential network attacks or data leakage events. The power supply needs to comply with relevant regulations and compliance requirements, such as data protection laws and privacy policies, ensure the correct use and protection of user data, clearly inform users of the purpose of data collection and processing, and obtain their consent. The power supply station also needs to strengthen employee awareness training, increase employees' awareness of the importance of information security and privacy protection, ensure their understanding and compliance with relevant policies and regulations, and reduce the risk of internal data leakage. The power supply station should establish an emergency response plan to quickly and effectively respond to any security incidents or privacy breaches. In the event of security vulnerabilities or violations, remedial measures should be taken in a timely manner, and users and relevant regulatory authorities should be notified in a timely manner. In the digital transformation of power supply stations, attention needs to be paid to and security and privacy risk issues should be addressed. Measures such as strengthening network security, complying with regulatory requirements, strengthening employee training, and establishing emergency plans should be taken to protect the security and privacy of user data, improve the credibility and trust of power supply stations.

2 *Technology and system upgrades*. With the rapid development and application of digital technology, traditional power systems and equipment may not be able to meet the growing demand. Therefore, the power supply needs to undergo technological and system upgrades to meet the requirements of digital transformation. The power supply station requires investment and the adoption of new hardware equipment and software systems, with higher performance, more reliable and stable infrastructure. For example, introducing smart grid technology to achieve automation and intelligent management of power supply networks; Adopting IoT technology to achieve remote monitoring and control of power equipment. During the upgrade process of the power supply station, technical and compatibility issues need to be addressed to ensure the interoperability and compatibility of new technologies with existing equipment and systems. This may require equipment adjustments, interface docking, data conversion, and other work to ensure the smooth operation of the system. The power supply station also needs to cultivate and recruit talents with corresponding technical capabilities for system maintenance, troubleshooting, and technical support to ensure the normal operation and continuous maintenance of technology and systems. The power supply station also needs to carry out system integration and integration, integrating data and systems from different departments and functions to achieve information sharing and collaborative work. Technology and system upgrades are the challenges that power supply must face in digital transformation. By investing in advanced hardware equipment and software systems, addressing compatibility issues, cultivating talents, and implementing system integration, power supply stations can gradually achieve technological upgrades and system optimisation, improve the quality and efficiency of power supply services, and lay a solid foundation for digital transformation.

3 *Personnel training and capacity building*. With the widespread application of digital technology, employees in power supply stations need to possess new skills and knowledge to adapt to new job requirements and digital environments. The power supply station requires employee training, including providing relevant digital technology training, data analysis and processing skills training, to enable employees to master digital tools and technologies, and be able to use these technologies to solve practical problems and improve work efficiency. The power supply station should also strengthen employees' understanding of the significance and goals of digital transformation, and increase their participation and support for digital transformation. This can be achieved through internal training activities, communication meetings, and experience sharing within the organisation to create a positive digital transformation atmosphere and culture. The power supply station can also consider introducing new talents to compensate for existing skills and knowledge deficiencies. For example, recruiting personnel with professional backgrounds in data analysis, big data mining, and the Internet of Things to jointly promote the implementation and success of digital transformation. The power supply station can also establish a learning and innovation mechanism with full participation, encourage employees to propose new ideas and solutions, promote knowledge sharing and team cooperation. Personnel training and capacity building are important tasks that power supply companies must pay attention to and invest in during digital transformation. By training employees, recruiting new talents, and establishing learning mechanisms, power supply stations can enhance employees' digital skills, enhance team innovation and adaptability, and promote the smooth implementation and long-term development of digital transformation.

4 *Regulatory and compliance requirements*. With the application of digital technology, relevant laws and regulations have also been introduced to ensure legality, security, and privacy protection during the digital transformation process. The power supply station needs to understand and comply with regulations and standards related to digital transformation, including data protection laws, network security laws, privacy policies, etc. This involves regulating the legitimate collection, use, storage, and sharing of user data, ensuring the security and privacy protection of user personal information. The power supply station needs to establish corresponding compliance frameworks and processes, evaluate and manage risks during the digital transformation process, and take appropriate control measures to ensure data security and privacy protection. The power supply station also needs to strengthen internal compliance awareness and training, ensure that employees understand relevant regulations and compliance requirements, and strictly comply with them in their work. The power supply station should also closely cooperate with regulatory agencies, industry organisations, etc. to jointly promote the standardisation of digital transformation, and timely understand and adapt to changes in regulations and compliance requirements. Regulatory and compliance requirements are crucial for power supply in digital transformation. Adhering to regulations and compliance requirements, ensuring the legitimacy and sustainability of digital transformation, can not only build a safe and reliable digital environment, but also enhance the credibility of power supply stations and the trust of users. By establishing a

compliance framework, strengthening internal training, and collaborating with relevant institutions, power supply stations can smoothly promote digital transformation and achieve sustainable business development under regulatory and compliance requirements.

5 The impact of improving service efficiency of power supply stations under the background of digital transformation

In response to the limitations of the development of service efficiency in power supply substations under traditional management models and the challenges faced by the development of service efficiency in power supply substations under the background of digital transformation, further analyse the impact of innovative management models on the improvement of service efficiency in power supply substations under the background of digital transformation:

5.1 Improving service efficiency of power supply stations

Innovative management models can improve work efficiency by optimising and improving the internal processes and working methods of power supply stations. In the context of digital transformation, power supply stations can introduce automation equipment and intelligent systems to achieve automated processing and intelligent monitoring of some work. For example, automated switchgear can replace manual operation, monitor the operation status of the power grid in real-time, quickly locate power faults, and take corresponding measures to solve problems. Intelligent systems can optimise equipment operation and maintenance plans through big data analysis and prediction, timely repair or replacement, thereby reducing power outage time and improving service response speed. In addition, digital transformation can also promote the informationisation of power supply stations, reduce the circulation of paper documents and manual ledger records, reduce unnecessary time and resource waste, and improve work efficiency.

5.2 Optimising the resource allocation of power supply stations

The innovative management model relies on the collection, analysis, and utilisation of data, which can help power supply stations better understand user demand, predict power demand, optimise resource allocation, and so on. Through digital transformation, power supply stations can establish a comprehensive data collection and processing system to monitor and record real-time electricity consumption data, user feedback, equipment status, and other information. By conducting in-depth analysis of these data, the power supply station can obtain objective and accurate operational conditions and customer needs. Based on these data, power supply stations can develop more accurate power supply plans and scheduling strategies, allocate power resources reasonably, improve energy utilisation efficiency and power supply reliability. In addition, data analysis can also predict the trend of changes in electricity demand, providing decision-making references for power supply stations, such as building new substations and expanding power supply capacity. Based on data-driven decision-making, power supply stations can operate more scientifically and accurately, improving service quality and efficiency.

5.3 Improving personalisation of power supply station services

Innovative management models can achieve personalised response to user needs through digital technology. In digital transformation, power supply stations can establish interactive channels with users through intelligent platforms and systems. By analysing user electricity usage data, historical records, and preferences, the power supply station can understand the electricity usage habits and demand characteristics of each user. By utilising this personalised information, power supply stations can provide users with more appropriate energy management solutions, preferential policies, and energy-saving suggestions. In addition, the power supply station can also provide users with convenient service channels through online platforms or mobile applications, such as querying electricity information online, submitting service applications, and paying electricity bills. The provision of this personalised service will enhance the interaction and connection between users and the power supply station, improve user satisfaction and loyalty, and thereby enhance the efficiency of the power supply station's services.

5.4 Improving the reliability of power supply in power supply stations

By utilising innovative management models, big data analysis and intelligent monitoring systems can be applied to real-time monitoring and fault prediction of power supply equipment. By real-time monitoring and data analysis of power supply equipment, potential faults can be accurately identified and corresponding maintenance measures can be taken. For example, if the monitoring system finds that the temperature of a transformer rises abnormally, it can dispatch maintenance personnel to carry out maintenance in advance to avoid serious consequences such as transformer damage or fire. In this way, prevention and maintenance can be carried out before the fault occurs, effectively reducing power outage time and impact range, and improving the reliability of power supply services.

5.5 Optimising the service experience of power supply stations

Through innovative management models, power supply stations can establish closer interactive relationships with users. On the one hand, power supply stations can provide online service platforms and mobile applications, allowing users to easily query electricity information, apply for services, pay electricity bills, and other channels. Users can perform various operations anytime and anywhere through the mobile app, eliminating the need to personally handle affairs at the power supply station, improving user convenience. On the other hand, power supply stations can communicate with users through social media, hotline calls, and other means to promptly answer their questions and questions. For example, when users encounter power outages or abnormal electricity usage issues, they can consult the power supply station through hotline or social media, and the power supply station will quickly respond and solve the problem. Through these interactive channels, users' service experience can be improved and their satisfaction with the power supply station can be improved.

6 Case analysis

6.1 The impact of innovative management models on the service efficiency of power supply stations

In order to further verify the effectiveness of innovative management models in improving the service efficiency of power supply stations in the context of digital transformation, a survey was conducted on 10 companies and 10 households in a commercial district. Using the average time for troubleshooting as an indicator, the service efficiency of the power supply station before and after using the innovative management mode is compared. The specific comparison results are shown in Table 1.

Table 1 Service efficiency of power supply stations before and after using innovative management models

Object	*Quantity/unit*	*Troubleshooting time before using innovative management mode/min*	*Troubleshooting time/min after using innovative management mode*
Enterprise	10	50	5
Residence	10	30	3

According to Table 1, the maintenance time of enterprises has been reduced from 50 min to 5 min, and the maintenance time of residential buildings has been reduced from 30 min to 3 min. Both enterprises and residential buildings have significantly reduced their troubleshooting time after using innovative management models in power supply stations, thereby achieving the goal of reducing power outage time and improving service response speed.

6.2 Impact of innovative management mode on power supply reliability of power supply stations

In order to further verify the reliability of the method proposed in this paper, the accuracy of fault maintenance is used as an indicator to compare the power supply reliability of the power supply station before and after the use of innovative management mode. The specific comparison results are shown in Table 2.

Table 2 Power supply reliability of power supply stations before and after the use of innovative management mode

Object	*Quantity/unit*	*Accuracy of fault detection before using innovative management mode/%*	*Error detection accuracy after using innovative management mode/%*
Enterprise	10	68.6	98.6
Residence	10	72.9	99.8

According to Table 2, the accuracy of fault detection in enterprises before using innovative management mode was only 68.6%, while the accuracy of fault detection after using innovative management mode increased to 98.6%. The accuracy of fault detection

before the use of innovative management mode in residential buildings was only 72.9%, while after the use of innovative management mode, the accuracy of fault detection was 99.8%, avoiding serious consequences such as transformer damage or fire.

6.3 Impact of innovative management models on the service experience of power supply stations

In order to further verify the feasibility of the method proposed in this paper, user satisfaction was used as an indicator to compare the user satisfaction of the power supply station before and after using the innovative management model. The specific comparison results are shown in Table 3.

Table 3 User satisfaction of power supply stations after using innovative management models

Object	*Quantity/unit*	*Satisfied*	*Dissatisfied*
Enterprise	10	10	0
Residence	10	10	0

According to Table 3, after using the innovative management model in randomly selected enterprises and residential areas, all users of the power supply station expressed great satisfaction with the service provided by the power supply station, with a satisfaction rate of 100%. Therefore, it can be explained that using innovative management models can improve users' service experience and increase their satisfaction with the power supply station.

7 Conclusion

In the context of digital transformation, innovative management models have a significant impact on improving the service efficiency of power supply stations. By applying innovative management methods such as data-driven management, agile management, customer participatory management, innovative technology application, knowledge management and training, and system optimisation and automation, power supply stations can achieve precise resource allocation, efficient operation, and continuous innovation. This will lead to more accurate load forecasting, optimised maintenance plans, personalised service strategies, and higher levels of service quality and user satisfaction. At the same time, the application of innovative management models can also improve the competitiveness and market influence of power supply stations, promoting the entire industry to leap towards digitisation and intelligence. Through case analysis, it can be seen that innovative management models can effectively improve the service efficiency, reliability, and user satisfaction of power supply stations. Therefore, in-depth research and application of innovative management models are of great significance for achieving digital transformation, optimising service efficiency, and achieving sustainable development in power supply stations.

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