

Guideline on Management to Promote the Quality of Scientific
Research at Guiyang University

Chen Ting

A thesis submitted in partial fulfillment of the requirements for
the Degree of Doctor of Philosophy Program in Educational Administration

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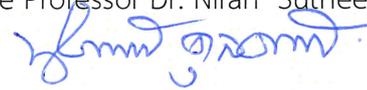
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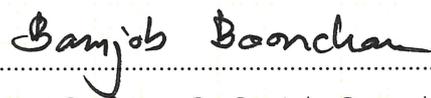
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ABSTRACT

The objectives of this research were: 1) to study the development status of scientific research management in Guiyang University. 2) to formulate the management guidelines for improving the scientific research quality of Guiyang University. 3) To evaluate the suitability and feasibility of the management guidelines for scientific research quality improvement in Guiyang University. The population for this research was 970 teachers who work in Guiyang University as faculty and according to the Yamane Formula the sample is 285 teachers. On the basis of literature analysis and interview materials analysis, the questionnaire "recognition of social science and natural science" was compiled, The average IOC value of the questionnaire was 0.69, which met the standard requirements of the questionnaire quality.

The results showed that the scientific research management of Guiyang University was in the middle level. Based on this, the author proposes that a scientific research management paradigm of respecting, understanding, motivating and developing people should be constructed from the people who create scientific research achievements. The suitability and feasibility of Guideline on Management to Promote the Quality of Scientific Research at Guiyang University was at the high level.

Keywords: Scientific research management of Chinese universities, Promotion guide, management paradigm

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ABSTRACT

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อ 1) ศึกษาสถานการณ์ปัจจุบันในการพัฒนาการจัดการการวิจัยทางวิทยาศาสตร์ของมหาวิทยาลัยกัยหยาง 2) กำหนดแนวทางการจัดการเพื่อปรับปรุงคุณภาพการวิจัยทางวิทยาศาสตร์ของมหาวิทยาลัยกัยหยาง และ 3) ประเมินความเหมาะสมและความเป็นไปได้ของแนวทางการจัดการเพื่อปรับปรุงคุณภาพการวิจัยทางวิทยาศาสตร์ของมหาวิทยาลัยกัยหยาง ประชากรในการวิจัยครั้งนี้ ได้แก่ อาจารย์ประจำมหาวิทยาลัยกัยหยางจำนวน 970 คน และคัดเลือกเป็นกลุ่มตัวอย่างของการวิจัย โดยในสูตรของยามาเน (Yamane) ได้จำนวน 285 คน เครื่องมือในการวิจัยครั้งนี้ ได้แก่ แบบสอบถาม “ การรับรู้ทางสังคมศาสตร์และวิทยาศาสตร์ธรรมชาติ ซึ่งได้จากการทบทวนวรรณกรรมและการสัมภาษณ์ ค่า IOC เฉลี่ยของแบบสอบถามคือ 0.69 ซึ่งเป็นไปตามข้อกำหนดมาตรฐานของคุณภาพแบบสอบถาม

ผลการวิจัยพบว่าการจัดการวิจัยทางวิทยาศาสตร์ของมหาวิทยาลัยกัยหยางอยู่ในระดับปานกลาง ดังนั้นกระบวนการจัดการการวิจัยทางวิทยาศาสตร์ภายใต้การเคารพ ความเข้าใจ การจูงใจ และการพัฒนาคน ควรสร้างขึ้นจากบุคคลที่สร้างผลสัมฤทธิ์ทางการวิจัยทางวิทยาศาสตร์ และความเหมาะสมและความเป็นไปได้ของแนวทางการจัดการเพื่อส่งเสริมคุณภาพการวิจัยทางวิทยาศาสตร์ของมหาวิทยาลัยกัยหยางอยู่ในระดับสูง

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Chapter 1

Introduction

Rationale

Both social science and natural science have a profound impact on the development of the country and the nation, not only cultivating a comprehensive spiritual and cultural atmosphere, but also providing solid support for social and economic progress (Yu Yinghong, 2014). In the context of economic globalization and cultural diversification, the research of these two disciplines has become more important. The Opinions of the CPC Central (Communist Party of China) Committee on the Further Prosperity and Development of Philosophy and Social Sciences highlight the key role of social and natural sciences and in China's economic and social development by emphasizing four "equally important" aspects. This not only reflects the high concern of the Party and the state to the prosperity and development of these two fields, but also the affirmation of their indispensable role in the future development (Song Zhendong, 2013).

Institutions of higher learning play a core role in the development of national social science and natural science. They not only play an irreplaceable role in understanding the world, inheriting civilization and innovating theories, but also make outstanding contributions in policy consultation and talent training. In the face of the growing social demand for scientific and technological innovation and the intensified global competition for science and intellectual property rights, the scientific research ability of universities has become a key indicator to measure their adaptability and influence. In fact, during the 11th Five-Year Plan period, two-thirds of the social science and natural science research achievements in China were made by universities. According to the Outline of the Chinese National Plan for Medium-and Long-term Education Reform and Development (2010-2020), higher education is not only responsible for training senior professionals and promoting the development of science, technology and culture, but also a key force in promoting socialist modernization (Sun Xiaobing, 2010).

The outline also emphasizes the importance of improving the level of scientific research, and encourages universities to make greater contributions to

knowledge innovation, technology innovation, national defense science and technology innovation and regional innovation, highlighting the important position of universities in the construction of a national scientific innovation system. In the current higher education environment, remarkable progress has been made in the social and natural sciences. But at the same time, the methods of managing these studies have also exposed some problems, especially in the pursuit of quantity and ignoring the quality, paying attention to the form and neglecting the content, and valuing the research results while ignoring the process. This bias has led to a utilitarian tendency in the research field, with a large number of low-level, repetitive research, lacking in innovative, pioneering and comprehensive outstanding results.

These problems have seriously affected the healthy development of social science and natural science research, and have aroused wide attention in academia and society. This situation may stem from a variety of factors, including the direction of social development and the national policy system. However, one of the significant reasons is that the paradigm of social science and natural science research management in universities has not met the needs of the current economic and social development. What is the "paradigm"?

According to the philosopher of science Thomas Kuhn (1965), the paradigm is a pluralistic concept. It can be either a tradition shared by scientists, a model and a model, or a belief system of the scientific community, or even some accepted examples of scientific experimental activities. The current management paradigm of social science and natural science research in universities is a modern management paradigm. It is mainly manifested as the "only scientific" management concept, the "rigid" management system and the "utilitarian" scientific research evaluation. However, this management paradigm has a fundamental conflict with the internal characteristics and diversity of social science and natural science research, which does not conform to the academic development law and characteristics of these disciplines themselves, and is a scientific research management mode that violates the law of research.

Recent research indicates that the management of social science and natural science research in higher education institutions is a both unique and complex task. This management mainly involves researchers, academic activities and their achievements. In this process, the role of researchers is crucial, and they are the core

and key of scientific research activities. Therefore, when managing social science and natural science research, universities should first pay attention to researchers, especially their creativity, and what kind of talents and environment can stimulate their creativity.

Adopt flexible management methods and creating a relaxed research atmosphere can encourage researchers to consciously abide by the research norms, so as to solve the current problems in university research. The Chinese government also attaches great importance to this area. In 2011, the General Office of the CPC Central Committee and the State Council forwarded a series of documents, including the Opinions of the Ministry of Education on Promoting the Prosperity and Development of Philosophy and Social Sciences in Institutions of Higher Learning, aiming to comprehensively plan and deploy research on social and natural sciences in universities and improve the quality of research.

"Humanistic management" is a concept and system that emphasizes the subjectivity of the management object. It starts from the perspective of people's emotions, needs and development, focuses on people's spiritual satisfaction, and respects and understands individual needs. This management approach provides a stage for each researcher to show their talent and ability. Scholars believe that this management mode full of humanistic care can enhance the affinity and cohesion of the organization, enable everyone to maximize their potential, bring spiritual satisfaction and pleasure, and achieve win-win results, thus greatly improving the benefits of the organization. Therefore, "humanistic management" is not only a new management concept, but also a new scientific research management paradigm, which is applicable to the fields of social science and natural science. This approach realizes that the core of research, whether social or natural science, lies in the researcher themselves. Paying attention to their innovative thinking, emotional needs and personal development can effectively improve the overall quality and efficiency of scientific research work.

Under this management model, institutions of higher learning not only assume the responsibility of providing material resources and research platforms, but also, more importantly, creating an environment that promotes innovation and personal growth. Such an environment should include: an open and inclusive academic atmosphere, encouraging inter-disciplinary collaboration, providing

personalized career development opportunities for researchers, and providing respect and encouragement for their innovative spirit. In this environment, researchers in both social science and natural science can find the way to realize their self-worth and make greater contributions to academic research and social progress.

In a word, the integration of humanistic management concept into the social science and natural science research management in universities not only improves the quality and efficiency of scientific research work, but also provides strong support for the personal growth and development of researchers. The enhancement and implementation of this idea is of great value for improving the overall level and international competitiveness of China's higher education.

Research Question (s)

1. What is the current status quo of scientific research management in Guiyang University? Is the flexible management and adaptive mode more necessary? The current management model is often too rigid, is this not conducive to meeting the changing research needs and methods? Could this rigid management hinder the development of innovation and collaboration, and therefore will more flexible and adaptive management strategies be needed to promote the diversity and quality of research?

2. How should the focus of scientific research shift from a pure pursuit of results to a balanced emphasis on research processes, including methodology, exploration and practice, to enhance the depth and quality of research, rather than just focusing on the final results? And should the university focus on improving the quality of research projects, not just the quantity, so as to improve the status of the university by improving the quality of research, rather than by continuously increasing the task requirements of researchers?

3. Should researchers be encouraged to conduct their own research to avoid limiting their innovation and exploration due to excessive tasks and time constraints? And is the reasonable implementation of rules and regulations strictly observed? Meanwhile doing these systems ensure rationality and justice, and are the penalties for violators appropriate and fair? And how on earth can we achieve comprehensive scientific research assessment: How to avoid the tendency of seeking quick success

and quick benefits in scientific research assessment, not only with the number of results as the main evaluation criterion, but also how to adopt a more comprehensive and comprehensive evaluation system?

Objective(s)

This study aims to establish a new management model focusing on all dimensions of research management and propose practical and feasible improvement guidelines. To this end, this article has three objectives in accordance with the objectives:

1. To study the development status of scientific research management in Guiyang University, to explore the shift in scientific research focus from purely results-driven to a holistic approach that values methodology, exploration, and practice. This involves identifying ways to deepen and improve research quality by appreciating the entire research journey, not just the outcomes.

2. To assess the effects of prioritizing scientific research quality over quantity within universities, to formulate the management guidelines for improving the scientific research quality of Guiyang University. This includes highlighting the significance of improving research standards over merely increasing researchers' workload and exploring the advantages of promoting independent research efforts. Additionally, it looks into how granting researchers more autonomy and lessening task constraints can spur innovation and exploration.

3. To evaluate the suitability and feasibility of the management guidelines for scientific research quality improvement in Guiyang University, analyzing if these measures ensure rationality and justice. This also involves assessing the suitability and equity of penalties for those who breach these standards.

Scope of the Research

Population and the Sample Group

Population

Guiyang University has all its 970 teachers

The Sample Group

The Yamame Formula $n = \frac{N}{1+N(e^2)}$ was used to determine the sample size, which goes like this:

n = sample size needed,

N = population size,

e = margin of error (expressed as a decimal),

a = margin of error of 5% is wanted here, and N = 970, the formula would therefore look like this:

$$n = \frac{970}{1+970(0.05^2)}$$

$$n \approx 283.57$$

So, according to the Yamane formula, about 284 samples are needed to represent the population to achieve a 5% error tolerance. Usually, the integer is taken up to the nearest integer, so 285 samples are selected to represent the population.

The Variable

Independent Variable

Population background factors (gender, age), professional background factors (academic degree, identity), other factors (professional title, position, and discipline) Dependent Variable

The recognition of scientific research management 1. "five-dimensional" scientific management, scientific research management concept, 2. scientific research management and operation system, management mode of scientific research personnel, 3. scientific research project management, scientific research assessment and evaluation)

Content (s)

First of all, the current scientific research management mode is often too rigid and not conducive to adapting to the increasingly changing research needs and methods. To facilitate the development of innovation and collaboration, more flexible and adaptable management strategies are needed. This strategy can not only promote the diversity and quality of research, but also balance the importance of research results and processes.

Scientific research should not only focus on the final results, but also have a balanced focus on methodology, exploration and practice, which is crucial to enhance the depth and quality of research.

Further, Universities and research institutions should focus on improving the quality of research projects, not just on quantity. By improving the quality of research, the status of Universities or institutions can be naturally promoted, rather than by increasing the task requirements of scientific researchers.

At the same time, researchers should be encouraged to study independently to avoid limiting their innovation and exploration space due to excessive tasks and time constraints. To support this goal, researchers should provide the necessary research platforms and support to help them better carry out their research work.

In addition, scientific research management should also encourage academic and cultural integration, especially in the field of humanities and social sciences, to reflect the spiritual values of the university, and to promote the integration of science and culture and humanistic culture.

In terms of scientific research assessment, the tendency of eager for quick success should be avoided, and the number of achievements should not be taken as the main evaluation criterion. Instead, a more comprehensive and comprehensive evaluation system should be adopted, which includes not only the evaluation of the results, but also the emphasis on the research process.

At the same time, the implementation of the rules and regulations should be reasonable and fair, and the punishment for those who violate the regulations should also be appropriate and fair.

Finally, the comprehensive training of scientific research talents is equally important. While paying attention to the output of scientific research results, we should not ignore the cultivation of scientific research talents, and we should pay equal attention to both, so as to truly promote the long-term development and in-depth progress of scientific research.

After establishing the principles of flexible management, balancing the research process and results, and focusing on quality and talent training, the next focus is on how to implement these principles to all levels of scientific research management. First, an environment that supports innovation needs to be

established. This means providing researchers with sufficient freedom and resources so that they can explore new ideas and methods, rather than just following existing research paths. This environment should encourage risk-taking and innovative thinking, as well as provide appropriate support and guidance to help researchers overcome possible difficulties in the research process. Secondly, scientific research management should promote interdisciplinary and cross-cultural cooperation. In today's complex and changing research environment, the combination of different disciplines and cultural backgrounds can produce new insights and solutions. By encouraging and supporting such collaboration, research horizons can be broadened and knowledge innovation and dissemination promoted. At the same time, attention should be paid to scientific research ethics and responsibility.

With the deepening of scientific research, the demands for ethics and responsibility are also increasing. Ensuring that scientific research activities follow ethical guidelines is not only a legal requirement, but also a basis for maintaining scientific integrity and public trust. Therefore, scientific research management should include the education and supervision of scientific research ethics. In addition, the dissemination and application of scientific research results. The dissemination of scientific research results can not only promote academic exchanges, but also promote the application of scientific knowledge in the society, thus bringing a wider impact. Therefore, researchers should be encouraged to actively participate in the public science education and the commercialization process of scientific research results. Finally, continuous evaluation and feedback mechanisms are crucial to the success of scientific research management. This includes a periodic review of research projects to ensure that they still meet established goals and standards and a periodic evaluation of research policies and procedures to ensure that they still apply to changing research settings. Through such a series of comprehensive measures, we can ensure that scientific research management can not only adapt to the current needs, but also prepare for the future challenges and opportunities.

Advantages

At present, although the scientific research and administrative management of our university have extensively discussed and analyzed with many scholars and experts, it is still in the initial stage to systematically understand and examine this

field from a higher "paradigm" level. In this context, this study aims to deeply explore the practice of scientific research management of Guiyang University from the perspective of "paradigm". The core purpose of this research is to break through the limitations of traditional research management and deeply explore its more essential problems, which is a major innovation in our university, even Guizhou Province and even the whole country. In particular, this innovation is mainly reflected in the following three aspects:

1. Based on the actual investigation, this research deeply analyzes the current existing problems in the scientific research management of Guiyang University, such as formalism, excessive emphasis on results and ignoring the process, and emphasis on quantity and neglecting quality, so as to provide guidelines for the construction of a new management mode.

2. With the help of the "paradigm" theory, the new concepts of "scientific research management paradigm" and "modernity management paradigm" are proposed, and the fundamental conflict between the "modernity management paradigm" and scientific research management in concept, system and operation is analyzed.

3. From the particularity and basic development law of scientific research management, the value concept and construction strategy of scientific management paradigm are put forward, and the guarantee mechanism and operation power of this paradigm are discussed at the practical level, so as to make the quality of scientific research a qualitative leap, so as to improve the academic status of Guiyang University in the future academic circle.

Definition of Terms

The "Five Only dimensions" of Scientific Management: The "Five Only dimensions" of Scientific Management is a comprehensive concept aimed at enhancing management efficiency and effectiveness from multiple perspectives. These dimensions typically cover technical, economic, social, environmental, and cultural aspects, reflecting the diversity and complexity of management activities.

Although the specific definition of the "Five Dimensions" may vary with scholars and research contexts, the core purpose is to adapt to the changing management environment through the integrated application of scientific management principles.

Throughout the development of scientific management theory, contributions from numerous scholars have provided theoretical support for understanding and practicing this concept.

For instance, Frederick W. Taylor's "Principles of Scientific Management" (1911) laid the foundation for scientific management; Henri Fayol (1916) expanded the scope of management by proposing five basic functions of management and 14 management principles; Peter Drucker (mid-20th century) emphasized the importance of knowledge workers and the social dimension of management; Ludwig von Bertalanffy (1968) highlighted the environmental dimension and systemic nature of organizations through system theory; and W. Edwards Deming (1980s) focused on continuous improvement and systemic thinking through his quality management theory.

These theories and principles not only revealed the multidimensionality of scientific management but also provided a rich theoretical resource for a deep understanding and application of the "Five Dimensions" management concept. Nonetheless, for specific definitions and applications of the "Five Dimensions" concept, it is essential to refer to the latest management research and literature for more comprehensive and updated theoretical support.

The concept of the "Five Dimensions" of scientific management, with its comprehensive attention to technical, economic, social, environmental, and cultural dimensions, offers a multi-angle and in-depth analytical framework for researching and enhancing the quality of scientific research management at Guiyang University. The definition and application of this concept play a significant role and value in understanding and improving the scientific research management practices at Guiyang University.

Technical Dimension: In scientific research management, the optimization of the technical dimension involves modernizing research tools and methods, including data analysis tools, updating experimental equipment, and applying information technology. For Guiyang University, investing in the latest research technology and training can significantly improve research efficiency and quality, promoting innovation in research outcomes.

Economic Dimension: The economic dimension focuses on the cost-effectiveness and resource allocation efficiency of scientific research management. For Guiyang

University, reasonable planning and allocation of research funds to ensure their effective use are crucial for enhancing the economic return and sustainability of research projects.

Social Dimension: This dimension emphasizes the role of scientific research activities in meeting social needs and solving practical problems. Guiyang University can enhance the social relevance and impact of its research work by aligning research focuses with local socio-economic development needs, thus increasing the social value of research management.

Environmental Dimension: The environmental dimension reminds us to consider the impact of scientific research activities on the environment and sustainability issues. Guiyang University should promote green research practices and encourage research areas related to sustainable development to enhance the environmental responsibility of research management.

Cultural Dimension: The cultural dimension focuses on values, ethics, and organizational culture in scientific research management. Guiyang University can improve the quality of research management by fostering an open, innovative, and collaborative research culture, promoting cohesion and innovative capability within research teams.

In summary, the "Five Dimensions" concept of scientific management provides a comprehensive theoretical guidance and practical framework for enhancing the quality of scientific research management at Guiyang University. By considering and balancing these five dimensions, Guiyang University can not only improve the efficiency and effectiveness of its research management but also ensure the sustainable development and social responsibility of research activities, ultimately achieving a comprehensive enhancement of research management quality. This all-around management strategy helps Guiyang University stand out in the competitive field of scientific research and maximize research outcomes.

Research Management Philosophy: The philosophy of research management refers to the comprehensive set of basic theories, viewpoints, and methods related to management work in scientific research activities. It encompasses aspects such as goals, principles, and methods, aiming to enhance management efficiency and promote the healthy development of scientific research. Key literature such as Meng Qingguo's "The Sociality of Science and Research Management" (2001), Li Xinjian's "Modernization Theory and Practice of Scientific Research Management in Universities" (2010), and Zhang Zhiqiang's "Research Management: Principles, Methods, and Cases" (2015) provide deep

theoretical support for this field. These works emphasize the importance of the human factor, the innovation environment, and the modernization of management methods.

For Guiyang University, adopting advanced research management philosophies is crucial. It not only helps to clarify research directions and optimize management processes but also promotes an innovative culture, enhances the quality and efficiency of scientific research, and strengthens international competitiveness. The practice of research management philosophy means closely integrating research activities with the overall development strategy of the school, optimizing management processes, and creating an innovative environment to focus research teams on innovation work. This promotes the overall improvement of research management quality at Guiyang University and achieves sustained and healthy development of scientific research activities.

The implementation of this philosophy at Guiyang University means not only focusing on the selection and management of research projects but also fostering a research culture that encourages exploration and tolerates failure throughout the college. This ensures that researchers can work in an environment that supports innovation. By clarifying the direction and objectives of research, Guiyang University can ensure its research activities are aligned with societal needs and technological trends, thereby enhancing the practicality and impact of its research outcomes.

Moreover, the modernization of the research management philosophy also emphasizes the informatization and digitalization of research management work, which helps improve management efficiency and reduce the administrative burden on researchers, allowing them more time and energy to devote to research itself. In the context of globalization and the knowledge economy, Guiyang University can enhance its research competitiveness and contribute to regional and national technological progress and social development by implementing and updating its research management philosophy.

The optimization and innovation of research management can not only improve the efficiency and outcome conversion rate of research work but also attract more outstanding research talents, promote academic exchanges, and research cooperation, thereby having a profound impact in a broader range of scientific fields. In summary, for Guiyang University, adopting and practicing cutting-edge research management philosophies is key to improving the quality of research management, promoting

research innovation capabilities, and enhancing the social contribution of research outcomes. Through continuous learning, introduction, and integration of new concepts, technologies, and methods in research management, Guiyang University can achieve a qualitative leap in research management and outcomes, making a greater contribution to the school's long-term development and the advancement of scientific research.

Research Management and Operation System: The research management and operation system refers to a set of systematic management mechanisms and procedures designed to ensure the effective conduct of research activities, covering all aspects of research projects, including application, review, implementation, supervision, evaluation, and the application and transformation of results. This system is crucial for the rational allocation of research resources, improving the efficiency and quality of research activities, promoting innovation in research findings, and the transformation of scientific and technological achievements. Numerous scholars and research institutions at home and abroad have conducted in-depth studies on this topic. For example, Clark, B. R. (1998) discussed ways for higher education institutions to improve research quality through innovative management and operation systems; Mowery, D. C. & Sampat, B. N. (2005) analyzed cases of promoting technology transfer between universities and the industrial sector in the United States through reforms in research management systems.

For Guiyang University, a deep understanding and effective implementation of the research management and operation system can not only optimize the allocation of research resources, enhance research quality and efficiency, but also promote the transformation of scientific and technological achievements, increasing the college's international competitiveness. Therefore, constructing and perfecting the research management and operation system is a key strategy to enhance the quality of research management, promote research innovation, and the transformation of results. Learning from successful experiences and practices both domestically and internationally plays a significant role in enhancing the quality of research management at Guiyang University.

In fact, Guiyang University and similar institutions, by building and perfecting the research management and operation system, can not only improve the quality and efficiency of research management but also stimulate the innovative potential of researchers, promote the transformation and application of research findings, thereby gaining a place in the domestic and international research fields. Moreover, a good research management and operation system helps attract excellent research talent,

establish and maintain efficient research teams, further enhancing the college's research competitiveness and social impact. Through participating in more international cooperation and exchange projects, Guiyang University can increase the international visibility of its research findings, bringing more opportunities and resources to the college.

In summary, optimizing and perfecting the research management and operation system is key to enhancing the quality of research management and the capacity for research innovation. For Guiyang University, this is not only an opportunity to improve its own research standards but also an important way to promote the overall development of the college through research innovation. In the future, Guiyang University should continue to pay attention to and absorb advanced research management concepts and practices from both domestic and international sources, constantly adjust and improve its research management and operation system to achieve continuous optimization and high-quality development of research work.

Management of Scientific Researchers: The management of scientific researchers refers to the strategies and methods for effective management and optimal allocation of research personnel in scientific research activities. This concept has received widespread attention internationally, with numerous scholars conducting in-depth studies on it. For instance, Mintzberg (1979) explored the relationship between organizational structure and management style in his work, emphasizing the importance of management style in stimulating the innovative capabilities of research personnel. Additionally, Kotter (1990) discussed the difference between leadership and management, and how effective leadership can enhance the efficacy of a research team. These literatures provide a theoretical foundation for understanding and applying the management of scientific researchers.

Applying the core concepts of scientific researcher management and international research findings to the management of scientific research at Guiyang University is of significant importance for improving the quality of the college's research management. Firstly, by adopting effective management and leadership strategies, it can promote innovation and productivity among research personnel, thereby enhancing the quality and efficiency of research projects. Secondly, a good management approach for scientific researchers helps attract and retain outstanding research talent, bringing more research opportunities and financial support to the college. Lastly, by implementing successful international management models, Guiyang University can enhance its

research competitiveness and increase its influence in the academic community both domestically and internationally.

In summary, a deep understanding and effective application of scientific researcher management methods are crucial for improving the quality of research management and overall competitiveness of Guiyang University. By drawing on successful international experiences and strategies, Guiyang University can achieve better outcomes in its research management practices.

To better implement these management methods, Guiyang University needs to take specific measures in several aspects. Firstly, the college should evaluate its existing research management processes, identifying problems and areas for improvement, which may include the efficiency of resource allocation, the selection and evaluation mechanisms for research projects, and the incentive and training system for research personnel. Following the evaluation, Guiyang University can introduce more flexible and open management models, such as promoting interdisciplinary cooperation, encouraging researchers to participate in the decision-making process, and providing more personalized development opportunities. Moreover, Guiyang University should also focus on building a research culture that supports innovation, encourages experimentation, and tolerates failure.

Such a culture can help stimulate the intrinsic motivation of researchers, prompting them to invest more passion and creativity in their research activities. At the same time, the college can establish a more fair and transparent evaluation and reward mechanism to ensure that the efforts and achievements of researchers are recognized and motivated. In the process of implementing these management strategies, Guiyang University also needs to recognize the importance of international cooperation and exchange. Through collaboration with foreign universities and research institutions, the college can not only introduce advanced research management concepts and technologies but also provide a broader platform for academic exchange for researchers, expanding their horizons and enhancing the international impact of their research work.

In conclusion, by deeply analyzing and applying the core concepts of scientific researcher management, combined with advanced international experiences, Guiyang University can make significant progress in improving the quality of its research management. This will not only enhance the college's research output and quality but also strengthen its ability to attract and cultivate research talent, ultimately promoting

the long-term development of the college's research endeavors and enhancing its academic influence.

Research Project Management: Research project management involves guiding the entire management process of a research project from initiation to completion through the application of specialized knowledge, skills, tools, and techniques. This concept is crucial in the field of research as it pertains to various phases such as planning, execution, monitoring, and closure of research projects, ensuring the effective completion of set objectives. Classic literature in this field includes Kerzner (2013)'s "Project Management: A Systems Approach to Planning, Scheduling, and Controlling," PMI (2017)'s "A Guide to the Project Management Body of Knowledge (PMBOK® Guide) - Sixth Edition," and Morris and Pinto (2004)'s "The Wiley Guide to Managing Projects." Although these texts are not specifically focused on research project management, the principles and techniques they provide are widely applicable to the management of research projects.

Research project management plays a significant role in enhancing the quality of research management at Guiyang University. It helps improve the efficiency and outcomes of projects, reduces the likelihood of project failure through risk management, optimizes resource allocation, enhances team collaboration and communication, and improves the predictability and controllability of project results. For Guiyang University, emphasizing training and practice in research project management is key to improving the level of research management, promoting the quality and efficiency of research outcomes. Through such efforts, Guiyang University can plan and execute research projects more effectively, ensure the rational use of research resources, promote academic innovation, and produce research outcomes.

Furthermore, the in-depth practice of research project management is not only a necessary approach for Guiyang University to enhance project management capabilities but also an important means to comprehensively improve the collaborative abilities of the research team, enhance research innovation, and competitiveness. By implementing research project management, Guiyang University can ensure that research projects are completed smoothly according to set timelines, budgets, and quality targets, while also promoting interdisciplinary cooperation, stimulating the innovative potential of researchers, and enhancing the social and academic value of research outcomes.

In fact, the successful practice of research project management at Guiyang University requires efforts on multiple levels: firstly, enhancing the awareness of the importance of research project management among managers and researchers, and strengthening their capabilities in project planning, execution, monitoring, and closure through training and learning; secondly, establishing and improving the systems and processes for research project management to ensure the standardization and normalization of research activities; and lastly, adopting management tools and technologies suitable for the college's research characteristics, such as project management software, to improve the efficiency and effectiveness of research project management.

In summary, research project management has a profound impact on enhancing the quality of research management and the output of research outcomes at Guiyang University. By drawing on successful international experiences and practices, combined with its own realities, Guiyang University can make significant progress in the field of research project management, contributing to the scientific research and technological innovation of the college and the region.

Research Assessment and Evaluation: Research assessment and evaluation is a crucial process aimed at ensuring the quality, efficiency, and innovation of scientific research activities. This process is achieved by evaluating the performance of research projects, personnel, teams, and institutions. Internationally, the concepts and practices of research assessment and evaluation have been extensively studied, with significant literature including Wilsdon et al. (2015) "The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management," which delves into the role of quantitative metrics in research evaluation, emphasizing the importance of balancing quantitative assessments with qualitative judgments; Hicks et al. (2015) "Measuring Research Performance," discussing multidimensional evaluation methods for research performance, highlighting the complexity of choosing and using evaluation metrics; and Guetzkow et al. (2004) "Research Assessment in the Humanities: Towards Criteria and Procedures," focusing on research evaluation in the humanities, proposing specific criteria and procedures that should be considered in the evaluation process.

For Guiyang University, the implementation of research assessment and evaluation plays a significant role in enhancing the quality of research management. It helps improve the quality and efficiency of research, enhances research innovation

capabilities, effectively allocates research resources, boosts the college's reputation, and promotes international cooperation. By establishing and improving the research assessment and evaluation system, Guiyang University can achieve a qualitative leap in research management practices, thereby enhancing its influence in academic and social spheres.

Guiyang University, by actively referring to and integrating these advanced international theories and practices of research assessment and evaluation, can effectively identify and strengthen its research activities' strengths while specifically addressing existing shortcomings. This not only helps to improve the overall quality and efficiency of research work but also stimulates researchers' innovative potential, promoting the innovation and diversification of research outcomes. The establishment and perfection of a research assessment and evaluation system are crucial for the reasonable allocation of resources, optimization of the research environment, and enhancement of the research team's collaboration and innovation capabilities. Research assessment and evaluation also play a key role in enhancing Guiyang University's academic reputation and social recognition. High-quality research outcomes can attract more academic attention and social resources, bringing more research funding and cooperation opportunities to the college, thereby further enhancing its research level and influence. Additionally, increased opportunities for cooperation and exchange with international research institutions will bring new research ideas and methods to Guiyang University, promoting interdisciplinary integration and improving the internationalization level of research work.

In summary, research assessment and evaluation is not only an important tool for enhancing the quality of research management at Guiyang University but also a key strategy for the college to achieve long-term development, enhance its academic status, and social influence. By deeply learning from and referencing advanced international experiences and practices, Guiyang University can build a more scientific, fair, and efficient research assessment and evaluation system, laying a solid foundation for the comprehensive improvement of the college's research development and management quality.

Scientific research: Scientific research, namely scientific research, is an activity to enhance our knowledge and understanding of natural and social phenomena through systematic methods. This process usually begins with observation, followed by the

asking of questions, and then the formulation of hypotheses. Scientists design experiments or collect data to test these hypotheses to test or refute them. Effective scientific research requires a rigorous methodology, including detailed data records and the recovery of the results. The results of scientific research can be new theories, technological improvements, or a significant expansion of existing knowledge. The value of scientific research is that it provides a systematic way to understand the world around us and promote technological innovation and social progress. Scientists share their findings by publishing research findings, that are peer reviewed to ensure their quality and accuracy.

Scientific research is not just about discovering new things, it also involves verifying the accuracy and application of old theories. Research also helps to solve real-world problems, such as disease treatment, environmental protection, and technological innovation, which is the cornerstone of the continuous progress of human knowledge. The process of scientific research also emphasizes multidisciplinary integration and cooperation. With increasing complexity and specialization in science, experts in different fields often need to work together to address complex problems across disciplines. For example, the combination of biology, physics, computer science, and engineering has revolutionized advances in areas such as bioinformatics and nanotechnology. In addition, scientific research is increasingly relying on advanced technology and big data analysis, which requires scientists to have cross-field skills and knowledge.

Scientific research is not only the activity of academia; it is also essential to social and economic development. Governments, NGOs and the private sector all invest in research to drive innovation, increase competitiveness and solve public problems. Scientific research has an important impact on formulating policies, improving public health, protecting the environment and improving the quality of life. Therefore, scientific research is not only the responsibility of scientists, but also the result of the joint efforts of the whole society, which has profound significance for the future development and well-being of human beings.

Research management: Research management is a multi-dimensional process, which involves planning, organizing, guiding, coordinating and controlling all aspects of scientific research activities. From a macro perspective, research management aims to ensure the effectiveness and efficiency of research projects, while also focusing on optimizing the allocation of resources, promoting innovation, and ensuring the

practicality and reliability of research results. It includes the selection of research projects, the management of project funding, the organization of team collaboration, and the evaluation and dissemination of research findings. Effective research management also includes the monitoring and maintenance of the research environment to ensure compliance with ethical and regulatory requirements, as well as providing a suitable research environment.

From a more micro perspective, research management also involves things such as project progress tracking, risk assessment, quality control, and performance evaluation of team members. This means that research managers not only need to have the expertise of scientific research, but also have good management skills to ensure the quality of research and the efficiency and high productivity of the research process. In addition, scientific research management also emphasizes interdisciplinary cooperation and communication, because modern scientific research is often interdisciplinary and requires the participation of experts from different backgrounds. Therefore, an effective communication and collaboration mechanism is an indispensable part of scientific research management.

In the process of scientific research management, special emphasis is also placed on the management of scientific research ethics and compliance. This means that managers should not only ensure that research activities comply with relevant laws and regulations, such as data protection laws and human research ethics, but also ensure that all research activities comply with the principles of scientific integrity. This includes preventing academic misconduct such as plagiarism, falsification, and tampering with research results. Research managers need to establish and maintain a transparent and fair research environment that encourages open communication and critical thinking, while also training researchers in ethics and compliance.

In addition, with the rapid development of science and technology and the trend of globalization, scientific research management also pays more and more attention to international cooperation and cross-cultural exchanges. This requires managers not only to understand scientific research policies and standards in different countries and regions, but also to have the ability to conduct cross-cultural exchanges and negotiations. Through international cooperation, scientific research management can promote knowledge sharing, accelerate the process of scientific discovery, and also provide support for solving global problems such as climate change and public health

crises. In general, scientific research management is a complex but extremely important field that not only supports scientific progress, but also promotes social and economic development.

Guide: From a scientific perspective, it is a series of methodology and steps designed to guide researchers or practitioners on how to effectively improve the quality and efficiency of a particular field or project. These guidelines are often based on rigorous scientific research and empirical data covering aspects from data collection, analytical methods to interpretation and application of results. They are designed to provide clear, specific operational steps and best practices that help practitioners avoid common pitfalls while promoting innovation and progress.

In practice, improvement guidelines are not limited to internal operations in the research field, but also to how to communicate effectively with wider society, policy makers, and other stakeholders. For example, these guidelines may include how to translate complex scientific concepts and findings into languages that are more accessible to the public, policy makers, and other lay audiences. This improvement of communication strategies is crucial for the dissemination of scientific knowledge, the improvement of public awareness, and the impact of policy decisions. They help ensure that scientific discoveries are not only recognized within academia, but also widely understood and applied by society.

In addition, the promotion guidelines highlight the importance of interdisciplinary collaboration, facilitating the integration of knowledge and methodology across different domains. In today's increasingly complex and interconnected world, many challenges such as climate change, global health, and sustainable development need to be addressed through a multidisciplinary perspective and collaboration. Thus, these guidelines, while guiding specific research practices, also provide a framework and principles for promoting dialogue and cooperation within and between the scientific community and in other fields. In this way, improving the guidelines not only promotes the quality and efficiency of scientific research, but also contributes to the application and influence of scientific knowledge in a wider range of fields.

Research Framework

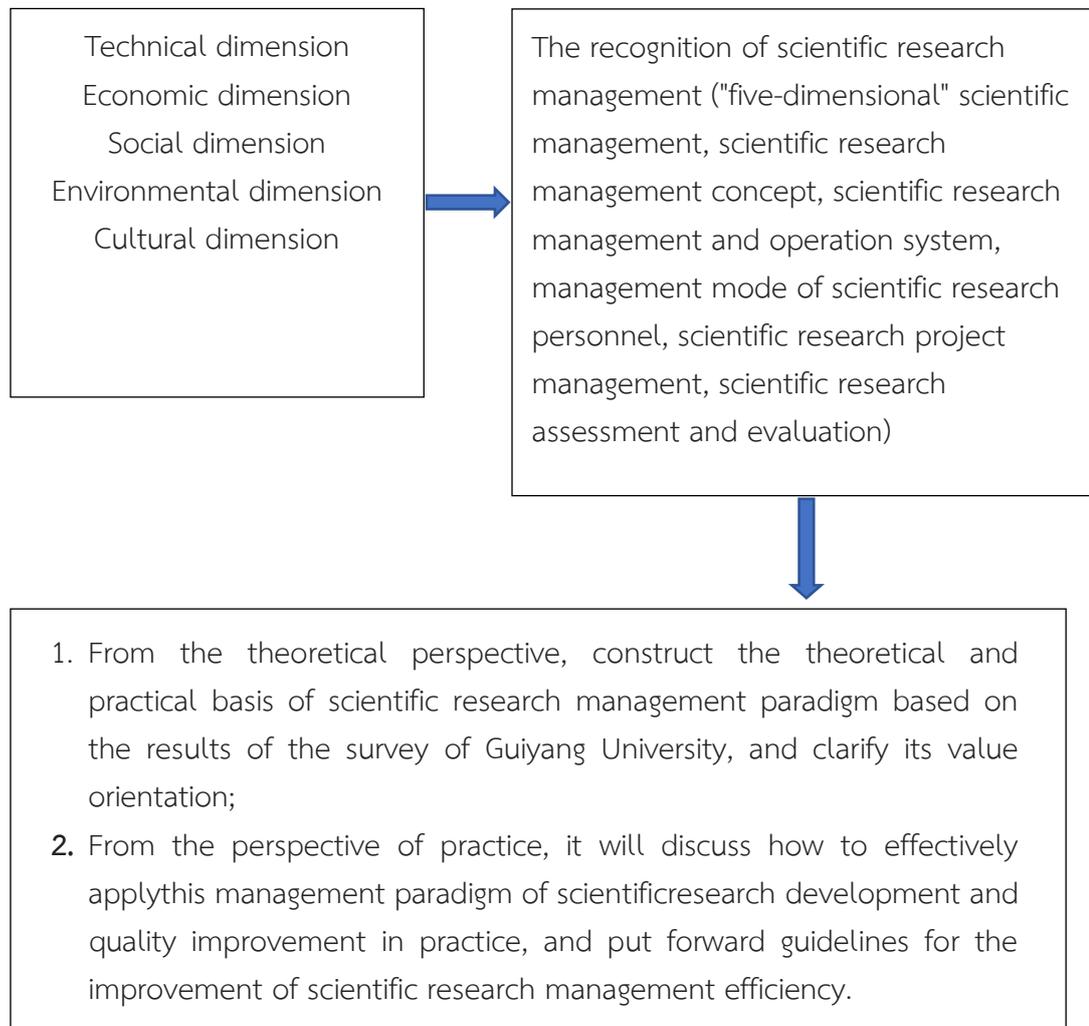


Figure 1.1 Research Framework

Chapter 2

Literature Review

The research management of social science and natural science in universities is an important part of the internal research activities of higher education institutions. It involves the organized, purposeful and planned management of research activities in these areas. In Western countries, this scientific research management activity began in the middle of the 20th century, while in China, it is a development phenomenon in the late 20th century.

During this period, both Chinese and western research in the field of university scientific research management has achieved remarkable results. In the early 20th century, with the development of European and American universities tending to be more integrated and the expansion of the scale of graduate education, the research function of social science and natural science gradually became more important. During this period, scientific research management in universities began to receive more attention. Especially after the Second World War, European and American universities began to pay more attention to this area of research.

They recognize that scientific research in universities plays an irreplaceable role in meeting the needs of social life and the country, and have achieved certain research results in this field. In general, the development and improvement of research management of social and natural sciences in universities not only reflect the progress of education and scientific research, but also reflect the changing trend of social and national needs. Over time, this field of management continues to evolve on a global scale, gradually forming a more mature and systematic management model.

1. Related research on foreign scientific research management system and mechanism
2. Research on domestic scientific research management system and mechanism
3. The shortcomings of the domestic and foreign research
4. Related Research
5. Discussion and outlook

The details are as follows.

Related research on foreign scientific research management system and mechanism

1. Related research on foreign scientific research management system and mechanism

1.1 Research on scientific research management concept

According to the existing literature, most foreign natural science and social science researchers hold different understandings of the concept of "research management". Zhang Baosheng (2005) mentioned in his research that there is generally no concept of scientific research management in Western higher education institutions. In the West, research in the natural and social sciences is generally taken as a service rather than a management. The core of this view is that the essence of research management is to serve research, and this purpose is derived from the goal of natural science and social science research to serve society. Since scientific research aims to serve the society, scientific research management should also be committed to providing support for scientific research activities, which also determines the main content of scientific research services. In foreign universities, the main responsibility of the research management departments and directors of the natural and social sciences is to provide services for researchers and research work. According to the research of Yang Li (2006), the scientific research management departments of foreign universities emphasize the concept of service and are committed to providing comprehensive, thoughtful, dedicated and perfect services.

In addition, giving full play to the talents and roles of professors is also an important part of scientific research management. For example, in American universities, professors' committees and presidents' committees are equally important, and they check and restrain each other in the management process of university research, including natural science and social science research (Wang Qingdeng, 2007). This management style embodies the principle of "people-oriented", taking professors as the main body and research interests as the driving force. Researchers are free to choose research topics according to their own research basis and personal interests, thus maximizing their individual potential and creativity. Researchers are free to choose research topics according to their own research basis and personal interests, thus maximizing their individual potential and creativity. Foreign scientific research management adheres to people-oriented, putting the needs and development of

researchers in the first place, and all scientific research activities are carried out around talents. This "people-oriented" scientific research management concept is closely related to the "humanistic" management concept advocated by this research institute.

1.2 Research on scientific research management in Universities and universities

1.2.1 Scientific research policies and systems

Since the 1980s, remarkable progress has been made globally in the management of research in the social and natural sciences. The Project Management Institute (PMI) published its first special report on research management in August 1983 through its Project Management Journal. After four years of intensive research, PMI launched the Project Management Body of Knowledge (PMBOK) in August 1987, a landmark project management document. Subsequently, in 1996, PMI published an updated version of the Project Management Body of Knowledge GUIDE (PMBOK GUIDE), which replaced the 1987 version and established it as the standard for project management. In 2000, the standard was further developed into the PMBOK GUIDE 2000, which was recognized as an official standard by the American National Organization for Standardization (ANSI/PMI-99-001-2000) on March 27, 2001. On this basis, the International Organization for Standardization (ISO) promulgated the international standard for project management, ISO 10006, as part of the ISO 9000 series of standards in December 1997. At the same time, since the 1990s, the Korean government has implemented a project-centered management System (PBS), which emphasizes the integration of research Project planning, budget allocation, acceptance, and management, using a competition-based system.

The core concept is to closely align R&D activities with budgets, ensuring that project leaders have the authority and responsibility to execute projects. The core concept is to closely align R&D activities with budgets, ensuring that project leaders have the authority and responsibility to execute projects. Under this system, if researchers fail to participate in projects, they may face the risk of salary reduction, and research institutions may suffer from funding shortages (Kim Kyu-soo & Lee Min-Hyeong, 2007). Therefore, in order to ensure adequate funding for research, the self-management capacity of research institutions and the freedom to execute projects have been strengthened. In addition, numerous studies have shown that foreign higher education institutions perform well in research policy and institutional construction. Take the

United States as an example, almost all research universities are equipped with detailed scientific research manuals, these manuals are detailed, and the scientific research system is highly consistent among universities.

This phenomenon reflects a common philosophy of research management in American institutions of higher education: in the academic world, common rules apply to all institutions and individuals. Universities are not only centers of scientific research, but also important places to train academic masters and top scientific talents. For example, the Research Policy Manual of Stanford University in the United States, as an important document of its research system, contains ten chapters, each chapter is carefully divided, and comprehensively covers all aspects of scientific research management (Huang Changzhu & Huang Yufu, 2008). Therefore, the scientific research policies and systems of foreign universities are not only binding, but also reflect the people-oriented management goal, which provides valuable reference for scientific research management.

1.2.2 Scientific research management system

Across the globe, research management in higher education institutions is diverse and innovative. The idea of academic freedom as the core concept was first put forward by Humboldt, and has widely influenced the scientific research management mode of universities in various countries. For example, in the United States, different universities adopt different management methods, such as setting up specific committees, being led by department chairs, or through delegated contracts. This diversified management style is conducive to stimulating the potential of researchers (Giroux, H.A.,1988). Since the 1980s, the UK government has implemented austerity fiscal policies, which have had a significant impact on the management of higher education and research. The research shows that British universities effectively adjust scientific research resources through the macro-policy orientation of the government to improve the quality of scientific research output and obtain more scientific research funds. In the allocation of scientific research funds, most countries do not overemphasize the division of funds between natural science and social science, but allocate funds under a unified scientific research framework. Funding sources are diverse, but the government is usually still the main funder (Li Qingjun & Chen Jian, 2007).

While upholding the academic freedom of researchers, the United States also supervises scientific research results through legislative and judicial means to ensure

the transparency and openness of scientific research activities. In addition, as scientific research tends to be integrated, most countries have developed interdisciplinary research programs and provided long-term funding support (Liu Niancai & Zhou Ling, 2007). In general, the research management experience of foreign universities emphasizes academic freedom and innovation, while effectively combining freedom and norms. This not only promotes the development of scientific research in the field of basic research, but also provides a useful reference for dealing with the relationship between social management and scientific management. This not only promotes the development of scientific research in the field of basic research, but also provides a useful reference for dealing with the relationship between social management and scientific management. This kind of management is highly consistent with the concept of respecting and developing talents, and shows the governance model that effectively combines freedom and norms.

1.2.3 Scientific research evaluation

Across the globe, different higher education institutions employ a variety of methods to evaluate and examine research work. It is particularly noteworthy that American universities have established a mature and perfect scientific research evaluation system. In this system, different evaluation methods are adopted according to the type of scientific research results. For example, the evaluation of the results of basic theories mainly relies on citation measurement and peer review. For applied research and development research results, methods such as social experiments, public opinion surveys and policy effect evaluation are used (Zhu Shaoqiang, 2007). In Australia, universities have formulated reasonable scientific research norms and evaluation index systems according to the nature and field of research. This system fully takes into account the different characteristics of social sciences, natural sciences and creative arts sciences, and aims to promote the development of these disciplines.

Research evaluation usually combines quantitative and qualitative methods. Qualitative evaluation is based on experience and makes use of the collective wisdom of scientists to form judgments. However, due to the lack of objective criteria and easy to be affected by academic and non-academic factors, it is highly subjective. On the contrary, quantitative evaluation focuses on using objective data such as scientometrics, bibliometrics and information metrology to evaluate scientific research results (Gu Lina & Lu Genshu, 2006). The British University Research Evaluation System

(RAE) mainly relies on peer review, emphasizing the principles of clarity, consistency, durability, reliability, efficiency, fairness, equality and transparency. This system assigns equal importance to all research, regardless of its purpose, how it is funded, or the type of research, focusing on assessing the quality of the results.

In order to ensure the fairness and consistency of the evaluation, each expert group will publish a statement on its working methods and evaluation criteria in advance and make it public prior to the evaluation. Due to differences in the way research and results are published in different disciplines, the working methods and standards will vary between expert groups. During the evaluation process, the Group focused more on quality than quantity of research and did not conduct field visits to institutions. After the evaluation is completed, each evaluated unit will be assigned a grade according to a unified standard, for example, the evaluation results of RAE in 2001 were divided into 1 to 5* seven grades (Liu Li, 2005).

Table 2.1 Standards for scientific research evaluation of British universities

Grade	Description
5*	In the research activities submitted, more than half of the projects reached the international leading level, and the rest also ranked among the top 10% in China, showing excellent research quality and innovation ability
5	In this research activity submission, at most half of our projects reached the international leading level, and all the other projects showed excellent domestic leading performance, ensuring the high quality standards of the overall research
4	All the research activities we submitted have reached domestic leading levels and in some ways show the potential and signs to approach international leading levels, demonstrating our competitiveness in the research field

Table 2.1 (Continued)

Grade	Description
3A	More than more than two-thirds of the submitted projects showed the leading domestic research level, and some even showed signs that they may reach the international leadership, reflecting the depth and breadth of our research work
3B	In this research activity submission, more than half of the projects reached the domestic leading level, showing our advantages and progress in certain research areas
2	At most, only half of the research projects we submitted this time have reached the domestic leading level, which shows that we still need to improve and develop in some areas
1	In this submitted research activity, it is regrettable that none of the projects have reached the domestic leading level, which reminds us that we need to further strengthen the research quality and innovation ability

When analyzing the research evaluation system of international higher education institutions, we notice that although there are some differences in the evaluation methods of universities in different countries, there are some common characteristics and development trends. These are mainly reflected in the following aspects: First, the importance of university research evaluation at the national level has increased significantly. In Italy and Germany, for example, there have been strong calls in recent years to strengthen the evaluation of research activities in higher education institutions. Second, governments in most countries do not directly participate in the evaluation of university research, but set up or entrust third parties to conduct it. These assessment institutions cover not only the natural sciences, but also the social sciences. Italy, France and Slovakia, for example, have set up special evaluation committees.

Thirdly, more and more attention has been paid to the evaluation of scientific research output. Evaluation criteria usually include the quantity and quality of the research results, the impact on other researchers or the advancement of knowledge,

and the resulting technical, economic, or social benefits. Finally, although the details of implementation vary from country to country, a general principle is to focus on the quality of research rather than just quantitative statistics. For example, the UK does not require a large number of research results, but requires researchers to provide a maximum of four representative results. The Netherlands, in addition to requesting a list of publications, emphasized the quality and impact of key publications. These observations show that although there are various ways of scientific research evaluation in international universities, the core is still to attach great importance to the quality of scientific research. This provides a useful reference for us to overcome the simple "quantitative" evaluation model.

1.3 Research on scientific research and talent training

Since Humboldt proposed integrating science into university education, the relative importance of research and teaching in higher education has been a hot topic in academic circles. The famous philosopher Jaspelspit believes that scientific research is the core function of a university, followed by teaching. He stressed that "the equal importance of research and teaching is a fundamental principle of the university" (Jaspelspit, 1991). The thinker Russell pointed out that university teachers should devote themselves to the research of social sciences and natural sciences, and should have enough time and energy to understand the research results of their international counterparts (Russell, 1990).

Newman, on the other hand, objected, questioning the role of the student if the goal of the university was only scientific invention and philosophical discovery. Neo-thomist Maritan, on the other hand, advocates teaching and opposes the current trend of overvaluing scientific research, and proposes limiting scientific research activities in universities to specialized research institutions (Gao Xiaoqing & Du Xiaoli, 2001). In practice, the United States has achieved remarkable results by combining scientific research with personnel training. For example, the recruitment of doctoral students and postdocs is closely related to the research project of the supervisor, which not only provides the doctoral students with research experience, but also enhances the research team of the supervisor. By participating in scientific research projects, researchers can not only broaden their horizons and improve their own research capabilities, but also transform scientific research results into part of education and teaching, thus improving the level of teaching. In particular, students participate in scientific research activities,

which not only greatly improves their scientific literacy, but also helps to cultivate high-quality talents.

Research on domestic scientific research management system and mechanism

2. Domestic scientific research management system and mechanism related research

Since the 1950s, the Chinese government has recognized the important role of higher education institutions in social and natural science research for the country's economic and social development and incorporated them into the national scientific research system. However, the importance of university research management in these fields was not fully recognized at that time, and relatively few researchers engaged in related research. In the 1980s, as Chinese universities played an increasingly significant role in the development of the country in social science and natural science research, scientific research management in these fields gradually received attention. In 1985, the Chinese Institute of Scientific Research Management of Universities was established, and a special journal was created to focus on the management of university research in these disciplines, especially the management of scientific funds and other research projects. During this period, relevant experts and scholars have carried out in-depth exploration of scientific research management in universities and made many important achievements.

2.1 Research on the management concept of scientific research

The concept of scientific research management integrates the rational thinking of social science and natural science. These concepts are not only derived from long-term scientific research practice, but also the crystallization of scientific management experience, which has significant stability and importance for the management and guidance of scientific research. When these ideas keep pace with scientific development, they become a key driver of innovation and spur continued progress in the field of research. On the contrary, if it is out of step with The Times, it may become an obstacle to scientific research and innovation. In recent years, around the concept of social and natural science research management, the main research directions include:

In the existing literature, many scholars and managers advocate the combination of Western corporate culture and people-oriented management concept to improve the research management of social science and natural science. This management mode emphasizes people-oriented management and service consciousness, and holds that researchers should be regarded as individuals with independent personality and will. Huang Jing pointed out that scientific research management in universities should attach importance to the subject consciousness of researchers, regard their comprehensive development as one of the core goals of universities, and promote the common growth of researchers and universities through humanized management, collective cooperation and meeting personnel needs (Huang Jing, 2003). Yang Li (2006) suggested that the management of scientific research in universities should be changed from one based on dominance and control to one based on dialogue and communication, so as to help researchers better understand the research direction of the university through equal communication, and to lower the management focus to pay attention to, help and serve researchers and solve problems in their life and work, so as to stimulate their concentration, enthusiasm and creativity.

Yuan Guiren, Minister of Education, stressed that the core task of scientific research management is to stimulate the enthusiasm and creativity of researchers, create a good scientific research environment and provide necessary services for them, so as to promote the development of scientific research. At present, the operation of Chinese universities mainly depends on the state or government's mandatory plans and financial allocations. In this context, research managers often develop a passive attitude of dependence, which needs to be changed to adapt to a more modern and humanistic model of research management. In the management of scientific research in universities, there is a common phenomenon: the managers often lack of enterprising spirit, showing a certain degree of bureaucracy, resulting in a simple and mechanical management of researchers and projects. In the management of scientific research in universities, there is a common phenomenon: the managers often lack of enterprising spirit, showing a certain degree of bureaucracy, resulting in a simple and mechanical management of researchers and projects. This approach confuses scientific research management with administrative management, ignoring the essential difference between the two. In order to improve this situation, some scholars put forward that it is necessary to establish a people-oriented service concept in the management of scientific research in universities.

They advocate the adoption of participatory services and refined management strategies, emphasizing the precision of management and the detail of services (Yuan Guiren, 2004).

Some researchers emphasized that scientific research management should be closely related to the inherent laws and basic principles of scientific research, and attach importance to the initiative, consciousness and creativity of teachers. The implementation of humanized flexible management mode is helpful to gradually realize the flexibility of scientific research management, so as to fully tap the scientific research potential of teachers, promote the positive interaction between scientific research and management, and improve the quality and efficiency of management. Professor Zhang Baosheng pointed out that Western universities generally do not have the concept of "scientific research management", they believe that research should not be managed, but should be supported by services. The ultimate goal of scientific research is to serve the society, so the purpose of scientific research management should also be to serve scientific research (Zhang Baosheng, 2005). In addition, modern management theory points out that whether in the social sciences or the natural sciences, people-oriented is a basic requirement. Humanistic management is the key to motivating both social and natural scientists.

The implementation of people-oriented management can not only improve work performance, but also encourage researchers to realize their own comprehensive and free development in any field through effective incentives. Effective incentive can mobilize the initiative and creativity of scientific researchers, so that the organization can create the greatest social and economic benefits, while meeting the material and spiritual needs of scientific researchers, and promote their all-round development. Therefore, in the scientific research management of higher education institutions, the application of people-oriented management means to create a cultural atmosphere characterized by cooperation and harmony. Under the guidance of performance orientation and collaboration orientation, individuals are encouraged to realize their personal value through innovation, team cooperation is advocated, and learning organizations are established. This management thought reflects the concept of respecting and developing people, and extends the scope of application of people-oriented management in the field of social science and natural science. This management thought reflects the concept of respecting and developing people, and

extends the scope of application of people-oriented management in the field of social science and natural science.

(2) Quantitative management

Since the late 1980s, the main goal of Chinese universities has been to train talents. These institutions enjoy relative freedom in the management of research in the social and natural sciences and often rely on soft assessments driven by spiritual incentives and intrinsic values. However, with the passing of time, this management style began to have problems, such as the lack of objective criteria for the evaluation of scientific research, the increase of academic misconduct, and the scarcity of domestic experts in professional fields, which made the peer review system difficult to implement. In addition, administrators are in urgent need of a fast, low-cost, and overall effective method for evaluating research. In response to these challenges, in 1984, Zhang Yongben and Li Ren of Anhui University of Technology put forward the reform idea of implementing quantitative management in the journal of Science. In 1987, Nanjing University became one of the first universities to implement this reform, stipulating that faculty members would receive a reward of about 1,000 yuan for each SCI journal paper they published. This policy initially achieved remarkable results, from 1992 to 1998, Nanjing University ranked first in the number of SCI papers among universities in China.

However, with the passage of time, the negative impact of quantitative management began to emerge (Tian Jingcheng, 2009). Some researchers point out that the most serious problem at present is the excessive pursuit of quantity of results, ignoring the quality of academic research. They called for updating management concepts, reforming the scientific research management system, selecting and employing people according to the quality of results, and allocating scientific research funds reasonably. Critics argue that quantitative management has led to a general fickleness in the academic world, and the pursuit of quantity over quality has led to a large number of low-quality papers, opportunism and plagiarism (Liu Ming, 2006). Critics argue that quantitative management has led to a general fickleness in the academic world, and the pursuit of quantity over quality has led to a large number of low-quality papers, opportunism and plagiarism (Liu Ming, 2006). Proponents, on the other hand, argue that quantitative management of scientific research cannot simply be confused with specific scientific research management schemes. They believe that reasonable quantitative

assessment can effectively suppress the negative impact of human network, and the key is to avoid unreasonable quantitative assessment.

Many critics point out that the current problem lies in the unreasonable design of scientific research management program. As long as the design is reasonable, the quantitative program is improved, and the quantitative program is used reasonably and moderately, the advantages of scientific research quantitative management outweigh the disadvantages. The research found that quantitative management can quickly achieve management goals in specific objects and stages, but if it violates the development law of things and fails to adjust in time, it will backfire (Sun Bo, 2006). At present, the research of social science and natural science in Chinese universities has developed to a certain height, and it is necessary to adjust the management concept and goal. This study is learning from the essence of quantitative management in order to maximize management benefits.

2.2 Research on scientific research management in Universities and universities

2.2.1 System and mechanism of scientific research management

In the current academic environment, the research on the management system and mechanism of scientific research in universities has achieved remarkable results. First of all, in view of the current requirements and existing problems of scientific research management in universities, the researchers deeply analyze the shortcomings of the scientific research management system, and put forward practical suggestions on its key design. Secondly, from the perspective of management science, the study points out the limitations of the current "research system", such as academic corruption, chaotic fund management and poor protection of results, and suggests the establishment of a scientific supervision and incentive mechanism, improve the quality of the project evaluation system. In addition, some studies start from the current situation of the subject management system of social science and natural science in China, and put forward the strategy of improving the management system of scientific research subject. Scholars point out that socialization and collective collaboration are the developing trends of scientific research in universities, which requires the corresponding renewal of traditional scientific research management concepts and methods. However, at present, the innovation of scientific research management in universities is still lagging behind,

and it needs to be innovated from the aspects of management concept, model and management team construction (Lin Ping, 2007).

When discussing the current national scientific research system and mechanism, Wang Zhizhen, academician of the Chinese Academy of Sciences, stressed the importance of establishing a national scientific research fund allocation coordination mechanism, a scientific research talent evaluation system, project management and personnel allocation mechanism. These insights provide valuable references for the improvement of the scientific research management system and mechanism in universities (Wang Zhizhen, 2006). Finally, starting from the concept and mechanism of social science and natural science research management in Chinese universities, the researchers put forward a series of innovative ideas in order to solve the existing main problems and further improve the concept and mechanism of research management in universities. Finally, starting from the concept and mechanism of social science and natural science research management in Chinese universities, the researchers put forward a series of innovative ideas in order to solve the existing main problems and further improve the concept and mechanism of research management in universities. These research results not only provide profound insights for university scientific research management, but also point out the direction for future management innovation.

2.2.2 Scientific research evaluation

In China, the evolution of the evaluation mechanism of social science and natural science research has gone through three stages: the initial qualitative evaluation, the later quantitative evaluation, and the final development into a comprehensive evaluation combining the two. In the beginning, administrative review was the core of qualitative evaluation and was dominated by the "will of the chief executive". In the 1980s, peer review was introduced into China and gradually became the mainstream of qualitative evaluation. However, due to the lack of unified standards and the interference of various factors, the scientific nature and impartiality of peer review are controversial. Subsequently, in the middle and late 1990s, more and more universities and scientific research institutions began to try quantitative evaluation and set up specific quantitative indicators. Although quantitative evaluation is more specific and accurate than qualitative evaluation, its improper use may cause the quality of scientific research to be driven by quantity, deviate from the academic goal, and even breed the academic atmosphere of quick success.

Due to the shortcomings of both qualitative and quantitative evaluation, the comprehensive evaluation method combining the two is highly respected by researchers and managers. Some scholars pointed out that the evaluation criteria of social science and natural science should be diversified, covering natural science, administrative management, market economy, personalized scholar standards, international mainstream and local standards, etc., which should complement each other rather than exclude each other (Wu Zhipan, 2002). Different disciplines should have different standards and cannot be generalized. Therefore, the evaluation should be dominated by qualitative evaluation and supplemented by quantitative evaluation, especially considering that the value of social science and natural science research results usually needs time to be widely understood and accepted. In the field of academic evaluation, delayed evaluation is regarded as an important operational measure, especially for those research results that have not yet reached a consensus. In the field of academic evaluation, delayed evaluation is regarded as an important operational measure, especially for those research results that have not yet reached a consensus. For example, Ma Yinchu's "population theory" is a typical case (Ni Runan, 2008). Through delayed evaluation, we can expand the application scope of qualitative evaluation, avoid over-reliance on peer review, and mitigate its possible negative effects.

At the same time, this approach can enhance the role of quantitative evaluation and provide a more solid basis for qualitative evaluation. In addition, representative academic achievements are also considered to be an important indicator to evaluate social science and natural science research (CAI Shushan, 2004). CAI Shushan, a professor at Qinghua University, explained that such achievements should be able to reflect the academic level and status of a subject field, mainly including academic books and papers. This evaluation system emphasizes quality rather than quantity. Under this system, a scholar is expected to evaluate which of his or her achievements best represent his or her academic level, and peer experts are responsible for assessing the status of these achievements in the field of study. This evaluation method is of great significance for promoting the production of academic excellence, establishing an evaluation mechanism that attaches importance to quality, standardizing academic research and cultivating a good style of study. Finally, this paper emphasizes that universities should not be one-size-fits-all when managing social science and natural science research, but should move forward in a relaxed and free environment.

Researchers can either adopt a team approach to research or become independent thinkers. Such a management paradigm aims to maintain the calmness, composure, depth, uniqueness and foresight of scholars. Such a management paradigm aims to maintain the calmness, composure, depth, uniqueness and foresight of scholars.

2.3 Research on scientific research management paradigm and transformation

Since the 20th century, a variety of international social and academic trends, such as positivism, humanism, psychoanalysis, etc., have flooded into China, bringing about innovations in research methods of various social sciences and natural sciences. These thoughts have had a profound impact on the concept and research pattern of social science and natural science in China, both positive promotion, but also blind imitation and simple application of problems. Experts have pointed out that China's management of natural science and social science research often oscillates between the general and special paradigms of the two, with both blind adoption of natural science research management methods and a tendency to completely exclude them, which hinders the healthy development of social science and natural science research (Ouyang Kang, 2003). To this end, some scholars put forward that the achievements and methods of western social sciences and natural sciences should be critically borrowed and rationally applied according to the actual situation of China. This includes absorbing the excellent ideological and cultural essence of the Chinese nation, promoting the transformation of the results of social and natural science research in China, and building a research management model that ADAPTS to the needs of economic and social development and has national characteristics and local style.

In addition, paradigm shift plays a guiding role in the research, which integrates the research background, perspectives, methods, etc., and is crucial to theoretical innovation. Ouyang Kang proposed that the paradigm transformation of social science and natural science should focus on five aspects, including the shift from general attention to specific exploration, from theoretical innovation to paradigm transformation and methodology innovation, and in-depth exploration of the ontology, axiology and other basic issues of social science and natural science. At the same time, some researchers have analyzed the current status of scientific research in universities, pointing out that although the national investment in scientific research in universities is increasing, the number of published papers and the number of patents applied has

increased, but compared with other developed countries in the world, there are still many gaps. At the same time, some researchers have analyzed the current status of scientific research in universities, pointing out that although the national investment in scientific research in universities is increasing, the number of published papers and the number of patents applied has increased, but compared with other developed countries in the world, there are still many gaps. This is reflected in the large number and low quality of articles, the scarcity of original results, the frequent problems of academic misconduct and academic corruption, the excessive utilitarian of researchers, and the complicated and time-consuming process of research grant application and approval (Ouyang Kang, 2008).

In response to these problems, this paper puts forward some suggestions to reform the mode of resource allocation and realize the positive interaction between administrative and academic power, such as ensuring education input, deciding fund allocation based on university classification, guaranteeing the academic autonomy of universities, and strengthening the decision-making power of academic power in resource allocation.

In discussing the reform of scientific research management in higher education, some scholars have stressed the importance of following the inherent laws and basic principles of scientific research. They believe that management should integrate research concepts, institutions and practices, and respect the rights and responsibilities of researchers. These points point out that current research policies are too utilitarian, favoring applied research over basic research, favoring science and engineering over social and natural sciences, and focusing too much on short-term benefits rather than long-term benefits. Critics point out that there are problems with the evaluation system of scientific research results, which mainly focuses on the quantitative evaluation of the number of papers, funding, topics, etc., and ignores quality and innovation. They believe that the evaluation system should be comprehensive and systematic, including both quantitative and qualitative indicators. Finally, these theorists put forward a series of policy suggestions, including the implementation of a balanced liberal arts and science policy, the implementation of people-oriented management in scientific research activities, and the standardization of the evaluation system of scientific research results (Zhang Xiaojun & Xi Youmin, 2011). They emphasized that the fundamental task of scientific research management is to stimulate the enthusiasm and

creativity of researchers, and management should serve scientific research and provide better conditions and support for researchers.

The researchers point out that a paradigm is a cohesive set of ideas and conceptual systems that provide a framework for the social and natural sciences to analyze and understand specific problems. This framework influences our goal setting, interpretation of observations, and approach to problem solving. A paradigm shift is needed when existing paradigms fail to address the core problem effectively. This shift may take the form of a shift from quantitative analysis to qualitative description, a shift from static evaluation to dynamic analysis, or a shift from isolated approaches to collaborative approaches. Some scholars have proposed that paradigm change is a gradual process, not overnight. In the process of the transformation of the old paradigm and the new paradigm, there exists a "transitional paradigm", which acts as a bridge between the old paradigm and the new paradigm. This transitional paradigm not only reveals the limitations of the old paradigm, but also provides the ideological basis for the formation of the new paradigm, and is the starting point for the development of the new paradigm (Shang Caiyun, 2010).

Paradigm shift is not only a change of method or tool, but a deeper change, including the fundamental idea, conceptual framework, interpretation principles, evaluation criteria and discourse mode. With the development of Chinese universities in social science and natural science research, this paradigm shift has become particularly important, which requires universities to make fundamental adjustments in management thinking. As a famous quote from Harvard University says, "The key to success and failure is not knowledge and experience, but the way of thinking." In addition, some researchers analyzed the current status of social science and natural science research management in universities and pointed out that the existing problems include: emphasizing quantity management and ignoring quality control, emphasizing form management and ignoring content management, preferring short-term simple management and ignoring long-term systematic scientific management. In addition, some researchers have analyzed the current status of social science and natural science research management in universities and pointed out that the existing problems include: emphasizing quantity management and ignoring quality control, emphasizing form management and ignoring content management, preferring short-term simple management and ignoring long-term systematic scientific management. They also pointed out that the scientific research

management mechanism relies too much on the management method of natural science, the management organization is unreasonable, and the leading role of major social issues and hot issues is lacking. These problems suggest that we need to carry on a deep paradigm shift in the management of scientific research in universities.

One of the main problems in the field of scientific research management is the excessive tendency of modern management and the lack of humanistic spirit. This leads to the lack of effective guarantee and incentive mechanism in the management of social science and natural science research, which makes it difficult to produce and transform major achievements. In this context, some scholars put forward coping strategies. They suggest that researchers and administrators need to change their mindset and reform the management system. This includes in-depth thinking and exploration of mechanism innovation, as well as the establishment and improvement of scientific research management system in universities (Ni Zhenhua, 2011). In addition, it also proposes to replace the single quantitative assessment with equal emphasis on quality and quantity assessment, emphasize the fairness of scientific research resource allocation, and advocate breaking disciplinary boundaries to enhance the internationalization of research. These views show that scholars have realized that the management of social science and natural science research in Chinese universities needs to change, and how to carry out this change. However, there is a lack of in-depth analysis and research on why this paradigm shift is needed, that is, the need for the establishment of new paradigms. At present, the connotation of the research management paradigm of social science and natural science has not been deeply discussed, and the theoretical framework of the new scientific research management paradigm has not been systematically discussed and studied.

2.4 Research on humanistic management

"The integration of social science and natural science" focuses on the study of natural phenomena and social behavior, which emphasizes that man is not only a part of nature, but also an important component of social structure (Zhao Bo, 2005). This combination of disciplines emphasizes the dual role of human beings in the natural and social environment, and guides human behavior and activities in both worlds through systematic learning and practice. It attaches special importance to the interaction between people's subjective initiative and the objective environment in the process of

management, aiming to stimulate people's potential and maximize their creativity (Shen Ying, 2007).

This management style emphasizes the importance of thought and emotion in decision-making, as well as the harmonious coexistence of the individual and the environment. In recent years, this management method of integrating social science and natural science has gradually become the subject of frequent discussion by university administrators. Many scholars believe that this kind of management respects the unity of man and nature, deeply understands man's role in the social and natural environment, and can stimulate people's creativity and adaptability, and cultivate their comprehensive qualities. It is regarded as a cohesive and centripetal management mode, which can not only effectively promote the implementation of institutional management, but also encourage people to consciously and voluntarily exert their own value, tap their potential and develop their personality (Chen Wanfen, 2010). Therefore, managers need to find the balance point between institutional management and personal development in daily management, and strengthen systematic thinking and adaptive management. This kind of management is designed to improve the quality and efficiency of scientific research management.

In the contemporary society, with the increasing demand of people for spiritual life, the pressure of life and work also increases correspondingly. The spatial design and atmosphere of the work environment have an important impact on the mental health of employees. A soothing, relaxed and harmonious working environment can significantly reduce the mental stress of employees. Human beings are born to pursue self-actualization and have the capacity for autonomy and self-control. Research in the social and natural sciences has revealed that there are two seemingly contradictory desires within people: on the one hand, the desire to be part of a good group or organization, and on the other hand, the desire to stand out in the group and display a unique self. This shows that when individuals' values are recognized and respected, and they feel that they have an important place in the group, they are more likely to combine their personal interests with the interests of the organization and face challenges together with the organization (Gong Bo, 2006). Therefore, managers need to learn to appreciate and tolerate others, and in the implementation of the system, they should ensure that more employees have development opportunities to promote the common growth of the organization and individuals.

When discussing the idea of scientific research management in universities, some researchers put forward a comprehensive management model, which mainly revolves around the management of social sciences and natural sciences. First of all, this management model emphasizes educate-centered, which is particularly obvious in all links of scientific research, education and management. Secondly, it advocates the establishment of a campus environment in which man and nature coexist in harmony, in order to promote the integration of scientific inquiry and environmental protection. Third, the model advocates setting up a variety of social science and natural science courses to cultivate students' scientific inquiry ability and critical thinking, and balance scientific spirit and humanistic care. Fourth, it emphasizes individual care and respect, making management more humane, cultural and inclusive. Finally, the scientific care of society should be taken as part of education and management to enhance students' social responsibility and scientific ethics (Fan Xiaohong, 2008).

However, these researchers also point out that the current scientific research management in universities has certain limitations. The main problem is that the current management model focuses too much on the results of research and ignores the importance of the process of research creation. It tends to focus on empirical data while ignoring the value of the people who create it. In addition, the existing management model overemphasizes the practicability and efficiency of scientific research activities, while ignoring the ideological, cultural and spiritual importance of scientific research activities. This trend reflects a formalistic management style, which lacks deep connotation and cannot be called scientific research management in the true sense (Meng Jianwei, 2010).

The shortcomings of the domestic and foreign research

3. The shortcomings of the domestic and foreign research

The analysis of the research status of social science and natural science research management at home and abroad shows that this field is highly valued by the world, and many research results are produced every year. However, further research reveals that universities have obvious challenges in this regard. Due to the constraints of geography, economy and management concepts, universities are unable to adapt to the rapidly developing demands of scientific research management. Especially in the concept of scientific research management, capital investment, management system and

operation mechanism, there is a significant gap compared with the needs of The Times. This limitation has become a major obstacle to the in-depth development of social science and natural science research in universities. On the whole, there are still many things to be improved in the management of social science and natural science research.

3.1 Most of the research results still remain at the level of experience summary and technical operation, and to rise to the theoretical level and theoretical analysis

Most of the research results are currently focused on the summary of practical experience and technical operation. In order to further improve these studies, it is necessary to develop them to a higher level, namely theoretical construction and academic analysis. This step not only deepens our understanding of current knowledge, but also provides a solid theoretical foundation for future research. Through such upgrading, we are able to better combine practical experience with theoretical knowledge to promote the development of the entire field.

Worldwide, research management in the social and natural sciences has received widespread attention and has produced many important research results year after year. However, with the in-depth development of research, universities are facing increasingly severe challenges in this field. Due to the constraints of geographical location, economic conditions, management ideas and other factors, universities are unable to adapt to the pace of development of The Times. Especially in scientific research management concept, capital investment, management system and operation mechanism, there are still significant gaps compared with international standards. These problems have become a major obstacle to the further development of universities in the field of social and natural science research. In general, although these research areas have been widely valued, the relevant research management in universities still needs to be strengthened and improved.

3.2 Most studies emphasize empirical management and ignore the inherent particularity and diversity of scientific research

Most research focuses on empirical management methods, a tendency to ignore the inherent particularity and diversity in the research field. This focus may lead to a misunderstanding of the nature of research, because research is not just a collection of data and facts, it also contains innovation, intuition and subjective interpretation.

Therefore, a more comprehensive understanding of the multi-dimensional characteristics of scientific research is crucial to further understanding and promoting scientific progress.

Empirical management advocates a data and knowledge-based management approach, focusing on quantitative indicators such as the number of scientific research achievements, the frequency of references, the intensity of project funding support, and the level of awards. This method strives to achieve a fair evaluation of scientific researchers through objective and fair data analysis. However, the social sciences and natural sciences cover a wide range of studies, not only exploring human society and natural phenomena, but also involving social structure, human behavior, natural laws and other dimensions. The uniqueness of these fields lies in their obvious value tendency, the close connection with ideology, the flexible and open research process, and the difficulty to quantify the results with data. Therefore, if scientific research is only regarded as a knowledge activity rather than an innovative and creative process, it may ignore these special aspects of social science and natural science. Such management methods may inhibit the enthusiasm, initiative and creativity of scientific researchers, and thus affect the in-depth development of social science and natural science research.

3.3 A few research results have been involved in the management concept of social science and natural science, but there is no research on how to construct the management countermeasures and related paradigms in these fields.

At present, some research results have begun to explore the management concepts in the fields of social science and natural science, but there are relatively few studies on how to construct specific management strategies and related theoretical frameworks in these fields. In the field of higher education, more and more studies emphasize the importance of people-oriented management in scientific research management. This idea advocates that humanized management means should run through every link of university scientific research management to ensure that management work is people-oriented (Song Wei, 2002).

However, although many scholars support this view, the reality of "people-oriented management" is still often understood as using people as tools of efficiency and economic interests, rather than the true carrier of culture and ideas. This deviation ignores the importance of humanistic care and fails to deeply explore how to build management ideas and paradigms with humanistic spirit as the core. In view of this

shortcoming, this study, on the basis of previous work, deeply analyzes the status quo and related policies of research management of social science and natural science in universities. This paper puts forward a set of "humanistic" management paradigm, including the idea, policy system and operation mechanism. This paradigm aims to solve the problem of over-emphasis on modernity and efficiency in the current scientific research management in universities, and strives to improve the quality of social science and natural science research in universities and promote its prosperity and development. Through this new management mode, we hope to pay more attention to and promote the comprehensive development of scientific researchers, and improve the overall effect of scientific research work.

Related Research

This paper applies the methodology of a systematic literature review. This methodology is systematic and focuses on the integration, synthesis, and evaluation of the existing literature relevant to specific research questions. With "scientific research management" as the core keyword, the research aims to explore various research results in this field.

4.1 Literature screening

4.1.1 Inclusion criteria

Only journal articles and master / doctoral dissertations that meet all of the criteria listed in Table 2.2 will be eligible for selection in this analysis. These criteria ensure the quality and relevance of the literature, provide a solid foundation for our study.

Table 2.2 Literature screening criteria

class standard	journal	Master and learned paper
Title, abstract, or keyword	management of research and development	management of research and development
time	In 2015- -2023	In 2008- -in 2023
Hierarchy (or type)	Citation index of Chinese sociology or Chinese core journal of Peking University	academic type of postgraduate student And professional graduate students
research contents	"management of research and development" "Scientific research management mode" "Scientific research incentive mechanism"	"management of research and development" "Scientific research management mode" "Scientific research incentive mechanism"

The purpose of conducting the quality assessment of the retrieved literature is to ensure the accuracy and rationality of the selected literature, so as to ensure the validity and reliability of the study data. This process not only helps to screen out high-quality literature, but also improves the accuracy and reliability of the overall study.

4.1.2 Screening process

First, we performed the literature search based on the keywords (standard 1) of scientific research management. At this stage, we focused on reading the title, abstract, introduction and conclusion section of each literature article (Standard 2), which helped us to quickly judge its relevance to the research question. Next, we excluded the literature that completely inconsistent with the research question based on established screening criteria. After that, we browse the full text of each document in detail to extract information that is crucial to answering the research question (Standard 3). Finally, based on this information, we decided which literature should be included in

the study and which should be excluded. Specific details of the whole process are shown in Figure 2.1.

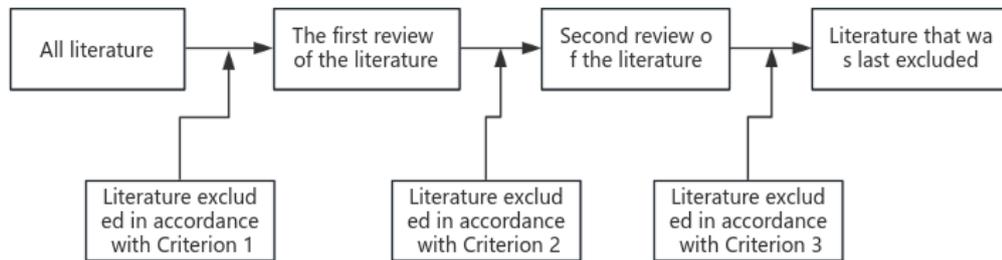


Figure 2.1 Flow chart of literature screening

4.1.3 Data extraction

To ensure the accuracy and reliability of the study sample, we referred to the existing systematic literature review methods. Using the "snowball" technology, we keep searching, reading and incorporating more compliant literature, and gradually expand the scope of data. This process finally screened out the data that met the criteria, as shown in Figure 2.3. Specifically, domestic journal papers were screened according to established criteria, from which we obtained a sample of 661 valid journal papers. Similarly, international dissertations were screened by these criteria, resulting in a sample of 20 valid academic papers.

Table 2.3 Literature Screening Data Table

Retrieve literature	Preliminary screening literature	Screening the literature again
CNKI	Read the title, abstract, and keywords 1. Delete 2898 articles that did not meet the basic criteria 2.Delete 1,029 documents unrelated to scientific research management 3. Delete 2878 articles with non-hierarchical articles or articles not satisfying research problems	Read the full text On the basis of 280 articles, five "snowball" method
A total of 7055 articles were available	He obtained 173 journal documents and 76 dissertation documents	285 articles were identified

4.2 Literature externalities description analysis

4.2.1 Distribution of publication time quantity

The rapid increase in the number of literature reflects the interest and activity of academia in specific research areas. This phenomenon not only marks the heat of academic research, but also provides rich resources and reference materials for researchers, thus promoting the development and innovation of related disciplines. Especially on the theme of "scientific research management", through accurate data screening and visual processing, we can clearly see the current situation and future trend of China in the field of grammar metaphor research, which provides valuable information and inspiration for researchers in this field.

The Price Literature Index Growth Law provides a framework for the relationship between discipline development and its literature output. According to this law, disciplines usually experience an unstable period of the growth in literature output during the early stages of their development. As the discipline enters an era of large-

scale development, the output of literature grows rapidly, showing an exponential growth trend. When the subject theory gradually matures and improves, the growth rate of the number of research papers will slow down, showing a linear growth trend. Eventually, with the further improvement and maturity of the subject theory, the number of new research papers produced may decrease. Taking the field of scientific management research from 2008 to 2023 as an example, through screening and visual analysis of the number of scientific management research papers during this period (as shown in Figure 2.2), we found that a total of 285 articles met our valid inclusion criteria. This finding coincides with Price's literature index growth rule, thus providing a powerful analytical tool for understanding and predicting the literature output of the discipline.

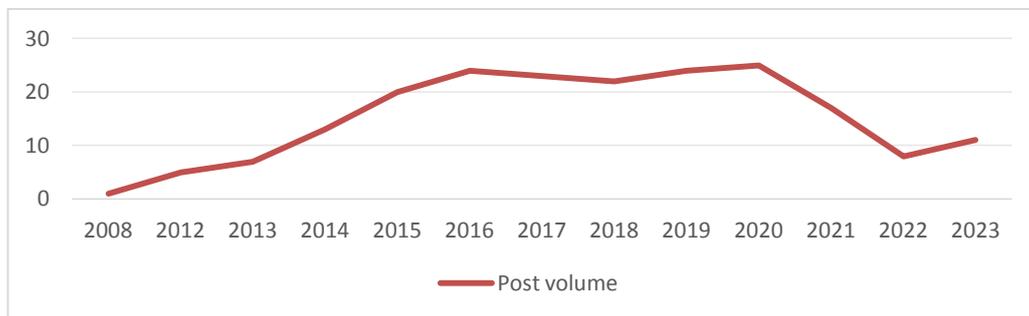


Figure 2.2 Distribution of the number of research management literature from 2008 to 2023

According to the data shown in Figure 3, from 2008 to 2023, the overall number of literature publications in the field of scientific research management in China showed an increasing trend. This trend is reflected in both the number of journals and dissertation published, showing a high correlation between the two. It is particularly noteworthy that since 2013, the number of literature published has increased significantly, especially between 2013 and 2015, scientific research management research rapidly entered a stage of rapid development. Through comparative analysis, the relevant research can be divided into two main stages: the embryonic period from 2008 to 2013, where the research management research is scattered and the attention of researchers is relatively low, and the development period from 2014 has witnessed the continuous increase of research heat, a trend that can be seen from the annual average

publication number of journals and dissertations. The main research contents in the field of scientific research management include:

(1) Scientific research project management: This field involves project planning, organization, implementation and control. By publishing papers, researchers share their practical experience and management techniques in managing scientific research projects to provide guidance and reference for peers.

(2) Academic team management: As the core of scientific research activities, efficient academic team management is crucial to scientific research results. In this field, papers usually share management strategies, organizational mechanisms and teamwork experience to facilitate the collaborative development of academic teams.

(3) Scientific research resource management: Scientific research activities rely on various resources, such as capital, equipment and manpower. Researchers discuss the methods and practices of resource management in the paper, aiming to improve the rationality of resource allocation, and then enhance the efficiency of scientific research and the quality of results.

(4) Innovation management: As a key factor to promote the progress of scientific research, effective innovation management can enhance the innovation and application value of scientific research results. In this respect, the paper shares the ideas, methods and cases of innovation management, which helps to improve the ability of scientific research and innovation.

In general, the increase in literature publication in the field of scientific research management reflects the deepening of researchers' understanding of scientific research management and their continuous innovation in practice. Through the publication of papers, they not only shared the latest scientific research management methods and practical experience, but also promoted the improvement of the quality and efficiency of scientific research results, providing rich reference and guidance for colleagues in the scientific research field.

4.2.2 Literature Influence

In the scientific field, the citation frequency of the literature is a key measure of its influence and importance. In general, literature published earlier have more opportunities to be cited for subsequent studies. Furthermore, the quality of the literature and the repercussions caused within its field of expertise are also usually measured by its number of citations. In order to understand this phenomenon in depth,

this study counted and analyzed the cited frequency of the literature published in the field of scientific research management between 2008 and 2023 and its proportion in the overall literature. The specific data are shown in Table 2.4.

Table 2.4 Table of literature citation frequency

Frequency interval (secondary)	Quantity (article)	scale (%)
0-5	167	59%
6-10	44	15%
11-15	9	3.1%
16-20	5	1.7%
21-30	6	2.1%
31-40	6	2.1%
≥ 40	48	17%

According to the analysis in Table 4, the distribution of citations in the literature over a decade shows that 59% of the literature had citations between 0 and 5, 15% between 6 and 10, 3.1% between 11 and 15, 1.7% between 16 and 20, and 4.2% between 20 and 40, while more than 40 was only 17%. This figure reflects that more than half of the papers are extremely poorly cited, with some never even being cited. This situation reveals a key issue: a lot of research has limited impact, and its content and quality need to be further improved. Moreover, it also implies that the diversity and depth of the research field need to be strengthened. However, those relatively more citreferences to some extent reflect the unmet needs of specific fields of knowledge and technology, pointing out the potential needs and development space of research direction.

4.3 Analysis of literature research results

Scientific research management is a process that involves the effective supervision and coordination of many aspects of scientific research activities, including scientific research processes, resources and results. It covers a series of specialized

management measures and technical means to ensure the efficient and orderly conduct of scientific research work. On the other hand, the literature research results in the field of scientific research management is a key step, its purpose is through a comprehensive review and analysis of the content of the selected major journals and dissertation (especially the top ten), to understand the latest research in the field, the main research hotspot and future trends. Such an analysis helps to reveal the key problems and potential improvement directions in scientific research management practice. See Table 2.5:

Table 2.5 Summary of "Scientific Research Management" journals and dissertations

Author	Autograph	Keyword	Primary coverage
Zhang Chunmei, Tang Liyan, Li Dongxia, Zeng Junxiu, Luo Bing	Exploration of the application of TCM institutional knowledge base in scientific research management	Traditional Chinese medicine, institutional knowledge base, scientific research management	With the rapid development of institutional knowledge base in China, as an important platform for TCM medical institutions in universities and TCM research institutes, TCM knowledge base has developed in recent years. At present, the construction of the knowledge base of TCM medical institutions mainly focuses on the platform construction, the provision of mechanism and analysis methods. To overcome the isolation of TCM knowledge base in the application field, it is necessary to expand the function of TCM knowledge base. With the electronization and systematization of TCM research and development process and the electronization and systematization of scientific research

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
Tang Yujia, Wang Chao	Analysis of the current situation of university scientific research managemen t and its improvemen t suggestions	Scientific research management, questionnaire survey,training, self-quality	management, the knowledge base of TCM medical institutions should actively integrate into the scientific research management process and scientific research management system to realize effective connection and cooperation, so as to further reflect the value of the institutional knowledge base. With the help of information technology and various statistical analysis services, the knowledge base of TCM medical institutions can play a unique role in the management of scientific research projects, achievement file management, scientific and technological decision-making, and the training of scientific and technological talents.(Zhang&Tang&Li&Zeng&Luo,20 19) Research management is an integral part of the activities of universities and research institutions, while research managers are an important link in the process of acquiring and disseminating scientific knowledge. It is very important to find out the problems existing in the research management of universities and research institutes and the status quo of the research management personnel, and to put forward targeted and universally

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>applicable solutions. Based on the investigation of scientific research management personnel in 10 Chinese universities and scientific research institutes, this study discusses the problems existing in the current scientific research management and puts forward relevant suggestions. The results show that the main reason of the scientific research management problem is the defects of scientific research system and the lack of scientific research management training, and scientific research management of institutions, education background and tenure has important influence of the scientific research management quality, which shows that the future need to be improved in these aspects, to ensure effective scientific research management and provide better service.(Tang&Wang,2019)</p>
<p>Wang Changto ng, Li Hui, Wang Zhuofei, Guo Qiyong</p>	<p>Construct the modern hospital scientific research managemen t information system</p>	<p>Scientific research management, informatization, hospital management, network</p>	<p>With the rapid development of the overall medical level in our country, the growth of national science and technology investment, the hospital of science and technology activities, scientific research, scientific research management obligations more and more difficult, traditional scientific research management faces the plight</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			of the administration, most of the national university and related institutions of scientific research management does not meet the requirements of scientific research management, how to improve the quality of the system and practical application is still an important problem. This paper expounds the concept, necessity and influence factors of the scientific and research management and information system construction, and introduces the achievements and experience of the framework of scientific research and management information system and module design.(Wang&Li&wang&Guo,2017)
Cui-cui zhao	On the importance of patent management in hospital scientific research management	Patent management, scientific research management, innovation and development, and economic development	It is very important to improve the scientific research level of hospitals. Strengthening scientific research management is the basis and driving force of hospital development, and patent management is of course an important part of scientific research management. This paper aims to explore the problems and solutions in patent management, promote the improvement of patent management level, provide a framework for the hospital scientific research management, and provide some

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			guarantee for the hospital innovation and development and economic development.(Zhao,2017)
Yue Hulan, Li Wei, Wu Tao, Li Xiaolu, Zhang Yu	Application of scientific research management information system in hospital scientific research management	Scientific research management, scientific research management system, role management, fund management, hospital information system	According to the actual needs of the hospital's scientific research project management, Beijing Anzhen Hospital commissioned Beijing Bilag Technology Co., Ltd. to design and develop the scientific research management system for Beijing Anzhen Hospital affiliated to Capital Medical University. The system is a networked scientific research management system based on the scientific research management guide, which realizes the joint office of scientific research management department, project department director and project director office; with the standardized scientific research information database, real-time data collection, regular review and file management; diversified scientific research project management ensures the connection between scientific research project management and human resource management, and the role of scientific research funds ensures the connection between scientific research project management and human resource management. In addition, it also combines the role management

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			method with the overall control of scientific research funds, realizing the three-dimensional comprehensive management of scientific research projects, talents and finance.(Yue&Li&Wu&Li&Zhang,2016)
Xia Huanhuan, Zhong Binglin	On the enlightenment of Japan's competitive fund allocation mechanism to the innovative scientific research management in China	Competitive funds, research management, research funds allocation mechanism	Competitive scientific research funds is a common means for countries to allocate scientific research funds, and each country has its own characteristics in allocating and providing scientific research funds. One of the main characteristics of Japan's competitive scientific research funding mechanism is that based on the inter-institutional research and development management system, it realizes the communication and cooperation between government agencies, ensures the transparency and fairness of competitive scientific research funding, avoids illogical overlap and excessive concentration, and paves the way for scientific research innovation in universities. China's current competitive scientific research funding mechanism can learn from international experience, realize the modernization of scientific research fund management system, optimize the support mechanism of scientific research innovation, build an

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			interdisciplinary public information platform for scientific research, strengthen the construction of academic structure, deepen strategic thinking, and constantly improve the research and development mode.(Xia&Zhong,2016)
Zou Yi	Research on risk prevention and control of scientific research management in universities based on PDCA cycle	Universities, scientific research management, clean government risk, prevention and control, PDCA cycle theory	In the process of promoting the reform of university research policy and implementing the innovation strategy, it is particularly important to strengthen the prevention and control of clean government risk of university research policy. The prevention and control of integrity risk in university scientific research policy is systematic, complex and limited. As an important theory of quality management, PDCA cycle theory is of great benefit to the scientific research management in universities. As an important theory of quality management, PDCA cycle theory is very useful for the prevention and control of clean government risk in scientific research management in universities. At present, there are some problems, such as the risk prevention and control system of clean government in Chinese universities, such as lag, ineffective implementation, imperfect performance evaluation system,

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			inadequate risk elimination, and inadequate accountability in place. It is necessary to introduce PDCA (planning, implementation, inspection, elimination) cycle theory to implement the specific measures for the risk prevention and control of scientific research management.(Zhou,2016)
Yang Dengcai, Zhu Xiangyu, Han Yu	International comparison and reference of university scientific research management mechanism for collaborative innovation	Collaborative innovation, scientific research management, international comparison, and enlightenment	Scientific research management is an important guarantee for the development of scientific and technological innovation ability. After long-term research and development, the scientific research management of universities in the United States, the United Kingdom and Japan has formed a relatively perfect mechanism of internal service, external guarantee and internal and external coordinated development of scientific research management. Therefore, drawing on the excellent experience of scientific research management in developed countries, combining the characteristics of Chinese society and the development needs of universities, highlighting the service concept, optimizing the system structure, and strengthening and improving the scientific research training and evaluation mechanism

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			can promote the scientific, effective and humanized development of scientific research management in Chinese universities.(Yang&Zhu&Han,2016)
Zou Changsi, Zhang Chun, Guo Confucian	Analysis of clinicians' scientific research needs and the realization ideas of scientific research management	Grade A hospital, scientific research needs, scientific research management, community hospital	As the political and economic center of the country, Beijing has the largest and most modern medical resources in China. However, uneven development means that peripheral and local hospitals often fail to meet the needs of patients, while large hospitals, especially tertiary hospitals in Beijing, have a large clinical workload. In order to better meet the needs of clinical work, the research and development work in these hospitals is severely limited. Therefore, this paper mainly analyzes the importance of scientific research to hospital development, the allocation of medical teaching and research among doctors, and the policy of encouraging medical scientific research in hospitals.(Zhou&Zhang&Guo,2015)
Zhang Yu	Some explorations to improve the level of scientific research management	Big data, scientific research management, and	In recent years, the concept and technology of big data have received wide attention from industry, academia and government. As an important basis of scientific research innovation in China, the level of scientific research management has a

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
	t in universities under the background of big data	data processing	great impact on the innovation and development of universities. At present, Chinese universities are faced with scientific research management problems, such as complex scientific research data, lack of data support for scientific research evaluation and decision-making, and improper allocation of scientific research resources. University scientific research data management is not easy. As scientific research management is an important part of the development of higher education and is increasingly influenced by big data technology, it is more and more important to further improve scientific research management under the background of big data. This paper briefly introduces the concept of big data and the traditional problems of scientific research management in universities, and puts forward some suggestions for improving scientific research management in the background of big data.(Zhang,2015)
Zeng Liyang	Design and implementat ion of university scientific research	Spring MVC, Spring, MyBatis, Scientific Research Management	Based on the scientific research management of universities, this paper carries out the following research on the main work of scientific research management: (1) after analyzing the common problems existing in the

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
	managemen t system based on SSM framework		current scientific research management platform, consult the history of the scientific research industry and the current situation of scientific research at home and abroad, and introduce the relevant technologies used in the development process, SpringMVC, MyBatis And MySQL database technology, through the analysis of the functions according to the scientific research (2) analysis of the system functions, the document should detail the functional requirements of the system, according to the system design principles to put forward additional functional requirements, the structure of the system, the design of the main functional modules, the design of additional functional modules and the design of the database.(3) Explain the specific implementation process of the system, the interface allowed by the system, and the programming code of each function to provide data sharing services for teachers to conduct scientific research, and to provide effective single-key verification services for scientific research managers.(4) The functional modules of the scientific research system have

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>been tested, the functional test of the main modules has been completed, and the test results have been reported. Through the design and development of the system, the scientific research management system designed by the system realizes the normal function of scientific research management in universities, which is convenient for teachers to conduct scientific research work, timely query scientific research data, and displays the query results in the form of reports, which meets the basic needs of researchers and improves the efficiency of scientific research work.(Zeng,2019)</p>
Party Yang	<p>Research on incentive incompatibility and governance in scientific research management of Chinese universities</p>	<p>University, scientific research management, incentive incompatibility, reputation</p>	<p>In order to eliminate or reduce the incentive incompatibility phenomenon in the scientific research management, the management of universities should try to find and establish an incentive mechanism that matches the interests of teachers with the interests of the organization. Based on the analysis of scientific research problems of Chinese university, and the American university scientific research system experience and academic comparative analysis of the existing three kinds of management, this study thinks that incentive</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>compatibility can through the inner demand of teachers, reduce the direct relationship between scientific research performance and monetary reward, attaches great importance to the reputation incentive, encourage basic research, provide incentive mechanism to achieve.(Dang,2018)</p>
Zou Yafei	<p>Research on the problems and countermeasures of scientific Research management in China under the background of big data</p>	<p>Big data, scientific research management, scientific data, solution path</p>	<p>This paper introduces the existing problems of Chinese scientific research management and how to solve these problems from the perspective of science and technology policy and management. This paper uses the history of science and technology to structure the development process of scientific research management in China, and puts forward the problems and reasons of the development of scientific research management in China under the background of big data from three multi-level perspectives of cognition, mechanism and management mode. On this basis, the ways to solve the problems are classified, and the future development of scientific research management in various fields is discussed. At present, there are many articles about scientific research management, but most of them focus on specific relationships,</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			while in this context, there are very few studies on general scientific research management. This paper aims to explore these problems from the macro and micro perspectives, in order to provide guidance for solving the problems of scientific research management in China in the background of big data.(Zhou,2018)
Yu Fan	Design and implementat ion of scientific research managemen t system of Yunnan University of Finance and Economics	Yunnan University of Finance and Economics, scientific research management, black box test method, information construction, system development	Based on the current situation of scientific research performance management in universities, on the basis of establishing the scientific research management system in line with the development of the university and the development of all aspects of research work, we will carry out the following main work. According to the defects of the system design, the personnel system is investigated in the field, the basic working process of the scientific research management in universities is clarified, and the defects of the scientific research management system in universities are analyzed. According to the research results, on the basis of the basic working process of scientific research management in Universities and universities, and according to the needs of project management, office and scientific

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>research achievements, the scientific research information management system of Universities and universities is constantly improved.(2) System design. On the basis of collecting the university research performance management information and software development program, a university research information management system suitable for the information management of university research is established. According to the main tasks of scientific research management in universities, the structure and functional modules of the system are refined, and the design and debugging of the system are finally completed.(3) System implementation. Comparative analysis of the construction progress and research results of the scientific research management system in major domestic universities, including Internet technology, and summarizes the successful management experience. Finally, a university scientific research management information platform based on B / S architecture is built to standardize the management of the scientific research achievements of universities and improve the accuracy of</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			information.(4) System test. The results show that the university scientific research management system can operate normally, with good function and performance, high degree of data standardization, and many parameters to reach the design standard.(Yu,2018)
Tu Yubo	Design and implementation of scientific research management system of Sichuan Vocational university of Science and Technology	Scientific Research Management, Scientific Research Management System, MVC, B / S	On the basis of the theory of software engineering, this paper develops the analysis, design and implementation of scientific research management system. Established the use case model based on the system function requirements; designed the system architecture based on MVC model; established the static structure model and dynamic interaction model; and designed the conceptual structure and physical structure of the system database. The designed scientific research management system covers all aspects of scientific research, including scientific researchers; horizontal and vertical research projects; papers, works, patents, awards; inquiry and claim of scientific research funds; assessment of scientific research performance and query statistics of scientific research information. The scientific research management system adopts B / S

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			structure, and is developed with Visual Studio 2010 and SQL Server 2008 tools, and the development technology is ASP. NET, the front-end interface is realized by HTC ml, Css and JavaScript technology, and the back-end function is realized by C # object-oriented language. In the design, the system fully considers the expansion and maintenance of the system function, organizes the functional structure with the MC model framework, establishes a flexible architecture, and reduces the coupling degree of the system module. The overall function of the scientific research management system is perfect, the content is comprehensive, the system runs stable after the test, the function is normal, the data is accurate, and can meet the basic requirements of scientific research management in universities.(Tu,2017)
Jun-li lu	Analysis of the current situation of hospital scientific research management and its	Hospital management, scientific research management, scientific research status quo, development countermeasures	Scientific research is a creative activity to explore the unknown, a source and guarantee to continuously improve the quality of medical care, and a necessary means to cultivate and train talents (1). How to improve the scientific research management ability, strengthen the scientific research

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
	countermeasures		<p>management and improve the competitiveness of hospitals is another new topic for hospital management and development in the new era (2). Therefore, formulating a series of effective and feasible policies and measures to form a relatively systematic scientific research management mode is one of the necessary conditions for the current development of hospitals to improve the level of scientific research management and enhance the market competitiveness of hospitals. Through the analysis of scientific research management in our institute, While affirming the achievements of scientific research management, Put forward the problems existing in the development of scientific research management: from the scientific research management system, Concept, supporting conditions, personnel quality, file management, incentive policies and ethical review were discussed and discussed, Drawing on the ideas and models of scientific research management development in foreign universities, Actively explore effective countermeasures, ways and methods to solve related problems: change the scientific research</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			management mode, improve the system and innovate ideas; Increase investment in scientific research, Improve the supporting conditions; Improve personnel quality; Perfect archives management; Popularize ethics-related knowledge, strengthen training, and enhance the ethical awareness of scientific researchers; Give full play to the review and supervision role of the ethics committee; Improve the relevant measures. Make the scientific research work of the hospital on the road of sustainable development, for the development of the hospital escort.(Lv,2016)
Chen Dianfan	Design and implementation of scientific research management system of Zhuhai university of Jilin University based on UML modeling	UML Modeling, Scientific Research Management System, ASP. The NET technique, and SQL SERVER2005R2	This paper focuses on the construction of scientific research management system in universities, analyzes the current development status of systematic research, and expounds the significance of building scientific research management system in universities. Based on the UML modeling design idea, the system requirements are analyzed, and according to the principle of system design, the scientific research system can grasp the overall design and the module structure design. The system focuses on the realization of

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>personnel management, department management, scientific research personnel, scientific research awards, academic management, comprehensive scientific research management and other modules. The system can release the content of academic exchange activities through the system platform, understand the research status and dynamics of various industries and fields, so as to broaden their horizon. At the same time, researchers can submit research project research online, research results audit, audit administrators online. At the same time, the system also provides scientific research administrator, authority setting, system department setting and security functions. In terms of implementation, the interface display, core code display and system test of the core part of the system, showing the whole research and development process of the university's scientific research management system. This research topic uses the B / S framework, based on UML modeling ideas, combined with ASP.</p> <p>NET technology and SQLSERVER2008R2 database complete the development of the system, and</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>establish a multi-level user management mode. Established the process systematic scientific research management model and the perfect scientific research project and achievement management model, to realize a set of scientific research management system that includes both universal and meets the needs of universities. At the same time, it provides reference for the scientific research system of other universities.(Chen,2015)</p>
Zhao Haixia	<p>The status quo and potential research of scientific research management under the background of the subject system</p>	<p>Subject system, scientific research management, current situation, potential</p>	<p>This paper introduces the subject system management mode implemented in China, on the basis of consulting a large number of literature and discussing with the relevant personnel of scientific research management, designs the questionnaire with their own work experience, and conducts a systematic and comprehensive investigation on the reality of scientific research management, the investigation content mainly includes four aspects: the current situation of scientific research management system construction; the current situation of the whole process management of scientific research projects; the allocation of human, financial and</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>material resources under the background of project system; and the current situation of scientific research management team construction. On the basis of the questionnaire survey, the potential index evaluation system of research management level is constructed. Combined with the survey data, the future potential of research management level of universities and research institutes is evaluated and compared. The results show that the future potential of research management level of research institutes is higher than that of universities. This paper sorts out the reality of scientific research management under the background of project system, analyzes the current problems exposed by scientific research management, mainly involving the problems of the supporting units and the policy implementation level, and proposes the ideas and measures to enhance the potential of scientific research management in China: promote the full participation in the construction and improvement of scientific research management system; attach attention to the role of supporting units, play the advantages of</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
Liu Jia	Design and implementation of scientific research management system based on SSH framework	J 2 EE, SSH, scientific research, and information management system	supporting units in organize and coordinate resources, and create a good scientific research environment; adhere to the reality, deepen the understanding and constantly improve the research system.(Zhao,2014) First of all, the paper tells the development background, significance, research status and research objectives of the scientific research management system. Then, the key technologies used in B / S architecture mode, HTML + CSS + Javascript and Ajax foreground page technology, Java development language, Mysql database, Tomcat server, MVC development mode, and SSH framework are introduced respectively. Subsequently, the system is analyzed from the system development principles, requirements acquisition method, functional requirements, performance requirements and interface requirements. In the system design stage, the functional process analysis of scientific research projects, scientific research personnel, scientific research achievements, academic exchange, project planning and project awards is emphasized, and on this basis, the system database is designed. In the

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>system implementation stage, this paper explains the construction and specific operation of SSH framework in detail, and realizes the system by using SSH framework technology. Finally, unit tests, functional tests, stress tests and compatibility tests are conducted to ensure the accuracy and stability of the system and ensure the efficient operation of the system. In general, the system can make full use of the existing resources to further strengthen the scientific research management ability of the department, which not only provides real and effective scientific research information data for the department and the university, but also greatly improves the scientific research information management level of the department, which is worth promoting and using.(Liu,2014)</p>
Ding Yu micro	Research on the status quo and countermeas ures of scientific research managemen t in A University	Scientific research evaluation, scientific research management, scientific research units, component analysis	Since the reform and opening up, earth-shaking changes have taken place in our country technology development level, in general, in the face of changing science and technology, increasingly strengthening resources and environment constraints and innovation and technology upgrading as the main characteristics of fierce international competition, the

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
	and B university		<p>problem of innovation ability is weak has increasingly become the bottleneck of development. At present, China will give the high hope of improving the national innovation ability to Universities and universities, and also give a lot of material support, Universities and universities have become an important base for exploring cutting-edge technology and cultivating innovation ability, scientific research has become one of the three key work of Universities and universities, in the core position of the work of domestic Universities and universities. Although the scientific research work has achieved good results at present, the problems restricting the promotion of scientific research work in universities also appear, especially in the management of scientific research work can not keep up with the development of scientific research work as the main problem. Scientific research management institutions shoulder the important task of the formulation and implementation of scientific research development plans and science and technology management policies, as well as the evaluation and management of scientific research</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			<p>projects, research organization and research effect, which plays a very important role in the development of scientific research work in Universities and universities. In the face of the challenge of international competition, the current scientific research management mode must introduce innovation mechanism in both concept and means, follow the law of scientific research, and carry out reform and innovation from the management concept, management mode and management system, so as to realize the leap-forward development of scientific research in universities. In this paper, this paper first introduces the relevant theories of research management, and the experience and lessons of research management and research management evaluation in domestic and foreign universities are analyzed. Secondly, based on the research of university B, the current situation of scientific research management of university B is expounded, and the problems existing in scientific research management are deeply analyzed. Thirdly, according to the construction principle of the scientific research management evaluation system and</p>

Table 2.5 (Continued)

Author	Autograph	Keyword	Primary coverage
			the environment faced by the scientific research management institute of B university, the scientific research management evaluation model is established. Using the hierarchical analysis method to calculate the weight of the evaluation index on the basis of the evaluation model. Finally, according to the weight of the evaluation index, the improvement countermeasure of the scientific research management system of A University and B university is proposed.(Ding,2013)

4.3.1 Study topics

(1) The exploration of scientific research project management involves many key aspects, such as project initiation, budgeting and control, and schedule supervision. In zhang, Tang Liyan, Li Dongxiao, Zeng Junxiu and Luo Bing (2019) of the TCM knowledge base in scientific research management application, for example, they put forward an innovative view: through the use of computer science and technology, Chinese medicine institutions knowledge base in scientific research project management, achievements and archives maintenance, technology decision support, and scientific research personnel training play a key role, promote scientific research management and research innovation. This view emphasizes the potential of the knowledge base in integrating the scientific research management processes and improving the system efficiency, thus enhancing the practical value of the institutional knowledge base. However, the study did not fully consider the importance of electronic and systematic scientific research management for practical application in the process of TCM research and development.

(2) The management of the research team involves the research of team building, member management and cooperation mechanism. For example, Yue Hulan, Li Wei, Wu Tao, Li Xiaolu and Zhang Yu (2016) analyzed the practical application of scientific research management system in Beijing Anzhen Hospital in their research paper "Application of Scientific Research Management Information System in Hospital Scientific Research Management". The system was developed by Beijing Epreag Technology Co., Ltd. under the commission of Beijing Anzhen Hospital, aiming to meet the specific needs of the hospital's scientific research management department for research projects. The design of the system takes scientific research management as the core, and builds a network-based management platform, which realizes the collaborative work between scientific research management department, project supervisor and project leader. In addition, through the establishment of a standardized scientific research information database, the system effectively realizes the immediate collection, regular review and archiving management of scientific research project data. The system also promotes the integration of scientific research project management and personnel management through the diversified management of scientific research projects, and realizes the three-dimensional integrated management of scientific research projects, talent and financial management through the role management mode and whole-process monitoring. These innovations are of great benefit to strengthening the scientific management of research projects and improving the overall scientific research capacity of the hospital. However, this study does not fully consider the adaptation of the system by older employees or inexperienced population with network system use, which needs to be further explored and optimized in the future.

(3) The effective management of scientific research resources is the key to realize the efficient scientific research work. This involves the integrated management of resources such as scientific research equipment, laboratory facilities and literature databases. In this regard, Yue Hulan, Li Wei, Wu Tao, Li Xiaolu and Zhang Yu put forward a set of innovative methods in their paper "The Application of Scientific Research Management Information System in Hospital Scientific Research Management". They stressed that collaboration through a web-based research management system can be facilitated between research management departments, project leaders and project directors. Through the establishment of a standardized scientific research information database, the system not only realizes the real-time collection and management of

scientific research project data, but also ensures the timely review and proper archiving of the data. In addition, the system realizes the effective connection between project management and personnel management through diversified scientific research project management. Combined with the role management mode and whole-process monitoring of scientific research funds, it realizes the three-dimensional integrated management of scientific research projects, talents and finance. This view is of great significance for improving the level of the hospital's scientific research management and accelerating the improvement of scientific research ability.

4.3.2 Study Methods

(1) Questionnaire: By using questionnaire survey methods to collect and analyze the relevant data of scientific research management, we can deeply understand the current situation of the field of scientific research management. For example, in tang Yujia and Wang Chao (2019) analysis and Suggestions for Improving the Current Situation of University Research Management, they conducted an extensive questionnaire survey on many universities and research institutes across the country. The survey aims to explore the problems existing in the current scientific research management, and to put forward the corresponding suggestions for improvement. Such research not only helps us to fully understand the challenges encountered by universities in scientific research management and the actual work of scientific research managers, but also reveals some key issues. However, this analysis is still insufficient in exploring the root causes of scientific research management problems, and fails to fully cover the underlying causes of the problems. Therefore, in future studies, deep exploration and analysis of these fundamental causes will be the key to improve the efficiency and quality of scientific research management.

(2) Case study: In the research management analysis, it is important to explore specific cases in order to learn valuable experiences and lessons from them. Taking the analysis of Xia Huanhuan and Zhong Binglin (2016) in the article "On The Enlightenment of Japan's Competitive Fund Allocation Mechanism on China's Innovative Research Management" as an example, they emphasized the core advantages of Japan's competitive research fund allocation mechanism. This mechanism relies on a cross-departmental R & D management system, which promotes effective communication and collaboration between different government departments. As a result, it ensures the transparency and fairness of funding allocation, effectively avoids the unreasonable

duplication and excessive concentration of resource allocation, and thus promotes the development of scientific research and academic innovation. For China, this view not only provides an opportunity to deepen the understanding of the management system of innovative scientific research funds, but also reveals the strategic thinking path of optimizing the support mechanism of scientific research and innovation, building a cross-departmental scientific research information sharing platform and strengthening the construction of academic community. Integrating these international experiences into China's competitive scientific research fund allocation mechanism can not only promote the continuous innovation of scientific research development mode, but also enhance China's independent innovation ability. Finally, this will help to improve China's scientific research level and international competitiveness, and promote the development of scientific research management to a more efficient and equitable direction.

4.3.3 Study Findings

(1) New theoretical construction: In the article "Design and Realization of Scientific Research Management System of Sichuan Vocational university of Science and Technology", Tu Yubo (2017) proposed an innovative theoretical model of scientific research management. The model is based on in-depth research and analysis, using computer information technology to build a comprehensive scientific research information management system. The design of this system aims to establish a unified scientific research information management standards, standardized management process, so as to improve the efficiency and quality of scientific research management. At the same time, it also aims to reduce the burden of management work, and improve work efficiency. In his research, based on the software engineering theory, Tu Yubo uses the object-oriented method to analyze, design and realize the scientific research management system in detail. The development of the system includes the establishment of the use case model, the architecture design based on the MVC model, the establishment of the system function modules, and the concept and physical structure design of the system database. This scientific research management system covers all aspects of scientific research work, such as the management of scientific research personnel, all kinds of scientific research projects, scientific research achievements (including papers, works, patents, awards, etc.), the management and allocation of scientific research funds, scientific research performance assessment, and the statistical inquiry of scientific research information.

This theoretical model of Tu Yubo not only promotes the development of higher education, improves the overall level of the teaching staff, but also enhances the comprehensive competitiveness of the school. In addition, the study focuses on the scalability and maintainability of functions in the system design, adopts the MVC model framework to organize the functional structure, establishes a flexible architecture, and effectively reduces the coupling degree between the system modules

(2) Summary of practical experience: When discussing the successful experience and problem-solving strategies of scientific research management, we can refer to the methodology of Ding Yuwei (2013) in his research paper "Research on the Status and Countermeasures of Scientific Research Management of A University and B university". This paper first reviews the basic theory of scientific research management, and analyzes the experience and lessons of scientific research management and foreign universities in China and its evaluation. Then, this paper takes B university of A University as A research case, describes the current scientific research management situation of A university in detail, and discusses the specific problems it faces in depth. Based on the construction principle of scientific research management evaluation system and the specific environment of B university, this paper puts forward an innovative scientific research management evaluation model. Using the hierarchical analysis method, the model calculates the weight of each evaluation index. Based on these weights, the paper finally put forward A series of improvement strategies for the scientific research management system of A University and B university. These strategies aim to innovate in management concepts, models and systems to promote the rapid development of scientific research in universities.

(3) Policy Suggestions: In view of the specific challenges in scientific research management, this paper puts forward a series of policy suggestions and management strategies. Lv Junli (2016), in her analysis on the Current situation of Hospital Scientific Research Management and Countermeasures, pointed out through in-depth analysis of the current situation of hospital scientific research management that although some achievements have been made, she still faces many problems. These issues include scientific research management system, concept, supporting environment, personnel ability, file management, incentive policies and ethical review. To solve these problems, Lv Junli put forward a series of countermeasures and methods, including the

management mode, improve the management system, innovation management idea, increase research funding, improve the research support environment, improve researchers quality, optimize archives management, popularize the knowledge of ethics, strengthen ethics training, enhance the ethical consciousness of researchers, and strengthen the supervision of the ethics committee. These suggestions can not only help to improve the efficiency and effect of scientific research management, but also to enhance the competitiveness of hospitals in the market. By drawing on the international advanced scientific research management concept and practice, we can more effectively respond to the challenges of scientific research management, and promote the sustainable development of the hospital scientific research cause.

4.3.4 Research Trends

(1) Data-driven research management: Advanced technologies, such as big data and artificial intelligence, can significantly improve the efficiency and quality of scientific research management. This point is fully reflected in zeng Liying (2019)'s research "Design and Implementation of University Scientific Research Management System based on SSM Framework". She pointed out that under the background of Web3.0 era, the rapid development of computer software technology and the continuous update of management concepts have brought innovative technological revolution to the scientific research management in universities. It has become an urgent task for the educational circle to adopt the new framework technology and build a set of information system that meets the needs of scientific research management in universities. The design and development of this system not only realizes the routine functions of scientific research management in universities, but also provides teachers with convenience for scientific research work, so that they can query scientific research data in time, and display the query results in the form of reports. The implementation of this system not only meets the basic needs of scientific research workers, improves the work efficiency, but also provides strong support for teachers to actively participate in scientific research, and promotes the development of information construction in Universities and universities.

(2) International scientific research cooperation: focus on the analysis of international and cross-institutional scientific research cooperation modes and their management strategies. For example, in his article "2018) on Incentive Discompatibility in The Management of Scientific Research", Dang Yang put forward a series of suggestions

for improvement based on the in-depth analysis of the scientific research system of American universities and the existing three governance approaches in the academic field. These recommendations include exploring the internal needs of teachers, reducing the direct link between research achievements and monetary incentives, focusing on reputation incentives, promoting basic research, and establishing a reasonable research evaluation mechanism. The importance of the research manager is also emphasized. These ideas are important for eliminating or reducing the incentive incompatibility problem in university research management.

(3) Innovative scientific research management: exploring the scientific research management mode with innovation as the core, and focusing on the innovative transformation of scientific research results. In this paper, taking "Design and Implementation of scientific Research Management System based on SSH Framework" as an example, it puts forward the current situation of many scientific research projects and long cycle, which brings management challenges to the scientific research order, process and achievement monitoring of the department. In view of this, it is necessary to establish an efficient scientific research information management platform. The paper first analyzes the background and importance of the development of scientific research management system, and investigates the current development status of the field of scientific research management, so as to clarify the research objectives. Next, the key technologies required for the development of scientific research management system are introduced in detail, including B / S architecture mode, front-end technologies such as Html, CSS, Javascript, and Ajax, Java programming language, Mysql database, Tomcat server, MVC development mode, and SSH framework. Then, a comprehensive analysis of the system requirements, including system development principles, requirements acquisition methods, functional requirements, performance requirements and interface requirements. In the system design stage, the process analysis of the key modules such as scientific research projects, scientific research personnel, scientific research achievements, academic exchanges, project planning and project awards is conducted, and the system database is designed accordingly. In the implementation stage, the construction and operation of SSH framework are detailed, and the system is realized with this framework technology. At the end of the article, the system is fully tested, including unit test, functional test, stress test and compatibility test, to ensure the accuracy and stability of the system and ensure its efficient operation. This research not

only provides accurate and effective scientific research information data for the department and school, but also significantly improves the level of scientific research information management, thus effectively strengthening the scientific research management ability of the department (Liu Jia, 2014). This research not only provides accurate and effective scientific research information data for the department and school, but also significantly improves the level of scientific research information management, thus effectively strengthening the scientific research management ability of the department (Liu Jia, 2014).

Discussion and Outlook

5. Discussion and Outlook

5.1 mainly reflect

Scientific research management is a comprehensive process, involving the planning, organization, guidance and monitoring of scientific research activities. Its core goal is to improve the efficiency and quality of scientific research. With the rapid development of modern science and technology, the role of scientific research management has become more important, which can be mainly reflected in the following four aspects:

(1) Organization and coordination

Research management plays a vital role in the whole process of research projects. It is not only a tool for organization and coordination, but also the key to improving research efficiency and innovation ability. In scientific research involving multiple team members and complex tasks, scientific research management effectively integrates team strength to ensure the smooth implementation of the project by clarifying various tasks, carefully planning steps and rationally allocating resources (Wang Jinmei, 2017). It promotes the exchange and sharing of knowledge and helps team members to learn from each other, thus improving the quality of the overall research. In addition, research management includes monitoring and evaluation of project progress to ensure that the research proceeds as planned and meets the set goals (Li Ning, 2012). This comprehensive management allows researchers to collaborate more effectively to leverage their professional strengths to achieve higher scientific research.

(2) improve the quality of the labour force

Scientific research management is essential to improving the quality of research results. It plays a key role in ensuring the methodological rigor of research and the reliability of data support. By providing professional guidance and supervision in the experimental design, data recording and analysis, the scientific research management ensures the accuracy and credibility of the research results. The reasonableness of experimental design is the core part of scientific research management (Peng Lin, 2023). Research management helps researchers to develop clear experimental plans to ensure the clarity of research objectives and operational steps, so as to reduce experimental bias and errors. In addition, professional experimental guidance ensures the scientific nature of the experimental process, and then produces credible research results. Scientific research management is equally important for recording and analyzing data (Hu Sai, Kong Yan & Wang Bo, 2023). Given that scientific research involves the collection and processing of a large amount of data, scientific research management ensures the accurate recording and safe storage of data. Moreover, it provides effective methods and tools for data analysis to help researchers conduct in-depth data statistics and analysis to draw scientific conclusions. Quality control and communication are also important aspects of scientific research management. Through the establishment of a quality control mechanism, scientific research management can ensure that every link of the research has been strictly reviewed and evaluated to avoid mistakes and mistakes. At the same time, it promotes the communication and cooperation among the team members, and shares the research results through regular discussions and reports, and promotes the further optimization and promotion of the results (Sun Hongxin, 2023).

To sum up, research management plays an indispensable role in improving the quality of research results. It not only improves the accuracy of experimental design and data analysis, but also promotes teamwork and knowledge sharing, thus strengthening the quality and innovation of scientific research results.

(3) Reasonable resources

Scientific research management plays a vital role in optimizing the allocation and utilization of scientific research resources. Scientific research not only requires a lot of time, manpower and materials, but also has strict requirements for rational allocation and efficient use of resources. One of the core tasks of research management is to ensure that these valuable resources are optimally allocated to maximize the benefits of

research. Effective scientific research management focuses on the precise planning and allocation of resources. Through clear project objectives and research needs, scientific research management can conduct a thorough feasibility analysis and budget assessment, and allocate research funds and personnel accordingly. This not only ensures that each resource can efficiently serve the research goal, but also can find and solve the bottleneck problems that may occur in the process of resource utilization, thereby improving the efficiency of resource utilization and the value of scientific research results.

In short, scientific research management plays a key role in promoting the efficient utilization of scientific research resources and the overall effectiveness of scientific research work. Through careful planning and coordination, scientific research management not only improves the efficiency of resource allocation and the quality of scientific research work, but also promotes the construction of science and technology platforms and research facilities, provides better conditions and support for scientific research work, and further stimulates the scientific research innovation ability and the rational use of resources.

(4) Sharing cooperation

Research management plays a key role in promoting efficient resource sharing and collaboration. In large research projects involving many laboratories, teams and institutions, research management not only facilitates resource integration and collaboration, but also ensures the optimal use of resources by avoiding duplication of inputs (Xiaojie Zhang, 2023). It greatly improves the efficiency and quality of research results by optimizing resource allocation and collaborative use. In addition, research management provides better research conditions and support through the construction and maintenance of scientific and technological platforms and facilities. This includes planning the purchase and renewal of scientific research equipment, building research information platforms, and providing high-quality data storage and sharing services. In this way, scientific research management not only creates a better working environment for researchers, but also improves the efficiency and convenience of resource utilization (Yang Yannan & Zhong Shuhua, 2023). Overall, research management plays a vital role in improving research efficiency, ensuring research quality and rational use of resources. Looking forward to the future, with the development of science and technology, scientific research management needs to continue to innovate and adapt, and further

improve management efficiency through the integration of advanced technologies such as artificial intelligence, so as to promote the sustainable development of scientific research. The outlook for the future is embodied in the following five points:

1) The digital process of scientific research management will continue to accelerate continuously. In the field of scientific research, with the acceleration of the process of digitalization, the digital management of scientific research processes and resources has been relied on by big data, cloud computing, artificial intelligence and other cutting-edge technologies. The application of these technologies will significantly improve the efficiency and quality of scientific research management (Miao Weihong, 2023). For example, through the analysis and mining of big data, researchers can have a deeper insight into the development trend and internal laws of the research field, so as to guide the research direction more effectively. At the same time, cloud computing technology provides the efficient storage and computing capabilities, and cloud computing technology can effectively solve the needs of large-scale data processing and computing. In addition, the application of AI technology can automate scientific research processes, reduce labor costs, and improve the accuracy of work.

Looking into the future, the application of digital scientific research management platform will be more widely used. These platforms integrate various scientific research management functions, including project management, resource allocation, data storage and sharing, and achievement display, so as to realize the comprehensive digitalization of the scientific research process (Su Jie, 2023). Researchers can use these platforms to cooperate and communicate, and jointly promote the development of scientific research projects. In addition, these platforms provide personalized recommendations and analytics capabilities to support researchers to make more informed decisions. In general, the acceleration of the digitalization of scientific research management indicates a new revolution in the field of scientific research management. With the help of big data, cloud computing, artificial intelligence and other emerging technologies, the popularization of digital scientific research management platform will greatly enrich and optimize the management experience of scientific research work (Li Qin, 2023).

2) Interdisciplinary and cross-field collaborative research will put more emphasis on the role of scientific research management

When exploring and solving complex problems, interdisciplinary cooperation is particularly critical. Such cross-border cooperation not only promotes the collision of knowledge and thought, but also is an important driving force for innovation and breakthrough. In the face of the barriers and obstacles between disciplines, the role of scientific research management becomes crucial. Effective scientific research management can not only break down the barriers between disciplines, but also establish a flexible and efficient cooperation mechanism to stimulate the enthusiasm and potential of cooperation among researchers. It ensures the efficient advancement of research work by providing the necessary resources and support, building diverse teams, planning research programs, and coordinating collaborations. In addition, scientific research management also needs to timely identify and solve problems in the process of project implementation to ensure the smooth progress of research activities. Therefore, scientific research management plays an extremely important role in interdisciplinary and interdisciplinarity research cooperation, and is a key factor in promoting scientific progress and realizing innovation (Sun Chao, 2023).

3) Further strengthen the management of intellectual property rights and research ethics

In the current interdisciplinary and cross-field collaborative research environment, it is particularly critical to attach importance to the management of intellectual property rights and research ethics. Intellectual property management plays a vital role in the transformation process of research results. Effective intellectual property protection not only ensures that researchers' achievements are legally recognized and guaranteed, but also encourages more innovative activities and promotes the development of technology. Therefore, in the scientific research management, attaching importance to the protection and reasonable management of intellectual property rights is the key to ensure the legal compliance and economic rights and interests of the research results. At the same time, with the increasingly prominent research ethical issues, strengthening ethical review has become more and more important. Especially in the human or animal experimental research and the processing of sensitive information, the ethical issues are particularly complex. In order to ensure the impartiality, safety and morality of the research, it is essential to establish a sound ethical review system and clear ethical guidelines. This includes comprehensive ethical oversight of the study design, data collection and processing, and informed

consent to ensure that participants' privacy and rights are protected. In general, strengthening the management of intellectual property rights and research ethics is an important link to promote interdisciplinary and cross-field collaborative research. By improving intellectual property management and strengthening ethical review, it can not only guarantee the legitimacy of the research results and the rights and interests of the participants, but also effectively promote the healthy development of scientific research and the wide application of the results.

4) Strengthen the training and motivation of researchers

In order to promote interdisciplinary and interdisciplinary collaborative research, the key is to strengthen the professional training and effective incentives for researchers, while improving the organizational and management capabilities of research teams. First, researchers' understanding of the importance of research management should be deepened through a variety of training and exchange activities. This includes conducting training on research practices, ethics, project management and teamwork to enhance their management awareness. In addition, the establishment of incentive mechanisms related to research management performance, such as salary system and professional title evaluation standards, will motivate researchers to improve their management skills (Shi Junyou, 2022). At the same time, it emphasizes the cultivation of diversified talents with organizational and coordination ability, which will greatly improve the level of team establishment and management. By setting up project leaders to coordinate resources, plan and coordinate relationships, or training professional project managers, you can effectively improve the management efficiency of the team. Learning from the industry's management methods, establishing a sound communication and process management mechanism, as well as a performance appraisal system, will continue to enhance the team's collaboration ability. In conclusion, through ongoing training and incentives, the awareness and capacity of researchers and teams in research management can be significantly increased, which is critical to driving interdisciplinary, cross-domain collaboration and achieving innovative results. This not only contributes to the improvement of scientific research results, but also has a far-reaching impact on the reform and development of scientific research management (Fan Liqin, 2021).

5) Strengthen the evaluation and tracking analysis of the input-output benefits of scientific research resources

Strengthening the quantitative evaluation and monitoring analysis of the benefit of the use of scientific research resources is the key strategy to improve the efficiency of scientific research management. In multidisciplinary and interdisciplinary collaborative research, optimizing resource allocation and integration is essential to achieve maximum synergies. Therefore, scientific research management institutions should develop a detailed evaluation system to examine the effective use of scientific research resources from the perspective of input and output. Specific measures include: regular monitoring and statistics of the use of various scientific resources, such as personnel, equipment and funds, and comparison and analysis with the output results. In addition to quantifiable results such as papers and patents, qualitative indicators such as quality and impact need to be included in the assessment of outputs to give a more comprehensive assessment of research achievements. At the same time, we should consider the characteristics of different disciplines and adopt appropriate evaluation methods. Establish a continuously updated database to monitor the progress of various scientific research projects, identify and solve problems in a timely manner, and optimize resource allocation. Reference to project management practices in the commercial sector, such as progress monitoring and performance evaluation, can bring a new perspective to research management. In short, through this quantitative input-output benefit evaluation, we can more effectively measure the efficiency of resource use, adjust the improper allocation of resources, and ensure the reasonable allocation and optimal use of resources. This has a profound impact on promoting interdisciplinary and interdisciplinary large-scale scientific projects and enhancing the overall scientific and technological innovation capability.

In summing up the above views, we can foresee that the management of scientific research in the future will be closely integrated with scientific and technological progress. This integration not only means improving management efficiency, but more importantly, it emphasizes the importance of research and innovation culture. In this way, we can simultaneously improve the efficiency and quality of scientific research. In addition, another key aspect of research management is the cultivation of innovation capacity. Scientific research should not only be limited to solving problems and producing results, but also focus on cultivating innovative thinking and teamwork skills. This is because only with these capabilities can scientific research teams maintain a leading position in the fierce scientific and technological competition.

Chapter 3

Research Methodology

To Guide on Management to Promote the Quality of Scientific Research at Guiyang University the researcher has the following procedures;

1. The population/ the sample Group
2. Research Instruments
3. Data Collection
4. Data Analysis

The population/Sample Group

The Population

Guiyang University has all its 970 teachers

The Sample Group

The Yamame Formula To determine the sample size, as follows

$$:n = \frac{N}{1+N(e^2)} \text{ among:}$$

- n is the number of samples to be sampled.
- N is the size of the population or the number of elements of the population.

- e is the error tolerance

$$n = \frac{970}{1 + 970(0.05^2)}$$

$$n = 970 / (1 + 970 * (0.05)^2)$$

$$n = 970 / (1 + 970 * 0.0025)$$

$$n = 970 / (1 + 2.425)$$

$$n = 970 / 3.425$$

$$n \approx 283.57$$

So, according to the Yamane formula, about 284 samples are needed to represent the population to achieve a 5% error tolerance. Usually, the integer is taken up to the nearest integer, so 285 samples are selected to represent the population to answer the research questions one by one.

Research Instruments

Based on the analysis of literature and interviews, the "Social Science and Natural Science Teachers' Research Management Identity" questionnaire was developed to explore all the six dimensions of scientific research management: scientific management, research management concepts, research management systems, research management models, project management, and research evaluation. The questionnaire employed a five-point Likert scale for responses, ranging from 1 to 5.

5= strongly agree / very satisfied

4= Consent / satisfaction

3= General / Uncertain

2= dissent / dissatisfaction

1= very disagree / very dissatisfied

The questionnaire was meticulously structured to encompass various segments, with Table 3.1 detailing its basic framework and contents. These include the "language of questionnaire instruction," which outlines the name of the questionnaire, an introduction to the survey, and instructions for completion, as well as a section on basic personal information, capturing details such as population background factors (gender, age) and professional title. The core aim of the survey was to identify avenues for enhancing the quality of scientific research, organized around "five dimensions": learning management, research management concepts, research management operation systems, management modes for research personnel, research project management, and research assessment and evaluation. The structural relationships among these dimensions were visually represented in Figure 3.1, illustrating the comprehensive approach taken to understand and improve the path of scientific research quality.

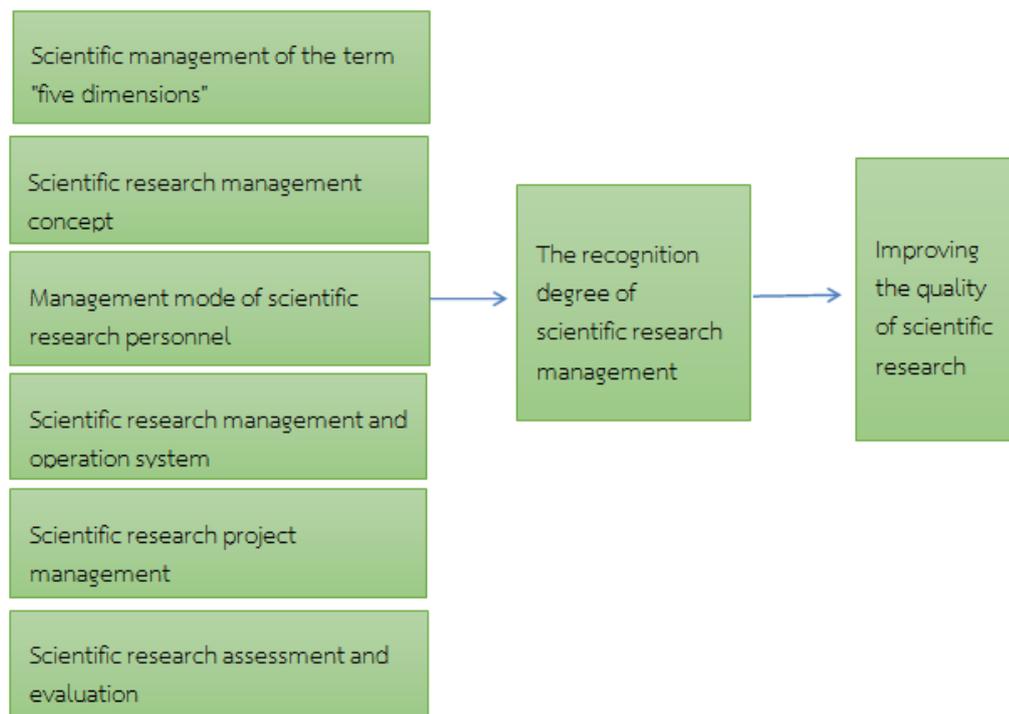


Figure 3.1 Structure relationship diagram of scientific research management recognition degree

Table 3.1 Index system of scientific research management recognition

Classify	Primary coverage
Scientific management "five dimensions" recognition	<p>Rigid management and management mode rigidity: The management mode is often too rigid to adapt to diverse research needs and methods, thus affecting innovation and collaboration.</p> <p>Pursue research results while ignoring the research process: In scientific research, the pursuit of results often leads to the neglect of the research process, including methods, discussion and practice, which may weaken the depth and quality of research.</p>

Table 3.1 (Continued)

Classify	Primary coverage
	<p>Assessment is based on quantity without focusing on quality of results: academic assessment often focuses on quantity as the main criterion, which may lead to shallow research and publishing rather than focusing on profound academic value.</p> <p>Research policies neglect humanistic care: scientific research policies usually favor natural science, and ignore the importance of humanistic care and social science.</p> <p>Focusing on the development of Universities while ignoring individual development: Universities tend to focus on improving the overall research level, but sometimes ignore the growth and needs of individual researchers.</p>
<p>Recognition of scientific research management concept</p>	<p>Emphasize scientific management, but ignore the importance of humanistic care</p> <p>Conduct rigid mechanical management of scientific researchers and research project results.</p> <p>Emphasize people-centered, put researchers in the center of research management, achieve the goals of research development, and regard meeting the self-realization needs of researchers as the primary task, and respect and encourage the dedication and innovation of researchers.</p> <p>Focusing on the university as the center, taking the quality and quantity of scientific research projects as the goal of improving the status of the university, and continuously improving the task requirements of scientific researchers.</p>

Table 3.1 (Continued)

Classify	Primary coverage
Scientific research management and operation system	<p>The scientific research reward system has been improved</p> <p>The scientific research performance appraisal system has been optimized and made more humanized</p> <p>A fair and just scientific research evaluation system has been established</p> <p>The management system of the scientific research process has been improved to make it more perfect</p>
Management mode of scientific research personnel	<p>Arrange scientific research responsibilities in strict accordance with scientific research policies, and conduct regular review.</p> <p>Complete the scientific research tasks within the specified time, pay equal attention to rewards and punishments, and pay attention to incentives.</p> <p>Researchers are encouraged to conduct their own research without multitasking or time constraints.</p>
Scientific research Project management	<p>Pay attention to the importance of project declaration, but also want to pay close attention to the project research process.</p> <p>Value the project research results, but also do not ignore the importance of the project research process.</p> <p>Provide appropriate financial support and supporting resources to improve the quality of project research.</p>
Scientific research assessment and evaluation	<p>Scientific research assessment tends to be eager for quick success and instant benefits, and the number of achievements is the main standard to evaluate the performance of scientific research personnel.</p>

Table 3.1 (Continued)

Classify	Primary coverage
	Encourage researchers to grow up independently, advocate patient accumulation, and concentrate on research.
	Score according to the relevant assessment standards, and implement the corresponding corrective measures for those who fail to meet the standards.
	However, the thinking of "only science" should conform to the essential law of humanities and social science research.

2.1 Initial test of the validity of the questionnaire

2.1.1 Questionnaire difficulty detection

Before finalizing the questionnaire, a professional review was organized, inviting experts in management to conduct a thorough evaluation of its content via the Questionnaire Effectiveness Evaluation form (detailed in Table 3.2). This form aimed to assess and refine the clarity and length of the questionnaire items across 11 critical dimensions. Each item was meticulously scrutinized to ensure it was understandable and answerable by respondents without exceeding their cognitive abilities, while also being precise and clear.

The evaluation process was grounded in two fundamental assumptions: Firstly, the difficulty level of a questionnaire item is directly linked to the potential for misinterpretation, suggesting that complex or vague questions could lead to inaccurate responses. Secondly, the primary challenges in questionnaire design stem from the inherent difficulty of the questions and the clarity of the provided options. This approach underscores the importance of designing survey questions that are both accessible to the target audience and capable of yielding reliable, insightful data.

In an effort to ensure the questionnaire was both comprehensive and comprehensible, four researchers with extensive knowledge of scientific research were invited to conduct a detailed assessment of its content using a difficulty evaluation form. The scoring system was straightforward: an item received 1 point if it met the criteria outlined in the evaluation form, and 0 points if it did not. With a maximum possible score of 11 points per item, this scale aimed to quantify the difficulty level of each questionnaire item.

The assessment revealed that the average difficulty score across all questionnaire items was 3, indicating a moderate level of overall difficulty. This finding suggested that while the questionnaire was challenging enough to gather meaningful data, it was not so difficult as to be inaccessible to respondents. Armed with these insights and guided by the recommendations from the assessment, adjustments were made to the questionnaire's presentation, guidelines, and format.

As a result of this meticulous process of evaluation and refinement, a formal questionnaire comprising 46 questions was finalized. This carefully designed instrument aimed to balance the need for in-depth, valuable insights with the practical considerations of respondent comprehension and engagement.

Table 3.2 Questionnaire difficulty detection table

Title	Select "0" or "1" score ("0" means that this situation does not exist in the questionnaire item statement, and "1" means that the situation exists in the questionnaire item statement)	
	1	0
Compared to a simple question, answering this question requires some thinking.	<input type="checkbox"/>	<input type="checkbox"/>
Answering this question requires memorizing the details	<input type="checkbox"/>	<input type="checkbox"/>
The problem is more complex and may contain two opposing situations	<input type="checkbox"/>	<input type="checkbox"/>

Table 3.2 (Continued)

Title	Select "0" or "1" score ("0" means that this situation does not exist in the questionnaire item statement, and "1" means that the situation exists in the questionnaire item statement)	
	1	0
The current problem that does not exist, just a guess or an assumption of the future, is difficult to answer	<input type="checkbox"/>	<input type="checkbox"/>
The answer option does not correspond to the question	<input type="checkbox"/>	<input type="checkbox"/>
The score division of the answer option is not equal	<input type="checkbox"/>	<input type="checkbox"/>
This problem involves some topics that usually are more taboo (such as disease, death, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Answer options or opinions have obvious social value judgment and other guidance	<input type="checkbox"/>	<input type="checkbox"/>
Questions have many meanings and are prone to ambiguity	<input type="checkbox"/>	<input type="checkbox"/>
Questions have difficult or unfamiliar words	<input type="checkbox"/>	<input type="checkbox"/>
Can not understand the meaning and purpose of the question, do not know how to answer the question	<input type="checkbox"/>	<input type="checkbox"/>

2.1.2 Preliminary test and adjustment of the questionnaire

The study employs a holistic methodological framework to grasp the intricacies and hurdles in managing research within the social and natural sciences. This approach encompasses two primary methods: a questionnaire survey and in-depth interviews. The objective is to gather extensive, nuanced data on academic

research management, enabling the identification, analysis, and understanding of prevailing issues from diverse viewpoints.

Data collected through these methods will undergo a detailed analysis using SPSS 20.0 software. This analysis will not be limited to basic descriptive statistics but will also explore the interrelationships and variances among various variables. Such a comprehensive examination is crucial for pinpointing the critical factors that impact the efficiency and outcomes of research management. Through this methodical analysis, the study aims to uncover insights that could lead to more effective management strategies and practices in the realm of academic research.

As a sample university, Guiyang University was selected for this study. To ensure the depth and accuracy of this study, an extensive and systematic literature review was first conducted, focusing on information on the management of natural science and social science studies in higher education. This process not only deepened our understanding of the knowledge system in these two fields, but also provided a solid theoretical basis for the questionnaire design, especially in the refinement of the research topics and related issues. Then, in the questionnaire design section, we adopted the open interview method to have an in-depth dialogue and communication with the heads of the scientific research management departments of many universities. These communications not only broaden our horizons, but also provide practical support for the specific questions in the questionnaire.

After the preliminary formulation of the questionnaire, we invited a group of higher education scholars and experts in the field of natural science and social science research and management in universities to review it. They made a detailed analysis and adjustment of the content of the questionnaire, the way of questioning and the overall readability of the questionnaire to ensure the effectiveness and scientificity of the survey tools. Ultimately, we carefully screened and constructed a questionnaire with 54 questions including two open-ended questions to capture a wider range of views and information. The whole process of questionnaire preparation and thinking are shown in Figure 3.2, aiming to ensure the rigor of the research method and the credibility of the survey results.

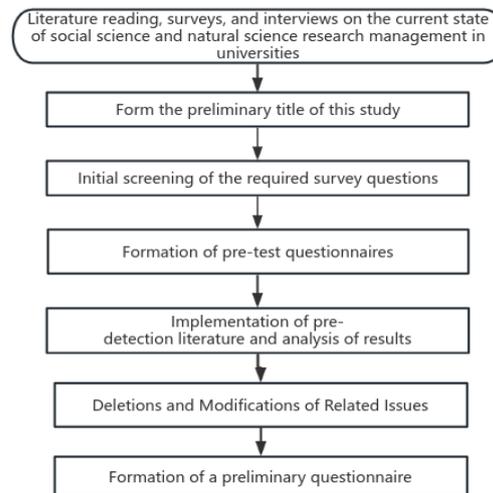


Figure 3.2 The questionnaire preparation process

Through detailed analysis of social and natural science management at Guiyang University, we identified two main challenges: discipline-specific issues and broader scientific research management concerns. These include dependency on scientism, updating management concepts, enhancing operational mechanisms, effective researcher management, refining project management, and improving research achievement evaluation systems. To address these, we conducted a questionnaire survey, focusing on both areas' management practices. We pretested with a validated five-point Likert scale, distributing 60 questionnaires and receiving 56, with 51 valid after screening. This pretest refined question presentation and added two open-ended questions to gather specific feedback on improving Guiyang University's management policies in social and natural sciences.

Table 3.3 Shows the predicted questionnaire statistics

Sample category	standard	Number of people	Ratio
sex	man	27	52.94
	woman	24	47.06
age	29 The following	11	21.57
	30-44	24	47.05
	45-59	12	23.53
	More than 60	4	7.8
academic	scholar	4	7.8
degree	Master	17	33.33
	doctor	30	58.87
take office	other	22	43.14
	Supervisor of master	20	39.22
	supervisor of a Ph.D. student	9	17.64
branch of learning	social sciences	35	68.63
	natural science	16	31.37

To enhance the questionnaire's design quality, engaging deeply with initial respondents is crucial. By utilizing various channels, we gain a comprehensive view of their characteristics, backgrounds, and current situations, while identifying potential opportunities and challenges. This approach ensures the study design's accuracy and usefulness. Consequently, a preliminary questionnaire underwent a trial test, distributed to experts, senior educators, and department heads. Key considerations included clarity of instructions, ambiguity in questions, respondent avoidance of topics, omission of critical questions, and the questionnaire's presentation and overall design. Feedback from this trial led to refinements, resulting in a final questionnaire with 46 questions, optimized for scientific research management assessment. This process not only guarantees the questionnaire's quality and validity but also enhances its practical research applicability.

2.1.3 Validity test of the questionnaire

In order to ensure the validity of the data and the quality of the questionnaire, this study first communicated with the initial respondents, and deeply understood their characteristics, background and present situation through various channels.

The questionnaire's effectiveness was evaluated through the Index of Objective Consistency (IOC) method, which assesses each item on a scale from -1 to 1, categorizing them as 1 for full alignment with the measurement goal, -1 for complete inconsistency, and 0 for ambiguity. Items scoring 1 were considered optimal, reflecting unanimous expert agreement with the survey objectives. Items with scores between 0.5 and 1 were kept as they somewhat met the objectives, whereas items scoring between -1 and 0.5 needed revision, and those with a -1 score were discarded. This optimization process enhanced the questionnaire's reliability and focus. The IOC method not only validated the alignment of items with research goals but also identified and removed ineffective items, thereby elevating the questionnaire's overall quality. Additionally, IOC's quantitative analysis offered a scientific and effective means to ascertain the questionnaire's reliability and validity, facilitating a more objective and comprehensive evaluation by researchers.

Finally, according to the expert evaluation, the average IOC value of the questionnaire was 0.69, which met the standard requirements of the questionnaire quality. This suggests that our questionnaire design maintained a high standard of quality and accuracy while meeting the survey objectives.

2.2 The confidence of and the validity of the questionnaire

2.2.1 Formulate scientific management of "five only" identification questionnaire.

(1) Determine the initial item

In order to more effectively understand and solve the "five only" problems in the management of social science and natural science research in universities, a set of preliminary questionnaires was developed before the formal preparation of the questionnaire (see Table 3.4). This questionnaire aims to evaluate the university teachers' views and attitudes towards the phenomenon of "five only", including 11 questions. To ensure the validity and credibility of the questionnaire,

exploratory factor analysis and confirmatory factor analysis methods were used to select and test the validity of the questions. In terms of the scoring mechanism, five levels are set: very disagree / very dissatisfaction (1 point), disagreement / dissatisfaction (2 points), general / uncertainty (3 points), consent / satisfaction (4 points), and very consent / very satisfaction (5 points). Such grading aims to more precisely capture the respondents' attitudes towards the various questions and thus provide deeper insights into the research.

Table 3.4 Preliminary questions on the "five only" recognition evaluation questionnaire of scientific management in social science and natural science in universities

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general"/"uncertain"; 2= "disagree"/"unimportant"; 1= "very disagree"/"very unimportant")
1	Rigid management and management mode rigidity: The management mode is often too rigid to adapt to diverse research needs and methods, thus affecting innovation and collaboration.	1 2 3 4 5
2	Pursue research results while ignoring the research process: In scientific research, the pursuit of results often leads to the neglect of the research process, including methods, discussion and practice, which may weaken the depth and quality of research.	1 2 3 4 5

Table 3.4 (Continued)

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general"/"uncertain"; 2= "disagree"/"unimportant"; 1= "very disagree"/"very unimportant")
3	The phenomenon of emphasizing "theory" over "text": sometimes, excessive emphasis on theoretical and empirical research, while ignoring cultural, social and humanistic factors, leads to the loss of comprehensiveness and comprehensiveness of research.	1 2 3 4 5
4	Assessment is based on quantity without focusing on quality of results: academic assessment often focuses on quantity as the main criterion, which may lead to shallow research and publishing rather than focusing on profound academic value.	1 2 3 4 5
5	Emphasis on "demonstration" rather than "speculation": excessive emphasis on empirical research may ignore speculation and philosophical thinking, which is of great significance in some fields.	1 2 3 4 5
6	Research policies neglect humanistic care: research policies usually favor natural science and ignore the importance of social science.	1 2 3 4 5

Table 3.4 (Continued)

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general"/"uncertain"; 2= "disagree"/"unimportant"; 1= "very disagree"/"very unimportant")
7	Focusing on the development of Universities while ignoring individual development: Universities tend to focus on improving the overall research level, but sometimes ignore the growth and needs of individual researchers.	1 2 3 4 5
8	Pursue the quantity of results while ignoring the academic value: too much emphasis on the quantity of research results may lead to a decline in the quality, and a neglect of the academic value.	1 2 3 4 5
9	The lack of "short, flat and fast" pursuit of scientific research results lacks long-term effect evaluation: excessive pursuit of short-term scientific research results, ignoring the long-term impact on society and culture.	1 2 3 4 5
10	The evaluation index system of "science and technology": the evaluation system tends to adopt the standards of science and engineering, and does not fully consider the characteristics and contributions of scientific research.	1 2 3 4 5

Table 3.4 (Continued)

Question number	Questionnaire topic	5= "very agree"/"very important";	4= "agree"/"important";	3= "general"/"uncertain";	2= "disagree"/"unimportant";	1= "very disagree"/"very unimportant")
11	Management science research: applying the management thinking of science and engineering to the scientific research field may not be applicable, because the two have different research methods and values.	1	2	3	4	5

Exploratory factor analysis

Before performing the exploratory factor analysis, it is critical to evaluate the KMO test and the Bartlett spherical test. The results of these two tests are an important basis for assessing the suitability of the data for factor analysis. The size of KMO value directly reflects the number of common factors among the variables in the data, which thus affects the suitability of factor analysis. According to the statistician Kaiser (1974), the KMO values below 0.5 usually mean that the data are less suitable for factor analysis. In this study, as shown in Table 3.5, the KMO value was 0.862, and this high value shows that the data are very suitable for factor analysis. Meanwhile, this conclusion is supported by the results of Bartlett spherical test, where χ^2 / df value is 1.902, $p < 0.05$, which further confirmed the existence of significant common factors among the data and thus justified the factor analysis.

Table 3.5 List of main fitting indicators for exploratory factor analysis

Metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	1.902	0.885	0.071	0.891	0.901	0.862	0.024

When evaluating the validity and reliability of the "five only" recognition questionnaire, the common degree analysis was conducted first. The commonality analysis assessed how much of each item's variance was accounted for by common factors, revealing that the commonalities for all questionnaire items ranged from 0.316 to 0.895. However, items 3 and 5 showed commonalities below the acceptable threshold (less than 0.60), indicating that a smaller portion of their variance was explained by common factors, which may point to insufficient validity for these items. Further analysis, including variance number analysis and factor loading calculations, confirmed the low loadings for items 3 and 5, and also identified item 9 as having a marginally satisfactory factor loading, suggesting that these items warrant additional scrutiny.

Despite these specific items underperforming, the overall questionnaire maintained a high rate of interpretation. The internal consistency reliability was assessed using Cronbach's alpha (α), which resulted in a coefficient of 0.740 for the questionnaire. This exceeds the benchmark for acceptable reliability ($\alpha > 0.7$), demonstrating robust internal consistency. This evidence supports the questionnaire's effectiveness in evaluating the "five-only" recognition of scientific management, showcasing its reliability and validity as a measurement tool. Consequently, while items 3, 5, and 9 may need further evaluation or exclusion, the questionnaire as a whole stands as a credible and reliable instrument for assessing perceptions of scientific management principles.

Table 3.6 Results of the exploratory factor analysis

Question number	Variable commonality	Cumulative interpretation of the amount of the variation	eigenvalue	factor loading
1	0.895	32.542	3.155	0.754
2	0.821	46.241	1.623	0.743
3	0.379	57.418	1.152	0.435
4	0.819	67.591	1.109	0.641
5	0.316	69.648	1.006	0.443
6	0.715	72.055	0.911	0.664
7	0.778	87.112	0.778	0.871
8	0.872	89.297	0.672	0.732
9	0.607	92.346	0.498	0.473
10	0.731	96.532	0.319	0.706
11	0.752	100.00	0.264	0.797

(Note: Original commonality and factor number are both 1.000)

2.2.2 Preparation of the questionnaire for the recognition of scientific research management concepts

(1) The initial item is determined

After an in-depth analysis of the current concept of social science and natural science research and management in universities, a set of comprehensive management concept evaluation tools are developed. The tools were presented in an exhaustive questionnaire with 12 questions (see Table 3.7), designed to comprehensively explore and evaluate multiple aspects of study management. To ensure the validity and reliability of the questionnaire, we first identified key questions and potential structures through exploratory factor analysis and subsequently tested the consistency and stability of these questions by confirmatory factor analysis. The scoring system of the questionnaire used a five-level scale that allowed respondents to give comments from "very disagree / very dissatisfied" (1

point) to "very agree / very satisfied" (5 points) for each question. This scale not only helps to capture subtle differences in opinion, but also more accurately reflects the recognition of the various management ideas.

Table 3.7 Questionnaire on the recognition degree of scientific research management concepts

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general"/ "uncertain"; 2= "disagree"/"unimportant"; 1= "very disagree"/"very unimportant")
1	Emphasize scientific management, but ignore the importance of humanistic care.	1 2 3 4 5
2	Conduct rigid mechanical management of scientific researchers and research project results.	1 2 3 4 5
3	Lack of people-oriented scientific research management concept.	1 2 3 4 5
4	Emphasize people-centered, put researchers in the center of research management, achieve the goals of research development, and regard meeting the self-realization needs of researchers as the primary task, and respect and encourage the dedication and innovation of researchers.	1 2 3 4 5

Table 3.7 (Continued)

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree"/"unimportant"; 1= "very disagree" / "very unimportant")
5	Focusing on the university as the center, taking the quality and quantity of scientific research projects as the goal of improving the status of the university, and continuously improving the task requirements of scientific researchers.	1 2 3 4 5
6	Putting natural science management at the heart of the core.	1 2 3 4 5
7	It mainly relies on institutional control and economic incentives.	1 2 3 4 5
8	Management should be considered as a service that emphasizes providing excellence.	1 2 3 4 5
9	Advocate personal charm, pay attention to empirical management.	1 2 3 4 5
10	Focus on the increase in the number of scientific research results.	1 2 3 4 5
11	We will encourage the cultivation of outstanding achievements and eradicate improper scientific research practices.	1 2 3 4 5

Table 3.7 (Continued)

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant")
12	Through scientific research management work, promote scientific research to reflect the spiritual values of the university, and promote the integration of scientific culture and humanistic culture.	1 2 3 4 5

(2) Exploratory factor analysis

Prior to the exploratory factor analysis, this study first performed the critical KMO test and Bartlett spherical test of the data to assess whether the data were suitable for the factor analysis. The results of these two tests are crucial for the factor analysis. The KMO test results showed that the KMO value was 0.883, indicating that there were many common factors among the variables in the data, which was suitable for factor analysis. This higher value indicates that the data are well suited for factor analysis. Meanwhile, the results of the Bartlett sphere test, where the χ^2 / df value was 2.133, $p < 0.05$, further confirmed the existence of significant common factors among the data, thus verifying the rationality of the factor analysis.

Table 3.8 List of main fitting indicators for exploratory factor analysis

metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	2.133	0.815	0.055	0.911	0.897	0.883	0.026

This study's analysis of the "management concept" evaluation questionnaire found that the commonality of all items ranged from 0.477 to 0.894. However, specifically, items V6 and V10 had commonalities of 0.477 and 0.518, respectively, falling below the accepted threshold (less than 0.60). This indicated that these items were less influenced by common factors, leading to their consideration for exclusion due to their lower explanatory variance.

Further examination through variance number analysis and factor loading calculations identified the factor loadings of 12 items, with items 6 and 10 exhibiting low loadings and thus were selected for removal. Despite the exclusion of these items, the overall interpretative rate of the questionnaire remained high, demonstrating its effectiveness.

The structural validity of the questionnaire, post-removal of items 6 and 10, was verified using a structural equation model. This analysis revealed that the remaining items had relatively high loadings and that the fitting indices satisfied statistical standards. Additionally, the questionnaire's internal consistency was evaluated with Cronbach's α coefficient, which was found to be 0.811, exceeding the reliability threshold and confirming the questionnaire's robustness.

Through a detailed and systematic process of analysis and adjustment, including the assessment of commonalities, factor loadings, structural equation modeling, and reliability testing, the research tool was refined to ensure its scientific validity and applicability. This comprehensive approach underlines the importance of meticulous tool preparation in research, affirming the questionnaire's reliability and validity in assessing management concepts.

Table 3.9 Results of the exploratory factor analysis

Question number	Variable commonality	Eigenvalue	Cumulative interpretation of the amount of the variation	Factor loading
1	0.813	3.184	27.413	0.618
2	0.894	1.972	41.194	0.715
3	0.754	1.734	54.621	0.667
4	0.776	1.473	62.930	0.682
5	0.811	0.969	71.651	0.614
6	0.516	0.794	77.786	0.374
7	0.701	0.677	83.383	0.438
8	0.817	0.612	88.817	0.641
9	0.746	0.467	92.176	0.679
10	0.498	0.402	96.311	0.416
11	0.797	0.271	98.927	0.725
12	0.772	0.194	100.00	0.773

(Note: Original commonality and factor number are both 1.000)

2.2.3 Questionnaire preparation of the operation mechanism and system of scientific research management.

Determine the initial questionnaire question items

In order to deeply understand the effects and problems of the current management system of social science and natural science research in universities, a preliminary questionnaire design was conducted before the formal survey. This initial questionnaire was crafted following an extensive examination of the operational dynamics within the specific field, incorporating eight pivotal questions aimed at garnering diverse insights and feedback to offer a well-rounded analysis. The questionnaire's development began with an exploratory factor analysis to pinpoint key factors and potential areas of concern, laying the groundwork for a focused inquiry. Subsequent to this, a confirmatory factor analysis was employed to refine

the questions further, ensuring their direct alignment with the study's objectives and their capability to gather pertinent data effectively. This rigorous validation process guaranteed that the questionnaire was finely tuned to the research's requirements. To facilitate nuanced responses, the questionnaire utilized a five-point Likert scale ranging from "very disagree/very dissatisfied" (1 point) to "very agree/very satisfied" (5 points), with options for "disagree/dissatisfied" (2 points), "neutral/uncertain" (3 points), and "agree/satisfied" (4 points) in between. This scaling approach was specifically chosen to capture a broad spectrum of participant reactions, from strong dissatisfaction to high satisfaction, enabling a more detailed and comprehensive analysis of the collected data. In this way, it is expected that the effectiveness of the current management system can be accurately evaluated and the room and opportunities for improvement found.

Table 3.10 Preliminary questionnaire on the recognition degree of scientific research management operation mechanism

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant")
1	The scientific research reward system has been improved	1 2 3 4 5
2	Make the evaluation system of scientific research achievements more scientific	1 2 3 4 5
3	The human culture of the establishment system of scientific research team construction has been strengthened	1 2 3 4 5

Table 3.10 (Continued)

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant")
4	Optimize the scientific research performance appraisal system, more in line with the human nature	1 2 3 4 5
5	A fair and just scientific research evaluation system has been established	1 2 3 4 5
6	It highlights the importance of human culture factors in the application of scientific research projects	1 2 3 4 5
7	Reasonable management of scientific research funds and finance	1 2 3 4 5
8	The management system of the scientific research process has been improved to make it more perfect	1 2 3 4 5

Exploratory factor analysis

Performing the KMO test and the Bartlett sphere test is the key step before performing the exploratory factor analysis. The results of these two tests are an important basis for assessing the suitability of the data for factor analysis. The KMO test reflects the number of common factors among the variables in the data, thus affecting the suitability of the factor analysis. A KMO value below 0.5 generally indicates that the data are not suitable for factor analysis. The KMO value in this

study was 0.624, with this higher value indicating that the data are excellent for factor analysis. Meanwhile, this conclusion is supported by the results of Bartlett sphere test, whose χ^2 / df value is 2.363 and p value <0.05, further confirming the existence of significant common factors between data, thus verifying the rationality of the factor analysis.

Table 3.11 List of main fitting indicators for exploratory factor analysis

Metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	2.332	0.846	0.044	0.918	0.911	0.624	0.018

In addition, the common degree analysis of the evaluation questionnaire of "scientific research management operation mechanism system" found that the common degree of all the questions was between 0.417 and 0.792. In particular, the common degree of questions 3 and 6 were 0.417 and 0.518, respectively, below the statistical criterion 0.60, indicating that both items are explained less variance by common factors and therefore considered for removal. Next, through the number of variants and factor load analysis, we also found that questions 3 and 6 had low load, so we decided to eliminate these two items. The refined questionnaire, following the exclusion of two specific questions, demonstrated a high overall interpretative rate, underscoring the efficacy and validity of its design. The application of a structural equation model (SEM) to assess the structural validity of the revised questionnaire revealed that each remaining item had a relatively high loading, and the fit indices satisfied the statistical criteria. This analysis not only validated the questionnaire's structural integrity but also confirmed its capacity to effectively measure the intended constructs. Furthermore, the reliability of the questionnaire was assessed through the calculation of Cronbach's α coefficient, which resulted in a value of 0.802. This figure indicates a robust internal consistency within the questionnaire, affirming its reliability for research purposes. The achievement of a Cronbach's α coefficient exceeding 0.7 is a standard benchmark in survey research, suggesting that

the items within the questionnaire are cohesively measuring the same underlying constructs.

In summary, the careful construction, analysis, and refinement of the questionnaire have ensured that it is both a valid and reliable tool for capturing comprehensive perspectives on the study's subject matter. The use of exploratory and confirmatory factor analyses, along with a detailed scoring system and the employment of SEM, has rigorously verified the questionnaire's ability to accurately gather and reflect the target data, making it a well-prepared instrument for the intended research application.

Table 3.12 Results of the exploratory factor analysis

Question number	Variable commonality	Eigenvalue	Cumulative interpretation of the amount of the variation	Factor loading
1	0.717	2.118	27.045	0.687
2	0.618	1.287	42.797	0.719
3	0.417	1.163	51.870	0.705
4	0.624	0.998	68.412	0.669
5	0.785	0.833	78.418	0.732
6	0.518	0.663	86.167	0.403
7	0.813	0.546	93.168	0.721
8	0.677	0.459	100.00	0.686

(Note: Original commonality and factor number are both 1.000)

2.2.4 Questionnaire preparation for the management methods of scientific researchers

(1) Determine the preliminary questionnaire items

After an in-depth analysis of the management patterns of social science and natural science researchers in universities, an initial questionnaire (see Table 3.13) was constructed to explore and evaluate the effectiveness of these

management methods. The questionnaire included six well-designed questions designed to comprehensively assess current management practice. The question items of the questionnaire were strictly screened and validated to ensure their accuracy and reliability. To more carefully capture respondents' opinions, the questionnaire used a five-level scoring system: very disagree / very dissatisfaction (1 point), disagreement / dissatisfaction (2 points), general / uncertain (3 points), consent / satisfaction (4 points) and very agree / very satisfaction (5 points). This graded scoring method helps us to interpret the data more accurately, and then provide in-depth insights and suggestions on the management mode of university researchers.

Table 3.13 Researchers' management style identification questionnaire

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant")				
1	The scientific research environment is free and loose, emphasizing the humanized management mode.	1	2	3	4	5
2	Focus on and develop a network of academic relationships among scientific researchers.	1	2	3	4	5
3	Arrange the research tasks and conduct regular inspections according to the scientific research policy.	1	2	3	4	5
4	If the research task is not completed within the specified time, it will be punished.	1	2	3	4	5

Table 3.13 (Continued)

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant")				
5	Respect and support the researchers in their research, and provide a research platform for them.	1	2	3	4	5
6	Researchers study on their own and are not limited by specific tasks and time constraints	1	2	3	4	5

Exploratory factor analysis

Before exploratory factor analysis, the data must first be KMO tested and Bartlett spherical tested to assess their suitability. The purpose of these tests is to determine whether the variables in the data have sufficient common factors to determine their suitability for factor analysis. The KMO value is a key indicator that measures the degree of common factors among the variables in the data, and its values below 0.5 generally indicate that the data are not suitable for factor analysis. In this study, the KMO value was 0.589, showing that the data were very suitable for factor analysis, while the χ^2 / df value of the Bartlett sphere test was 2.513 and $p < 0.05$, further confirming the existence of significant common factors among the data.

Table 3.14 list of main fitting indicators for exploratory factor analysis

metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	2.513	0.844	0.049	0.845	0.911	0.589	0.015

We analyzed the common degree of the evaluation questionnaire of "recognition of researchers' management mode", and found that the common degree of all items was between 0.401 and 0.819. However, the common degree of item 2 is only 0.401, which is below the statistical standard of 0.60, indicating that it is less explained by public factors, so it should be considered. Subsequently, through the number of variation and factor load analysis, the factor load of item 2 was low, which further confirmed that it should be eliminated. After elimination, the overall interpretation rate of this questionnaire was high, indicating that the factor analysis of the remaining question items performed well. Finally, the structural equation model was used to verify the structural validity of the deleted item 2. The results showed that the load of each item was relatively high, and each fitting index also met the statistical requirements. Moreover, the reliability of the questionnaire was further confirmed by testing the Cronbach's α coefficient with a value of 0.725, meeting the criteria of questionnaire preparation.

Table 3.15 Results of the exploratory factor analysis

Question number	Variable commonality	eigenvalue	Cumulative interpretation of the amount of the variation	factor loading
1	0.688	1.987	31.542	0.815
2	0.414	1.421	52.731	0.401
3	0.775	0.945	64.515	0.637
4	0.821	0.858	81.642	0.819
5	0.866	0.584	91.344	0.747
6	0.615	0.516	100.00	0.715

(Note: Original commonality and factor number are both 1.000)

2.2.5 Preparation of scientific research project management questionnaire

(1) Initially determine the questionnaire questions

In response to the complex challenges confronting research project management within social and natural sciences at universities, a meticulous and broad-based research project management questionnaire was developed, targeting the pivotal factors contributing to these issues. Detailed in Table 3.16, the questionnaire encompasses 10 carefully selected inquiries that span crucial aspects of the management cycle. To ascertain the questionnaire's validity and reliability, an exploratory factor analysis was employed, a methodology renowned for its precision in scrutinizing and affirming the pertinence and significance of each question, thereby guaranteeing the questionnaire's scientific validity and practical applicability.

Participants, encompassing both researchers and managers with firsthand experience in the domain, were asked to evaluate each question. They provided their assessments based on personal perspectives and experiences, utilizing a nuanced scoring system that ranged from "very disagree / very dissatisfaction" (1 point) to "very consent / very satisfaction" (5 points). This granular scoring mechanism is designed to discern subtle variances in respondents' attitudes towards specific issues, thereby furnishing a comprehensive and nuanced dataset for subsequent analytical endeavors. This approach not only enhances the questionnaire's capacity to reflect a broad spectrum of opinions and experiences but also significantly contributes to the depth and accuracy of the resulting data analysis, laying a solid foundation for addressing the identified challenges in research project management effectively.

Table 3.16 Questionnaire of research Project management

Question number	Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree"/"unimportant"; 1= "strongly disagree" / "very unimportant")
1	Pay attention to project declaration and neglect project research.	1 2 3 4 5
2	Focus on the quality of project research and encourage the creation of high-quality results.	1 2 3 4 5
3	Note the project research results, with less emphasis on the project research process.	1 2 3 4 5
4	To improve the quality of project research, provide appropriate financial support or corresponding resources.	1 2 3 4 5
5	Project application should conform to the characteristics of scientific research.	1 2 3 4 5
6	Scientific research projects focus on the long-term impact.	1 2 3 4 5
7	Strictly according to the rules and regulations management, the violations shall be punished accordingly.	1 2 3 4 5
8	Advocate personalized research and restore the essence of scientific research.	1 2 3 4 5
9	Focus on the important project research work, and do not ignore the general project research.	1 2 3 4 5
10	Research projects require better management of process documentation.	1 2 3 4 5

Exploratory factor analysis

In the initial phase of conducting the exploratory factor analysis, this study first performed the KMO test and the Bartlett spherical test on the data. The KMO test was used to measure whether the variables in the data are sufficiently related to be effectively grouped into fewer factors. In this study, the KMO value was 0.590, which exceeded the usual standard of 0.5, indicating that sufficient common factors among the variables in the data are suitable for factor analysis. Furthermore, the purpose of the Bartlett spherical test is to check whether the observed data deviate statistically significantly from the normal distribution. In this study, the χ^2 / df value of the Bartlett-test was 1.945, and the p-value was less than 0.05, implying that there were significant common factors between the data, thus further confirming the rationality of conducting the factor analysis. The results of these two tests provide a solid statistical basis for the following factor analysis, ensuring the accuracy and reliability of the analysis.

Table 3.17 List of main fitting indicators for exploratory factor analysis

metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	1.945	0.824	0.071	0.818	0.877	0.590	0.006

Building on the framework for evaluating "scientific research project management recognition," this study delves into the questionnaire's analysis with a focus on its commonality. The common degree analysis, as detailed in Table 3.18, uncovers a range in the common factors' explanatory power across the questionnaire's items, from 0.348 to 0.872. This variance in commonality suggests a breadth in how effectively each item captures the underlying constructs intended to be measured, indicating a robust differentiation in item specificity and relevance to the overarching themes of scientific research project management recognition. This analysis not only sheds light on the strengths and potential areas for refinement within the questionnaire but also underscores the nuanced understanding required

to gauge the multifaceted nature of project management in scientific research. This result indicates that most items can be well explained by the corresponding common factors. However, the degree of common of specific items 5,6, and 10 was significantly lower than the statistical criterion of 0.60,0.348,0.462, and 0.417, respectively, indicating that these items have less variance explained by common factors, and therefore should be considered in subsequent analyses. Then, when analyzing the number of variation and factor load of the questionnaire, we found that the loads of the items 5,6 and 10 were relatively low, which further confirmed that the contribution of these items to the overall structure of the questionnaire was limited. Therefore, it was decided to eliminate these items.

Furthermore, the overall interpretation rate of the questionnaire was high, showing the validity of the questionnaire design. Finally, the structural equation model was used to verify the structural validity of the excluded items, and found that the load of each item was relatively high, and the fitting index met the statistical requirements, which further confirmed the structural rationality of the questionnaire. At the same time, through the Cronbach's α coefficient, the value reached 0.716, which met the general requirements of questionnaire preparation, indicating that the questionnaire has good internal consistency and ensures the credibility of the results.

Table 3.18 Results of the exploratory factor analysis

Question number	Variable commonality	eigenvalue	Cumulative interpretation of the amount of the variation	factor loading
1	0.836	1.927	19.512	0.812
2	0.812	1.735	35.482	0.761
3	0.834	1.573	47.545	0.732
4	0.782	1.322	59.490	0.755
5	0.348	1.040	68.485	0.302
6	0.462	0.842	77.482	0.411
7	0.834	0.728	85.654	0.724

Table 3.18 (Continued)

Question number	Variable commonality	eigenvalue	Cumulative interpretation of the amount of the variation	factor loading
8	0.883	0.581	90.212	0.828
9	0.875	0.482	95.548	0.715
10	0.417	0.417	100.00	0.417

(Note: Original commonality and factor number are both 1.000)

2.2.6 Preparation of scientific research assessment and evaluation questionnaire.

(1) Determine the preliminary questionnaire items

Drawing on a thorough examination and critique of the prevailing systems for evaluating scientific research within the realms of social and natural sciences at universities, this study endeavors to accurately pinpoint and comprehend the myriad issues inherent in the process of scientific research evaluation. To achieve this, the research articulates a specialized questionnaire comprising 12 pivotal inquiries, detailed in Table 3.19, which span the spectrum of research project selection, funding allocation, and results dissemination. This methodical approach aims to offer a holistic assessment of the extant research evaluation framework.

The construction of this questionnaire was underpinned by the utilization of exploratory factor analysis, a technique instrumental in distilling the most impactful and pertinent questions, thereby facilitating their subsequent validation. This analytical process not only foregrounds the fundamental challenges within the scientific research evaluation landscape but also enriches our comprehension of the system as it currently stands.

In an effort to capture the nuanced perspectives of respondents with precision, the study introduces a nuanced five-point scale for responses. This grading mechanism categorizes reactions to each query into five distinct echelons: from strong disagreement or dissatisfaction (1 point) to strong agreement or satisfaction (5

points), thereby enabling a granular and comprehensive analysis of participant viewpoints on each question posed.

Table 3.19 Questionnaire.

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general" / "uncertain"; 2= "disagree"/"unimportant"; 1="very disagree"/"very unimportant")
1	Grcore according to the number of scientific research projects, achievements, awards, etc	1 2 3 4 5
2	The scientific research assessment system is too eager for quick success and instant benefits, and the number of achievements is the main standard for the performance evaluation of researchers	1 2 3 4 5
3	A representative system was introduced to assess the quality rather than quantity of results	1 2 3 4 5
4	Emphasizing the social evaluation of the representative works	1 2 3 4 5
5	Scientific research practitioners are encouraged to grow independently, emphasizing the need for time and effort to hone their research skills	1 2 3 4 5
6	Pay attention to the output of scientific research results, but also pay attention to the training of scientific research talents	1 2 3 4 5

Table 3.19 (Continued)

Question number	Questionnaire topic	5= "very agree"/"very important"; 4= "agree"/"important"; 3= "general" / "uncertain"; 2= "disagree"/"unimportant"; 1="very disagree"/"very unimportant")
7	Based on the relevant performance standards, corresponding sanctions will be taken for those who fail to meet the standards	1 2 3 4 5
8	Put scientific research assessment under the principle of humanism and avoid excessive red tape	1 2 3 4 5
9	Abide by the characteristics of scientific research, and implement a differentiated assessment system	1 2 3 4 5
10	Abandon the "five only" thinking, follow the rules of scientific research	1 2 3 4 5
11	Do not blindly choose the results as the assessment method	1 2 3 4 5
12	Establish a perfect scientific research performance file, as the basis for evaluating the annual performance of scientific researchers, professional and technical position promotion and project recommendation	1 2 3 4 5

Exploratory factor analysis

First, the premise of the exploratory factor analysis is the evaluation of the KMO test and the Bartlett spherical test. These two tests are the key to determine whether the data is suitable for factor analysis. The KMO values reflect the degree of common factors among the variables in the data, influencing the suitability of the factor analysis. For example, KMO values below 0.5 generally indicate that the data are not suitable for factor analysis. In this study, as shown in Table 3.20, the KMO value was 0.639, indicating that the data are highly suitable for the factor analysis. Moreover, this conclusion is also supported by the resulting χ^2 / df value of 1.842 and $p < 0.05$, confirming the existence of significant common factors between the data and verifying the rationality of performing the factor analysis.

Table 3.20 List of main fitting indicators for the exploratory factor analysis

metric	X2/df	GFI	RMSEA	NFI	CFI	KMO	Bartlett Spherical test
Inspection value	1.842	0.859	0.044	0.828	0.903	0.639	0.007

The common degree analysis of the "recognition of scientific research assessment" questionnaire (see Table 3.21) found that the common degree of common factor interpretation for all items was between 0.512 and 0.851. In particular, the common degree of item 4 is 0.512, which is lower than the statistical standard (0.60), indicating that this item is less explained by public factors and should be considered and excluded. The variation number and factor load analysis were continued, and the factor load of 12 items was obtained through the factor analysis. From the load coefficient of each item, the load of item 4 was low, so it was removed. Moreover, the interpretation rate of the overall questionnaire was high. Finally, the structural equation model is applied to verify the structural validity of each item after deleting item 4. The results showed that each item had a high load and the fitting index met the statistical requirements. Meanwhile, the

questionnaire was tested by Cronbach's α coefficient, and its value was 0.675, reaching the standard of questionnaire preparation.

Table 3.21 Results of the exploratory factor analysis

Question number	Variable commonality	eigenvalue	Cumulative interpretation of the amount of the variation	factor loading
1	0.726	3.414	28.639	0.689
2	0.708	1.681	44.602	0.671
3	0.769	1.530	55.845	0.793
4	0.512	1.084	64.931	0.413
5	0.655	0.884	71.236	0.629
6	0.669	0.785	77.518	0.668
7	0.839	0.626	83.906	0.672
8	0.757	0.652	88.033	0.631
9	0.612	0.514	92.147	0.601
10	0.633	0.416	96.149	0.659
11	0.688	0.283	98.157	0.616
12	0.675	0.219	100.00	0.649

(Note: Original commonality and factor number are both 1.000)

Data Collection

The core focus of this study is the in-depth analysis of the scientific research management system of Guiyang University, which is motivated by my personal experience of working in the university. The goal is to investigate the actual operation of the university in research management, aiming to provide valuable management experience and insights for the peer institutions. In the process of designing the questionnaire, a comprehensive scientific methodology was applied to ensure the validity and accuracy of the survey. The methods include expert review to enhance the pertinence and depth of the questionnaire, appropriate difficulty setting to

match the understanding level of the respondents, and pretesting to evaluate the initial effect of the questionnaire.

To ensure a high degree of study rigor, the reliability and validity test used KMO test and Bartlett spherical test to assess the suitability of the sample, which helped to ensure the validity and representativeness of the data we collected. Furthermore, we also tested the internal consistency of the questionnaire by using the Cronbach's α coefficient, which is a critical step to ensure the reliability of the data. In this study, a total of 310 questionnaires were distributed, of which 285 met the study criteria. In the data analysis phase, SPSS 20.0 was used as the primary analysis tool. SPSS is a widely used statistical software in the social sciences. Its powerful functions can not only effectively process complex data sets, but also support multiple analysis methods including descriptive statistics, correlation analysis, and regression analysis.

Through these methods, it not only reveals the current situation and existing challenges in the scientific research management of Guiyang University, but also provides a solid data support for the future improvement of the scientific research management of Guiyang University. Moreover, our results have broad applicability, which makes it an important reference for other institutions when improving scientific research management strategies. This influence will not only help to improve the overall quality and efficiency of scientific research, but also help to strengthen the influence and reputation of the university in the academic world.

Data Analysis

Exploring the relationship between university faculty's personal backgrounds and their perceptions of scientific research management is a multifaceted research endeavor that encompasses a variety of variables. Key among these are academic qualifications, field of study, rank, experience in teaching and research, as well as demographic factors like gender and age. For instance, faculty members' views on research management can vary significantly based on their degrees or academic disciplines; seasoned educators might offer insights grounded in extensive experience, while those newer to the field might focus on the implications of management practices for their professional development. Moreover, variations in

gender and age could influence attitudes towards research management, reflecting distinct career phases and personal life experiences.

The characteristics of disciplines are also a factor that cannot be ignored. Faculty from various disciplines often have differing focuses and priorities in scientific research management, shaped by the unique characteristics and requirements of their fields. Additionally, the manner in which educators reconcile their teaching and research duties with their personal values and professional aspirations can significantly impact their perspectives and receptiveness towards research management. To investigate the intricate relationship between these diverse background elements and the perception of scientific research management, researchers typically employ methodologies such as surveys, in-depth interviews, focus groups, and other data-gathering techniques, followed by the analysis of this data using statistical software like SPSS. The significance of this research lies in its potential to provide universities and administrators with a deeper insight into faculty needs and expectations, thereby enabling the development of more effective research management strategies and practices. These improvements aim to enhance research productivity and the overall quality of research outputs.

Such in-depth analysis of the relationship between scientific research management and personal background factors can help to improve the quality of scientific research in many aspects:

1. **Optimized Resource Allocation:** By understanding the diverse needs and preferences of scientists from various backgrounds, research institutions can enhance their resource distribution. For instance, recognizing the adoption of new tools by younger researchers could lead the institutions to prioritize those tools, ensuring a more effective allocation of support.
2. **Enhanced Job Satisfaction and Productivity:** Researchers who feel their needs and expectations are acknowledged and met typically exhibit higher job satisfaction and productivity. This positive shift directly contributes to the improvement in both the quality and the volume of scientific research outputs.
3. **Fostering Innovation:** Identifying research management practices that effectively stimulate innovation can enable institutions to cultivate a more creative and innovative research atmosphere. Awareness of young researchers' openness to new ideas could encourage the adoption of advanced research methods and

technologies. 4. Improved Team Dynamics: Recognizing the varied perspectives and preferences in research management among researchers from diverse backgrounds can lead to more effective teamwork. A culture where individual viewpoints are respected enhances team collaboration and communication. 5. Enhanced Decision-Making Quality: A thorough analysis leads to more informed, data-driven decisions in scientific research management, elevating decision-making quality. Emphasizing data in decision processes minimizes biases and errors, ensuring research resources are utilized efficiently. 6. Tailored Training and Support: Identifying the unique requirements of researchers from various backgrounds allows research institutions to offer more personalized training and support programs. This targeted approach not only enhances researchers' skills and knowledge but also elevates the overall quality of research.

In short, the analysis of university teachers' recognition of scientific research management can not only help scientific research institutions to better understand the needs and expectations of their researchers, but also provide data support for the development of more effective scientific research management strategies, which are the key factors to improve the overall quality of scientific research.

In the in-depth analysis of scientific research management recognition, SPSS 20.0 statistical analysis software can be used. This process first start from clear the key dimension of scientific research management, such as scientific management practice for the "five dimensions", explore the deep connotation of scientific research management concept, analyze the effectiveness of scientific research management operation system, evaluate the management of scientific research personnel, examine the efficiency of scientific research project management and the rationality of scientific research evaluation. Subsequently, personal information about the researchers will be collected, covering gender, professional field, education level, teaching experience, professional title level, subject expertise and education background. Based on this information, a comprehensive questionnaire survey is designed to obtain the recognition evaluation of each dimension of scientific research management in a quantitative way.

Upon completion of data collection, the SPSS 20.0 software will be used to perform an exhaustive curation and descriptive statistical analysis of these data. This

step involves calculating key statistical measures such as mean, standard deviation, frequency, and percentage for each dimension and a detailed group comparison of the data based on the participants' personal background information. In this way, it can not only reveal the differences of researchers from different backgrounds in the recognition of scientific research management, but also deeply explore the causes of these differences, providing strong data support for the optimization of the field of scientific research management. Summarize the key findings and make targeted suggestions for improvement.

After completing the basic steps of the descriptive statistical analysis, the analysis results are further interpreted and explored. The core of this stage is to understand the deep meaning of the data, especially to explore the correlation between personal background factors (such as gender, education level, etc.) and various aspects of scientific research management. Through this analysis, it can reveal the degree of recognition of scientific researchers from different backgrounds to all aspects of scientific research management, and then understand their needs and expectations. For example, one may find that young researchers are more open and receptive to innovative research management ideas. Thereafter, statistical software such as SPSS 20.0 can be used to conduct more complex statistical analysis, such as correlation analysis.

These analyses could deeply explore the interactions and influences between different variables. These detailed analyses can identify the combination of background variables that have the greatest impact on the identity of research management and the potential links between the different dimensions of research management. Throughout the analysis process, ensuring the accuracy of the data and the appropriateness of the analysis method are crucial. The interpretation of the statistical analysis results should be maintained in an objective and scientific attitude, and avoid over-interpretation or misinterpretation of the data. Meanwhile, possible bias or limitations need to be considered, such as the representativeness of the sample and the accuracy of data collection.

In conclusion, this research process constitutes a comprehensive analytical system designed to provide in-depth insights and practical advice to promote continuous development and improvement in the field of scientific research

management. Through the careful analysis of the data, it can not only better understand the current situation of scientific research management, but also provide valuable guidance for its future development direction. It can help scientific research managers to better understand and meet the needs of scientific research teams, so as to improve the efficiency and quality of scientific research work.

Chapter 4

Results of Analysis

This research was to study Guideline on Management to Promote the Quality of Scientific Research at Guiyang University the data analysis result can be presented as follows:

1. Investigation situation
2. The status quo investigation of the "five only" recognition degree of scientific management
3. Investigation status of relevant issues related to scientific research management
4. Cause analysis

The details are as follows.

Investigation situation

In the context of in-depth research on scientific research management and quality improvement, the questionnaire of this study shows a high degree of reliability after strict validity test, and is subdivided into four parts to comprehensively evaluate and improve the quality of scientific research.

First, the first part focuses on the basic information of the respondents, covering key demographic data including gender, age, occupation category, professional title, subject field and university type. The data was collected as a single choice option to create a basic picture of research participants and provide a solid foundation for subsequent analysis.

The second part turns to professional topics, focusing on the many challenges of Guiyang University in the field of social science and natural science research management. Through the in-depth evaluation of the "five dimensions" recognition, this section tries to reveal the key management factors affecting the quality of scientific research, including resource allocation, research direction determination, and the potential of interdisciplinary cooperation.

The third part deeply explores the current situation of Guiyang University in social science and natural science research management, covering many aspects

from management philosophy and system operation, to the training of researchers, project management, research platform construction, fund management, achievement transformation and scientific research evaluation. This part of the data is collected through the Likert scale, aiming to grasp and understand the multi-dimensional influence of scientific research management from different perspectives, so as to guide the continuous improvement of scientific research quality.

Finally, the fourth part of the questionnaire focuses on collecting specific recommendations on the current research environment and management practices, especially those factors that can directly or indirectly affect the quality of research. This part aims to encourage respondents to share their personal experiences and insights, thus providing a valuable perspective on the research management of the university. The whole questionnaire design not only considers the importance of basic demographic information, but also provides a comprehensive and detailed perspective for the aspects of scientific research management, so as to understand, evaluate and ultimately improve the efficiency of scientific research management and the quality of research results.

In September, a detailed and precise survey was conducted at Guiyang University, employing Probability Proportional to Size (PPS) sampling to gain insights into the faculty's expertise, research orientations, and needs. This month-long initiative aimed to meticulously assess the professional backgrounds, research interests, and challenges faced by the university's research staff, with the goal of optimizing the allocation of research resources and maximizing research outcomes.

The survey process resulted in the distribution of 310 questionnaires, with 291 successfully retrieved. Following a stringent review and filtering process, 285 responses were deemed valid, demonstrating the effectiveness of our questionnaire design and data verification protocols. This resulted in a remarkable validation rate of 91.93%, underscoring our commitment to research integrity and the importance we place on data quality.

To assess the questionnaire's effectiveness, we applied rigorous criteria: responses were considered invalid if participants left more than 10% of the questions unanswered or if their answers displayed a clear pattern of uniformity or consistency, ensuring the reliability of our findings.

These data were processed using SPSS 20.0 software for basic descriptive statistics and differential analysis. The questionnaire covered multiple dimensions including the university, gender, age, education, occupational background and technical titles to provide a comprehensive understanding of the composition and needs of the research team. In particular, we subdivide the nature of Universities, university categories and disciplines into social sciences (such as philosophy, economics, law, etc.) and natural sciences (such as science, engineering, etc.), which not only helps to reveal the research characteristics of different disciplines, but also provides an important basis for subsequent resource allocation and policy formulation. The final statistical results are detailed in Table 4.1. Through this survey, it is expected to grasp the needs and challenges of researchers more accurately, so as to formulate more effective strategies and measures to improve the scientific research quality and innovation ability of Guiyang University.

Table 4.1 Basic information of the survey sample

Class	Standard	Number of people	Ratio (%)
Sex	man	164	57.75
	woman	121	42.25
Age	Under 29	94	33.14
	30-44 Years old	111	38.97
	45-59	59	20.8
	Over 60 years old	21	7.09
Academic degree	baccalaureate	91	32.03
	master's degree	117	41.17
	doctor's degree	71	24.88
	other	6	1.92
Type	Scientific research management post	24	8.3
	Teaching and scientific research	177	62.4
	research-based	15	5.1
	type		

Table 4.1 (Continued)

Class	Standard	Number of people	Ratio (%)
	Teaching type	69	24.2
Professional ranks and titles	other	26	9
	Is advanced	59	20.6
	Deputy senior	109	38.3
	middle rank	40	14.2
	elementary	51	17.9
Now in office	supervisor of a Ph.D. student	6	2.1
	supervisor of master	96	33.8
	other	183	64.1
Subject category	natural science	165	57.89
	social sciences	120	42.11

The status quo investigation of the "five only" recognition degree of scientific management

The starting point of this survey is to explore the acceptance degree and identity of our teachers for the "five-dimensional" scientific management method implemented in the field of social science and natural science research. An extensive survey of participants from different academic backgrounds gathered their views and opinions about this type of management. The recovered data is specifically analyzed in depth, which contains rich information about the core features of the scientific management approach. Through the careful study of these data, a more comprehensive understanding of the staff's attitude towards the application of scientific management in the university, as well as the effectiveness and feasibility of this management method in the scientific research activities of the university. This analysis not only helps to reveal teachers' overall cognition of scientific research management in universities, but also provides valuable reference and guidance for improving and optimizing scientific management strategies so as to improve the quality of scientific research.

Table 4.2 Survey results of the "five only" recognition degree of scientific management

Title	Evaluation form	Number of people	Ratio (%)
Rigid management and management mode rigidity: The management mode is often too rigid to adapt to diverse research needs and methods, thus affecting innovation and collaboration.	Very much disagree / very dissatisfied	4	1.44
	Disagree / dissatisfaction	8	2.71
	Same as	15	5.33
	Consent / satisfaction	121	42.38
Pursue research results while ignoring the research process: In scientific research, the pursuit of results often leads to the neglect of the research process, including methods, discussion and practice, which may weaken the depth and quality of research.	Very much disagree / very dissatisfied	8	2.77
	Disagree / dissatisfaction	19	6.64
	Same as	20	7.01
	Consent / satisfaction	132	46.49
Assessment is based on quantity without focusing on quality of results: academic assessment often focuses on quantity, which may lead to shallow research and publishing rather than	Very much disagree / very dissatisfied	1	0.37
	Disagree / dissatisfaction	7	2.40
	Same as	20	7.01
	Consent / satisfaction	67	23.62
	Very satisfied / strongly agree	190	66.61

Table 4.2 (Continued)

Title	Evaluation form	Number of people	Ratio (%)
focusing on profound academic value.			
Research policies neglect humanistic care: research policies usually favor natural science and ignore the importance of social science.	Very much disagree / very dissatisfied	7	2.40
	Disagree / dissatisfaction	4	1.29
	Same as	35	12.18
	Consent / satisfaction	172	60.52
	Very satisfied / strongly agree	67	23.62
Focusing on the development of Universities while ignoring individual development: Universities tend to focus on improving the overall research level, but sometimes ignore the growth and needs of individual researchers.	Very much disagree / very dissatisfied	18	6.64
	Disagree / dissatisfaction	32	11.44
	Same as	36	12.55
	Consent / satisfaction	136	47.79
	Very satisfied / strongly agree	63	21.59
Pursue the quantity of results while ignoring academic value: too much emphasis on the quantity of research results may lead to a decline in quality and a neglect of academic value.	Very much disagree / very dissatisfied	1	0.38
	Disagree / dissatisfaction	6	2.21
	Same as	18	6.27
	Consent / satisfaction	47	16.42
	Very satisfied / strongly agree	213	74.71

Table 4.2 (Continued)

Title	Evaluation form	Number of people	Ratio (%)
The evaluation index system of "science and technology": the evaluation system tends to adopt the standards of science and engineering, not fully considering the characteristics of other scientific research.	Very much disagree / very dissatisfied	14	4.80
	Disagree / dissatisfaction	41	14.39
	Same as	74	25.83
	Consent / satisfaction	89	31.18
	Very satisfied / strongly agree	67	23.80
Management scientific research: applying engineering management thinking to the scientific research field may not be applicable, because the two have different research methods and values.	Very much disagree / very dissatisfied	13	4.43
	Disagree / dissatisfaction	23	8.30
	Same as	25	8.86
	Consent / satisfaction	141	49.63
	Very satisfied / strongly agree	83	28.78

From a comprehensive analysis of the management style and its rigidity, it's evident that a significant majority of participants (258, 90.52%) are satisfied or very satisfied with the current management approach. This suggests that they view the existing model as effective in meeting their research requirements despite its perceived rigidity. Conversely, a minority (12, 4.2%) expressed dissatisfaction, hinting at a belief that strict management stifles innovation and research methodology diversity. Fifteen respondents (5.26%) remained neutral, possibly indicating ambiguity about the impact of management rigidity on research or recognizing both its positive and negative effects. While most respondents appreciate the current model, there's

a voiced desire for increased flexibility. This feedback urges managers to consider incorporating more adaptability and flexibility to nurture innovation and cater to varied research demands. The management model should promote open dialogue and collaboration, enhancing the sharing of knowledge and ideas, and in turn, boosting innovation capacity.

Considering that the needs of different researchers may vary, adopting more personalized management strategies may be more effective, both maintaining the consistency of management while meeting the specific needs of individuals. To sum up, although the current management model has been highly recognized by Guiyang University, there is still room for improvement, especially in terms of increasing the flexibility and adaptability of management. This improvement not only increases staff satisfaction, but may also contribute to the overall quality of research; observing the distribution of participants from the survey. This helps to understand the overall attitude of the staff of Guiyang University on this issue. According to the data, the majority of people (238,83.5% of the total) agreed or strongly agreed with the "pursuit of research results and ignoring the research process". This shows that most staff believe that there is a tendency to overemphasize the results and ignore the process in scientific research. On the other hand, only 27 people (9.5%) disagreed or strongly disagreed. This suggests that only a minority of faculty members object to the neglect of the research process. Twenty people (about 7%) chose "average", which may reflect that some staff have a neutral attitude on the issue or are not sure of their opinions.

It can be seen from this data that Guiyang University may need to pay more attention to the importance of process in scientific research management. Given that most people agree that pursuing results often leads to the neglect of the research process, this may suggest that management needs to put more emphasis on the importance of methodology in research projects and pay more attention to the research process in research evaluation. Combined with the scientific management of the "five" (only, only, only, only new, only big) identity, the data may suggest that the current scientific research management and evaluation system may be too much emphasis on results (such as articles published in high level journals), rather than the quality and innovation of the research process itself and innovation. Therefore,

management may need to reconsider the evaluation system to make it more balanced and comprehensive to improve the quality of research.

From the survey, it is clear that a significant portion of respondents (190 individuals, accounting for 66.67%) perceive the current academic assessment at Guiyang University to favor quantity over quality. This perception suggests a prevalent concern among faculty that the emphasis on volumetric achievements might overshadow the depth and intrinsic value of research. Such an approach contradicts the principles of scientific management, which advocate for a balance between efficiency and excellence, potentially stifling academic innovation and comprehensive research endeavors. Consequently, the university is advised to reevaluate and refine its assessment protocols to prioritize and reward research quality, not merely its volume. Implementing changes to the evaluation framework, amplifying recognition for substantive research contributions, and enhancing support for thorough investigative work are pivotal steps. This analysis underscores the necessity for Guiyang University to adjust its research management strategies, highlighting the significance of research methodologies, refining evaluation systems, and elevating the role of the research process itself to augment the caliber of scientific inquiry.

According to the survey, most respondents (239, 83.86%) supported the current scientific research policy, while the number (11, 3.86%) who believed that the policy ignores humanistic care was relatively small. Most respondents believed that research policies should balance the natural and social sciences. This is in line with the principle of combining theory and practice emphasized in scientific management. Support for research policies shows that most people believe that current policies can improve the quality and efficiency of research, especially in the natural sciences. Although most of the respondents supported the current research policy, some expressed dissatisfaction, which may reflect the lack of humanistic care in the research policy, which needs to pay more attention to people-oriented care in future policy making. Overall, the survey showed that the majority of respondents supported current research policies, but also revealed potential deficiencies in humanistic care, suggesting that research managers need to consider more about all aspects of scientific management in future policy making.

From the perspective of the development of the individual, in the survey of the faculty, most of the faculty (199, 69.82%) are satisfied or very satisfied with the university management, that the university focuses on the overall development, also consider the growth and needs of individual researchers. However, about 17.5% of the staff (50) expressed dissatisfaction that individual needs were ignored in the development of the university. Another 36 were neutral. These data point to the university management's need to more balance the overall and individual development needs in the process of pursuing the improvement of scientific research quality. It is suggested that the university management should pay more attention to individual researchers, seek a balance between the overall and individual development, and deeply understand the specific needs of the staff, so as to develop more effective management strategies, so as to better follow the "five only" principle of scientific management.

In the aspect of pursuing the number of achievements while ignoring the academic value, the survey topic focuses on the problem of "pursuing the number of achievements while ignoring the academic value". According to the results of the questionnaire, the majority of staff (213, 74.7%) expressed "very satisfied / very agree", believing that overemphasis on the number of research results may lead to the decline of academic quality and neglect of academic value. In addition, 25 people (about 8.8 percent) said they "disagreed" or "strongly disagree," and 18 people (about 6.3 percent) were neutral. These data emphasize the importance faculty attach to the quality of research, not just the number of results. This view is in sharp contrast to the "five only" principle in the current scientific research management (only thesis, only title, only academic background, only awards, only projects), and points out the problem of excessive emphasis on the number and surface achievements in scientific research evaluation. Therefore, the university and similar educational institutions should pay more attention to the quality of academic research in scientific research management, encourage in-depth and meaningful academic inquiry, adjust the evaluation standards, make them more comprehensive and balanced, and pay attention to the depth and innovation of research, rather than only focusing on the quantity and superficial achievements.

From the perspective of the evaluation index system of "science and technology", in the survey of the faculty members of Guiyang University, a total of

285 faculty members participated in the evaluation of whether the academic evaluation system is excessively biased towards the science and engineering standards. The results showed that about 54.7% of the respondents (i.e., the sum of consent / satisfaction and very satisfied / very consent) believed that the evaluation system was comprehensive enough and was not excessively biased towards science and engineering. However, about 19.3% of respondents (i. e., the sum of disagree / dissatisfaction / very disagree / very dissatisfaction) are dissatisfied with the current evaluation system, saying it is too heavy on science and engineering. In addition, about 26.0% of the respondents hold a neutral attitude, possibly meaning that they think the evaluation system is ok, but there is still room for improvement. These results show that although the current evaluation system has been recognized to some extent, it still needs to further consider and integrate the characteristics and needs to improve the quality and fairness of different disciplines. Especially for neutral staff, further investigations and discussions may help to understand their views and provide more insights for improving the evaluation system.

From the perspective of management scientific research of engineering thinking mode, according to the survey of the staff of Guiyang University, their views on the application of engineering management thinking to the field of scientific research are analyzed. According to the survey results, 141 of the 285 staff (about 49.47%) say "agree / satisfied" and 83 (about 29.12%) say "very satisfied / very agree", which means that the majority of staff (about 78.6%) have a positive view on the application of engineering management thinking in the research field. In contrast, the proportion of faculty with negative views was small, with 13 (about 4.56%) saying "very disagree / very dissatisfied", 23 (about 8.07%) "disagree / dissatisfied", and 25 (about 8.77%) being neutral. These data show that most of the staff of Guiyang University believe that the management method of engineering is applicable in the field of scientific research and may help improve the quality of scientific research. Based on this analysis, it is suggested that the university should consider further exploring and implementing the specific application methods of engineering management thinking in the field of scientific research, and regularly evaluate its effects. At the same time, attention should also be paid to the opinions of those staff who hold negative opinions, understand their concerns and suggestions to improve research management methods more comprehensively.

Table 4.3 Recognition degree of different positions in the "five only" of scientific management

Question	Score method	The proportion of identity selection among different types of groups is (%)			
		Scientific research management post	Teaching and research post	Teaching type	Scientific research post
Rigid management and management mode rigidity: The management mode is often too rigid to adapt to diverse research needs and methods, thus affecting innovation and collaboration.	Disagree /dissatisfaction	3.6	3.4	5.2	9
	Same as	7.5	16.3	9.2	11.4
	Consent / satisfaction	88.9	80.3	85.6	79.6
Pursue research results while ignoring the research process: In scientific research, the pursuit of results often leads to the neglect of the research process, including methods, discussion and practice, which may weaken the depth and quality of research.	Disagree / dissatisfaction	1.1	6.7	5.8	0.7
	Same as	20.3	15.9	18.6	20.1
	Consent / satisfaction	78.6	77.4	75.6	79.2
Assessment is based on quantity without focusing on quality of results: academic assessment often focuses on quantity, which may lead to shallow research and	Disagree / dissatisfaction	2.2	1.5	4.2	3.3
	Same as	20.1	19.6	20.3	18.3
	Consent / satisfaction	77.7	78.9	75.5	78.4

Table 4.3 (Continued)

Question	Score method	The proportion of identity selection among different types of groups is (%)			
		Scientific research management post	Teaching and research post	Teaching type	Scientific research post
publishing rather than focusing on profound academic value.					
Research policies neglect humanistic care:	Disagree / dissatisfaction	6.5	4.6	8.8	10.5
research policies usually favor natural science and ignore the importance of social science.	Same as Consent / satisfaction	18.3	25.9	12.3	25.6
Focusing on the development of Universities while ignoring individual development:	Disagree / dissatisfaction	3.1	9.5	2.1	8.1
Universities tend to focus on improving the overall research level, but sometimes ignore the growth and needs of individual researchers.	Same as Consent / satisfaction	10.1	14.9	20.5	21.3
Pursue the quantity of results while ignoring academic value: too much emphasis on the quantity of research results may lead to a decline in quality and a neglect of academic value.	Disagree / dissatisfaction	5.2	6.2	1.2	17.9
	Same as	14.9	15.3	20	11.2
	Consent / satisfaction	79.9	78.5	78.8	70.9

Table 4.3 (Continued)

Question	Score method	The proportion of identity selection among different types of groups is (%)			
		Scientific research management post	Teaching and research post	Teaching type	Scientific research post
The evaluation index system of "science and technology": the evaluation system tends to adopt the standards of science and engineering, not fully considering the characteristics of other scientific research.	Disagree / dissatisfaction	3.9	10.1	9.8	9.1
	Same as	10.6	17.8	14.6	24
	Consent / satisfaction	85.5	72.1	75.6	66.9
Management scientific research: applying engineering management thinking to the scientific research field may not be applicable, because the two have different research methods and values.	Disagree / dissatisfaction	8.7	4.9	10.6	9.3
	Same as	20.1	19.6	24	30.8
	Consent / satisfaction	71.2	75.5	65.4	59.9

The data analysis reveals that in Table 4.3, we can clearly see the significant differences between different groups on the two key issues. The discussion centers on two critical concerns: the potential oversight of academic research's intrinsic value due to a focus on output quantity, and whether the emphasis on university advancement might eclipse individual development. Despite these significant differences, there is a noted consistency in attitudes towards faculty and staff across the disciplines of social and natural sciences regarding management philosophies. The divergence in viewpoints may primarily arise from two factors. First, the variation in responses could reflect differing perceptions and understandings of the posed

questions among participants. Second, the inclusion of a notable proportion of early-career faculty in the survey might influence findings, as these individuals may still be acclimating to the academic research management system and thus rely more on personal, subjective judgments.

Overall, while there was a general agreement among respondents on the prevalence of a research management ethos characterized by an emphasis on scientific research, utility, and quantity within the humanities and social sciences, the analysis uncovered pronounced disparities in opinions on key issues among different demographics. This revelation holds significant implications for enhancing the comprehension of scientific research management challenges within the university, suggesting a need for a more nuanced approach that accommodates diverse perspectives and fosters a deeper understanding of the underlying issues.

The divergent opinions among faculty from varied backgrounds and career stages highlight the rich complexity and diversity within our university, underlining the multifaceted perspectives that must be integrated into the university's management system. This disparity particularly manifests in the tension between prioritizing the quantity of scientific research outputs and nurturing the quality of academic inquiry among younger faculty members. Younger teachers might lean towards immediate results and productivity, whereas more experienced professors typically value the long-term academic worth and depth of research. Furthermore, the pursuit of the university's overarching goals may inadvertently sideline the critical aspect of individual development.

Teachers, as the cornerstone of the academic ecosystem, play a pivotal role in its success, making their personal growth and satisfaction indispensable for the system's overall health. Addressing the dilemmas and hurdles within the university's scientific research management system, especially for young faculty, necessitates nuanced, human-centered management approaches. This situation underscores that the challenges facing our university's scientific research management extend beyond mere efficiency. They encompass broader issues related to educational philosophy, career progression, and organizational behavior. Effective solutions must therefore consider a balanced array of factors, including faculty personal development needs, the enduring value of academic research, and the university's strategic objectives for growth. By adopting a holistic and in-depth approach to these challenges, our

university can foster harmonious development between individual ambitions and collective goals, ensuring the maintenance of high academic standards and the flourishing of both its faculty and the institution as a whole.

Investigation status of relevant issues related to scientific research management

3.1 Status quo investigation on the recognition of scientific research management concepts

In the realm of higher education, national policies, university missions, and pedagogical approaches are profoundly shaped by governmental directives. This top-down management style adheres to a structured set of administrative principles and regulations, with the overarching aim of creating an efficient, well-ordered educational ecosystem. Particularly in the domain of scientific research management, the objective is to bolster and rejuvenate higher education through the enhancement of research outputs. The influence of the broader social system on the governance of social and natural science research is evident, typically manifesting in a focus on utilitarian outcomes and the employment of stringent management ideologies. Within this pragmatically driven context, the study meticulously examines university scientific research management philosophies.

To facilitate this analysis, 10 carefully crafted questions were developed to probe the divergent perspectives and strategies employed in research management across these institutions. These inquiries are thoughtfully split into five positive and five negative prompts, ensuring a comprehensive exploration of the array of views and practices (refer to Table 4.4). Through this methodical approach, the study aims to gain an insightful understanding of how scientific research management is operationalized across various settings and its consequent impact on the quality and achievements of higher education institutions.

Table 4.4 Survey results of scientific research management concept recognition

Title	Sample number	Mean value	Standard error	Degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	Same as	Consent / satisfaction	Very satisfied / strongly agree
Emphasize scientific management, but ignore the importance of humanistic care.	285	3.85	1.089	7.8	9.6	20.3	40.1	22.2
Conduct rigid mechanical management of scientific researchers and research project results.	285	3.7	1.174	6.2	10.1	29.6	30.3	23.8
Lack of people-oriented scientific research management concept.	285	3.75	1.164	4.6	11.3	19.8	34.7	29.6
It emphasizes the core of people, puts researchers in the center of research management, realizes the realization of research development goals, and regards	285	2	1.025	31	55.4	5	4.7	3.9

Table 4.4 (Continued)

Title	Sample number	Mean value	Standard error	Degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	Same as	Consent / satisfaction	Very satisfied / strongly agree
meeting the self-realization needs of researchers as the primary task, and respects and encourages the dedication and innovation of researchers.								
Focusing on the university as the center, taking the quality and quantity of scientific research projects as the goal of improving the status of the university, and continuously improving the task requirements of scientific researchers.	285	3.7	1.218	9.9	5.1	14.4	43.6	27
It mainly relies on institutional control and economic incentives.	285	3.95	1.316	4.1	16.1	10.2	20.3	49.3

Table 4.4 (Continued)

Title	Sample number	Mean value	Standard error	Degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	Same as	Consent / satisfaction	Very satisfied / strongly agree
Management should be considered as a service that emphasizes providing excellence.	285	1.9	1.071	41.2	44.4	4.8	4.6	5
Advocate personal charm, pay attention to empirical management.	285	2.85	1.089	11.1	23.9	43.2	9.9	11.9
We will encourage the cultivation of outstanding achievements and eradicate improper scientific research practices.	285	2.05	1.145	36.1	44.3	5.3	11.2	3.1
Through scientific research management, humanities and social science research is promoted to reflect the spiritual values of universities, and.	285	2.15	1.268	34.7	39.9	10.2	4.8	10.4

Table 4.4 (Continued)

Title	Sample number	Mean value	Standard error	Degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	Same as	Consent / satisfaction	Very satisfied / strongly agree
promote the integration of science and culture and humanistic culture								

Through the data analysis of the current status of scientific research management, the following evaluation can be made: In the process of pursuing the improvement of scientific research quality, the current concept of scientific research management is obviously insufficient. Although managers have made great efforts in the systematic management of scientific research, the humanistic care for researchers is often overlooked, which can be seen in their average satisfaction score (3.85 ± 1.089). At the same time, the management of researchers and project results was too mechanical and rigid (average score 3.7 ± 1.174), exposing the lack of people-oriented in management philosophy (average score 3.75 ± 1.164). In addition, the overemphasis on management strategies makes the university a center, resulting in increasing pressure and task requirements (average score 3.7 ± 1.218), and insufficient support for personal growth and self-realization.

Expert interviews further reveal the shortcomings of management philosophy. Xiong Chunwen, a professor at the Agricultural University, pointed out that although the university attaches great importance to the level of research projects and the number of research achievements, it is lacking in cultivating talents. The results of the survey questionnaire showed that, More attention should be paid to the management strategy centered on the needs and self-realization of scientific researchers; Stimulate their professional enthusiasm and innovation ability (average score of 2 ± 1.025); Implement the service-oriented management, Provide quality

service (average score 1.9 ± 1.071); Emphasis on personal charisma and experiential management (average score of 2.85 ± 1.089); Dedicated to the output of high-quality research results, Eradication of scientific misconduct (mean score: 2.05 ± 1.145); And to promote the spiritual pursuit of universities through scientific research management, Strengthening the social science and cultural values, Further promote the deep integration of science and culture and social culture (average score 2.15 ± 1.268).

In general, the current scientific research management concept shows a certain degree of deficiency in paying attention to human development and care. By improving these aspects, we can not only improve the effectiveness of research management, but also promote the personal growth of researchers, and ultimately promote the overall improvement of the quality of research work.

3.2 Investigation of the operation mechanism and system of scientific research management.

Scientific research management plays a vital role in universities, which is the core of promoting the efficient and smooth progress of scientific research activities. The research of Ma Li (2009) explores multiple dimensions of scientific research management, which involves six key fields, including scientific research reward mechanism, achievement evaluation system and performance appraisal process. These contents not only provide in-depth insights for understanding the complexity of research management, but also reveal possible ways to optimize the research management process. On this basis, an empirical analysis of related fields was conducted, which comprehensively considers multiple variables and supports the assertion through detailed data (see Table 4.5). In this way, it aims to provide more specific and practical suggestions for the improvement of scientific research management, so as to promote the overall improvement of the scientific research work of the university.

Table 4.5 Survey and statistics of the operation mechanism of scientific research management

Title	Sample number	Mean value	Standard error	degree of satisfaction (%)				
				Very much disagree	Disagree	same as	Consent	Very satisfied
Perfect scientific research reward mechanism / system	285	2.41	1.18	27.33	26.1	23.18	14.22	7.17
Scientific evaluation mechanism /system of scientific research achievements	285	2.33	1.22	18.2	21.9	30.38	15.7	13.82
Human nature of scientific research performance appraisal mechanism / system	285	2.75	1.34	22.2	18.9	27.31	26.7	4.89
A fair and just scientific research evaluation system has been established	285	2.19	0.88	23.57	54.71	4.33	5.82	11.57
Financial management of scientific research funds is reasonable	285	2.62	1.37	24.46	25.71	13.44	24.76	11.63
The relevant management system of the scientific research process has been improved	285	2.47	1.33	19.64	32.46	29.88	4.67	13.35

In the process of education development in the 21st century, Universities and universities shoulder the dual tasks of cultivating high-quality talents and promoting scientific research, but with the deepening of the reform of the education system,

some problems have also been exposed. Especially in the management of scientific research, the increasingly obvious deviation of management patterns has become a prominent problem. At present, the overuse of management strategies tends to be quantitative evaluation, which not only limits the output of high-quality scientific research results, but also promotes the proliferation of low-level and repetitive research. For example, although China ranks second in the world in paper production, it lags far behind in the frequency of paper citation, only outside 100, reflecting the shortcomings of the bank management system.

The purpose of this survey is to deeply analyze the problems of the current scientific research management operation mechanism in our university, and explore the fundamental causes, so order to provide the theoretical basis for improving the current management strategy (Wang Xiumei, 2007). The survey results show that the current scientific research management and operation system generally fails to meet the expectations of the researchers. Through the questionnaire survey, we found that the average recognition score of the improvement of the scientific research reward system was only 2.41 ± 1.18 . More than half of the staff reflect that the current reward mechanism is imperfect, 23.18% of the staff are neutral, and only 21.39% believe that the existing research reward mechanism is perfect.

These data highlight the urgent need for reform in scientific research management to better adapt to the development needs of education and research. The deviation of this management mode not only affects the quality and innovation of scientific research results, but also may lead to the academic short-sighted and utilitarian tendency. Data show that when our university pursues short-term results and quantitative advantages, we often ignore the long-term and in-depth academic research and the cultivation of innovative thinking. In order to solve these problems, we need to start from many aspects. First of all, our university should re-examine and adjust the scientific research evaluation system, emphasize the quality rather than the quantity, and encourage the original and innovative research.

Rather, different evaluation and incentive mechanisms should be set up for the social sciences and the natural sciences to adapt to the characteristics and needs of their respective fields. In addition, it is also necessary to strengthen scientific research ethics education, and cultivate scholars' academic responsibility and long-term perspective, so as to promote the formation of a healthy academic ecological

environment. These improvement measures can not only improve the quality of scientific research results, but also promote the overall development of academic circles. Universities can better fulfill their important mission of cultivating high-quality talents and promoting scientific research, and make greater contributions to the progress and development of society.

To enhance the quality of scientific research at our university, it is imperative to first establish an incentivizing and equitable research reward system. This system should accurately reflect the contributions and efforts of researchers through transparent criteria and a variety of rewards, including project funding, research bonuses, and opportunities for career advancement. Secondly, the methodology for evaluating research outcomes must be refined to be more scientific and unbiased. This can be accomplished by integrating peer review processes and employing a range of evaluation metrics that consider the innovation, applicability, and scholarly impact of the research. Such improvements will enhance the precision and fairness of assessments, thereby fostering higher-quality research outputs.

Additionally, the performance appraisal system should incorporate more personal considerations, taking into account the researchers' workload, personal growth needs, and the balance between professional and private life. By adopting such a comprehensive approach to evaluation, we can boost job satisfaction and motivation among staff, leading to increased efficiency and improved quality of scientific research endeavors.

At the same time, it is crucial to establish a fair and just scientific research evaluation system. This requires ensuring that all faculty members have a clear understanding of the evaluation process and believe that the evaluation results are based on fair and transparent standards. In addition, the financial management of scientific research funds should also be rationalized to ensure that the allocation and use of funds is efficient and transparent, so as to improve the efficiency of the use of resources. In terms of management system, it needs to be constantly improved and optimized, including project schedule supervision, resource allocation and risk management. Providing adequate support and training to researchers can help to improve their research capacity and efficiency. Furthermore, enhanced internal communication and regular feedback collection are essential to ensure the

effectiveness of the strategy. This helps to timely adjust and optimize strategies to ensure that they can meet the needs and expectations of the teaching staff.

Finally, pay attention to talent training and development, provide sustainable education and career development planning, can improve the overall quality and ability of the research team in the long term. Through these comprehensive measures, our university can not only improve the quality of its scientific research, but also create a healthier, more fair and more efficient scientific research environment, so as to establish a higher position in the academic circle.

3.3 Investigation of the management mode of researchers

As for the working environment and management mode of scientific researchers, the current situation shows that they are under considerable work pressure, and at the same time, the management mode lacks enough humanization. To understand this further, a comprehensive survey analysis was conducted (see Table 4.6 for specific data). The survey will not only focus on the stress level of researchers, but also on all aspects of the management system, including communication processes, incentive mechanisms, and work-life balance. Through this method, the research aims to reveal the problems in the scientific research environment of our university, and explore how to improve the working conditions of researchers in our university to improve their job satisfaction and efficiency.

Table 4.6 Survey results of the management mode of scientific researchers

Title	Sample number	Mean value	Standard error	degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	same as	Consistent / satisfaction	Very satisfied / strongly agree
The scientific research atmosphere is relaxed, and the management is people-oriented.	285	1.78	1.11	28.87	25.66	24.72	12.55	8.2

Table 4.6 (Continued)

Title	Sa mp le nu m ber	Mea n valu e	Stan dar d erro r	degree of satisfaction (%)				
				Very much disagr ee / very dissati sfied	Disagr ee / dissati sfacti on	same as	Cons ent / satisf actio n	Very satisf ed / strong ly agree
Arrange scientific research responsibilities in strict accordance with scientific research policies, and conduct regular review.	285	2.88	1.32	16.47	25.43	22.37	26.13	9.6
Complete the scientific research tasks within the specified time, pay equal attention to rewards and punishments, and pay attention to incentives.	285	3.61	1.42	13.45	11.82	24.92	31.83	17.98
Provide a scientific research platform for scientific researchers to support scientific research work.	285	2.33	1.28	25.45	57.45	4.11	7.71	5.28
Researchers are encouraged to conduct their own research without multitasking or time constraints.	285	2.49	1.38	26.44	31.48	13.86	15.79	12.43

The environmental survey reveals a significant insight: only a mere 20.75% of researchers perceive their work environment as relaxed and embodying humanized management principles. This starkly highlights that the majority are subjected to a stringent, perhaps overly rigorous, management framework. The lukewarm reception

of daily management practices, such as task allocation, progress reviews, and penalties for delays-with average recognition scores of merely 2.88 and 3.61 - underscores the intense pressure faced by researchers. A predominant source of this stress is the quantitative evaluation of research outputs, which prioritizes volume over the substance, relegating researchers to the role of mere "paper production machines" and overshadowing the intrinsic quality of their work.

This emphasis on quantity over quality not only diminishes the value of research but also stifles researchers' drive for independent inquiry and innovation. The prevalent expectation for researchers to deliver on predefined projects within set parameters further exemplifies the limitations of the current research management approach. The urgency to shift towards fostering researchers' autonomy and innovative capabilities is palpable, demanding immediate action to revamp the management paradigm.

Cheng Gang's 2009 study, which offers an in-depth examination of researchers' needs-highlighting economic, stability, respect, and particularly personal development - mirrors the survey's findings. The alignment between researchers' aspirations for greater focus on personal growth and managers' willingness to support such development underscores a shared desire for a management system that not only acknowledges but actively nurtures the personal and professional growth of researchers. This calls for a strategic reevaluation of management practices, emphasizing the critical need for a system that supports autonomy, values innovation, and prioritizes the holistic development of researchers to enhance the overall quality and impact of scientific research.

The environmental survey highlights a critical concern: only 20.75% of researchers perceive their work environment as relaxed and humanized, indicating that the majority are subjected to a stringent and possibly rigorous management regime. This is further underscored by the limited approval of daily management practices, such as task allocation and progress reviews, with average ratings of 2.88 and 3.61, respectively, reflecting the significant stress researchers endure. A key stressor identified is the quantitative assessment of research outcomes, which prioritizes volume over quality, relegating researchers to the role of mere "paper production machines." Additionally, the lack of support for independent and

innovative projects restricts researchers to predefined tasks, highlighting the deficiencies in the current research management approach.

The urgency to foster researcher autonomy and innovation is echoed in Cheng Gang's 2009 study, which underscores the importance of addressing researchers' needs for economic stability, respect, and personal development. This aligns with the survey's findings, emphasizing the desire among both researchers and managers for greater focus on personal development.

Furthermore, the dissatisfaction with research platforms—25.45% very dissatisfied and 57.45% dissatisfied—signals a glaring mismatch between available resources and researchers' needs. This resource inadequacy hampers deep research, delays projects, stifles innovation, and compromises research quality and diversity. The impact of excessive tasks and time constraints on researcher autonomy is also alarming, with 26.44% very dissatisfied and 31.48% dissatisfied. Such pressures undermine the depth and originality of research by nudging researchers towards safer, less innovative methodologies.

Addressing these challenges requires a comprehensive strategy that enhances research platforms and resources, alleviates excessive workloads, and prioritizes the depth and originality of research over quantity. By adopting a more humanized approach to scientific research management that values personal development and innovation, universities can significantly improve academic achievement and innovation capability.

To sum up, the quality of scientific research work can be significantly improved, and academic innovation and knowledge progress can be promoted by optimizing the scientific research platform, reducing unnecessary restrictions, and encouraging innovation and free exploration. These measures not only help to improve the satisfaction of the staff, but also to promote the development of higher education and scientific research to a higher level. The loose and humanized management of scientific research environment is the key to improve the research quality and stimulate scientific research innovation. Therefore, the development and implementation of scientific research management strategy of comprehensive humanistic care is crucial to improve the job satisfaction and output quality of researchers. The specific measures are shown as follows:

(1) Improving the scientific research atmosphere and management mode: First, we need to pay attention to the improvement of the scientific research atmosphere. The survey shows that a large proportion of the staff are not satisfied with the scientific research atmosphere and management. A people-oriented management approach can be considered to provide more support and encouragement, while reducing unnecessary pressure and constraints, so as to stimulate the innovative spirit and scientific research enthusiasm of the staff.

(2) Strictly following the scientific research policies and conduct regular reviews: strict scientific research policies and regular reviews are crucial to ensuring the quality of scientific research. Strictness should be maintained, but the opinions and feedback of the staff should also be considered to ensure the rationality and feasibility of the policy.

(3) Paying attention to reward and punishment mechanism and incentive measures: reward and punishment mechanism and incentive measures play an important role in improving the efficiency and quality of scientific research. According to the survey, this level of satisfaction is relatively high, indicating that the current practice is effective. This system can be further strengthened and improved to stimulate more scientific research potential.

(4) Strengthening scientific research platform and support system: Providing sufficient scientific research platform and support is the key to the success of scientific research work. The survey showed that the dissatisfaction with this aspect is very high, so we need to focus on and improve. Consider increasing funding, improving experimental facilities, and providing more research resources and platform support.

(5) Encouraging independent research and reduce unnecessary restrictions: encourage faculty members to carry out independent research, reduce excessive tasks and time constraints, which can promote innovative thinking and the output of scientific research results. More freedom should be provided for staff to conduct research based on their interests and expertise to improve the quality and efficiency of research.

In general, in the process of improving the quality of scientific research, our university needs to comprehensively consider the scientific research atmosphere,

policy implementation, incentive mechanism, resource support, research freedom and other aspects, to achieve the overall improvement of scientific research quality.

3.4 Current situation investigation of scientific research project management

In order to comprehensively evaluate the current situation and effect of scientific research project management in our university, the research was refined and focused on seven key areas, as shown in Table 4.7. In-depth investigation and analysis revealed several major problems and challenges. First of all, the current project evaluation system seems to focus too much on the form and process of project declaration, and relatively ignores the deep attention to the nature and content of scientific research projects. Second, although the increase in the number of research projects did not significantly increase the output of excellent scientific research results, indicating that the increase in quantity is not the only factor behind excellence.

Moreover, although the research results of the project are highly valued, the research process itself has not received enough attention, which may affect the depth and quality of the study. Further problems include the lack of funding, which limits the quality of research projects. Although strict adherence to regulations is necessary to ensure transparency and impartiality in management, too rigid management systems may inhibit innovation and flexibility. At the same time, the current scientific research environment is generally homogeneous, which reflects the pursuit of rapid results, which may affect the long-term scientific research development and in-depth exploration. It is finally found that major projects usually receive more attention, while some smaller but equally important projects are often ignored, which may lead to the unification of the research field and the decline of the ability to innovate. Overall, these problems and challenges reveal the need to review and adjust the strategies and methods of scientific research project management.

Table 4.7 Survey results of scientific research project management

Title	Sa mp le nu mb er	Mea n valu e	Stan dard error	degree of satisfaction (%)				
				Very muc h disag ree / very dissa tisfie d	Disagr ee / dissati sfacti on	same as	Conse nt / satisfa ction	Very satisfi ed / strong ly agree
Pay attention to the importance of project declaration, but also to pay close attention to the project research process.	285	3.68	1.15	8.89	14.46	25.8	26.41	24.44
Emphasize the quality of project research and encourage the output of high-quality results.	285	1.52	1.03	36.2	21.6	18.4	12.48	11.32
Value the results of the project research, but also do not ignore the importance of the project research process.	285	3.79	0.96	14.3	11.8	24.6	34.7	14.6
Provide appropriate financial support and supporting resources to improve the quality of project research.	285	2.93	1.25	16.5	23.5	26.4	27.1	6.5
Strictly implement the rules and regulations, and punish those who violate the regulations accordingly.	285	3.02	1.15	15.4	23.1	28.9	17.9	14.7
Advocate personalized research and emphasize the nature of scientific research.	285	1.98	0.96	16.5	26.8	31.2	12.5	13

Table 4.7 (Continued)

Title	Sa mp le nu mb er	Mea n valu e	Stan dard error	degree of satisfaction (%)				
				Very muc h disag ree / very dissa tisfie d	Disagr ee / dissati sfacti on	same as	Conse nt / satisfa ction	Very satisfi ed / strong ly agree
Equal focus on major project research and general project research.	285	3.64	1.25	9.7	13.2	35.2	24.5	17.4

First of all, regarding the attention of the project application and research process, most of the staff of our university expressed their satisfaction with the medium to high level (76.65%, 218 students). This means that faculty members generally recognize the importance of project application and expect the research process to receive sufficient attention. This indicates that the university should also focus on the implementation of the project and the quality of the research process while emphasizing the project application. Secondly, more than half of the teaching staff expressed their dissatisfaction with the research quality and output of the project (57.8%, 165 students).

This strongly points to the shortcomings in improving the quality of research and encouraging high-quality outcomes. Universities should consider adopting more incentives and support strategies, such as more research funding, improved research facilities, or more recognition and incentives for outstanding results. In terms of the importance of the project research results and the research process, the satisfaction of most staff is relatively moderate. This shows that the university has done a better job in balancing the research results with the emphasis on the process, but there is still room for further improvement.

As for financial support and resource matching, the distribution of staff satisfaction is relatively scattered, suggesting that different staff may have different needs for funds and resources. Therefore, Universities may need to evaluate and

adjust their funding allocation and resource allocation strategies more carefully to meet the specific needs of different research projects. In terms of the implementation of the rules and regulations and penalties, the feedback from the staff showed that the university still needs to improve the implementation and fairness of the rules and regulations (67.4%, 192 people were dissatisfied or remained neutral). The university should consider strengthening the publicity and education of rules and regulations to ensure their effective implementation and take appropriate punishment measures for violations.

In addition, the staff were more dissatisfied with the personalized and essential importance of scientific research (74.5%, 212 people). This suggests that the university may need to further promote the development of personalized research, emphasizing the nature of research work, and provide the staff with more freedom and flexibility in order to stimulate their innovative potential. Finally, staff satisfaction is generally moderate, which may point to the need for Universities to more evenly allocate attention and resources when handling large and smaller projects.

To sum up, the university's strategies in improving the quality of scientific research should include strengthening the attention to the project application and research process, improving the quality of research, optimizing the allocation of funds and resources, strengthening the implementation and fairness of rules and regulations, encouraging the personalization and nature of scientific research, and balancing the attention to large and small projects. Through these measures, the quality of scientific research and the satisfaction of the staff can be effectively improved. The specific measures are shown as follows:

(1) Strengthen the attention of the project application and research process

Optimize the application process: simplify the project application process, provide clear guidance and support, so that the staff can focus more on the scientific research itself in the application stage. Monitoring and evaluation: Establish a systematic monitoring mechanism to track the project progress and ensure the quality and efficiency of the research process.

(2) Improve the project research quality and outcome output

Provide regular training: organize training in research methods and data analysis to improve the research ability of the faculty. Enhance research incentive

mechanism: provide rewards and recognition for excellent research results, and encourage staff to invest in higher quality research.

(3) Balance the importance of research results and processes

Strengthening the research culture: cultivate a culture that values both the research results without neglecting the research process, and encourage the staff to remain innovative and rigorous in the research process.

(4) Optimize financial support and resource matching:

Refine the fund allocation: flexibly adjust the fund allocation according to the nature and needs of the project to ensure the effective use of resources.

Improving facilities and resources: invest in upgrading and maintenance of research facilities and provide necessary technical and material support.

(5) Strengthen the implementation and fairness of rules and regulations:

Transparency rules and regulations: ensure that all rules and regulations are transparent and easy to understand, and ensure that staff understand their rights and responsibilities. Fair enforcement: Ensure that all rules and regulations are fairly and consistently applied to all staff members and impose appropriate penalties for violations.

(6). Promoting the individualization and essence of scientific research:

Support innovation: Encourage faculty to conduct innovative research and support projects with high risk but potential for major breakthroughs.

Respect for personalized research: To provide faculty and staff with sufficient freedom to explore their research interests and encourage multidisciplinary and cross-disciplinary collaboration.

(7). Balance the focus on large and small projects

Balanced resource allocation: Ensure that both large and small projects receive appropriate attention and resource support. Diversified project evaluation: establish a diversified project evaluation mechanism to ensure that all kinds of projects can be fairly evaluated according to their uniqueness and potential value.

Through implementing these strategies, our university can not only improve the quality of its scientific research, but also enhance the research ability and satisfaction of the staff. This requires a firm commitment from the university leadership and the concerted efforts of all faculty members to create a more efficient, innovative and supportive research environment.

3.5 Investigation on the status quo of scientific research assessment and evaluation

The analysis of the scientific research assessment mechanism highlights its critical role in shaping the career trajectories, economic conditions, and academic standing of researchers. This mechanism, integral to scientific research management and a catalyst for research advancement, is scrutinized through an examination of around 10 core issues, aiming to unpack its essence and widespread influence.

The findings underscore a comprehensive approach to assessment, factoring in project participation, output achievements, and recognitions. Yet, a notable critique is the system's skewed emphasis on short-term achievements, manifesting in a preference for quantity over quality of outputs. The predominance of publication counts as an evaluative metric overshadows the substantive depth and innovative contribution of research endeavors. Such a bias towards rapid output generation can inadvertently sideline the cultivation of high-caliber scientific talent.

Moreover, the punitive aspects within the assessment criteria could potentially hinder researchers' career progression. The complexity and cumbersome nature of the current assessment system further exacerbate these issues, suggesting a need for streamlining and enhancing the management of innovation-related documentation to bolster assessment fairness and efficiency. The path forward involves recalibrating the assessment system to foster a balanced evaluation of quantity and quality, thereby nurturing an environment that values depth and innovation in research. Simplifying the assessment process and making it more transparent can also contribute to a more equitable and motivating assessment landscape. By adjusting these mechanisms, the scientific community can better recognize and reward comprehensive achievements, paving the way for more profound and innovative scientific exploration.

Table 4.8 Survey results of scientific research assessment and evaluation

Title	Sample number	Mean value	Standard error	degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	satisfactory	Content / satisfactory	Very satisfied / strongly agree
Score according to scientific research projects, achievements and awards.	285	3.92	1.10	7.3	5.8	9.2	49.6	28.1
Scientific research assessment tends to be eager for quick success and instant benefits, and the number of achievements is the main standard to evaluate the performance of scientific research personnel.	285	3.98	1.20	7.4	9.2	10.3	37.2	35.9
A representative work system was introduced to focus on the quality of the evaluation results.	285	2.16	1.21	31.8	22.9	24.6	10.6	10.1
Encourage researchers to grow up independently, advocate patient accumulation, and concentrate on research.	285	1.93	1.15	15.4	22.7	11.6	28.9	21.4
Focus on the output of scientific research achievements, but should not ignore the cultivation of scientific research talents.	285	3.85	1.25	8.6	12.4	7.8	34.5	36.7

Table 4.8 (Continued)

Title	Sample number	Mean value	Standard error	degree of satisfaction (%)				
				Very much disagree / very dissatisfied	Disagree / dissatisfaction	satisfactory	Content / satisfactory	Very satisfied / strongly agree
Score according to the relevant assessment standards, and implement the corresponding corrective measures for those who fail to meet the standards.	285	4.06	1.17	9.4	8.7	10.5	37.2	34.2
Highlight the people-oriented orientation, to avoid too much bondage.	285	1.74	0.92	45.6	34.2	6.4	7.5	6.3
Follow the law of scientific research and implement differentiated assessment.	285	1.81	0.81	31.8	45.6	10.6	3.5	8.5
Not too paranoid "only scientific" thinking, should conform to the essential law of scientific research.	285	4.39	0.83	6.2	3.5	7.1	37.2	46
Establish sound research performance files as the evaluation basis for annual evaluation of researchers, professional and technical position promotion and project recommendation.	285	1.73	1.18	60.9	24.1	3.5	6.2	5.3

In the process of our university to improve the quality of scientific research, a series of investigations have revealed various problems and insights on the management of scientific research projects. According to the survey results, most of

the respondents were satisfied or very satisfied with the research projects, achievements and awards (77.7%, 221), but a small number expressed dissatisfaction (22.3%, 64). On the other hand, there are large differences of opinions on the tendency of quick success in scientific research assessment, the introduction of the representative system, and the encouragement of the independent growth of researchers. In particular, in the compliance of scientific research laws and the establishment of scientific research performance files, there was a high proportion of unsatisfactory and very unsatisfactory feedback (85%, 242 people), which exposed the shortcomings of the current system in adapting to the characteristics of different disciplines and ensuring fairness and transparency. In view of these problems, our university needs to adopt a series of strategies to improve the quality of scientific research management.

First, we should continue to strengthen the optimization and existing evaluation mechanism, while paying attention to the balance between the quality of scientific research and innovation. In the fields of humanities and social sciences, a differentiated evaluation system should be established to respect the uniqueness and research laws of various disciplines.

In addition, the support and encouragement for the independent growth of scientific researchers is also very important. More resources and time should be provided to create a more humane and flexible scientific research environment.

Finally, for the scientific research performance file system, it is necessary to ensure its fairness and transparency, and truly reflect the contribution of researchers, so as to stimulate the innovation potential of researchers, and provide a solid foundation for the improvement of scientific research quality of Guiyang University.

For Guiyang University, the survey results emphasize an important point of view: the research management and evaluation system should not only take into account the quantity and quality of the results, but also pay attention to the personal growth of the researchers and the diversity of the subject characteristics. This means that the optimization of the scientific research management system should not only pursue quantitative indicators, but also pay more attention to the quality improvement and personal development. One-size-fits-all evaluation criteria should be avoided, but its unique research rules and methods should be respected. Such differentiation strategies can not only improve the overall quality of scientific

research results, but also stimulate the innovative spirit and research enthusiasm of scientific researchers.

Moreover, our university needs to improve the quality of scientific research in the process of diversification, humanization and differentiation strategies. This includes optimizing the evaluation mechanism, supporting the independent growth of researchers, respecting the characteristics of various disciplines, and ensuring that the research management system is fair and transparent. Through these comprehensive measures, not only the quality and quantity of scientific research results can be improved, but also can promote the overall development of scientific researchers, so as to lay a solid foundation for the long-term development of the university. This process will be an ongoing exploration and adjustment, requiring a joint effort from all aspects of the university and continuous feedback to ensure the effectiveness and adaptability of the final strategy.

In order to improve the quality of scientific research of Guiyang University, the following improvement guidelines are formulated according to the survey results:

1. Balanced evaluation system: Adjust the scientific research evaluation mechanism, so that it not only focuses on the quantity of scientific research achievements, but also pays attention to the quality and innovation. The influence, originality of the project and its contribution to the development of the subject should be comprehensively considered in the assessment.

2. Differentiated assessment: Implement differentiated assessment standards according to the characteristics of different disciplines. Especially in the field of humanities and social sciences, its research characteristics should be considered, and more flexible evaluation criteria in accordance with the discipline rules should be formulated.

3. Incentive system reform: to establish an incentive mechanism to encourage innovation and long-term research. Provide the necessary time and resources to support researchers to grow independently in in-depth research and innovative exploration.

4. Researchers Development support: Establish specialized training and development programs to help researchers improve their research skills, encourage interdisciplinary cooperation and international exchanges, so as to broaden their horizons and enhance their research capabilities.

5. Fair and transparent management system: to ensure the fairness and transparency of the scientific research evaluation and management system. All evaluation criteria and results should be open and transparent to ensure that researchers have a clear understanding and trust in the evaluation process.

6. Optimization of scientific research performance archives: improve the scientific research performance file system to ensure that it can comprehensively and accurately reflect the work performance and contribution of scientific researchers, and regularly update and evaluate the contents of archives.

7. Human-oriented cultural construction: emphasize human-oriented orientation in scientific research management, reduce excessive administrative constraints, improve the flexibility and autonomy of scientific research work, and create a more relaxed and creative research environment.

Through the implementation of these policies, the university can effectively improve the quality of scientific research, stimulate the innovation potential and research enthusiasm of scientific researchers, and lay a solid foundation for the long-term development of the university.

Cause analysis

After an in-depth analysis of the current situation and challenges of scientific research management in our university, a key observation emerges: the scientific research management in our university focuses too much on practical value and tool rationality, while ignoring the humanistic dimension and diversity of scientific research. This scientific research management mode based on modern management technology not only fails to fully stimulate the innovation potential of scientific researchers, but also limits the comprehensive development of scientific research.

Through the survey of researchers, we find that they generally feel the limitations of this management style. Specifically, about 35% of respondents said the main problem was the insufficient care for researchers and the shortcomings of the evaluation system; 33% said that excessive pursuit of achievement and fame leads to decreased research rigor; and 26% said that researchers were insufficient in terms of social responsibility and humanistic knowledge.

In addition, 6% of respondents pointed out the excessive emphasis on practical value and the lack of an equal atmosphere for academic discussion. In the

face of these challenges, such as the lack of humanistic spirit, the uneven quality of scientific research results and the weakening of scientific research responsibility, it is necessary to explore the deep reasons. Only by fully understanding these complex factors can we effectively change the existing management system of scientific research and truly improve the quality and social value of scientific research work. This not only needs to adjust the management strategy, but also needs to cultivate the attention to humanistic care in the scientific research culture, and promote the diversification and innovation of scientific research work.

In order to realize this change, we must first re-examine and adjust the scientific research evaluation system of our university. The current evaluation mechanism focuses too much on quantitative indicators and short-term results, which often leads to researchers ignoring long-term and far-reaching research. We need to establish a more comprehensive and balanced evaluation system, which emphasizes the practical application value of scientific research as well as the importance of basic research and innovative thinking. At the same time, researchers should be provided with more academic freedom and exploration space, and they should be encouraged to pursue in-depth research and interdisciplinary cooperation.

Secondly, it is also crucial to strengthen the humanistic education and training of scientific researchers. Through regular seminars, lectures and workshops, researchers can enhance their awareness of their sense of social responsibility and enhance their knowledge of ethics, history and philosophy. Such interdisciplinary learning and communication can not only enrich the perspective of researchers, but also inspire them to adopt more comprehensive and innovative methods in their research work.

Finally, it is very important to create an open and equal academic discussion environment. Researchers should be encouraged to freely share their views and ideas, regardless of their academic status. This open atmosphere of discussion helps to foster critical thinking, while also promoting diversity and innovation in academia. In short, by repositioning the focus of scientific research management, strengthening humanistic care, and promoting open academic exchanges, we can effectively improve the quality of scientific research, cultivate researchers with innovative spirit and social responsibility, and then promote the healthy development of academic research.

4.1 Flexible management and adaptive modes are needed to yield to the development of research innovation and collaboration

In order to improve the quality of scientific research, it is necessary to deeply explore and optimize the current scientific research management mode. At present, our university has widely adopted the assessment and quantitative evaluation mechanism in the scientific research management. However, this management mode with hard indicators as the core seems to change the essence of scientific research activities. Research, which is supposed to be a human activity full of creativity and diverse thinking, is now becoming more technical and competitive.

The academic evaluation system, originally designed to motivate and supervise, has gradually evolved into an emphasis on academic competition, ignoring the inherent cyclical and long-term characteristics of scientific research activities. This phenomenon is not only inconsistent with the normative structure of scientific research, but also intensifies the competition and conflict in the university, leading to the tension and disharmony of the academic environment. More importantly, this trend of materialization and technology gradually weakens the humanistic spirit and diversified values in scientific research work.

Therefore, the current scientific research management mode covers the diversity and creativity of scientific researchers to a certain extent. In this case, the scientific research evaluation standards should be re-examined and adjusted, so as to better balance the technical and humanistic nature of scientific research activities, so as to truly improve the quality and innovation of scientific research work.

4.2 Pursuing balanced emphasis on research processes, including methodology, exploration and practice, to enhance the depth and quality of research

In the continuous improvement of the quality of our scientific research, a detailed investigation has revealed several key findings. First of all, in the process of dealing with and displaying the scientific research results, our university generally shows a more rigid management style and a rigid management mode. This approach may imply that the university focuses too much on technical treatment in scientific research management, and ignores the importance of humanistic spirit. In addition, the scientific research policy seems to overemphasize the overall development of the university, but seems to ignore the focus on individual development to some

extent. This tendency may indicate that Universities lack attention to humanistic spirit in the formulation of scientific research policy.

We observe that the rigidity of management approaches often leads to an inflexible environment, struggling to accommodate the varied needs and methodologies required for diverse research. This not only stifles innovation but also hampers the advancement of collaborative scientific endeavors. Statistics reveal that a significant 90.52% of surveyed individuals report satisfaction or high satisfaction with this situation. Concerning the neglect of humanistic considerations in research policies, data indicates that 90.62% of respondents feel current policies overly favor natural sciences, overlooking the critical role of social sciences. Moreover, 84.59% express dissatisfaction with the discrepancy between institutional growth and individual development, highlighting a general perception that universities tend to neglect the personal growth and requirements of researchers in their quest for overall academic excellence. These insights underscore the necessity for universities to adopt more balanced, humane approaches in management, research policy, and harmonizing institutional versus individual growth, to enhance the quality of scientific research.

To ensure the quality and continued progress of research work, it is important to re-evaluate and adjust current research management and policies. The following suggestions were immediately put forward to solve the problems found in the investigation: 1. Enhance the flexibility of the management mode: the current rigid management mode needs to shift to a more flexible and adaptable way. Management should be able to adapt to the unique needs of different researchers and diverse research methods to promote innovation and interdisciplinary cooperation. 2. Balancing natural sciences and social sciences: Research policies should seek a balance between natural and social sciences. By attaching importance to humanistic care, we can cultivate a more comprehensive research environment, while promoting the close integration of science and society. 3. Focus on the development of individual researchers: While pursuing the improvement of the overall research level, Universities should also pay attention to the personal growth and career development of each researcher. Provide the necessary resources and support to ensure that each researcher has the opportunity to contribute their own unique value. 4. Continuous feedback and evaluation mechanism: Establish a

continuous feedback mechanism in order to timely understand and solve the challenges facing the researcher. The effectiveness of research policies and management styles is regularly assessed to ensure that they always align with the needs of the research community.

Through these adjustments, the university can more effectively promote the improvement of the quality of scientific research, and ensure the sustainable and healthy development of scientific research activities. This will not only help to improve the academic reputation of the university, but also to provide a richer and more supportive research environment for researchers.

4.3 Competition in the quantities of research projects and papers the comprehensive literacy of researchers

In terms of optimizing the quality of scientific research, there seems to be some deviation in our current scientific research management system. At present, the main criteria for evaluating scientific research results tend to focus on the number of published papers, rather than the quality of their content or innovation. This quantitative evaluation method not only ignores the comprehensive ability and innovative thinking of researchers, but also may induce some bad behaviors, such as academic misconduct. For example, to pursue quantitative results, some researchers may commit misconduct such as plagiarism or forging data. In a survey, it was found that 85.5% of the staff in our university believed that the current research evaluation system overemphasizes the number of papers rather than quality and innovation. This phenomenon not only damages academic integrity, but also poses an obstacle to the improvement of researchers' comprehensive literacy and innovation ability.

Therefore, our university pays too much attention to the number of achievements, but in fact, it ignores the cultivation and incentive of the comprehensive quality and innovation ability of the researchers. In order to achieve the real improvement of the quality of scientific research, it is necessary to reform the existing evaluation mechanism to measure the value of scientific research results in a more comprehensive and fair way. (See Table 4.9)

Table 4.9 Survey statistics of "heavy quantity, light quality"

Metric	Very much disagree / very dissatisfied	Disagree/ dissatisfaction	Same as	Consent / satisfaction	Very agree / very satisfied
Number of people	4	10	31	70	170
Ratio	1.4	3.3	10.8	24.6	59.9

4.4 Too much tasks have obscured people's research ability

The scientific research management of universities constitutes a complex and systematic project, among which, the scientific research project management plays a vital role. At the management level, this process involves multiple links: from the preliminary review of the project application, to the expert review, the project submission to the publisher, to the final project decision, as well as the mid-term inspection and final acceptance of the project. At the same time, from the perspective of scientific research, the process usually involves the demonstration and declaration of the subject, the implementation of scientific research, the application and promotion of research results, as well as the final preparation and the impact assessment on the society.

However, according to the actual research situation of our university, whether from the perspective of management or research, there is a tendency, that is, too much attention to the application process of the project, while ignoring the necessity of in-depth research and exploration of the project itself. According to the survey results (see Table 4.10), as high as 53.2% of the respondents believe that there is a phenomenon of "emphasizing application rather than research" in the scientific research field of our university.

This phenomenon exposes the imbalance in the scientific research management, that is, while paying attention to the application, there is insufficient attention to the in-depth research of the subject. In order to improve the quality of scientific research, we must pay attention to and balance these two aspects to ensure that scientific research projects not only receive attention in the application stage, but also can be fully explored and developed in the whole research process.

Table 4.10 Survey statistics of "Re-declaration, light study"

metric	Very much disagree / very dissatisfied	Disagree / dissatisfaction	Same as	Consent / satisfaction	Very agree / very satisfied
Number of people	15	47	72	90	61
Ratio	5.2	16.4	25.2	31.8	21.4

In the process of improving the quality of scientific research, it is particularly important to comprehensively consider the comprehensiveness and substance of the project. At present, much research work seems to focus too much on project declaration, management process and final formal procedure. This approach, while seemingly appearing to support core research, may inadvertently downplay the importance of research itself. Under the current situation of scientific research in our university, this phenomenon is particularly obvious. Too much emphasis on external procedures may mask the actual level of researchers in terms of scientific literacy and innovation ability.

In view of this, we believe that whether natural science or social science, more attention should be paid to digging and explore its core and substantive content. Real scientific exploration should not be limited to forms and procedures, but should be more put into the actual research work, immersed in the process of exploration, to expect new discoveries and theoretical breakthroughs. This immersive research approach can not only help researchers grow and progress, but also ensure that research work has profound significance and value. Only in this way can we expect to produce truly outstanding and long-term influential research results.

Table 4.11 shows the survey results of the current scientific research management mode of our university. The survey focuses on the common phenomenon of "emphasizing results, neglecting processes" in university scientific research management. According to the survey results, 49.1 percent of respondents agreed with the situation. This data not only reveals the problems existing in scientific research management, but also reflects that in the current scientific research culture, non-humanistic factors, especially the tendency to focus on results while ignoring the research process, has become an important issue that cannot be

ignored. To get a more comprehensive understanding of this problem and find a thorough analysis of the causes of this preference. Possible reasons include the deviation of the evaluation system, the uneven distribution of scientific research resources, and the excessive pursuit of scientific research achievements. With a deeper understanding of these factors, more effective strategies can be developed to promote the overall improvement of research management, emphasizing not only the quality of research results, but also the ethics, methodology and teamwork in the research process.

Table 4.11 Survey statistics of "emphasizing result, light process"

Metric	Very much disagree / very dissatisfied	Disagree / dissatisfacti on	Same as	Consent / satisfaction	Very agree / very satisfied
Number of people	18	42	85	78	62
Ratio	6.5	14.6	29.8	27.2	21.9

To improve the quality of scientific research, it is necessary to pay attention to the long-term knowledge accumulation and the persistence and patience of scientific researchers, which is often compared to "ten years of grinding a sword". However, at present, the evaluation method of scientific research results in our university focuses too much on short-term quantitative results, which leads to the researchers paying too much attention to the quick effect in the pursuit of the results, while ignoring the importance of scientific research process. This trend inevitably influences the depth and quality of the study.

Although short-term quantitative evaluation can meet the needs of scientific research management to some extent and promote the increase of the number of achievements, it ignores the academic rules that must be followed in scientific research activities and has a negative impact on different research fields. Obviously, a single quantitative management method is not suitable for the overall development of the scientific research field. Research development usually follows two paths. One is to pay attention to social reality, use empirical methods to explore laws, and make

remarkable achievements in social application; the second is to focus on humanistic care and pursue the frontier and transcendence of scientific research.

In China, many outstanding scientific research achievements have shifted from pure theoretical research to the fields closely related to real life, paying more attention to contemporary social issues. While this trend is emerging, it is still a few examples. To sum up, in order to avoid the more utilitarian direction of scientific research field, it is urgent to reform the current evaluation system based on "absolute quantification" and balance the emphasis on "result" and "process", so as to promote the healthy and comprehensive development of scientific research field.

4.5 Extreme publicity and justice of rational erection

Currently, Guiyang University's research environment is confronting several challenges, notably the rise in academic misconduct such as the pursuit of quick results and academic dishonesty. These issues are partly due to an over-reliance on highly structured research management models. While the concept of diversified research management offers ample opportunities for scholarly investigation, our focus is on the institutional-level research management at our university. A multifaceted relationship exists between universities and government agencies, where the latter dictate research objectives and desired outcomes through administrative directives. Universities are then required to fulfill these mandates within set timelines to secure resources.

This resource allocation mechanism is often biased to those universities with stronger scientific research ability, leading to the unbalanced allocation of resources among Universities. In order to obtain more resources, our university has formulated a series of scientific research management systems with quantitative evaluation as the core. These systems include quantitative evaluation criteria for scientific research projects, academic papers, scientific research works and other achievements, and require achieving predetermined targets within a certain time limit. Although such management methods have increased the number of papers published in authoritative journals to some extent, it also raises questions about whether the proportion of innovation results will increase.

The current management system overemphasizes digital indicators, which may have reduced the quality of academic exploration. In order to improve the quality of scientific research, it is necessary to re-examine and adjust the scientific

research management system, reduce the excessive injustice on digital indicators, and promote the culture of academic innovation and scientific research integrity. In this way, we can better balance resource allocation, encourage high-quality academic research, and maintain the healthy development of academia in the long term.

4.6 Mechanization of scientific research evaluation system

On the basis of fully understanding the country's expectations and positioning of Universities and universities, we can see that these institutions are the key components of the social structure and play multiple important roles. First, they play a core role in the field of education, especially in teaching quality and personnel training. In addition, they have key responsibilities in research management and evaluation innovation, which is not only crucial to improving the country's science and technology, but also a driving force for social progress. In order to effectively perform these duties, the management system of Universities and universities must strictly follow the administrative principles and norms set by the state. This system builds a clear hierarchical and efficient administrative network.

The network is designed to stimulate the initiative and innovation of each department, while ensuring that its functions are implemented effectively through the development and implementation of various regulations, policies and measures. This includes planning, organization, command and control, aiming at the efficient use of human, material and financial resources to achieve the goals of education and scientific research. Especially in the aspect of scientific research evaluation, the administrative system of universities shows obvious hierarchy, which becomes the key to maintain quality and efficiency.

In this model, the division of roles is clear, the degree of specialization is high, and each member shoulders clear responsibilities, and works in accordance with the transaction-oriented principle rather than the personnel-oriented principle. This management mode is conducive to improving the quality and efficiency of scientific research projects, promoting the development of innovative thinking, and finally realizing the long-term goals of universities in education and scientific research.

In order to improve the quality of our scientific research, we must carefully consider the structure and function of our scientific research evaluation system. In a highly specialized and meticulous system of bureaucracy, research management

personnel may sometimes be overly involved in scientific research work. This excessive involvement may lead them to inadvertently prioritize administrative principles over academic ones, and sometimes may even lead to administrative decisions replacing academic decisions. This phenomenon is crucial to maintaining academic freedom and promoting research innovation, and it needs careful consideration.

To solve this problem, it is necessary to define the responsibilities of research managers and ensure that their focus is on the process of supporting and promoting research activities, rather than directly intervening in research decisions. Secondly, it is essential to establish a system that both guarantees administrative efficiency and respects and protects academic freedom. In addition, the communication and understanding between researchers and managers should be strengthened, so that managers can better understand the nature and needs of academic work. Finally, through these measures, we can not only guarantee the innovation and freedom of scientific research, but also ensure the effectiveness and rationality of administrative management, and then improve the overall quality of scientific research.

Chapter 5

Discussion Conclusion and Recommendations

In order to improve the quality and efficiency of scientific research work, this study focuses on exploring and evaluating the recognition of the current scientific research management system by the teachers of Guiyang University. This system includes five key dimensions of scientific research management: the diversification of scientific management, the concept of scientific research management, the operation system of scientific research management, the management mode of scientific research personnel and the management of scientific research projects. In addition, it also includes the assessment and evaluation method of scientific research results.

Through this survey, the aim is to have a deep understanding of the current situation of Guiyang University in scientific research management, including the implementation effect of various management measures and the acceptance of these measures by researchers. The research results will help to find the problems and deficiencies in the management process, so as to make specific and targeted suggestions for improvement.

The goal is to develop a set of practical guidelines through a comprehensive evaluation of the existing research management system combined with teacher feedback and advice. The guidelines will guide Guiyang University in how to manage its scientific research work more effectively, so as to improve the quality of scientific research and promote the innovation and development of academic achievements.

The details are as follows:

Conclusion

1. Improve the quality of scientific research from the perspective of human nature

In the current academic landscape, the management of scientific research at universities is marked by its complexity and the distinct challenges it presents. The human element plays a crucial role in the research process, underscoring the importance of deeply understanding human potential and creativity. This understanding, coupled with the development of talent and effective incentive

mechanisms, is critical for the successful management of scientific research. Despite the prevalence of modern management concepts in the administration of research at some institutions, this approach often fosters a utilitarian mindset. It leads to a focus on quantifiable outcomes and an overemphasis on publication metrics, overlooking the intrinsic value of researchers themselves.

Such a management style does not adequately account for the unique nature and fundamental principles of scientific inquiry, potentially impeding the sustainable growth and development of research initiatives. To foster the holistic advancement and flourishing of national culture, universities must transition from traditional, modern management models to more human-centered strategies that respect the essence of academic disciplines. This entails embracing management practices centered on humanism, including critical thinking, phenomenological analysis, and hermeneutic interpretation. These approaches advocate for a comprehensive evaluation of research goals, prioritizing quality and depth over mere quantity.

In the process of deepening the reform of scientific research management and improving the quality of scientific research, universities should pay attention to the growth and development of individual researchers, and pay attention to their personalized needs and career development path, rather than just the quantity and quality of research results. To facilitate this transition, universities must cultivate an open, inclusive, and nurturing research ecosystem that fosters innovative thought and academic liberty, prioritizing the well-being and job satisfaction of its researchers. Additionally, institutions should encourage interdisciplinary and cross-departmental collaboration, leveraging the dynamic interplay and synergies across various disciplines. This approach will not only deepen and broaden the scope of research but also facilitate the exchange of knowledge and spur technological advancements across different sectors.

In terms of evaluation and incentive mechanisms, universities should adopt a more comprehensive and diversified approach, considering the originality of research, social impact, and the contribution of researchers to education and academia, so as to more comprehensively evaluate the work of researchers and motivate them to pursue excellence. Finally, in order to meet the changing needs and challenges of the research field, universities should continue to invest in research infrastructure and resources, while focusing on the professional development and continuing

education of researchers. Provide continuous learning and growth opportunities to help researchers keep pace with The Times and thus stay ahead in the global competition.

In the process of continuing to promote this transformation, universities need to take more forward-looking and innovative measures. First, more attention should be paid to the diversity and inclusiveness of talents, and researchers with different backgrounds and professional skills should be recruited to enrich the perspectives and capabilities of the research team. Such diversification can not only improve the team's innovation ability, but also promote wider social impact and academic exchanges. Second, universities should respond to rapidly changing science and technology by building a more flexible and dynamic research environment. For example, encouraging interdisciplinary research projects, supporting researchers to participate in international collaborations, and providing resources such as laboratories, equipment, and funding for young researchers. These measures will not only help improve the quality of research, but also enhance researchers' satisfaction and sense of belonging to the research work.

Moreover, universities should actively promote the cooperation with the industry, and transform the scientific research results into practical applications. This collaboration can help researchers better understand market needs and industry trends, as well as provide additional funding and resources for research. In addition, such cooperation can also provide students with internship and employment opportunities, thus keeping close contact with university education and social practice. Finally, Universities and universities should continuously improve the professional quality and ability of scientific research managers, and enable them to better understand their needs and support scientific research work more effectively. At the same time, more flexible and personalized management strategies should be adopted to meet the needs of researchers at different stages, so as to stimulate their innovation potential and research enthusiasm.

Through these measures, universities can establish a healthier, more dynamic and innovative scientific research environment, promote the continuous improvement of the quality of scientific research, and make greater contribution to the country's scientific and technological progress and cultural prosperity.

To elevate the quality of scientific research at Guiyang University, it is essential to embrace a human-centered approach to research management, underscoring the pivotal role of researchers in the research process. The personal growth and well-being of researchers are crucial for successful outcomes, necessitating the university's commitment to fostering a supportive and innovative research milieu. This environment should not only supply essential resources and tools but also offer prompt and effective solutions to the challenges researchers encounter, with particular emphasis on the implementation of this humanistic management philosophy. Such an approach not only signifies a management innovation but is also adept at addressing the unique and varied nature of scientific inquiry. To integrate this philosophy thoroughly into every facet of research management, practices like tailored project allocation, and fund management should consider researchers' interests, expertise, and career aspirations. Moreover, by providing professional training and career development opportunities, the university can assist researchers in enhancing their skills and knowledge, thereby boosting their research capabilities.

In addition, in order to better cope with the challenges and pressures in research, we provide necessary mental health support and counseling services to help researchers maintain a good mental state, so as to more effectively enter into research work. We also value diversity and inclusiveness, and encourage cooperation from different backgrounds and perspectives among research teams to stimulate new thinking and innovation, and enhance the depth and breadth of research results. This provides an equal, respectful, and supportive work environment for all researchers. Finally, we will monitor and improve scientific research management strategies through regular evaluation and feedback mechanisms. By collecting the opinions and suggestions from researchers, students and other stakeholders, we can constantly adjust and optimize the management methods to ensure that they meet the actual needs of the scientific research work.

To sum up, through the implementation of this people-oriented scientific research management concept, Guiyang University can not only improve the quality of scientific research, but also create a more healthy, supportive and innovative working environment for researchers, which will undoubtedly stimulate the potential of researchers and promote the in-depth development of scientific research.

1.1 Improvement of cultural management theory and scientific research quality

According to a survey on the perceptions of research management at Guiyang University, enhancing the quality of scientific research necessitates focusing on several critical aspects. Firstly, the "five dimensions" of scientific management—comprising goal setting, resource allocation, process control, outcome evaluation, and feedback modification—form the foundation for boosting management efficiency and effectiveness. Secondly, examining the philosophy behind research management highlights its influential role and potential constraints on research activities, which is crucial for guiding practical operations. Furthermore, evaluating the rationale and impact of the current research management and operational systems is beneficial for standardizing research activities and enhancing management performance. The management approach towards researchers, including incentive mechanisms, career development support, and the work environment, has a direct influence on researchers' motivation and capacity for innovation. Analyzing the management processes of research projects, such as approval, implementation, monitoring, and conclusion, is also vital for enhancing the outcomes of scientific research projects. Lastly, the assessment and evaluation mechanisms for research findings play a significant role in driving the improvement of research quality.

In view of these aspects, by improving the concept and system of scientific research management, reasonable arrangement of scientific research personnel and project management, and effective assessment and evaluation, the quality and efficiency of scientific research of Guiyang University can be significantly improved, and then enhance the status and influence of the university in the academic circle.

To sum up, the key to improving the quality of scientific research in Guiyang University lies in comprehensively and deeply understand and improve all aspects of scientific research management. The primary task is to integrate the concept of scientific management into the daily operation of the university, and to ensure that the scientific management methods are strictly followed from the start of the project to the completion of every link. In addition, update and optimize the scientific research management concept to ensure that it can keep pace with The Times and meet the needs and challenges of modern scientific research. The

scientific research management and operation system should be evaluated and adjusted regularly to ensure that it can effectively support all aspects of scientific research work. In the management of researchers, attention should be paid to building a supportive and motivating environment to encouraging innovation and academic freedom, while providing researchers with the necessary opportunities and resources for career development.

For scientific research project management, it is necessary to ensure that project selection, implementation and monitoring meet high standards, and that project results can be effectively applied and disseminated. The establishment and improvement of the scientific research assessment and evaluation mechanism is also crucial, which not only affects the motivation and output of scientific researchers, but also is an important means to continuously improve the quality of scientific research. Through the implementation of these strategies and measures, Guiyang University can not only improve the quality of its scientific research, but also create an environment more conducive to scientific research innovation and academic growth for its teachers and students, so as to achieve remarkable achievements in a wider range of academic and research fields.

Further, in order to achieve the continuous improvement of the scientific research quality of Guiyang University, the importance of interdisciplinary cooperation and international exchanges should be emphasized. Encouraging teachers to participate in interdisciplinary projects can promote the integration of knowledge in different fields and stimulate innovative thinking. At the same time, through cooperation with other academic institutions, the university can access a wider range of resources and perspectives, and improve the depth and breadth of research. In addition, it is also critical to emphasize data-driven scientific research management.

By collecting and analyzing the relevant data of scientific research activities, the university can more accurately understand the effects of scientific research work, and adjust strategies in time to meet challenges and seize opportunities. For example, use data analysis to optimize resource allocation, assess the impact of research results, and predict research trends. Attention should also be paid to scientific research ethics and social responsibility. Ensuring that all research projects follow ethical ethics will not only enhance the reputation of the university, but also actively fulfill social responsibilities. For example, ensuring transparency in

the research process, protecting the rights and privacy of the research subjects, and promoting the fair sharing of scientific research results.

Finally, Guiyang University should continuously improve the ability of the scientific research management team, including training the management personnel to master the latest scientific research management knowledge and skills. In addition, creating an open and inclusive academic atmosphere and encouraging teachers and students to put forward innovative ideas and critical thinking is an important part of the continuous improvement of the quality of scientific research. Based on the above efforts, Guiyang University will be able to establish a more efficient, dynamic and innovative scientific research environment, which will bring long-term academic achievements and social impact to the university. Through such continuous efforts, the university can not only improve the quality of its scientific research, but also play a greater role in the wider academia and society.

1.2 Improvement of humanism theory and scientific research quality

First, it will explore the "five dimensions" of scientific management, that is, how to integrate planning, organization, personnel, control and leadership into the humanistic framework to achieve a more comprehensive and humanized management. Next, we will analyze the current scientific research management concept of Guiyang University, and explore how to introduce the humanistic concept to promote teachers' innovation and personal development, and then improve the quality of scientific research. In addition, this study will also evaluate the existing scientific research management and operation system, and explore how to optimize under the guidance of humanism to ensure the efficient operation of scientific research work. In terms of researcher management, we will study how to improve management methods through humanistic theory, such as improving job satisfaction and stimulating innovative thinking, so as to improve the efficiency and creativity of researchers. At the same time, we will also pay attention to the management of research projects, analyze how to manage research projects more effectively under the guidance of humanistic theory, to ensure the success and quality improvement of projects. Finally, this study will also explore how to build a more fair and comprehensive scientific research evaluation system. Such a system can not only stimulate the enthusiasm of scientific researchers, but also truly reflect the quality and achievements of scientific research work.

Through comprehensive research in these aspects, it is expected to provide a practical and effective guide for improving scientific research quality, which can not only improve the efficiency and effectiveness of scientific research management, but also fundamentally stimulate the innovation potential of teachers, so as to significantly improve the quality of scientific research. Continuing from the perspective of humanism, this study will focus on the personal development and satisfaction of teachers, which is the key to improving the quality of scientific research. In practice, this means providing adequate understanding and support for teachers' needs, motivations, and career goals. For example, by providing professional development opportunities, creating a more attractive work environment and establishing more open and inclusive communication channels, teachers can enhance their sense of participation and sense of belonging, thus enhancing their initiative and creativity in research work.

At the same time, this study will also focus on teachers' cooperation and team spirit in scientific research work. Humanitarian theory emphasizes the value of each individual, but also recognizes the importance of teamwork. In research project management, encouraging interdisciplinary cooperation, knowledge sharing and mutual learning among teams will be important factors to improve research efficiency and innovation. In this way, we can not only improve the overall quality of our research projects, but also promote the optimal allocation of knowledge and resources within the university. In addition, considering the important role of scientific research evaluation in motivating researchers, this research will strive to establish a more comprehensive and dynamic evaluation system. This system will not only be based on traditional quantitative indicators such as the number of papers published and project funding, but will also include qualitative evaluations such as research innovation, social impact, and academic contribution. Such an evaluation system can more comprehensively reflect the actual value of scientific research work, so as to promote the overall quality of scientific research work of Guiyang University.

In general, this study aims to comprehensively examine and improve the scientific research management system of Guiyang University through the application of humanism theory. By focusing on teachers' personal growth, promoting teamwork and innovation, and establishing a more comprehensive and dynamic evaluation system, we will be able to fundamentally improve the quality and efficiency of

scientific research work and lay a solid foundation for the long-term development of the university. In further deepening the research of the scientific research management system of Guiyang University, we will also pay attention to realizing the sustainability of scientific research management. This means ensuring that research activities not only to current needs but also to future changes and challenges. Therefore, we explore how to establish a flexible and adaptable scientific research management framework under the guidance of humanistic theory. For example, through regular evaluation and updating of research policies, introducing the latest research trends and technologies, and encouraging continuous learning and innovation, we can ensure that the research management system is always relevant and effective.

Moreover, adherence to scientific research ethics and social responsibility constitutes a crucial aspect of our research endeavors. Within a humanistic framework, scientific research should be conducted according to high ethical standards, actively contributing to societal well-being. This involves ensuring the integrity and transparency of research processes as well as considering the environmental and societal impacts during these processes. Fostering a deep appreciation for ethical conduct and social responsibility can motivate faculty to seek scientific advancements while being mindful of the broader implications of their research activities.

To achieve these objectives, it's important to enhance interactions between faculty and students and their involvement in the research process. Providing students with increased opportunities for participation not only enriches their educational experience but also introduces fresh perspectives and ideas, thereby fostering a more vibrant and innovative research culture. Encouraging student involvement in research projects serves to cultivate the next generation of scientists and to augment the diversity and inclusivity of research endeavors.

Finally, Guiyang University is dedicated to establishing a robust feedback and communication system to ensure the ongoing refinement and optimization of the research management system. This entails the regular collection of feedback from faculty, students, and other stakeholders, and the assurance that such feedback is effectively utilized to enhance research policies and practices. Through this open and inclusive approach to communication, the research management system can

remain dynamic and efficient, supporting the long-term sustainability and success of Guiyang University's scientific research.

1.3 People-oriented management theory and scientific research quality improvement

To elevate the quality of scientific research, adopting a multi-dimensional and people-centric management approach is essential. At its core lies the implementation of "five-dimensional" scientific management, encompassing strategies, processes, tools, evaluation, and continuous improvement, ensuring the management of scientific research is comprehensive and systematic. Establishing a correct scientific research management philosophy is crucial, one that fosters a positive and innovative research culture while also valuing and motivating researchers.

An efficient and flexible management and operational system is vital, offering robust institutional support for research activities. It should aim to lessen the administrative load on researchers, allowing them to dedicate more attention to research and innovation. Regarding personnel management, prioritizing the personal growth and career development of researchers not only enhances their job satisfaction and motivation but also fosters teamwork and knowledge sharing. Effective management of research projects involves efficient resource allocation, diligent progress monitoring, and rigorous achievement evaluation, crucial for the successful and quality completion of projects. Moreover, a fair and effective research assessment system is necessary to evaluate the quality and impact of research outcomes, encouraging researchers to strive for excellence.

By thoroughly considering and enhancing these facets, not only can the standard of scientific research management be significantly improved, but the quality of scientific research can also be effectively elevated, thereby boosting the academic reputation and competitiveness of the university. This comprehensive and people-oriented approach to research management positions the university as a leader in scientific research and innovation.

Further, Guiyang University should pay attention to the following aspects on the road to improve the quality of scientific research. First, strengthen interdisciplinary cooperation and promote knowledge exchange and technology integration in different disciplines, which can not only broaden research horizons, but

also inspire more inspiration for innovation. Secondly, encourage the establishment of an open research environment, so that researchers and students inside and outside the university can freely share their ideas and achievements. Such an environment can promote academic exchanges and cooperation, and improve the transparency and credibility of scientific research work. At the same time, the university should attach importance to research ethics and quality assurance, and ensure that all research activities follow high standards of ethics and quality control processes.

This will not only enhance the credibility of the research results, but also enhance the university's social responsibility and public image. In addition, we should actively seek cooperation with the government, industry and other academic institutions. Such cooperation can bring more resources and opportunities for the university and help it to make greater breakthroughs and influence in scientific research. At the same time, this collaboration can also provide students with practical experience and broaden their career path. Finally, the university must remain vigilant in monitoring the latest research trends and technological advancements, continuously upgrading its research infrastructure and technology platforms. This proactive approach ensures the institution remains at the forefront of scientific inquiry. By implementing these comprehensive and thorough strategies, Guiyang University can enhance the quality of its scientific research, elevate its standing in the global research community, and establish itself as a pivotal hub for scientific innovation and scholarly discourse.

2. Improve the quality of scientific research from the perspective of internal needs

In the practice of scientific research management in our university, the adoption of "humanistic" management method has not only been widely supported by cultural management theory, humanistic theory, and human-oriented management theory, but also has gradually become the key driving force to promote the development of future scientific research. This approach emphasizes the respect for researchers and personal development emphasis intended to create a more collaborative and innovative research environment. The implementation of the "humanistic" management mode is not only helpful to stimulate the creativity and enthusiasm of scientific researchers, but also conducive to the formation of a

positive scientific research culture, which is particularly important in the future development of scientific research in our university. Therefore, it has become an inevitable trend to promote the "humanistic" management mode in the scientific research field of our university, which can not only improve the quality and efficiency of scientific research work, but also promote the in-depth development of academic innovation and knowledge.

(1) The philosophy of people-centered development underscores the significance of adopting a humanistic approach to scientific research management at our university. This approach prioritizes human welfare and overall well-being, extending beyond the mere improvement of living conditions. In the realm of scientific inquiry, the essence of humanistic management is crucial. It delves into the intricate interplay between individuals and societal patterns, advocating for a nuanced comprehension of these dynamics. This paradigm shift transcends the traditional focus on objective natural phenomena, embracing the complexity of social phenomena through a humanistic lens.

The humanistic model of management addresses the intrinsic requirements of scientific research management to comprehend and navigate the complexities of social phenomena effectively. It enriches the field of scientific research management, laying a robust theoretical and empirical groundwork for making scientific inquiry more human-centered. By adopting this model, the broader impacts of scientific endeavors on individuals and society can be more thoroughly appreciated, fostering a more harmonious integration of science and the humanities. This approach not only advances the comprehensive growth of scientific research management but also amplifies its contribution to humanizing scientific work and promoting the balanced advancement of science and humanities.

(2) The principle of "people-centered development" underscores the importance of orienting scientific research management around the holistic well-being and betterment of humanity. This approach transcends the traditional focus on objective natural phenomena to embrace a humanistic management model that deeply engages with the intricate interplay between individuals and societal structures. Such a perspective is pivotal for navigating the complexities of social phenomena and fostering the advancement of scientific research management. By prioritizing humanistic values, this model aims to enrich our understanding of

science's impact on both individuals and society, advocating for a more integrated development of science and the humanities.

The concept of "potential and long-term significance" in enhancing research quality involves reevaluating and redefining the values underpinning scientific inquiry, with a central focus on creating meaningful value that addresses human needs. This encompasses both the tangible outcomes of natural sciences, such as technological innovations and solutions to environmental challenges, and the more nuanced contributions of social sciences to our understanding of societal dynamics and policy formulation. Adopting a humanistic approach in research management means harmonizing research objectives with the broader goals of human and societal welfare, ensuring that scientific endeavors are grounded in enhancing human life quality and societal progress. This value orientation encourages a broader impact assessment of scientific research beyond immediate economic gains, highlighting its significance in enriching societal and human welfare through an integrated and compassionate scientific perspective.

(3) The emphasis on "long-term accumulation to improve the quality of scientific research" reflects an understanding that the advancement of scientific knowledge, technological innovation, and the cultivation of talent are endeavors that unfold over extended periods. These processes are inherently cumulative, requiring a deep and nuanced understanding of both the human condition and societal evolution. This perspective acknowledges that significant scientific progress is not the result of sporadic inspiration or isolated experiments but rather builds upon the collective wisdom, theories, and empirical findings inherited from previous scholars and researchers. It underscores the importance of a sustained commitment to knowledge accumulation, methodical inquiry, and rigorous experimentation.

Adopting a "humanistic" approach to research management recognizes the limitations of models overly reliant on scientific rationality and quantitative metrics, which may inadvertently stifle creativity and innovation. Such models can overlook the crucial role of human factors in the research process, including the creative inspiration, intellectual perseverance, and collaborative efforts necessary for groundbreaking discoveries. By fostering a research environment that values the humanistic aspects of inquiry—such as the importance of knowledge inheritance, the encouragement of deep critical thinking, and the nurturance of innovative

capacities—universities can cultivate a more dynamic and fruitful scientific community.

This human-centered management model places a premium on the personal growth and intellectual development of researchers, encouraging an environment where innovative ideas can flourish. It emphasizes the integration of diverse perspectives, interdisciplinary collaboration, and the mentorship of emerging scientists, ensuring that the legacy of scientific inquiry is both preserved and propelled forward. Through such a holistic approach, the quality and impact of scientific research can be significantly enhanced, laying a robust foundation for continuous advancement towards deeper understanding and broader societal contributions.

2.1 Necessity of an academic establishment

In today's academia, academic prosperity is seen as the key to driving research universities forward. This boom is not only a cornerstone of education, research, and social services, but also a main driver of innovation. A core idea generally recognized by universities is to put academic development in the center of their educational philosophy and promote continuous progress in the academic field through continuous improvement of the system and mechanism. This not only involves the establishment of a cultural environment conducive to academic growth, but also requires institutions to flexibly adapt to change while pursuing excellence, and actively integrate into the development trend of The Times, so as to maintain their academic foundation solid and innovative. In this process, the integration of scientific spirit and humanistic spirit is very important. The scientific spirit emphasizes the exploration of the truth and core values of things, while the humanistic spirit focuses on the pursuit of moral and good values. Both spirits are important parts of human wisdom, and they jointly promote the action and development of scientific research.

However, in an era of rapid development of science and technology, increasing personal awareness and relatively rich material life, there is a sense of loss and emptiness in the society, especially in university students, the pillar group of the future society, this feeling is particularly obvious. Their humanistic qualities have attracted wide attention from the society. In view of this, our university should focus on cultivating the humanistic quality and spirit of teachers and students under the

concept of academic establishment. This humanistic characteristic not only carries an important role in cultivating the humanistic spirit of Universities and universities, but also means that our university needs to pay full attention to students' physical and mental health and the expression of values in education and research practice. Therefore, Universities and universities not only need to guide students to explore the pursuit of personal value, but also should fully consider the comprehensive development of students in the process of education. Therefore, the choice of discipline development and management strategy with "humanities" as the core has become an inevitable choice to adapt to the social development. Therefore, our university must re-examine its educational and research methods to ensure that academic pursuits are not limited to the progress of scientific theories, but more widely include the exploration and cultivation of humanistic values.

In practice, this means that our university needs to design more diversified courses and research projects, including not only traditional science and technology fields, but also humanities, art, philosophy and other humanities. This interdisciplinary integration can not only promote the overall academic development, but also help students to build a more comprehensive world view. In addition, our university should strengthen its social responsibility, solve social problems and improve public welfare through education and research activities. This includes encouraging students and faculty to participate in community service activities, conducting research on social issues, and promoting cultural exchange and understanding on and outside campus. Through these activities, students can not only gain valuable practical experience, but also enhance their awareness and responsibility of social issues.

In the context of globalization, our university should also pay attention to the cultivation of international vision. This includes encouraging students to participate in international exchange programs, attracting international scholars to the university for exchange and cooperation, and offering courses on global issues and intercultural exchanges. Through these measures, students are able to gain a broader vision and understand the diversity of different cultures and societies, which is crucial for them to become future global citizens. In short, while pursuing academic excellence, our university must constantly strengthen its humanistic care and social responsibility, so as to ensure that in the process of cultivating the next generation of

leaders and innovators, we should not only pay attention to the transmission of knowledge and skills, but also pay attention to the cultivation of humanistic quality and the promotion of social responsibility. In this way, academic prosperity can truly become a powerful driving force for social progress and human well-being.

2.2 The development needs of scientific research talents

Since the beginning of the 21st century, universities have become a key base for cultivating high-quality talents, making remarkable achievements not only in the field of natural sciences, but also in the field of humanities and social sciences. These achievements reflect the important role of universities in scientific research and technological innovation. However, with the continuous evolution of the education system, the research management of Universities and universities gradually shows a tendency to overemphasize the quantity. Although this quantitative management strategy promotes the output of research results to some extent, it also limits the potential of innovation, leading to the generation of large repetitive and low-level research. In this context, we can see that social science and natural science are fundamentally different in research management.

Social science research puts more emphasis on humanity, society and spirit, which requires researchers to pay more attention to the display of humanistic spirit. Therefore, for the research management of humanities and social sciences, we should not only pay attention to the quantitative output of academic achievements, but also pay attention to stimulating the enthusiasm of researchers, promote their self-improvement and self-management, develop scientific research ability, and stimulate the innovation potential. In addition, for universities, it is more important to cultivate talents with profound research skills than to complete academic programs.

In this process, it is crucial to build a cohesive research team, especially at the intersection of the humanities and natural sciences. Unlike the laboratory isolation model of natural sciences, social science research should encourage teamwork and exchange of ideas. In these two fields, scientific breakthroughs often rely on the exchange of ideas and the change of ideas, requiring constant discussion and communication to inspire innovation. Therefore, in order to improve the quality of scientific research, whether natural science or social science, we need to establish a research team based on long-term cooperation to promote the sharing of

knowledge and innovation, and ultimately improve the quality and efficiency of the whole scientific research ecology.

To improve the quality of research, building an efficient research team requires attention to several key factors. First, the diversity of the team can not be ignored. Interactions between senior experts and young newcomers should be encouraged to form an ecological environment and promote the inheritance of knowledge and experience. Secondly, the importance of interdisciplinary cooperation is self-evident. Integrating experts in philosophy, psychology, pedagogy, sociology, history and economics can effectively broaden the research perspective and deepen the understanding of a specific field. Moreover, developing a culture of teamwork that works effectively and communicates both within and outside the team is critical, which is key to ensuring the sustainability of the team. Further, in order to promote the formation and development of this cooperative culture, it is particularly important to hold various activities to promote the communication inside and outside the team. This requires Universities and universities to establish practical institutions to evaluate, review and make corresponding decisions to ensure the effective implementation of these activities.

At present, although our university has academic committees, discipline review councils and other institutions, they are often bureaucratized and lack the necessary independence and flexibility, which limits the full play of academic autonomy. Therefore, scientific research and administrative managers should actively support the construction of a cohesive research team to provide necessary support for their growth and research innovation. As some scholars have emphasized, the core of university management should be to stimulate teachers' enthusiasm for research and create the necessary research conditions for them. Scientific research and administrators assume important responsibilities. Based on this concept, this research advocates the adoption of a humanistic oriented management mode, and reflects on and redesigned the scientific research management mode of our university. This model emphasizes the maintenance of academic freedom, creating a relaxed and harmonious academic environment, and promoting good interpersonal relationships, so as to comprehensively improve the quality of research.

3. People-oriented value orientation is the necessary way to improve the quality of scientific research

In order to improve the quality of scientific research in Guiyang University, it is necessary to clarify the value orientation of humanistic management mode. This means integrating humanistic values into scientific research management, attaching importance to teachers' innovation ability, autonomy and career satisfaction, and guiding the direction of scientific research management through these values. On this basis, the "five dimensions" of scientific research management (including planning, organization, leadership, coordination and control) is particularly critical. This not only involves the comprehensiveness and complexity of management, but also is the basis of improving management efficiency and innovation ability. For the scientific research management concept and operation system, in-depth analysis is needed to judge its effectiveness and promote innovation and efficiency. In addition, researchers will also need to be managed, including incentives, training and career development opportunities, to ensure their efficient work and continued growth. As for the management and assessment of scientific research projects, the efficiency and fairness of the process should be investigated to ensure that the evaluation and assessment mechanism can accurately reflect the quality and achievements of scientific research work.

Through these analyses, specific and practical improvement strategies can be proposed for the specific environment and resources of Guiyang University. These strategies may include improving management systems, enhancing teachers' research capacity and motivation, and optimizing resource allocation, aiming to comprehensively improve the quality and efficiency of scientific research.

3.1 Strength and softness: transition from "rigid" to "flexible"

First of all, in the "five dimensions" of scientific management, our university needs to implement innovation in multiple dimensions such as planning, organization, guidance, coordination and control. This means that scientific research management should not only have clear goals and plans, but also have an efficient organization and coordination mechanism, as well as effective monitoring and adjustment means. In terms of the concept of scientific research management, our university should explore the new concept of combining rigid and flexible management to adapt to the rapidly changing scientific research environment and

needs. This may include the encouragement of research freedom and innovation, as well as the strict control of research outcomes and quality. In terms of scientific research management and operation system, it is crucial to optimize the specific operation process and rules and regulations. This includes simplifying the approval process, improving the transparency and efficiency of management, while ensuring the standardization and compliance of scientific research activities.

For the management mode of scientific researchers, a appropriate balance should be found between rigid requirements and flexible incentives. This may mean providing more autonomy and innovation space for researchers while ensuring basic norms and standards. Research project management is a key field to improve the quality of scientific research. Our university needs to implement effective management strategies in the selection, implementation, monitoring and evaluation of scientific research projects. This may include meticulous planning of research projects, as well as continuous monitoring and timely adjustment of the progress of research projects.

Finally, in terms of scientific research assessment and evaluation system, a fair, transparent and effective system should be established, which can not only motivate researchers, but also ensure the quality and innovation of scientific research results. Through the investigation of the teachers' recognition of these management aspects, the current management status quo can be understood, and the corresponding improvement measures can be put forward accordingly. Comprehensive these measures, through the implementation of the scientific research management strategy of "hardness and softness", it is expected to improve the quality of the scientific research work, so as to promote the long-term development of the scientific research work of the university.

3.2 Guided management: change from "control" to "guidance"

When analyzing the current situation and improvement potential of the scientific research management system of Guiyang University, the first thing we need to pay attention to is the teachers' recognition of the current scientific research management system. This includes the understanding and acceptance of the "five dimensions" of scientific management, scientific research management concept, operation system, personnel management mode, project management and assessment and evaluation. Surveys and feedback provide insight into the teachers'

views of the existing system, especially in encouraging innovation and promoting research development. Further, the introduction of guided management concept is crucial to improve the quality of scientific research management. This management style emphasizes the shift from the traditional "control" type to the more flexible and participatory "guide" type. In research management, this shift is particularly important because it can better motivate researchers and promote teamwork and innovative thinking. Guided management encourages open communication and shared decision-making processes, thus creating a more supportive and collaborative research environment. Under the specific background of Guiyang University, it means that the existing scientific research management system is carefully evaluated, and suggestions for improvement and optimization are put forward based on the guided management concept. This may include adapting research management systems to better support innovation and the personal development of researchers; improving the way research programs are managed and evaluated to be fair and transparent; and providing more professional development and training opportunities for teachers to enhance their research skills and innovative thinking.

In general, through an in-depth understanding of our teachers' views on the current scientific research management system, and combined with the advantages of guided management, a set of targeted scientific research quality improvement guidelines can be developed. This can not only improve the overall quality and efficiency of scientific research, but also encourage teachers to participate more actively in the scientific research work, so as to promote the overall improvement of the scientific research level of the university. The specific guidelines are as follows: 1. Strengthen the dissemination and training of scientific research management concepts: Through regular seminars and training courses, all teachers and researchers can fully understand and agree with the "five-dimensional" concept of scientific management, including goal clarity, transparency, participation, flexibility and continuous improvement. 2. Optimize the management process of scientific research projects: establish a more efficient and transparent scientific research project management system, ensure that the selection, supervision and evaluation process of scientific research projects is open and transparent, and encourage innovation and quality improvement. 3. Improve the management mode of

researchers: introduce more incentives and career development paths to provide necessary training and career development support for researchers.

At the same time, teamwork and knowledge sharing are encouraged to create a more open and collaborative research environment. 4. Optimization of scientific research assessment system: Develop a comprehensive and fair assessment system, considering not only the quantity and quality of scientific research achievements, but also taking into account the innovation ability, teamwork and contribution to academia. 5. Promote the transparency and democratization of the scientific research management and operation system: through regular feedback and evaluation mechanism, to ensure that the scientific research management system can be continuously improved to meet the needs of researchers. Encourage researchers to participate in the management decision-making process, and enhance their sense of identity and belonging to the management system. 6. Establish an effective communication mechanism: promote effective communication between management and researchers, ensure that management can timely understand the needs and suggestions of researchers, and enable researchers to better understand management decisions and goals.

3.3 coherence: change from "neglect" to "attention"

The university is undergoing a significant change from "neglect" to "attention", which is of profound significance for improving the quality of scientific research. First of all, the "five dimensions" of scientific management, including strategy, process, personnel, technology and culture, is the key to improve the efficiency and quality of scientific research. Through the investigation, we find that Guiyang University has made significant progress in these dimensions, but it still needs to continue to strengthen, especially in the development of scientific research culture and technology application. Secondly, the transformation of the concept of scientific research management from a broad management to a more refined and goal-oriented management has played a core role in improving the quality of scientific research. This shift in philosophy has made research more focused on innovation and quality, not just quantity. In terms of the scientific research management and operation system, the university needs to further optimize its system design to ensure the efficient and orderly scientific research activities. Especially in the process of the application, approval and supervision of scientific

research projects, more transparent and efficient mechanisms are needed to promote the smooth progress of scientific research work.

The management mode of scientific researchers is also the key to improving the quality of scientific research. Managers should pay attention to the career development and incentive mechanism of researchers, and improve the enthusiasm and innovation ability of researchers by providing sufficient resources, training and reasonable incentives. In addition, the effectiveness of scientific research project management directly affects the quality of scientific research results. Guiyang University should strengthen its project management ability to ensure that the scientific research projects proceed smoothly in accordance with the established goals and standards. Finally, the optimization of scientific research evaluation system is another key factor to improve the quality of scientific research. A fair and comprehensive assessment system should be established, considering both the quantity of scientific research achievements and the quality and innovation, so as to stimulate the potential of researchers.

To sum up, the transformation of scientific research management in the university is of great significance to improving the quality of scientific research. By further optimizing all aspects of management, the quality of scientific research results can be effectively improved and the overall improvement of the scientific research level can be promoted.

3.4 Quality depends on quantity: the transition from "quantity" to "quality"

The evaluation of "five dimensions" in scientific management—planning, organization, leadership, control, and coordination—is crucial for enhancing the efficiency and effectiveness of scientific research. This paper delves into the prevailing research management philosophies at universities, encompassing not only their overarching research attitudes and objectives but also specific expectations and priorities. The discussion highlights how the renewal or adjustment of these philosophies can steer the enhancement of research quality.

Furthermore, the importance of an effective scientific research management and operational system is underscored. It is essential that management procedures and regulations not only facilitate the smooth operation of research projects but also uphold transparency and fairness in management practices.

The management style of scientific researchers emerges as a pivotal element in elevating research quality. This aspect covers the recruitment and training of researchers as well as strategies to foster and sustain their innovative capabilities and motivation. Effective management of scientific research projects also stands out as a critical factor. This includes careful consideration of resource distribution, time management, and methodologies for evaluating and providing feedback on research outcomes.

The construction of a robust scientific research evaluation mechanism is deemed vital. An effective system should inspire researchers and impartially assess their contributions, ensuring high-quality research outcomes. For universities aiming to bolster their research quality, a holistic approach to enhancing all aforementioned areas is necessary. It is also crucial to recognize that pursuing quality through quantity does not merely entail increasing resource investment but emphasizes the efficient utilization of resources and the refinement of management strategies. Through such comprehensive improvements, the quality of scientific research at Guiyang University is expected to see significant advancement.

In the process of in-depth discussion and improving the quality of scientific research in the university, an important part is to ensure the coordination between scientific research project management and scientific research assessment and evaluation system. Research project management involves not only project planning, implementation and supervision, but also how to properly allocate resources, optimize time management and ensure that project objectives are consistent with the university's long-term strategy. This requires project management to be not only efficient but also forward-looking to ensure that scientific research activities can produce maximum results.

At the same time, the design of the scientific research assessment and evaluation system needs to be detailed and comprehensive. This system should not only consider the quantity and quality of scientific research achievements, but also consider the innovation, influence of scientific research activities and their contribution to the development of the discipline. The evaluation criteria should be fair, transparent, and can encourage researchers to pursue higher levels of research. Further, the university should pay attention to the development of the scientific research team and individuals. Providing continuous training and development

opportunities that encourage researchers to participate in seminars, graduate courses, and other professional development activities can effectively enhance their research capacity and innovative thinking.

In addition, establishing a supportive and collaborative research environment can promote knowledge sharing and teamwork, thus improving the overall level of research. In terms of resource allocation, ensuring a reasonable and effective resource allocation is very important to improving the quality of scientific research. This includes not only financial resources, but also laboratory equipment, research materials, and human resources. A transparent and equitable resource allocation mechanism can ensure that all research projects have sufficient resources to achieve their goals. Finally, the university should encourage and support scientific research innovation. By setting up specialized funds to support high-risk research projects but may bring major breakthroughs, the university can promote new discoveries and technological innovations in the field of scientific research. In addition, collaboration with other research institutions and industry can also provide new research opportunities and perspectives.

Considering the above improvement measures, the university can ensure the effectiveness of scientific research management, but also promote the quality and innovation of scientific research work. Through such a comprehensive and systematic approach, the university can not only improve its scientific research level, but also establish a stronger influence in academia and industry.

4. Explore the strategic thinking of building a people-oriented management mode

Humanistic management, embodying a people-centric philosophy, deeply respects and acknowledges human nature's complexities. This approach underscores the significance of catering to individual needs, recognizing these as pivotal for societal advancement. The aim of humanistic management is to foster a seamless integration of organizational practices with personal values, facilitating mutual growth for both entities. To adopt and embed this philosophy in our university's research management, it's critical to thoroughly appreciate the influence and worth of individuals within this framework. This involves a detailed exploration of humanistic management's core principles, aligning them with our current research management practices. Drawing insights from other institutions' experiences in research

management can guide the creation of a model that is both theoretically robust and practically relevant. By embracing this paradigm, our research management can more consciously factor in human elements, thereby enhancing research quality. Centered around humanistic management, this model aims to unlock researchers' creative potential and boost collaborative efficiency, significantly contributing to scholarly discourse and innovation.

4.1 Scientific research management needs humanistic care

Through the investigation of teachers in our university, we can have a deep understanding of their recognition degree of scientific research management, including the "five dimensions" of scientific management, scientific research management concept, scientific research management and operation system, the management mode of scientific research personnel, scientific research project management and the current situation of scientific research assessment and evaluation. This investigation helps to identify the problems and challenges existing in the current management practice, and reveals the dissatisfaction of the teachers in our university with the humanistic aspects of the existing system. Further, based on these findings, targeted suggestions can be put forward to improve the quality of scientific research in the university. These suggestions should focus on strengthening the role of humanistic care in scientific research management, such as by improving the sense of participation and belonging of scientific researchers, optimizing the management process of scientific research projects, and reasonably formulating scientific research assessment standards. This management mode not only improves the efficiency and quality of scientific research work, but also enhances teachers' job satisfaction and scientific research motivation. Finally, this will help to build a more healthy, efficient and humanized scientific research management environment, so as to promote the overall scientific research level of Guiyang University.

In order to improve the quality of scientific research in our university, we must build a people-oriented scientific research management mode, which is the key to ensure the effective operation of the scientific research management system. When designing such a model, the primary task is to pay attention to, reflect and protect the rights and interests of researchers. Specifically, the management mode of scientific research humanities includes five core elements: management subject and

institution, management object, management goal, management mode and operation conditions.

These elements are not only the cornerstone of the scientific research management system, but also the key to work together to ensure the effective operation of the system. First, managers and institutions must be people-centered, and their decisions and actions should be oriented to the well-being of researchers. Secondly, the management object, namely the research activities themselves, should also aim at improving the skills and knowledge of researchers. In addition, the management objectives should be clear, aiming at promoting the growth and development of researchers, but also paying attention to the quality and innovation of scientific research results. Management style is a key way to achieve this goal. Flexible, inclusive and humane management strategies should be adopted to encourage the innovation and autonomy of scientific researchers. Finally, operational conditions, including the allocation of material and non-material resources, should support a people-oriented research environment and create an environment that both promotes research results and focuses on the growth and well-being of researchers. The scientific research humanistic management mode aims to create a scientific research management system with both efficiency and humanistic care through the coordination and optimization of these five elements.

In the process of pursuing these scientific research goals, the key is to establish an efficient and humanized management system. This means that management should go beyond simple task assignment and supervision and focus on how to stimulate the innovative potential and personal growth of researchers. Therefore, scientific research management should not only pay attention to the progress and results of the project, but also care about the career development, mental health and job satisfaction of scientific researchers. This management mode can not only improve the efficiency of scientific research, but also promote the overall well-being of scientific researchers, thus creating a positive and healthy scientific research environment.

In addition, scientific research management also needs to adapt to the changes of The Times and technological progress. In the digital age, using advanced information technology and data analysis tools to optimize management processes, improve decision-making quality, and enhance transparency and traceability have

become new trends. For example, by establishing a comprehensive data management system, you can more effectively track project progress, analyze research results, predict research trends, and make more informed management decisions accordingly. At the same time, it also helps to better evaluate and optimize resource allocation, so as to improve the overall efficiency and effect of scientific research. Finally, continuous training and learning are essential to improving the quality of scientific research management. Research managers should constantly update their knowledge and skills to cope to the rapidly changing research environment. This includes understanding the latest research trends, mastering new management tools and methods, and developing effective communication and leadership skills. Through continuous learning and self-improvement, research managers are better able to guide and support research teams, thus pushing the boundaries of scientific research forward. To further deepen the quality of scientific research management, interdisciplinary and cross-departmental collaboration should also be emphasized. In today's complex and changeable scientific research environment, the boundaries between different disciplines are increasingly blurred, which requires the scientific research management system to encourage and promote interdisciplinary cooperation. By establishing an interdisciplinary team, experts from different fields can be gathered together to promote the exchange of knowledge and the collision of innovative ideas, thus generating new research directions and breakthrough results. At the same time, cross-departmental cooperation is crucial, which involves not only between academic departments, but also between non-academic departments such as administrative and finance, to ensure that research activities are fully supported and resources.

Scientific research management must embrace an international perspective as globalization deepens, transforming research into a global endeavor. Managers in this field are tasked with forging international collaborations, fostering networks that enhance global scientific dialogue and partnerships. Such initiatives not only elevate the stature and visibility of research endeavors but also expose researchers to broader perspectives and a wealth of collaborative opportunities. Engaging in international projects, convening global conferences, and forming cross-border research teams are strategic moves to boost international cooperation and competitive edge in scientific inquiry.

Beyond enhancing research quality and efficiency, management's broader objective encompasses elevating the societal impact and reach of science. This entails ensuring research outcomes contribute significantly to society, such as addressing real-world challenges, spurring technological advancements, and refining public policy quality. Moreover, it's vital for research management to engage in disseminating scientific knowledge widely and encourage public involvement, thereby elevating societal support and comprehension of science. By aligning research activities closely with societal needs, scientific management not only amplifies the practical utility of research findings but also forges stronger connections between science and society, paving the way for sustainable scientific progress.

4.2 People-oriented humanistic management function

Implementing a humanistic, people-oriented approach in scientific research management necessitates that managers possess a profound understanding and respect for the unique needs and career aspirations of researchers. This management style significantly boosts the acceptance and effectiveness of research management among faculty members by ensuring management practices are diverse and adaptable. It leverages the "five dimensions" of scientific management, prioritizing both individual value realization and team objectives. Operationally, this approach champions the creation of a research environment characterized by fairness, transparency, and motivation, thereby fostering researchers' enthusiasm and creativity.

In evaluating and managing researchers, humanistic management adopts more individualized and empathetic criteria, aiming to ignite researchers' intrinsic motivation and support their long-term career development. This focus on personal growth and satisfaction is crucial for enhancing the quality of scientific research within the university. By catering to individual development and career contentment, this management style significantly increases faculty engagement and innovative capabilities, which in turn, positively impacts the quality and volume of research outcomes. For instance, offering personalized guidance and support in project management, along with nuanced evaluation methods, not only elevates research efficiency but also encourages faculty members to pursue innovation in their research fields. Therefore, a people-oriented humanistic management approach does not just elevate Guiyang University faculty's recognition and acceptance of research

management; it is also a critical lever for enhancing the overall quality of scientific research.

In order to improve the quality of scientific research, the scientific research management department of our university needs to make a series of long-term development plans from the perspective of cultural management. First of all, it is necessary to plan medium and long-term research development, focus on the cultivation of young backbone, build a high-level research management team, and plan interdisciplinary research and international research projects. This involves not only the construction of high-end research platforms, but also various plans to improve social services. When planning the future development of the scientific research system, managers should emphasize "humanistic care", clarify the development direction of scientific research culture, and ensure that the scientific research activities fully reflect the humanistic spirit. In addition, scientific research managers should adopt emotional management methods, actively organize scientific research teams, strictly implement the national university scientific research policies, and be responsible for the evaluation of scientific research project application, project management and achievement evaluation.

At the same time, managers should also adopt the "moral leadership" way, actively guide the scientific research team to establish a positive image, cultivate the true, pragmatic and objective research spirit of scientific researchers, and go all out to promote the scientific research work. In addition, take the "connotation quality" as the criterion to guide the research attitude of researchers, abandon the bad habits such as emphasis on declaration, ignoring in-depth exploration, pursuit of personal interests, neglecting service, emphasizing quantity rather than quality, and re-establish the real and practical scientific research character. In addition, managers also need to improve the scientific research management system through "institutionalized construction" to ensure that the scientific research work of universities proceeds in an orderly manner and strictly abide by the relevant systems and regulations. At the same time, the standardization of the evaluation of scientific research projects and achievement assessment should be strengthened, and the behavior of scientific research personnel should be standardized through firm and moderate management methods, and improper behaviors in the management of scientific research should be corrected.

To sum up, the humanistic management paradigm of scientific research in our university integrates the five functional advantages of the traditional management system to meet the development needs of scientific research in the today's humanistic era and help to improve the level of scientific research management in our university.

4.3 The operation mechanism of humanistic management must be based on people

To improve the quality of scientific research, it is necessary to deeply understand and effectively apply the core concept of scientific research management: "operation mechanism". This concept emphasizes how system elements interact to achieve established functions in a given context. In our university, the management mechanism of scientific research especially emphasizes the dynamic interaction between managers and researchers, as well as the relationship between management objectives and execution methods. First, the collaborative relationship between research managers and researchers is crucial. In the field of natural and social science research, management should be based on cooperative principles to ensure an equal and beneficial relationship between managers and researchers. Managers should not abuse their power, while researchers should actively participate in team work and jointly promote the development of team spirit. Secondly, the synergistic effect between management objectives and execution strategies cannot be ignored. Management objectives should guide execution policies to ensure that they effectively achieve these objectives. In this process, managers should combine goal setting with humanistic management concepts to ensure that research management is not only efficient, but also humanized. Finally, the complementarity of natural science and social science research and management is also the key.

Although each link of management has its own emphasis, they should support each other and serve a bigger goal together. For example, in the humanistic management mode, the project application and review system aims to select potential research topics, while the scientific researcher management system pays more attention to stimulating the enthusiasm and responsibility of researchers. The interaction of the "three operating mechanisms" not only optimizes the efficiency of the whole management system, but also promotes the cooperation between various

elements, and ensures the efficiency and humanization of scientific research management. This multi-dimensional management mechanism further reveals the complexity and dynamics of scientific research management. In order to better understand this mechanism, the following aspects can be further discussed: 1. Humanized management: In the university scientific research management, we should pay attention to the concept of humanized management. This means that managers need to understand and respect the individual needs and career development goals of researchers. Provide appropriate support and resources to stimulate their potential and creativity, as well as encouraging innovation and academic freedom. 2. Transparent and fair communication: An effective communication mechanism is the key to the success of scientific research management. An open, transparent and fair channel of communication needs to exist between managers and researchers. This ensures that all team members have a clear understanding of the project goals, progress, and expectations, thus facilitating better collaboration and teamwork. 3. Adaptability and flexibility: With the continuous development and change of the scientific research field, scientific research management also needs adaptability and flexibility. This means that management strategies and methods should be able to adapt to changes in the research environment and feedback from researchers. Flexible management not only responds to changing research needs, but also encourages innovation and experimentation. 4. Performance evaluation and incentive mechanism: The establishment of a fair and effective performance evaluation system is crucial to motivate researchers. Such a system should not only focus on the quantitative results of research, such as the quantity and quality of published papers, but also consider the quality of research work, teamwork, and innovation capabilities. Through a reasonable incentive mechanism, the enthusiasm and participation of scientific researchers can be improved.

Considering these aspects, it can be seen that the "three operational mechanisms" of scientific research management not only pay attention to the efficiency and efficiency of the management system, but also emphasize the people-oriented management philosophy, aiming to create an efficient and dynamic scientific research environment. Through such a comprehensive management

strategy, universities can better cultivate and utilize their scientific research talents, so as to promote the quality and innovation of scientific research.

4.4 The spiritual orientation of humanistic management

Since the beginning of the 21st century, universities have become the core platform for cultivating high-quality and highly skilled talents. He has not only actively engaged in large-scale scientific research, but also made remarkable achievements in the field of scientific research. However, the continuous change of the education system, especially in the management mode of social science and natural science research in universities, has attracted wide attention. The current leading quantity-oriented evaluation system has restricted the production of high-quality scientific research results, leading to the production of a large number of low-quality and repetitive studies. This phenomenon can be seen from the contradiction that China ranks second in the number of global academic papers, but the citation rate is far behind.

This study aims to explore the problems existing in the field of scientific research management in our university from multiple angles, and dig into its roots through empirical analysis, so as to provide theoretical support for the improvement of the current management mode. The current research shows that our university focuses too much on rigid management and advocates modern management concepts when managing social science and natural science research. However, this model is not conducive to the deep exploration of the nature of scientific research, because it ignores the flexible and open environment needed for scientific research work. The "humanistic management paradigm" aims to establish a management philosophy that is more compatible with the characteristics of scientific research, not to encourage excessive liberalization or laissez-faire management, but to create an environment more conducive to innovation and scientific exploration. This idea encourages researchers to see work as a noble spiritual pursuit, rather than just for a living or financial gain.

At the same time, it is also recognized that excessive liberalization and humanized management may pose obstacles to effective process implementation and the implementation of daily norms. Therefore, in the research management in the field of social science and natural science in our university, it is urgent to seek a balance between humanistic management concept and practical efficiency, to

ensure the organic integration and mutual support between rationality and sensibility, scientific rigor and humanistic care, emotional needs and normative requirements. This balance will help to improve the quality of scientific research, cultivate more high-quality talents, and promote the long-term development of the field of scientific research.

5. The core idea of the humanistic management mode

On the road of exploring and improving the quality of scientific research, the core concept of humanistic management plays a vital role. The core of this management mode is to reconcile the needs of different individuals in an orderly and harmonious way, and to achieve a benign interaction through mutual adaptation, selection, trust and kindness. This not only involves the organic combination of organizational behavior and individual subjectivity, but also focuses on meeting and stimulating the diverse needs of individuals, and then promoting the development of individual needs and creativity. This process is essentially a journey to enhance human mental maturity and creativity. In the scientific research environment, it is particularly important to integrate the concept of humanistic management into the scientific research work, especially in the scientific research institutions of universities. This means not only continuing to meet the needs of researchers, but also the continuous pursuit and realization of scientific research management goals. Specifically, this requires our university's scientific research management to innovate and adjust in the following aspects:

(1) Management objective architecture based on the humanistic management paradigm.

In order to improve the quality of scientific research, the setting of management goals plays a key role. These goals not only guide the direction of scientific research and realize the vision of management, but also reflect the profound connotation of "humanistic" management in the field of scientific research, which directly affects the improvement of research quality and the healthy development of scientific research team. Therefore, it is necessary to pay attention to the following core aspects in the construction of scientific research management target system:

1). The ping of scientific research concept: guide scientific research teams to establish correct scientific research concept, emphasizing that scientific

research is not only a means of personal career development, but also an important cause to contribute to the social needs and scientific prosperity.

2). Support for innovative research: Encourage and support innovative scientific research, remove the old technical paradigm that overemphasizes quantitative standards, and encourage researchers to explore with forward-looking thinking and pay attention to their positive impact on society.

3). Management system of humanistic care: formulate a scientific research management system in line with the contemporary spirit to ensure that humanistic care and respect for individuals are considered while maintaining standardized management.

4). Diversification of achievement evaluation: Recognize the difference in management between social science and natural science, and adopt diversified evaluation methods, such as citation rate and high-level journal publication, to ensure the comprehensiveness and depth of the evaluation.

5). Creation of scientific research atmosphere: create a dynamic, democratic, free and loose scientific research environment, encourage interdisciplinary cooperation, improve the evaluation mechanism of scientific research achievements, and realize the diversity of evaluation standards.

6). Optimization of resource allocation: Take the optimization of scientific research fund allocation and resource allocation as one of the management objectives to solve the human and financial problems in scientific research.

7). Emphasis on talent training: attach importance to the training of outstanding scientific research talents, strengthen the construction of scientific research platform, improve the ability of scientific research to serve the society, and promote the research and development and promotion of high-quality achievements.

8). Improvement of internationalization level: According to the principle of "Going Global" Plan of Philosophy and Social Sciences in Institutions of Higher Learning, improve the internationalization level of scientific research and absorb the advanced research and management experience of other countries.

Through these measures, we can guide the scientific research work more effectively, improve the quality and influence of the scientific research in our university, and promote the healthy development of the scientific research team.

(2) Implement the cultural management path

In the context of a people-centered approach to scientific research management, prioritizing cultural management aligns with the evolving demands of societal development. Our university's scientific research management team is tasked with crafting a system that marries humanistic values with scientific principles, aiming to foster a cohesive and harmonious research management culture. This entails nurturing positive interpersonal dynamics and promoting a culture of research that is reflective of postmodernist ideals, both of which are foundational to the cultural management pathway.

For managers, cultivating an innovative mindset, a commitment to excellence, and a focus on the quality of research outcomes over their quantity are essential. This includes actively working against academic misconduct and prioritizing the long-term impact, novelty, practical application, and societal contribution of research findings. Enhancing the humanistic competencies of managers is also key to elevating their effectiveness in leadership roles.

Legal and regulatory frameworks established by the national government play a pivotal role in grounding scientific research management in clear legal standards and rigorous enforcement, including measures to address violations. University research management departments should adhere to these regulations, ensuring that policy-making processes consider the research community's needs and that national guidelines and norms are implemented fairly, especially concerning rewards and disciplinary actions.

The dynamic between management and researchers should be characterized by mutual respect rather than a unilateral exercise of power. Abandoning authoritarian practices in favor of open communication and democratic engagement is vital for a more humanistic management approach. This includes understanding the research team's needs, establishing feedback mechanisms, and fostering a culture of constructive dialogue. Given the unique nature of scientific inquiry—marked by openness, diversity, individuality, and subjectivity—uniform evaluation standards are insufficient. Instead, differentiated assessment strategies that accommodate these variances are necessary. Managers must embrace ideological innovation and craft norms that guide research activities thoughtfully and inclusively. Ensuring the fairness and scientific integrity of academic evaluations

requires leveraging a variety of assessment methods, allowing for the equitable participation of emerging scholars and researchers in the scientific community.

Discussion

At the beginning of the 21st century, universities have become not only the cradle of cultivating high-quality talents, but also an important position of scientific research. However, with the evolution of the educational system, many universities increasingly adopt quantitative-oriented methods when managing humanities research. Although this quantity-oriented management mode promotes the development of scientific research activities to some extent, it also limits the production of high-quality scientific research results, leading to the emergence of a large number of low-level and repetitive studies. In view of this situation, this study aims to deeply explore the challenges faced by our university in the research management, especially the impact of quantitative oriented management mode on the research quality.

Through empirical analysis, we examine the current research management problems from multiple angles, and explore the deep reasons. The goal of this paper is to provide strong theoretical support and put forward feasible suggestions and strategies for the transformation of the existing management mode and improve the quality and efficiency of scientific research. Through such research, we hope to provide new ideas and directions for our university's scientific research management in the new era, and then promote the sustainable development and innovation of scientific research. In particular, the integration of humanistic and democratic management concepts in the field of scientific research in our university.

In the modern scientific research environment, the concept of humanistic management is based on the humanistic thought and emphasizes the care and respect for researchers. This management paradigm not only makes up for the shortcomings of the traditional efficiency and output-oriented management model, but also inspires the creativity and enthusiasm of researchers to produce higher levels of research results. The core goal of this study is to explore how to effectively implement the humanities management paradigm in scientific research in our university.

To this end, the following four aspects: first, build a rational scientific research community to promote the communication and cooperation among researchers; second, establish a perfect system to support humanistic management to ensure that the management process is compatible with humanistic values; again, design a practical operation mechanism to implement humanistic management paradigm, including but not limited to incentive policies and training plans; and finally, establish a comprehensive evaluation system to accurately evaluate the implementation effect of humanistic management paradigm, so as to continuously optimize the management strategy. Through these measures, it is expected to promote the overall improvement of the scientific research quality of our university, and also to provide new ideas and methods for the field of scientific research management.

1. Establish a management community of humanistic scientific research

In order to establish a humanistic scientific research management community, one of the most important measures is to investigate the teachers' recognition of scientific research management. This recognition covers the "five dimensions" of scientific management, scientific research management concept, operation system, scientific research personnel management mode, scientific research project management, scientific research project management and scientific research assessment and evaluation. The purpose of the survey is to deeply understand the current teachers' acceptance and satisfaction with the scientific research management system, so as to provide data support for further improving the efficiency and quality of scientific research management. This approach helps to reveal the existing problems and challenges, and provides a basis for formulating improvement measures. Furthermore, this kind of investigation and analysis is of great significance and role in improving the quality of scientific research in our university.

By understanding and improving the various dimensions of scientific research management, the university can more effectively motivate and manage its scientific research personnel, optimize the management of scientific research projects, and improve the fairness and effectiveness of scientific research assessment and evaluation. This can not only improve teachers' enthusiasm and innovation ability in scientific research, but also improve the overall scientific research environment and culture, and ultimately promote the overall improvement of scientific research

quality. Therefore, based on these survey results, more accurate and effective guidelines for improving the quality of scientific research can be developed, so as to achieve greater breakthroughs and development in the field of scientific research.

1.1 Interpretation of community connotation

With the rapid development of the current society, the concept of "community" has not only become an idea, but has become a widely recognized way of practice. This trend is particularly evident in the context of globalization, in which different countries pursue common economic interests in the form of alliance, reflecting the practice of the concept of community at the international level. Similarly, in the business world, the cooperation and collectivization between enterprises has become a common strategy to counter the fierce competition in the market. This strategy not only promotes the effective use of resources, but also enhances the market position of the enterprise. The field of education has also witnessed the vigorous development of the concept of community, especially through the form of learning groups that promote collaborative learning among students, aiming to improve academic performance and develop teamwork skills. This trend highlights the key role of the community in knowledge dissemination and learning efficiency improvement. From the perspective of management, the understanding of the community concept can be divided into three levels:

Formal reconstruction: In form, the management of natural science and social science in Universities and universities should be regarded as a people-oriented management paradigm practice. Its core is to give top priority to the well-being of researchers, and to emphasize the long-term development and quality improvement of natural and social sciences in universities. This management mode not only focuses on the material and ideological level of scientific research, but also goes deep into the emotional level, aiming to establish a close connection and cohesion between scientific research managers and team members, and jointly promote the progress of scientific research.

Optimization at the characteristic level: At the characteristic level, this management community emphasizes the concept of "two-subjects", that is, the close cooperation between managers and team members. This partnership is committed to promoting the common development of the natural science and social science

research fields in universities, and to realize the overall scientific research progress around the research goals and development plans of professors.

Deepening at the practical level: In concrete practice, this management community emphasizes that scientific research managers constantly optimize the management mechanism according to the needs and research direction of the team. At the same time, the research team will also need to regard improving the research quality as a top priority and conduct in-depth and pragmatic exploration. This management mode is actually an in-depth embodiment of the management concept of humanities and social sciences.

The wide application of community concept: This concept of management community is not limited to academia, it has been widely used in every field of modern society. From economic alliances between countries to business cooperation in the business community to study groups in the field of education, the community is designed to meet the common needs and interests of its members through cooperation. This reflects the new connotation and value of the concept of "community" in the contemporary society. Especially in the management field of natural sciences and social sciences, the construction of the community helps to promote interdisciplinary exchanges and cooperation, thus promoting scientific research and academic development.

1.2 The importance of community building

After in-depth analysis and discussion, it is clearly recognized that humanity plays a key role in the integration of natural sciences, social sciences, and management disciplines. This people-oriented management concept is not only the core of the university's scientific research management, but also an important driving force to promote the long-term and orderly development of scientific research. To be specific, building a scientific management community full of humanistic care is crucial to improving the overall quality and efficiency of scientific research work. This importance can be analyzed in detail from these three aspects:

(1) Promote the formation of participatory scientific research management cultural atmosphere

The core goal of building a scientific research management community is to break the traditional gap between scientific research managers and scientific researchers, and to form a team with close cooperation and consistent goals. Such a

community not just simply combines managers and researchers, but requires deep integration in communication, collaboration and responsibility. Such a partnership can significantly enhance the team's sense of collaboration and a sense of belonging. In this system, scientific research managers play a key role. They not only need to pay close attention to the work and needs of researchers, but also actively consult their opinions and suggestions, so as to provide more accurate and effective guidance and support. At the same time, researchers should also be encouraged to actively participate in management decisions to discuss and plan the research development direction and important reform measures of Universities or research institutions. This interactive and participatory management model is conducive to creating a more inclusive and creative cultural atmosphere. In such an environment, the boundaries between managers and researchers become blurred, and they share successes and challenges, which not only improves the quality of research, but also enhances the cohesion and competitiveness of the entire organization. In this way, the research management community not only improves the efficiency and quality of research, but also cultivates a positive and future-oriented research culture.

(2) Expand the thinking of humanistic managers

The field of scientific research is undergoing a change, and the integration of natural science and social science management has injected new ideas into scientific research management. This interdisciplinary management mode not only breaks the rigid thinking in the traditional management, but also repairs the shortcomings of the single thinking mode in the past, and promotes the traditional scientific research concept to a more open and flexible direction. In this scientific research management system integrating humanistic care, the management team and the researchers have established a closer cooperative relationship to face the challenges and problems in the process of scientific research together. This cooperation is not only based on the modern management concept of democracy and efficiency, but also reflects the spirit of mutual support and service between teams. To further optimize the management structure, working groups led by specific leaders can be set up, which promote the division of labor and cooperation within the research team, while also encourage innovation and sharing of resources. This group working mode is conducive to strengthening the communication and coordination among team members, so as to improve the overall work efficiency and

scientific research quality. In addition, such management can attract more researchers to join the research team, which not only expands the thinking vision of research managers, but also enhances their ability to grasp the management details. In general, this interdisciplinary and collaborative scientific research management method is the key to improving the quality of scientific research, which provides fertile soil and strong support for scientific research innovation.

(3) We will make the management of scientific research more democratic

Under the framework of optimizing the quality of scientific research, a core feature of the field of natural science and social science management is the close integration of managers and researchers. This combination is not only systematic, but organic, though the two differ in their duties. In this collaborative system, efficient communication and collaboration channels are established between managers and researchers. This allows managers to have a deeper understanding of the needs of researchers in the research process, and to provide them with timely feedback and suggestions through established feedback mechanisms. Further, this close cooperative relationship promotes the two sides to jointly pursue the goal of "academic university, academic university and academic university". In this process, the mutual understanding and support between managers and researchers not only strengthens the depth and breadth of academic research, but also promotes the long-term and sustainable development of natural and social sciences. In addition, this cooperation mechanism also increases democracy and transparency in research management, thus ensuring that research activities are closer to practical needs, while also promoting innovation and knowledge development. This combination of management and research not only improves the quality of scientific research, but also provides a solid foundation for the overall development of academic circles.

1.3 Community-building Path

In order to improve the quality of scientific research, it is necessary to realize the joint role of natural science, social science and humanities management in promoting the development and progress of scientific research in universities. Collaborative collaboration of these disciplines can provide a diverse pool of knowledge and skills that facilitate innovation and discovery. However, to fully

leverage these strengths requires finding effective ways to coordinate and integrate efforts in these different areas. The current challenge is that individual members in these fields may conflict over personal interests, which may hinder the effective management and implementation of research projects. To address this issue, relying on a single benefit mechanism is insufficient, as it can lead to management deficiencies and inefficiency. In view of this, the scientific research management of our university should take the following measures to promote the effective cooperation among various disciplines:

(1) Strengthen the ideological education of relevant personnel

And in the construction and maintenance of efficient scientific research management system, ideological education plays a vital role. The main players in the system include research administrators, researchers, and university management. In-depth ideological education for them is not only to cultivate collective consciousness and team spirit, but also to implant core values and make them a part of their daily work and decisions. This way of education is crucial to improve their recognition and respect for the value of the scientific research management system. To achieve this goal, we must develop a strong sense of interdependence among team members, advance and advance together, and share achievements and challenges. The establishment of this group consciousness not only enhances the cohesion and collaboration ability of the team, but also provides the basis of the incentive mechanism and the correct guidance. Only when each member is deeply understood and fully integrated into the team, can we build a cohesive and efficient scientific research community. Therefore, when building such a scientific research management community full of humanistic characteristics, the ideological education is particularly important for scientific research management personnel and scientific research workers. They need to be guided to establish a collective overall consciousness and assume the corresponding sense of responsibility. This approach not only protects the overall interests of the research team, but also provides a solid ideological foundation and organizational guarantee for scientific exploration and knowledge innovation. Through such efforts, we can ensure the continuous improvement of the quality of scientific research, so as to promote the improvement of the overall level of scientific research of the university.

(2) Cultivate the sense of responsibility of different subjects

The emphasis on a sense of responsibility within the realm of scientific research management highlights a fundamental principle: that an individual's attitude and moral standards are crucial for enhancing the quality of research. This perspective acknowledges that while individuals have varying levels of ability, a strong sense of responsibility can propel someone to face challenges head-on, fostering an environment where potential can be fully realized. Responsibility, in this context, serves as the foundation of ethical behavior and professional conduct, guiding individuals to not only acknowledge their duties but also to act in a manner that is considerate of the broader impacts on society and their peers.

In collaborative settings, such as research teams, the importance of responsibility cannot be overstated. The collective success and effectiveness of a team hinge on the commitment and accountability of each member. This collective responsibility ensures that the team's objectives are met and that the individual contributions are synergized towards achieving common goals.

For those involved in the management of scientific research, from administrators to researchers themselves, the responsibility entails a broad spectrum of obligations. These range from adhering to ethical standards in research conduct to ensuring the integrity and reliability of scientific outputs. The cultivation of cross-disciplinary coordination and cooperation becomes paramount in this setting. It involves harmonizing the dynamics of power, interest, and responsibility, transcending mere compliance with rules or adherence to formal procedures. This approach requires a deep understanding and integration of responsibilities into the operational and developmental strategies of the institution, particularly within the humanities.

By fostering a culture that prioritizes responsibility, universities can significantly enhance the cooperation between different research domains, streamline management processes, and optimize the organizational structure of research teams. Such a culture not only bolsters the individual's sense of duty but also elevates the overall quality and impact of scientific research. Thus, instilling a robust sense of responsibility in all members of the academic community is not merely about personal development; it is a strategic imperative for advancing the quality of research and contributing to the flourishing of humanistic studies within

the academic institution. This collective ethos of responsibility serves as a catalyst for innovation, integrity, and excellence in the pursuit of knowledge.

(3) Make clear the roles of different subjects

In order to improve the quality of scientific research, it is crucial to build an efficient scientific research management community. The core of this community lies in the clear division of responsibilities and work, especially in the scientific research management system. In this system, the collaboration between research managers and researchers is the key to promoting continuous progress and innovation in research. Their roles must be clear and their responsibilities must be reasonable. In the research management community of natural and social sciences, senior managers of universities or research institutions shoulder the responsibility of strategic decision-making. They lead the direction of research and projects, which is the key to promoting research.

Research managers play the role of bridge and link to ensure the smooth transmission of information, and provide the necessary daily support to ensure the smooth progress of scientific research activities. Researchers focus on academic exploration and knowledge innovation, and occupy a central position in the whole network. On the face of it, there seems to be a "two-agent" relationship between managers and researchers: one side performs a research task and the other side is responsible for guidance and supervision. However, they actually interact and communicate through common goals, finding their responsibilities and obligations in their respective roles. With the in-depth development of humanities and social sciences and the refinement of discipline division, managers and research teams need to have a clear understanding of their respective roles and responsibilities. As key players in scientific research planning, guidance, organization and coordination, managers should be aware of the core role of researchers in promoting discipline innovation and social progress. Only when the roles and responsibilities of both sides are clearly defined and the cooperation is tacit, can the concept of scientific research management community be effectively reflected and implemented in practice, so as to improve the overall quality of scientific research.

2. Establish a system to support the humanistic management paradigm

In order to improve the quality of scientific research, the research points out that the humanistic management paradigm plays an important role in stimulating the

individual's subjective initiative, self-cognition, ideal creativity and independent practice. This management mode not only attaches great importance to the shaping of ideas, but also pays more attention to the practical process, especially the shaping, cohesion and guiding role of culture on the way of thinking.

However, at present, the common problems of scientific research management in universities are to overemphasize quantity rather than quality, attach importance to project declaration but ignore research itself, and favor administrative control rather than real governance. This approach distorts the nature of university research and intensifies the tension between researchers and managers. On the contrary, the humanistic management paradigm is closely related to the characteristics of the contemporary humanistic era, which always takes people as the core, integrates the concepts of "equality, freedom and justice" into the management practice, and realizes the organic combination of humanistic spirit and democratic concept. Therefore, it has become a trend to adopt the humanistic management paradigm in the university scientific research management.

In order to effectively implement the humanistic management paradigm, we must establish the corresponding support system. This includes the development of scientifically sound policies and procedures, providing the necessary resources and training, as well as creating an open and inclusive cultural atmosphere that encourages innovation and critical thinking. At the same time, the emphasis is placed on the career development and personal growth of researchers, and the establishment of a diversified and participatory decision-making process. In this way, universities can better balance administrative management and scientific research freedom, and promote the improvement of scientific research quality.

2.1 Shaping the humanistic environment

The quality of scientific research depends heavily on the quality of the research environment. Both history and reality have shown that those growing in an open and inclusive academic atmosphere tend to do better. Therefore, in scientific research management, especially in the fields of natural sciences and social sciences, universities should focus on creating a dynamic and tolerant academic environment. This environment should encourage scholars to explore and research without worrying of excessive stress of success or failure. In this culture, success is certainly celebrated, but failure is also seen as a valuable opportunity to learn and grow,

especially in the process of conducting original research. At the same time, universities should uphold the concept of "people-oriented" in the practice of humanistic management, and integrate humanistic care into all aspects of scientific research management. This involves not only the implementation of core values such as democracy, fairness and justice, but also how to integrate these values into their daily research activities.

Colleges and universities must strive to build an environment with strong humanistic characteristics, which can strengthen the humanistic spirit of researchers, promote people-oriented team cooperation, and then form the unique competitive advantage of the university. From the perspective of scientific research development, the environment rich in humanistic spirit is a fertile ground for scientific research innovation; From the perspective of management, a good humanistic environment contributes to the establishment of a harmonious relationship between researchers and management team. This atmosphere based on mutual respect and shared responsibility is not only conducive to the further development of scientific research, but also the key factor for the smooth progress of scientific research management.

2.1.1 Emphasize humanistic management and show humanistic care

In order to improve the quality of scientific research, it is necessary to build an academic environment with significant humanistic management characteristics. The core of this environment is to adhere to the people-centered management concept, to provide a solid theoretical support for shaping the humanistic environment. In the traditional scientific organization management, institutions and rules and regulations are often dominant, which regulate behavior but ignore the individual subjective initiative and internal incentive mechanism. This management may lead to multiple problems: first, the managed may be resistance and feel lost initiative at work, which may reduce efficiency; second, it may inhibit innovation and problem solving motivation among team members; and finally, it may affect the overall research quality. Both natural science and social science research are deeply rooted in humanistic thought, emphasizing respect for everyone's thinking and creativity.

Therefore, in the management of social science and natural science in universities, it is very important to adopt humanistic management mode. This model

stimulates the potential of researchers and guides them to identify with and practice humanistic values. For example, in research management and education, the concept of humanistic democracy can be integrated to guide researchers and managers to share these values and to apply them practically. At the same time, scientific research managers should deeply identify with the humanistic values, which are based on their profound moral qualities. Under the guidance of the humanistic management mode, they will cultivate higher moral standards and constantly absorb new management concepts, so as to effectively guide the research and management of social science. In addition, it is also important to enhance the understanding of scientific values, which helps to internalize values such as democracy, equality, freedom, harmony, development, innovation and creation, and then promote the effective development of university research under the humanistic management paradigm.

2.1.2 Promote independent development and advocate democratic management

Universities play a vital role in building a human-centered academic environment, especially in the harmonious integration of the humanities and management fields. In the modern management concept, the individual autonomy and the democratic harmony of the management environment are the key factors. This requires universities to adhere to the principle of independent development and democratic management in the management of social science and natural science research. In this era oriented by humanistic spirit, the research and management mode should deepen humanism and democratic thought, and promote the development of humanized management. This goal can be achieved through the following measures: 1. Strengthen the concept dissemination and practice of humanistic management.: Universities should go beyond promoting humanistic thought only at the theoretical level, but integrate the respect of independent thinking into management practice. Combining traditional management and democratic principles, cultivate an ideological and moral system with both humanistic care and democratic quality. 2. Promoting democratic scientific research governance based on consultation: This governance model emphasizes equality, justice and transparency, and achieves governance goals through mutual coordination among internal members. Compared with the traditional obedient

governance, consultative democratic governance can implement the people-oriented principle and stimulate the enthusiasm of researchers. 3. Establish a scientific and rigorous research review mechanism: build a standardized review system after careful discussion and procedural decision-making, effectively evaluate research results, enhance researchers' trust in the system, and encourage them to participate more actively in scientific research. The system should cover many aspects, such as job assessment, qualification, professional title evaluation and talent incentive, to strengthen the functional role of relevant institutions.

Finally, the principle of democratic management is closely combined with the research practice, discuss the applicability of the principle from the two aspects of theory and practical operation, optimize the problems found in practice, and ensure the effectiveness and practical applicability of the method. In this way, we can ensure that the management principle and the practical research complement each other, and promote the scientific research management of universities towards a more humanized and democratic direction.

2.1.3 Pay attentions to the development of The Times and respect individual differences

In order to improve the quality of scientific research management, especially in the field involving social science, its unique nature, such as regional nature, national nature, and class nature. These characteristics make social sciences different from natural science, requiring a more specific and human-cultural approach to management and research.1. Human culture orientation of scientific research management in universities: In university scientific research management, humanistic management concept should be deeply rooted, which means to follow the principles of "humanities, democracy and equality", starting from understanding, respecting and meeting the needs of researchers. This management mode should not only meet the material and spiritual needs of researchers, but also enhance the cognition of "humanistic" service consciousness.

In this way, university researchers are encouraged to self-educate, self-discipline, self-management, while respecting the differences between different disciplines, so as to better understand and deal with special problems in each research field.2. Organic combination of moral education and management: In the research and management of humanities and social sciences, university

administrators should adhere to the organic combination of moral education and management. This means that moral education is placed in the first place, emphasizing the cultivation of ideological and moral quality and professional ethics of researchers, so as to improve the overall quality of researchers.³ The adoption of personalized management methods: Research managers in universities should adopt personalized management methods, which aims to accurately grasp and respect the personality differences of researchers. By flexibly coping with the characteristics of different individuals, managers can effectively cultivate the self-innovation ability of scientific researchers, so as to improve the comprehensive quality of the entire research team.

In general, the core of these strategies is based on humanistic care, respect and deal with the particularity of social science research, and also emphasize the importance of moral education and personalized management in scientific research management. This integrated and diverse approach helps to create a healthier, more effective, and innovative research environment.

2.1.4 Shape the academic atmosphere and promote the harmonious interpersonal relationship

In order to improve the quality of scientific research, we must pay attention to creating a healthy academic atmosphere, which is the cradle of scientific research and innovation. An environment that freely develops academic ideas and promotes disciplinary communication is indispensable. Establishing an open and inclusive academic environment in universities is one of the key tasks in universities. Such environments encourage the collision and integration of different ideas and ideas. For example, Chen Pingyuan's mention of CAI Yuanpei's contribution in his speech at Peking University is a vivid example. CAI Yuanpei was not only praised for his support for the New Culture Movement and promoting the German Association at Peking University, but more importantly, he advocated the principle of "freedom of thought and inclusiveness", which is the cornerstone of a first-class university.

Around the world, world-class universities have established a free and relaxed academic environment, in which scholars can focus on research without exposure to external interference, especially political factors. History shows remarkable progress in scientific and technological development and innovation in societies that follow scientific norms rather than assessments of political and social

needs. In universities, scientific researchers are the explorers of knowledge and the promoters of social progress. Their unique insights and expertise give them a unique personality in problem cognition and expression. Therefore, in order to promote scientific research work, the management of universities must carefully deal with various interests relationships, not only stimulate the enthusiasm and creativity of researchers, but also ensure the quality and efficiency of scientific research, so as to promote the development of academic research and the overall stability of the university. In organizing and managing scientific research activities, the interests of all parties should be balanced, and the achievements of researchers should be respected, their personality differences and research freedom.

This balance and respect promotes a diverse and open academic culture in which new ideas and innovative approaches can be freely conceived and developed. To achieve this goal, universities should encourage interdisciplinary cooperation, support the diversity of academic exploration, and provide the necessary resources and support for researchers. In addition, it is essential to establish a fair and transparent evaluation system, which ensures the quality of research results and encourages scholars to pursue excellence. Further, universities should foster an environment that embraces differences and encourages critical thinking. Such environments not only promote academic freedom, but also stimulate questions about traditional views and existing knowledge, thus expanding the boundaries of knowledge. Educational institutions must understand that true academic innovation often stems from questioning the status quo and the courage to explore unknown territory. Finally, Universities and universities should also pay attention to the communication and cooperation with other parts of the society. Through collaboration with industry, government departments and NGOs, academic research can be better applied to solve practical problems, and in turn can draw inspiration and insights from social practice. This interaction not only promotes the practical application of scientific research, but also strengthens the connection between academia and society, and enhances the social significance and influence of research.

To sum up, universities play a key role in creating a healthy academic atmosphere. By establishing an open, inclusive and innovative academic environment, universities and universities have not only promoted scientific research

and academic innovation, but also made important contributions to social progress and development.

2.2 Strengthen the organizational structure

In discussing the scientific research and humanistic management of universities, it is first necessary to recognize the core position of the organization. Organizational structure is not only the basic unit of social structure, but also the source of its vitality and creativity. They not only build the skeleton of the society, but also weave various elements together in a systematic way, so as to achieve the established goals, tasks and operation modes, and ensure the efficient completion of the tasks. In the university environment, the success of scientific research and humanistic management depends on a strong and scientifically orderly organizational structure.

This structure not only provides ideological support, but also is a cornerstone of key strategies and decisions. An effective organizational structure can facilitate relevant analysis, control, decision making, evaluation and planning activities to ensure the smooth operation of the entire management system. Undoubtedly, this scientific, orderly and efficient organizational structure will provide solid support for the scientific research and humanistic management of universities, and promote them to higher quality and efficiency. In addition, such a structure can also promote interdisciplinary communication and cooperation, enhance the depth and breadth of research, so as to bring more innovation and breakthrough to the entire academic community.

2.2.1 Improve the construction of scientific research management organization team

The core view of modern management emphasizes that organization is the cornerstone of effective management, especially in Universities and universities. In order to achieve success in scientific research management and improve the research quality, the key is to establish an efficient and efficient management system, which not only helps to promote the paradigm of humanistic management, but also is the core of the improvement of scientific research quality. To this end, the following suggestions are proposed: 1. Transparent and fair approval process: The approval agencies of research projects should ensure the transparency and fairness of the process, and guide researchers to focus on the balance between social and

academic values. At present, the scientific research community generally focuses on the quantity of projects rather than the quality, and ignores the social value of research, especially in linguistics, history and other fields. This bias leads to the preference of research projects focusing on personal economic interests and neglecting research that makes greater contributions to society, thus limiting the overall development of the research field.

2. Enhanced interaction between managers and researchers: It is very important to strengthen the communication and interaction between management and researchers. Maintaining the traditional management mode may lead to a gap between the two, and may even lead to the depression and isolation of the researchers. By promoting the communication between the two sides, a closer cooperative relationship can be established to promote the common development of scientific research management and scientific research activities.

3. Self-improvement and interdisciplinary cooperation: Researchers should constantly improve their abilities and actively look for interdisciplinary or even cross-institutional cooperation opportunities in order to play a greater role in their respective fields. When researchers demonstrate greater professional skills and a broader vision, their key role in research will be enhanced, while also promoting communication and integration between different disciplines, bringing new impetus to scientific research. By implementing these strategies, the quality and efficiency of research management can be effectively improved, thus improving the overall quality of research.

2.2.2 Strengthen the humanistic functions of the organization

In the modern scientific research management, the definition of the organization is far beyond the simple staff hierarchy structure. It covers job assignment, grouping, and collaboration patterns. Especially in universities, an efficient scientific research management plays a vital role. In this way, the management not only promotes the communication and cooperation among the researchers, but also stimulates the research enthusiasm of the team in the field of social science and natural science, enhances the sense of responsibility of the researchers, and enhances the team cohesion of the management department. However, in global research settings, a tendency is often observed to focus on science and engineering over the humanities. This bias leads to an imbalance in resources and attention, thus affecting the coordinated development between

disciplines. Specifically, in the level of internal management, we can see problems such as paying attention to research results while ignoring the research process, the mismatch between publicity and actual input, material incentive is higher than spiritual incentive, and excessive emphasis on applied research while ignoring basic research. In order to effectively implement the humanistic management paradigm, the following improvement measures are necessary: 1. Build a positive organizational environment: by creating a positive working atmosphere, stimulate the subjective initiative of researchers, so as to improve the quality and depth of research. 2. Promote harmonious interpersonal relationships: Establish and maintain effective communication channels between research managers and research team members to create an environment conducive to in-depth research. 3. Emphasize humanistic values: pay attention to and enhance those scientific and technological achievements that reflect humanistic values, and emphasize their importance and influence on social development in practice.

Through these measures, the relevant administrative departments of the university can give full play to their organizational function and encourage researchers to show a more positive, proactive and innovative attitude. This not only promotes the development of the knowledge system in the field of natural science and humanities and social sciences, but also promotes the overall progress of the whole society.

2.2.3 Cultivate the service consciousness of scientific research managers

Service consciousness plays a vital role in scientific research management. It involves putting itself in the position of others, respecting the dignity of each person, and helping others to maximize the value of their lives. The cultivation of this awareness encourages individuals to gradually dilute their attention to their personal interests in the process of helping others, and turn to care more about the needs of others, thus laying the foundation for creating a harmonious working environment. Within the framework of humanistic management, putting people in the center and establishing humanistic and democratic values in the scientific research management structure and team can not only stimulate the enthusiasm of researchers, but also promote them to work more consciously. For scientific research managers, cultivating the awareness of service is one of the

important strategies to maintain the healthy and sustainable development of scientific research activities, and it is also the key to ensure the success of scientific research activities. The priority is to stimulate and reinforce researchers' interest and expertise in their field. If researchers lack a deep understanding of their professional field and just stay on the surface, they may not be able to continue to generate enthusiasm, making research work into a simple professional activity or a means of making money, which is not good for the full investment of scientific research. Therefore, in the daily practice of scientific research management, managers should take the following measures: 1. Pay attention to and cultivate researchers' deep interest in the research field, such as organizing lectures and seminars to promote communication and interaction between researchers and deepen mutual understanding; 2. strengthen ideological and political education, help researchers to serve the society, so as to show higher social value in the work; 3. Research managers should become models, beyond short-term utilitarian thinking, orderly promote humanistic research management, and guide researchers to establish correct values and professional attitudes.

With these measures, research managers and teams are able to create a service-centered work environment that improves the efficiency of their teams and the social impact of their research results.

2.3 Strengthen institutional guarantee

Natural science and social science are important fields to explore the pursuit of human spirit and the transformation of social benefits, and their development has attracted wide attention in all sectors of society. These two areas enhance our understanding of the natural world and social structure through research, while also promoting advances in technology and social policy. However, with the continuous development of these fields, some problems and challenges have also emerged. For example, the utilitarian tendency appears in the project application process, which attaches importance to short-term results while ignoring long-term impact and innovation value; the repetitive problems in the research process indicate the lack of coordination and innovation in research resource allocation and subject selection.

At the same time, the lack of rationality and transparency in the project approval process may lead to the uneven distribution of resources and the neglect

of excellent research projects. In view of these challenges, in order to further promote the healthy development of natural science and social science, the subject application and approval system should be reformed and improved. The establishment of a more scientific, reasonable and transparent management system is the key. This means that more explicit assessment criteria need to encourage research with innovative and long-term value, while reducing repetitive research and ensuring effective use of resources. In addition, the introduction of multiple evaluation mechanisms, such as peer review and public participation, can increase the fairness and transparency of the approval process. Through these measures, not only can improve the quality of research, but also can better serve the long-term development of society and the progress of human knowledge.

2.3.1 Formulate a project application and approval system that emphasizes humanity

Natural science and social science, as the two major fields with deep insight into and reflecting the social reality, are jointly committed to exploring and revealing the truth and the universal truth. This mission gives them an important responsibility to frame their scientific rules and systems. Natural science focuses on the phenomena and laws in nature, while social science focuses on human society and its behavior patterns. They complement each other in the pursuit of knowledge and jointly promote a deeper understanding of the world. First, research in the natural and social sciences should be closely linked to social needs to ensure that research results can be widely used in all aspects of society. This not only promotes the development of scientific knowledge, but also promotes the social progress and the productivity promotion. For example, discovery in natural science can lead to the development of new technologies, while research in social science can help solve social problems and improve the quality of human life.

Additionally, humans and their development and values are central to research in these two fields. In the field of natural science, human needs and well-being are an important driving force for scientific exploration and technological innovation. In the field of social sciences, the study of human society, culture and behavior helps to better understand and improve human living conditions. Finally, considering the core values and objectives of these disciplines, we must deeply understand and closely follow the essence of these disciplines when planning the

research topics and their application and approval mechanisms. This means supporting research projects that aim to address existing or potential social problems, while avoiding proposing topics that are too abstract or idealized. Such research can not only be close to reality, but also produce significant social impact and value in practice. Natural science and social science play an irreplaceable role in the pursuit of knowledge and truth, which is of great significance to promoting the development and progress of human society. Through a deep understanding of the nature of these disciplines, scientific research projects can be better designed and implemented, so as to effectively serve the needs and development of the society.

In order to improve the quality and effectiveness of scientific research, the current application and approval process of scientific research projects needs to carry out a series of reform and optimization. The problems in current practice mainly include that some researchers repeatedly submit approved research proposals in order to successfully apply for projects or get approval quickly by changing their wording. This phenomenon is particularly pronounced in the field of education. At the same time, due to the lack of full understanding of the particularity of natural science and social science projects, some researchers failed to conduct necessary field visits before the application, which led to some topics such as environmental pollution control research. In order to solve these problems, the following reform suggestions are put forward: 1. Implement the dynamic subject management and approval mechanism: to ensure the timeliness and social relevance of the subject. In terms of the subject access mechanism, researchers should be encouraged to pay attention to the hot social issues and improve the guiding and practical value of the research work. 2. Emphasize the social value and humanistic care of the research content: both natural science and social science research should follow the principle of "people-oriented", pay attention to the positive impact on the society, and aim to solve the problems of society and The Times. 3. Implement the principle of differentiated project approval: ensure the rationality of the research team structure and promote the participation and growth of young researchers. At present, many project applicants tend to invite highly qualified experts to improve the project approval rate, but this approach often ignores the potential of less qualified researchers. In order to balance the team structure and stimulate the innovation ability, people with low education and low

professional title should be encouraged to actively participate in the scientific research work, and the academic confidence of young researchers should be cultivated to promote the sustainable development of social science in universities. Through these reforms, we can promote the quality of scientific research to be better promoted, stimulate the innovation potential of scientific researchers, and ensure that scientific research results can better serve the needs of the society.

2.3.2 Establish a management system for scientific research personnel and pay attention to science

In the natural sciences, the evaluation of research results often depends on precise measurement standards, so quantitative management methods perform well in this field. However, with the increasing importance of the humanities and social sciences, the traditional quantitative methods encounter new challenges, especially in the management system of scientific researchers. In order to effectively respond to these challenges, this study puts forward the following in-depth thinking and strategies: 1. Pay full attention to the needs of researchers: When designing the management system, we should not only consider the material welfare of researchers, but also deeply understand their spiritual needs, interests and personality. This is because, as Adam Smith points out, with the enhancement of individual economic ability, so does the pursuit of spiritual life. Therefore, these psychological and social-level shifts should be fully considered when developing management strategies. 2. Implement personalized management methods: In view of the different personality, needs and values of each researcher, managers should develop differentiated management strategies to better adapt to the characteristics of various researchers. 3. Extend the research evaluation cycle in the field of humanities and social sciences: In order to give researchers more time to show the value of their work, managers should extend the evaluation cycle of research results in the field of humanities and social sciences, and show more patience and tolerance. In this way, researchers can conduct more profound exploration, and fully tap and exploit the potential of their research results. 4. Extend the professional life of scientists: Whether in the natural or social sciences, long-term knowledge accumulation is indispensable for major breakthroughs. Humanities and social science research puts more emphasis on the combination of knowledge and experience. Therefore, in order to maximize the potential of researchers, maintain

academic freedom, and promote innovation, a more flexible retirement age to be set for different positions should be considered. The existing international practice shows that the flexible retirement system is extremely beneficial to the long-term development of scientific researchers.

2.3.3 Improve the selection mechanism of high-quality scientific research achievements

In today's scientific research field, it is crucial to ensure a high quality assessment of scientific research results, because it directly affects the career development of researchers. However, translating research results into social value usually takes longer time and more resources, making it a challenge to accurately assess the quality of research results. This challenge has led to uncertainty and deviations from authenticity of some evaluation criteria, leading to a trend: the pursuit of quantity exceeds the emphasis on quality. In order to change this situation and improve the evaluation quality and effect of scientific research results, the following strategies are crucial: 1. Formulate and implement clear evaluation criteria: Clear evaluation criteria can help researchers to more clearly understand and define their research direction.

A comprehensive evaluation system can help researchers to set clear goals in their field of expertise, and to make their research more purposeful and systematic. 2. Motivating researchers: a scientifically rigorous and fair evaluation mechanism can make researchers feel that their work is respected and stimulate their enthusiasm. This mechanism encourages researchers to translate their results into practical applications and to devote themselves to deeper research and exploration. 3. Adhere to high quality standards and diversified evaluation dimensions: a high-level evaluation system is crucial to distinguish excellent research projects. Such standards should go beyond the simple performance appraisal, including the innovation of the results, social benefits and public response. 4. The system of promoting academic masterpieces: This system emphasizes quality rather than quantity, helps to change the current trend of excessive emphasis on quantity, and encourages researchers to improve the quality of research.

In short, the establishment and improvement of a high-quality scientific research results selection mechanism is crucial to improving the research level and stimulating innovative thinking, and also plays a positive role in promoting

the sustainable and healthy development of the field of humanities and social sciences. This not only helps to improve the overall level of research, but also encourages researchers to pay attention to the long-term impact of their research on society, so as to realize the real value of scientific research work.

3. Build the operation mechanism of the humanistic management paradigm

The core of humanistic management lies in emphasizing the key nature of human beings, which reflects the profound humanistic spirit and scientific humanistic view. This management concept advocates respect for the dignity of each individual and advocates equality, freedom and creativity. Such a thought is not only closely linked with the characteristics and development laws of scientific research, but also has far-reaching positive significance for promoting the prosperity and development of scientific research. In order to ensure the effective application of humanities management in the research of humanities and social sciences, efforts must be made in the management system and operation mechanism. Here, "operating mechanisms" can be understood as the interaction relationships between the internal components of the system and how they work. This concept applies not only to natural and artificial systems, but also to the social sciences. Zheng Hangsheng's definition of the word "mechanism" includes three aspects: the first is the interconnection between the components of the elements, namely the structure; the second is the effect in the regular movement of things, namely the function; and finally, the process and principle of displaying function.

Based on these considerations, the operation mechanism of humanistic management can be defined as the sum of its internal functions and operation mode, that is, through the appropriate strategic arrangement to motivate and restraint of the behavior of individuals and groups in the scientific research system. The core goal of humanistic management is to create a good environment for improving the quality of scientific research and promoting the growth of innovation ability through the establishment of a scientific management system. This not only involves improving resource allocation and action control capabilities, but also helps to address the complex relationships between relevant teams and individual practitioners to maximize output efficiency. From the perspective of achieving

research goals, this means that every participant, whether practitioner or administrator, can work happily and efficiently in such an environment.

When deeply discussing the practical application of humanistic management in scientific research, we also need to consider how to integrate it with the existing scientific research system and culture. Scientific research is not only an exploration of knowledge, but also an activity involving complex interpersonal interaction and teamwork. Therefore, effective humanistic management should focus on the interpersonal relationship and organizational culture in the scientific research environment, so as to create a working environment that both respects individual differences and promotes teamwork. In addition, humanistic management also emphasizes individual autonomy and creativity, which is crucial to stimulating the internal motivation and innovation potential of researchers. In the field of scientific research, innovation is the core driving force for development, and innovation often requires a free, open and inclusive environment.

Therefore, humanistic management should not only focus on the realization of results, but also on the process of creating these achievements, including encouraging exploration, tolerance of failure and learning. To achieve these goals, the implementation of humanities management in scientific research institutions requires a meticulous and strategic approach. This includes, but is not limited to, the development of adaptable management policies and procedures to meet the diverse needs and expectations of researchers; the establishment of effective channels of communication, the free flow and sharing of information; and the provision of necessary resources and support for researchers to maximize their innovative potential. Ultimately, by implementing humanistic management in research institutions, an efficient and dynamic working environment can be created. Such an environment can not only promote the quality of scientific research, but also encourage researchers to be more actively involved in the process of innovation and exploration. The successful implementation of humanistic management will be one of the key factors for the continuous progress and prosperity of the scientific research field.

3.1 Principles of organizing the system operation

In order to improve the quality of scientific research, it is necessary to establish an operation mechanism with humanistic management as the core. This

mechanism should be based on the uniqueness of social science and natural science research, and centered on the realization of scientific research goals. The design of the management system, the structure of the departments, the division of functions and the personnel configuration should be closely around the scientific research objectives. By adopting a flat organizational structure, management levels can be reduced, thus shortening the information transmission path and accelerating the decision-making process. Under humanistic management, relevant personnel are concentrated in the same research group, which not only strengthens information exchange, but also helps to make timely and full use of information resources to facilitate rapid discussion and decision-making. In addition, this model also enables research directions to respond flexibly to market changes. Humanistic management emphasizes the clarity of tasks and the clarity of goals, thus promoting teamwork. In this mode, the communication and interaction between team members is particularly important, which encourages the establishment of a good communication platform and atmosphere. For example, in interdisciplinary research projects, experts from different professional backgrounds, such as mathematicians, physicists and biologists, may be required.

Through communication and collaboration, they are able to integrate knowledge in their respective fields to find the best way to solve problems. By establishing diversified research teams, humanistic management promotes the academic exchange of talents in different disciplines and realizes the sharing of knowledge and skills. This will not only help solve complex problems, but also cultivate interdisciplinary talents with innovative ability. In the social sciences, this management approach is particularly effective. For example, when conducting a study, experts in different fields such as psychologists and economists can be invited to participate in the discussion, combined with the in-depth exploration of their expertise in data analysis and statistical models. This interdisciplinary collaboration not only improves the quality and level of research, but also provides more effective and feasible solutions for practical applications. In general, humanistic management promotes innovation and collaboration in the scientific research process, effectively integrates knowledge and skills in different fields, and improves the quality and application value of scientific research results.

In terms of interdisciplinary collaboration, humanities management encourages researchers from different disciplinary backgrounds to participate in the project, thus forming a team with diverse perspectives and expertise. This interdisciplinary collaboration not only broadens the research horizon, but also promotes the integration and innovation of knowledge in different fields. For example, in biomedical research, combining knowledge of computer science, mathematics, and biology can lead to more precise data analysis and more innovative research approaches. In terms of "innovative thinking stimulation", humanistic management attaches great importance to individual creativity and autonomy, and provides an environment for researchers to freely explore and express ideas. This environment not only stimulates the individual's innovative potential, but also helps in the exchange of knowledge and the collision of inspiration within the team. By promoting open exchange of ideas and challenging traditional thinking, humanistic management brings new perspectives and solutions to scientific research.

In addition, humanistic management also shows its advantages in the effective use of resources. Through precise task allocation and reasonable allocation of human resources, each team member can play the maximum role in the field of expertise, and improve the work efficiency of the whole team and the quality of scientific research output. For example, in environmental science research, data collection, analysis, and model building can be carried out more efficiently by gathering chemical, ecology, and geographic information system (GIS) experts. In general, humanities management provides a more flexible, efficient and innovative working environment for scientific research by promoting multidisciplinary integration, stimulating innovative thinking and making efficient use of resources. This not only improves the quality and efficiency of scientific research projects, but also lays a solid foundation for future scientific development. With this management approach, the research team is able to adapt more quickly to changes in technology and markets, while achieving more significant results in innovation and practical applications.

3.2 Scientific research guidance mechanism

In the modern scientific research management, "guidance" is not only the guidance and management of scientific researchers, but also a comprehensive and

meticulous management art. This management method emphasizes stimulating the potential of researchers through humanistic care, ensuring that they choose the right direction of behavior and integrate them into their daily scientific research management work. The key is that research management needs to clearly communicate expectations about their behavior and performance to researchers to create an interactive and mutually understanding work environment. Each researcher has his own personal goals, but the methods and behavioral orientation to achieve these goals vary. Therefore, under the framework of humanistic management, the scientific research management department should actively formulate specific long-term, strategic, annual and quarterly goals for each researcher according to their ability and stage goals.

At the same time, the necessary human, financial and material support should be provided to ensure that researchers are confident in achieving these goals. In addition, the goal setting process should make researchers understand that achieving these goals depends on the collaboration of the organization and following the research management norms, which can enhance their trust in the organization. It is well known that goals are the key to determining the direction of action. To succeed requires not only clear, clear and achievable goals, but also a plan of action. A lack of specific direction of action often leads to wasted efforts. In the management face, the role of scientific research guidance mechanism is crucial. It helps researchers to guide and support their detours, strengthen their confidence and determination, and provide them with the necessary conditions to ensure that they focus on achieving their research goals.

Under the humanistic management paradigm in the field of social sciences and humanities, managers need to correctly evaluate and assess researchers according to the university's research development goals, and encourage them to move forward. Whether it is planning the university's scientific research development strategy or formulating the scientific research tasks of researchers, the guiding mechanism fundamentally shows the "gravity" of researchers, that is, guiding them to make unremitting efforts in the goal and direction of the university's scientific research development. This guidance is based on a clear goal orientation and direction guidance, which reflects the great potential of scientific research management in stimulating the behavior of scientific researchers. By clarifying the

university's scientific research tasks and prospects, the decomposition target system, and the professional title evaluation and employment and scientific research evaluation, scientific research management can effectively guide and promote the scientific research personnel to realize the university's scientific research development plan.

In this process, the core of scientific research management is to create a supportive environment, in which scientific researchers can freely explore, innovate, and achieve the common goals of both the individual and the organization. To this end, scientific research management departments should actively listen to the opinions and needs of scientific researchers, and provide customized career development plans and training opportunities, so as to promote their personal growth and career achievement. In addition, effective research management also includes the establishment of a fair and transparent evaluation system that ensures that their achievements and achievements are recognized and rewarded. This evaluation system not only helps to stimulate the enthusiasm of scientific researchers, but also helps to build a positive working atmosphere and team spirit. At the same time, in order to cope with the increasing challenges and complexities of scientific research, scientific research management departments should encourage interdisciplinary cooperation and teamwork, break down the traditional disciplinary barriers, and promote the exchange and integration of knowledge and skills. In this way, more innovative research projects can be created to broaden the vision of scientific research and improve the quality and influence of scientific research results. Finally, scientific research management should also pay attention to scientific research ethics and social responsibility, to ensure that scientific research activities not only meet academic standards, but also comply with social ethics and legal regulations. This not only helps to protect the interests of the research object and the public, but also is an important factor in building and maintaining the academic reputation.

To sum up, modern scientific research management is not only a process of organization and supervision, but also a comprehensive strategy to comprehensively promote the growth of scientific researchers, stimulate innovation and ensure the quality of scientific research. Through the above multi-dimensional management measures, the overall quality and efficiency of scientific research can

be effectively improved, and a working environment full of challenges, support and encouragement can be created for scientific researchers.

3.3 Main ways to establish the scientific research incentive mechanism

To improve the quality of scientific research, research management need to adopt a comprehensive approach that involves understanding and exploiting the internal motivation and external drivers of researchers. First, the personal interests, career goals and self-fulfilling aspirations should be explored. Understanding these motivations helps to design incentives that not only encourage them to pursue excellence, but also to ensure that their work coincides with their individual career goals. Second, attention should be paid to the external pressures on scientific research work, such as funding constraints, release deadline and the challenges of peer review. These pressures can be mitigated by providing appropriate resource support, time management training, and mental health services.

At the same time, in order to encourage innovation and high-standard research, the management departments should introduce positive guidance forces, such as reward systems, career development opportunities, and public recognition. Moreover, it is equally important to consider the expectations and needs of the research community. This includes promoting interdisciplinary collaboration, establishing resource-sharing platforms, and encouraging knowledge exchange. In this way, the research management department not only supports individual researchers, but also promotes the cooperation and development of the entire research community. To establish an effective incentive mechanism, it is necessary to comprehensively consider the internal motivation, external pressure and positive guidance of researchers, and also pay attention to the overall interests of the community. Such a management strategy will promote the healthy and rapid development of scientific research, thus improving the overall quality of scientific research. It is embodied in the following two points:

(1) Play the incentive role of "competition"

As a key factor to improve the quality of scientific research, competition not only promotes personal growth and social progress, but also plays an important role in setting and realizing clear goals. It not only guides us to tap and use their own potential, but also effectively improves our study and work efficiency.

In the field of humanistic management, the inclusion of competitive mechanisms has been proved to be a wise strategy. Because of the lack of competition, the lack of progress, innovation and breakthrough will be out of the question. In the practice of scientific research management, it has become a key strategy to stimulate the enthusiasm of researchers and optimize the management goal. Effective competition not only promotes goal-oriented management mechanisms, but also promotes healthy competition in the pursuit of common goals.

The primary task of higher education scientific research managers is to build a comprehensive and reasonable target system and guide and promote the effective implementation of scientific research management in universities. In addition, through competition, researchers and managers can not only find their own shortcomings while pursuing personal interests, maintain enthusiasm for learning, accumulate knowledge and cultivate good academic habits, but also change from passive learning to active learning. At the ideological level, this mechanism has enhanced the learning motivation of scientific research managers and researchers, and attaches great importance to the construction of humanistic spirit. From another point of view, the excitation of competition is not spontaneous, but under external guidance and correct dynamic mechanism.

In the humanistic management model, competition becomes an effective incentive tool. In order to make full use of the power of competition, we must first establish a scientific and reasonable competition management mechanism. In the field of natural and social science in higher education, the lack of scientific and reasonable competition mechanism may lead to the lack of external constraints for researchers in the pursuit of scientific research achievements, leading to the chaos of competition order, which is not conducive to the creation of a fair competition environment. Next, it is necessary to establish a competitive guidance mechanism with humanistic care to ensure that researchers participate in scientific research cooperation and competition with integrity and moral norms on the premise of voluntary, justice and equality. Finally, it is very important to build a "mutually beneficial and win-win" cooperation and competition mechanism. While competing with each other, researchers should strengthen the contact and division of labor and cooperation to improve the scientific research ability of the whole team and promote the development of scientific research work.

(2) Give full play to the incentive role of "major projects"

In the current educational and scientific research environment, the participation and performance of universities in major national projects has become an important indicator to evaluate their scientific research strength. In view of this, universities need to focus on the development of scientific research projects, take this as the core, and constantly enhance the cohesion and professional skills of the scientific research team. In addition, gradually increasing the funding for scientific research work is also crucial. Making major breakthroughs in key scientific research projects is the key to promoting the development of scientific research capacity, and the lack of such breakthroughs will severely limit the scientific research potential of universities. In this regard, when managing the research work of social science and natural science, universities should observe and conform to the development trend of The Times, correctly guide the direction of scientific research, and ensure that they can play a leading role in promoting social progress and development. This is not only a question about the choice of research direction, but also a strategic consideration involved. In this context, the departments managing social science and natural science research should adopt the strategy of pooling resources and go all out to promote the cooperation between different disciplines and across disciplines. This strategy will help universities gain an advantage in competing for funding from major national projects. By optimizing resource allocation and stimulating the potential of scientific research cooperation, universities will be more likely to make significant achievements in the field of scientific research, thus making greater contributions to the overall development of the country. To achieve these goals, universities need to take a series of concrete and innovative measures. First of all, it is the key to emphasize the selection and planning of scientific research projects.

Universities should actively select forward-looking and innovative projects, while considering their application potential in solving practical problems. This will not only help to improve the chances of project approval, but also ensure that the research results will have a greater impact on society. Secondly, universities need to strengthen the framework of interdisciplinary research and encourage in-depth cooperation between experts and scholars in different fields. By breaking down the barriers between disciplines and promoting the exchange and integration of knowledge, more innovative ideas can be stimulated, and the comprehensiveness

and depth of research can be enhanced. For example, combining the rigorous methodology of natural science with the broad vision of social science can solve problems at a more diverse level. In addition, it is also critical to strengthen the construction of scientific research team and talent training. Universities should attract and retain high-level researchers by providing a high-quality research environment, adequate financial support and reasonable incentive mechanisms. At the same time, universities should play a more important role in training young scientific research talents, especially in cultivating the new generation of scientists with innovative ability and with an international perspective.

Finally, universities should also strengthen the cooperation with the government, industries and other research institutions, and establish a multi-party win-win cooperation mechanism. Through such cooperation, universities can not only obtain more resource support, but also enhance the application and practicality of research, so that their results are more in line with the needs of the society and the market.

To sum up, through these strategies and measures, universities can make greater achievements in the field of scientific research, and contribute more strength to the national scientific and technological innovation and social development.

Recommendations

1. Build the effect evaluation based on humanistic management

In the construction and implementation process of scientific research management in universities, it is a complex and important task to adopt the humanistic management mode. This involves not only building profound ideas, but also creating a positive working environment, establishing a solid support system, establishing an effective implementation mechanism, and deploying a comprehensive oversight system. In particular, it is worth emphasizing that the scientific and strict evaluation system plays a core role in this process. It not only ensures the accurate implementation and efficient effectiveness of humanistic management, but also plays a positive role in promoting the multi-dimensional development of the whole research management system. From the perspective of management, such an evaluation system can help managers to accurately evaluate

the effect of the current management measures, and provide an important basis for the adjustment and optimization of the subsequent management strategies.

For researchers, an efficient evaluation system not only demonstrates the principles of "fairness" and "justice" management, but also makes researchers feel that their work and efforts are fully respected. This respect has greatly increased their enthusiasm and motivation to participate in scientific research. Therefore, for universities, it is of great and long-term significance to evaluate the effect of humanistic management mode. This approach can not only promote the development of more humane and fair research work, but also significantly improve the quality of research results and improve the overall morale of the research team. Through such management and evaluation, universities can become a model for other educational institutions to improve the quality of scientific research.

1.1 Establish the evaluation principle of humanistic management effect

Under the background of the rapidly developing economic environment and the increasingly popular concept of "people-oriented" management, the scientific research management of universities is facing profound internal and external environment changes. This change urges us to rethink and reform the traditional supervision and evaluation system of university scientific research. The existing mechanism is insufficient in improving the efficiency and sustainable development of scientific research management. Therefore, it is urgent to build a more modern evaluation system, which should be based on the "people-oriented" management concept, committed to improving the management efficiency and the quality of scientific research, and encouraging researchers to realize the optimal allocation of resources. In constructing this new evaluation mechanism, the following core principles should be followed: 1. Pay equal attention to science and humanities: The evaluation system should encourage researchers to give full play to their maximum potential and promote humanistic and democratic values. Managers should pay more attention to consider problems from the perspective of people, absorb extensive opinions, and implement humanistic care. At the same time, we should attach importance to the quality of scientific research, respect knowledge and innovation, ensure fairness and justice, and ensure public supervision. 2. Coordination between control and prevention and good governance: An efficient humanistic

management system needs to combine the advantages of scientific management to anticipate and prevent future challenges.

Managers need to have foresight, from the promotion of humanistic management concepts to the integration of these concepts into daily management practices, to the establishment of a sound feedback mechanism, it should be a process of continuous progress.³ Combine points and aspects, reasonable compatibility: scientific research management in universities should not only pay attention to the details of specific problems, but also coordinate the overall strategy. While respecting each unique research result, attention should be paid to human nature and emotion, especially when evaluating the research results of humanities and social sciences, and emphasizing its diversity and value, because these results reflect the researchers' in-depth thinking and summary of relevant issues. Through such a management and evaluation system, we can not only balance strict regulations and humanistic management concepts, but also reduce conflicts and enhance cohesion within the organization. Finally, this management system with "quality first" and "perception and reason coexistence" will better reflect the management vitality and benefits of universities in the field of social science and natural science, and provide valuable reference for other universities to improve the quality of scientific research.

1.2 Establish a humanistic management effect evaluation system

In order to ensure the efficient and high-quality development of higher education institutions in the field of scientific research management, the key is to establish an accurate and comprehensive management evaluation system. The importance of this evaluation system lies not only in its ability to quantify and evaluate the current management effectiveness, but also in its ability to provide a clear direction for future reform and optimization. Therefore, the design and implementation of a scientific, reasonable and far-sighted evaluation system is of inestimable value for promoting the continuous progress and systematic development of university scientific research. This assessment system ensures that current research management not only meets current needs, but also provides flexibility and adaptability to future changes and opportunities. Through such a system, institutions can set benchmarks for their global peers and provide valuable

experience and strategies to jointly improve the quality and efficiency of scientific research in global higher education.

1.2.1 Characteristics of humanistic management effect

In today's higher education and scientific research system, the integrated management of natural science and social science becomes the key. Effective management includes not only daily operations, but also the full implementation of systematic engineering. In order to improve the quality of scientific research in universities, the scientific research management system should be examined in an all-round way and pay attention to the following core fields:

1. Remarkable achievements of scientific research management: In the management of natural science and social science, universities should highlight the effectiveness of their scientific research management. This is not only reflected in improving the overall level of scientific research management, but also should promote the orderly progress of scientific research work, to ensure the efficient implementation of scientific research activities on the right track.
2. Significant improvement of scientific research management efficiency: an efficient management mode should improve the work efficiency of managers and the enthusiasm and creativity of scientific researchers. This means that the management needs to define its responsibilities, give full play to its functions, and go beyond traditional constraints to make the subject approval and evaluation process more flexible and in line with actual needs.
3. Far-reaching influence of scientific research management and control: The management mode should ensure the systematic improvement of the research level, and achieve the goals in the construction of knowledge system, the strengthening of professional ability and local knowledge innovation. In addition, it should also promote the status of China's basic technology in the international competition, accelerate the promotion, and promote the harmonious relationship between managers and researchers, and enhance the value and status of scientific research in the social and natural fields. In general, these fields are not only related to the scientific research activities themselves, but also reflect the role and influence of scientific research management in the overall development strategy of universities. Efficient management is not only an improvement of the current situation, but also an investment and planning for the future development.

1.2.2 Establish the effectiveness standards for humanistic management

First of all, it is emphasized that the efficiency of scientific research management activities not only depends on the fluency of management and the degree of goal realization, but also takes into account the innovation and adaptability of management activities in practice. In other words, the effectiveness of scientific research management is not only a matter of planning and implementation, but also a matter of how to flexibly respond to the changes and challenges of scientific research environment. Secondly, a more comprehensive evaluation system is proposed, including not only the optimization of the management process and the quality of the management output, but also the contribution of management activities to promoting academic innovation, enhancing teamwork and improving the efficiency of scientific research. This means that we should examine and evaluate the effectiveness of scientific research management from multiple perspectives.

Furthermore, it is recommended to introduce continuous improvement and feedback mechanisms at all stages of management. This includes adding innovative elements during the design and planning phase of management strategies, focusing on team member participation and feedback during the implementation and supervision phase, and conducting in-depth analysis of management outcomes during the evaluation and feedback phase to ensure that research management activities adapt to the changing academic environment. Finally, it emphasizes the humanistic care of scientific research management, and believes that effective scientific research management is not only the completion of tasks, but also the attention to the development of scientific research team and personal growth, and promotes the overall progress of the academic circle.

(1) The "humanities" paradigm in scientific research management emphasizes the importance of scientific research personnel autonomy and personal development. The core of this management mode is to create conditions for researchers to take the initiative to respond to the changes of The Times and the needs of society, and to stimulate their enthusiasm in social science and natural science research. To evaluate the effectiveness of this model, the key is to test whether researchers have enough time and freedom to engage in in-depth and creative research work.

(2) The organic combination of humanistic care and scientific rigor should be reflected in the practice of "humanistic" scientific research management. This integration is not only the core of the concept of "humanistic" management, but also the key to the success of social science and natural science research. Therefore, the management system, the achievement evaluation system and the project approval process of scientific researchers should properly balance the humanistic care and scientific rigor. This balance constitutes an important indicator to evaluate the management efficiency of "humanistic" scientific research.

(3) In the practical operation of "humanistic" management paradigm, ensuring the humanization of scientific research evaluation system is the key to establish effective management standards. The ideal evaluation system should cover multiple evaluation subjects, scientific and differentiated evaluation criteria, and diversified evaluation methods. Especially in the field of humanities and social science research, the evaluation system should not only reflect the warmth of human nature, but also maintain professionalism and objectivity, so as to ensure the quality and innovation of scientific research work.

1.2.3 Feedback mechanism for the effectiveness of humanistic management

In the modern and efficient management system, the organization and management of information flow are the core elements. These information not only originates from daily production and business activities, but also form efficient information flow through careful analysis and integration, so as to provide an important basis for management decisions. The key is to build a comprehensive management information system (MIS) and an agile feedback mechanism. This fast and accurate feedback ability is the core of measuring the vitality of a management system or department, reflecting the importance of the feedback principle in modern management theory. In order to improve the effectiveness of scientific research management in universities, we should focus on building and improving the information feedback mechanism. This mechanism can start from many aspects: First, improve the research management network, including the establishment of an anonymous or real-name research advice delivery system, as well as an interactive communication platform, to promote the communication between researchers and managers.

Secondly, full-time personnel are assigned to collect and analyze all kinds of opinions and suggestions to ensure that the information is timely processed and feedback. Then, a special evaluation team is set up to regularly evaluate the research results and communicate with researchers and all sectors of society to improve the social influence and application value of the research. In addition, social media and online tools, such as Weibo, Renren, QQ, etc., are used to establish a network feedback platform to widely absorb social opinions and suggestions on management work. At the same time, strengthen the cooperation and experience exchange between universities, learn from the innovative practices of other universities, and adjust according to the needs to adapt to the situation of the university. Further, an information feedback incentive mechanism should be set up to encourage researchers and all sectors of society to actively participate in the discussion of the management mode, and to regularly organize and evaluate these opinions and suggestions. Finally, paid feedback strategies are implemented to provide material rewards to individuals or groups that provide valuable information, enhance social awareness of the importance of information feedback, and stimulate more participation and contributions.

Through these measures, we can not only improve the transparency and interactivity of management, but also significantly improve the overall efficiency and effectiveness of scientific research management of universities. Further, in order to ensure the effective implementation of these measures and maximize the effectiveness of scientific research management, Universities and universities should adopt the following strategies: 1. Regular training and education: Universities and universities should regularly to management and research personnel training, focusing on the use of management information system, the importance of information feedback mechanism, and how to effectively communicate and feedback. This not only improves the ability of individuals, but also promotes the overall management level. 2. Technical support and innovation: Invest in advanced information technology and software to support efficient information management and communication. At the same time, encourage technological innovation, such as the development of independent research management software, to meet specific management needs and challenges. 3. Interdisciplinary cooperation: Encourage cooperation between different disciplines to solve complex research problems

through interdisciplinary teams. Such collaborations can not only broaden the research perspective, but also promote the integration and application of knowledge in different fields. 4. Strengthen quality control: While improving efficiency, universities should also pay attention to the control of scientific research quality.

Through the establishment of strict quality audit process and standards, to ensure the high quality of scientific research results.5. International cooperation and exchange: actively participate in international scientific research cooperation and academic exchanges, and absorb international advanced scientific research management experience and practice. Such an international perspective not only increases the global influence of scientific research, but also promotes cultural and knowledge exchanges.6. Continuous evaluation and optimization: Regular evaluation and optimization of the scientific research management process and strategies to ensure that the management measures keep pace with The Times and meet the actual needs of scientific research development.

Through these comprehensive and comprehensive measures, universities can continuously improve the quality and efficiency of their scientific research management, so as to stand out in the fierce academic competition and provide more scientific achievements and innovative ideas for the society.

2. Assess the effect of scientific and humanistic management

The five basic links of management activities are —— plan, organization, command, coordination and control, which provide the basic framework for scientific research management in universities. On this basis, it is particularly important to evaluate the performance of the management effectiveness. This evaluation not only measures the performance of individual employees, but also is a test of the effectiveness of managers in setting and implementing evaluation methods. In higher education institutions, whether in the field of natural science or social science research, the effect evaluation of scientific research management departments should be considered comprehensively in order to promote the healthy and orderly development of scientific research work. To achieve this goal, it is essential to establish a reasonable and effective evaluation mechanism. This mechanism should promote the scientific research management department to continuously optimize the management system and improve the evaluation system. In the specific implementation process, the application of key performance indicators (KPIs) is

widely considered as an effective method. By breaking down performance into multiple key indicators and comparing it with employee performance, the KPI performance evaluation method successfully integrates management by objectives and Pareto principles. These key indicators should conform to the SMART criteria: specific (Specific), measurable (Measurable), attainable (Achievable), relevant (Relevant), and time-limited (Time-bound). In the research management of humanities and social sciences, performance evaluation should also adhere to certain principles to ensure the effectiveness of scientific research management and promote the implementation of strategies and measures in the field of humanities. To evaluate and operate the management effectiveness of standardized humanities field, the following three aspects:

- (1) Set up a special agency to evaluate the effect of scientific research management.

In order to provide a reference for other higher education institutions in improving the quality of scientific research, we propose a more detailed and comprehensive framework to explore the effectiveness of research management in the humanities and social sciences. In our model, we highlight the importance of the three core evaluation indicators. First, in order to ensure that the management effect is scientific and reasonable, we advocate the establishment of an evaluation agency with unique characteristics. The institution should be established on two basic principles: independence and professionalism. Independence ensures the proper distance between the institution and the research management and researchers, thus ensuring the objectivity and impartiality of the assessment activities. Professionalism means that institutions will focus on the evaluation of the effectiveness of humanities and social science management, guided by the objective monitoring and optimization of scientific research management practices.

Further, to play an active role in the management of humanistic research in universities, we need to carry out some basic work. The first is the recruitment and training of professional evaluation talents, which ensure the professionalism and diversity of the evaluation team through the establishment of a strict selection mechanism. Secondly, we need to clarify and refine the evaluation indicators, which should not only cover the independent development of researchers, but also include the key aspects of comprehensive quality control with people-oriented

management and scientific management as the core. Third, build and improve the operation system to standardize and effectively promote the entire evaluation process, while emphasizing the humanistic characteristics and improving the efficiency of systematic operation. Finally, we should ensure the standardization of the evaluation process and the continuous improvement of the method, attach importance to the improvement of practical benefits, reduce the burden of the evaluated units and individuals, and enhance the overall coordination and sharing of results.

Through such a series of efforts, we can promote the orderly and efficient development of higher education institutions in scientific research management, and provide valuable experience and reference for the whole academic community.

(2) Strictly follow the principles of effect evaluation

When constructing the management mode of improving the quality of scientific research in modern universities, the role of the performance evaluation system should not be underestimated. This system must be based on four core principles to ensure its scientific nature and effectiveness. The first principle is innovation, which is the key to progress in scientific research. As Jiang Zemin emphasized, innovation is the core of national development. At the same time, as Belner said in the *Social Functions of Science*, the value of scientific research lies in the quality of innovation rather than the quantity of innovation. Therefore, the evaluation system should value and motivate the real innovation results. Secondly, the scientific and reasonable guiding principle is crucial. Assessment policies should avoid being constrained by researchers, but rather to stimulate their potential, promote research innovation, and meet teaching and social needs. In addition, the evaluation criteria should integrate all perspectives to ensure that the direction of scientific research activities is correct. The third principle is openness and fairness. A scientific and effective evaluation system is the key to ensure the healthy operation of the cultural model of scientific research managers. The evaluation process must be fair and just, and the management department should adopt modern information technology means to ensure the transparency and credibility of the activities. The introduction of blind evaluation system and information disclosure mechanism can improve the fairness of evaluation and create a healthy competitive environment.

Finally, moderate stratification considering discipline characteristics is as important as the principle of easy operation. Performance evaluation should take into account the research characteristics of humanities and social sciences and natural sciences, and implement appropriate stratification system, which should avoid too complicated and not too simplified.

Different types of evaluation mechanisms should be implemented for different disciplines to ensure the scientific and rational evaluation. To sum up, only when the performance evaluation system of universities integrates the four principles, can we ensure that it can truly evaluate and motivate the innovation ability of researchers, promote the healthy development of scientific research in universities, and provide a reference for improving the quality of scientific research in other universities.

(3) Correctly handle the difficulty of effect evaluation

In order to improve the quality of scientific research in universities, this paper discusses the core elements of scientific research management from the perspective of relationship philosophy. Relational philosophy emphasizes the interconnection and dependence of all things, which has important implications for scientific research management in universities: scientific research is not only an academic activity, but also a complex system closely connected with other departments of the university. This means that scientific research management involves not only the academic research itself, but also includes the interaction with teaching, administration, student affairs and other aspects. Therefore, when evaluating the effect of scientific research management in universities, the multiple factors and their interactions within the university should be fully considered. This evaluation method is conducive to a comprehensive understanding of the actual impact of scientific research management, so as to more accurately locate the problems and put forward suggestions for improvement. Especially when dealing with the key issues in scientific research management, such as resource allocation, policy formulation, talent training, etc., it is necessary to comprehensively consider the various internal elements and external environment of the university. In short, examining the scientific research management in universities from the perspective of relationship philosophy can not only enhance our understanding of the complexity of scientific research activities, but also provide a useful reference for improving the

quality of scientific research in other universities. Through this comprehensive and systematic evaluation and management method, universities can more effectively promote the development of academic research and achieve higher quality scientific research results.

According to the Higher Education Law, the core goal of higher education is to cultivate advanced professionals with innovative ability and practical skills. This will not only promote the development of science, technology and culture, but also make important contributions to the socialist modernization drive. In the context of market economy, many universities have begun to pay attention to scientific research work, aiming to improve the professional skills of teachers through the innovation of scientific research results. This trend is not only reflected in the incentive mechanisms and career development strategies, but also reflected in the individual reputation and recognition of teachers. However, the difference of university teachers in scientific research ability is very obvious. Some teachers perform well in teaching, but their achievements in scientific research may not be significant. Therefore, when evaluating the effectiveness of teacher management, it must be treated differently according to the specific needs of different positions. For teachers who are mainly responsible for basic and public curriculum teaching, their main responsibilities and contributions should be considered, and their expectations for their scientific research participation should be appropriately reduced during the evaluation. On the contrary, for teachers who undertake both scientific research and teaching tasks, more attention should be paid to their scientific research achievements and professional level, and their teaching burden should be appropriately reduced, so as to achieve a balance between high-quality teaching and high-level scientific research. Through this hierarchical evaluation and differentiated management, not only can better follow the spirit of the education law, but also help the healthy growth of all kinds of talents and improve the overall education quality of Universities and universities, providing a valuable reference for other higher education institutions to improve the quality of scientific research.

Future Research

The level of scientific research is an important symbol to measure the wisdom, cultural accomplishment and spiritual outlook of a country and a nation. The strength of a country is not only reflected in its economic, scientific and technological and military aspects, but more importantly, in its cultural strength, including the humanities and social science research with international standards, national characteristics and characteristics of The Times. The attraction and influence of culture are an important part of national soft power. Since the founding of the People's Republic of China, especially after the reform and opening up, with the great attention and support of the Party and the state, universities in China have made remarkable achievements in scientific research, and made significant contributions to the prosperity of scientific research, national economic and social development, cultural prosperity and talent training.

However, there are some problems in the current scientific research management. It is too inclined to adopt management models suitable for natural science, such as the application and management of research projects over the deep management of project research; focuses too much on the quantity over the quality of research projects; and focuses more on the publication of scientific research results than its academic value. Such a management mode belongs to the modern management paradigm in the sense of "paradigm", which is mainly reflected in the "scientific" management concept, the "rigidity" of management system and the "utilitarianism" of scientific research evaluation. This management mode leads to the widespread academic utility of university research, which urges researchers to pay more attention to quantity rather than quality, resulting in university research to largely become low-level repetition, low-level repetition, lack of original and innovative high-quality academic works. In view of this, we believe that the current paradigm of scientific research management in universities ignores the internal characteristics and diversity of scientific research, and does not conform to the academic development law and characteristics of scientific research itself, thus hindering the progress of scientific research in universities.

Therefore, it is urgent to establish a scientific research management paradigm in line with the law of scientific research, fundamentally solve the problems brought by the existing management mode, gradually eliminate the disadvantages caused by

this management mode, and provide reference and guidance for other universities to improve the quality of scientific research. This is not only the need of the development of scientific research in universities, but also the key to improve the overall scientific research level and cultural strength of the country. This study aims to explore a new way to improve the quality of scientific research in universities, deeply analyze the domestic and foreign literature, and propose a comprehensive perspective on scientific research management.

We believe that the scientific research management in universities should not be limited to the quantitative evaluation of the results, but should deeply explore the innovation of scientific research and the role of creators in the scientific research process. This involves a full range of attention from the generators of empirical data to the ideological, cultural and spiritual aspects behind scientific research activities. This study emphasizes that in addition to focusing on the outcomes and implementation of research activities, we should also have a deep understanding of the motivation, goals, meanings and values of researchers. To this end, we propose a new management paradigm —— "humanistic management", which adapts to the inherent characteristics and diversity of scientific research and follows the law of natural development of scientific research. This management method can effectively solve many problems in the current management of university scientific research. Our research shows that the current scientific research management in universities mainly focuses on quantitative indicators, such as the number of papers, project funds, etc., and this management of instrumental rationality ignores human value and humanistic care.

We propose establishing a people-oriented management paradigm from the perspective of respecting, understanding, motivating and developing researchers. This includes three aspects: first, at the concept level, adopt the management concepts of "rigid and soft", "control and guide compatibility", "implicit combination" and "quantity and quality"; second, at the system level, integrate humanistic management concepts into the scientific research management system, establish a perfect guarantee, operation and evaluation mechanism; finally, at the operation level, establish the scientific research management community, formulate the evaluation principles of form and substance, prevention and governance, overall and detail, pay attention to the cultivation of third-party evaluation force. Humanistic management

is a kind of people-centered management mode, which emphasizes internal self-discipline, stimulates individual potential and creativity, and regards scientific research as a creative cultural activity. This management mode can effectively transcend the traditional quantitative and utilitarian management, show the profound human nature and cultural implication, and provide a new perspective and method for the improvement of the quality of scientific research in universities.

It aims to explore the new paradigm of university scientific research management. Although this research is only a preliminary exploration in the field of scientific research management, it marks an important step. As the author, I know that this work is far from perfect, but scientific progress always begins with the exploration of the unknown. Each preliminary research has laid the foundation for the continuous maturity and improvement of scientific research management in universities in China. Fortunately, the scientific research work in Universities and universities is increasingly attracting the attention of the party and the country. The country is actively playing the key role of scientific researchers in solving major theoretical and practical problems, and is paying more and more attention to the management and evaluation of scientific research achievements. This has brought new opportunities and challenges to the field of scientific research management, and also provided rich resources and broad vision for future research. Although this paper is only a small part of many studies, it provides a new thinking and direction for the transformation and upgrading of the scientific research management mode in universities. Through such efforts, we can better promote the overall quality and efficiency of scientific research in Chinese universities, and contribute to the development of national science and technology.

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Appendices

Appendix A

List of Specialists and Letters of Specialists Invitation
for IOC Verification



Ref.No. MHESI 0643.14/ 1176

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

28 September 2023

RE: Invitation to validate research instrument

Dear Professor Dr. Yu Wenwu

Miss Chen Ting is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. She is undertaking research entitle "Guideline on Management to Promote the Quality of Scientific Research at Guiyang University"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th



Ref.No. MHESI 0643.14/1174

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

28 September 2023

RE: Invitation to validate research instrument

Dear Professor Dr. Huang Wei

Miss Chen Ting is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. She is undertaking research entitle "Guideline on Management to Promote the Quality of Scientific Research at Guiyang University"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th



Ref.No. MHESI 0643.14/ 1175

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

28 September 2023

RE: Invitation to validate research instrument

Dear Professor Dr. Huang Zhulan

Miss Chen Ting is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. She is undertaking research entitle "Guideline on Management to Promote the Quality of Scientific Research at Guiyang University"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

Appendix B
Official Letter



Ref.No. MHESI 0643.14/179

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

8 February 2024

Subject: Request for Cooperation in Data Collection

Dear Guiyang University

This is to certify that Miss Chen Ting is a Ph.D. student in Philosophy Program, Faculty of Education, Bansomdejchaopraya Rajabhat University. She is conducting research entitled "Guideline on Management to Promote the Quality of Scientific Research at Guiyang University" under the supervision of Assoc. Prof. Dr. Niran Suthinirandon as major advisor and Asst. Prof. Dr. Kulsirin Aphiratvoradej and Asst. Prof. Dr. Nonnathi Dulyadaweessid as co-advisor. her contact information is as follows: telephone number 0623329201, email 34545474@qq.com

In this regard, the student researcher has to collect data from lecturers using questionnaire and interview. The students will subsequently coordinate with you and provide more detail on this matter.

Accordingly, I would like to kindly request for your permission to allow this student researcher to collect data for academic purposes. Your cooperation will be highly appreciated.

Yours sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Vice Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

Appendix C
Research Instrument

Basic personal information

This part is mainly about your basic information. The personal information involved in the questionnaire appears anonymously. Please read it carefully and mark "" in front of the corresponding options

1. Your gender

Male female

2.: Your age

Under 29 years old 30-44 45-59 over 60 years old

3. The highest degree

Bachelor degree Master Doctor Other

4,: Engaged in the work

Scientific research management post scientific research teaching
 teaching and research

5.: Title

Advanced vice-senior intermediate junior

6.: Serving

PhD supervisor Master supervisor others

7. The discipline

Natural science Social science

Scientific management of the "five only" recognition degree

This part is about your view on the "five only" of scientific management of scientific research management. When reading these options, please use your recent research activities as a reference. Of the following options, 5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Rigid management and management mode rigidity: The management mode is often too rigid to adapt to diverse research needs and methods, thus affecting innovation and collaboration.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Pursue research results while ignoring the research process: In scientific research, the pursuit of results often leads to the neglect of the research process, including methods, discussion and practice, which may weaken the depth and quality of research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Assessment is based on quantity without focusing on quality of results: academic assessment often focuses on quantity as the main criterion, which may lead to shallow research and publishing rather than focusing on profound academic value.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Research policies neglect humanistic care: research policies usually favor natural science and ignore the importance of social science.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Focusing on the development of Universities while ignoring individual development:	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Universities tend to focus on improving the overall research level, but sometimes ignore the growth and needs of individual researchers.	
Pursue the quantity of results while ignoring academic value: too much emphasis on the quantity of research results may lead to a decline in quality and a neglect of academic value.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
The evaluation index system of "science and technology": the evaluation system tends to adopt the standards of science and engineering, not fully considering the characteristics of other scientific research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Management scientific research: applying engineering management thinking to the scientific research field may not be applicable, because the two have different research methods and values.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Recognition of scientific research management concept

This part is about your survey of scientific research management concepts. When you read these options, please refer to the recent scientific research activities. For the following options, 5= "strongly agree" / "very important"; 4= "agree" / "important"; 3= "general" / "not sure"; 2= "disagree" / "not important"; 1= "strongly disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Emphasize scientific management, but ignore the importance of humanistic care.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Conduct rigid mechanical management of scientific researchers and research project results.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Lack of people-oriented scientific research management concept.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
It emphasizes the core of people, puts researchers in the center of research management, realizes the realization of research development goals, and regards meeting the self-realization needs of researchers as the primary task, and respects and encourages the dedication and innovation of researchers.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Focusing on the university as the center, taking the quality and quantity of scientific research	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
projects as the goal of improving the status of the university, and continuously improving the task requirements of scientific researchers.	
It mainly relies on institutional control and economic incentives.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Management should be considered as a service that emphasizes providing excellence.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Advocate personal charm, pay attention to empirical management.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
We will encourage the cultivation of outstanding achievements and eradicate improper scientific research practices.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Through scientific research management, humanities and social science research is promoted to reflect the spiritual values of universities, and promote the integration of science and culture and humanistic culture.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Scientific research management and operation mechanism and system

This part is your view on the operation mechanism of scientific research management. When reading these options, please use your recent research activities as a reference. Of the following options, 5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Perfect scientific research reward mechanism / system	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Scientific evaluation mechanism / system of scientific research achievements	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Human nature of scientific research performance appraisal mechanism / system	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
A fair and just scientific research evaluation system has been established	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Financial management of scientific research funds is reasonable	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
The relevant management system of the scientific research process has been improved	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Management mode of scientific research personnel

This part is your view on the way scientific researchers manage their personnel. When reading these options, please use your recent research activities as a reference. Of the following options, 5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
The scientific research atmosphere is relaxed, and the management is people-oriented.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Arrange scientific research responsibilities in strict accordance with scientific research policies, and conduct regular review.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Complete the scientific research tasks within the specified time, pay equal attention to rewards and punishments, and pay attention to incentives.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Provide a scientific research platform for scientific researchers to support scientific research work.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Researchers are encouraged to conduct their own research without multitasking or time constraints.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Scientific research project management

This part is your view on the management style of scientific research projects. When reading these options, please use your recent research activities as a reference. Of the following options, 5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Pay attention to the importance of project declaration, but also to pay close attention to the project research process.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Emphasize the quality of project research and encourage the output of high-quality results.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Value the results of the project research, but also do not ignore the importance of the project research process.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Provide appropriate financial support and supporting resources to improve the quality of project research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Strictly implement the rules and regulations, and punish those who violate the regulations accordingly.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Advocate personalized research and emphasize the nature of scientific research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Equal focus on major project research and general project research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Scientific research assessment and evaluation

This part is your view on the scientific research assessment and evaluation. When reading these options, please use your recent research activities as a reference. Of the following options, 5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "very disagree" / "very unimportant"), please note the options and answers.

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
Scorcore according to scientific research projects, achievements and awards.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Scientific research assessment tends to be eager for quick success and instant benefits, and the number of achievements is the main standard to evaluate the performance of scientific research personnel.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Introduce the representative work system, and focus on the quality of the evaluation results.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Encourage scientific researchers to grow up independently, advocate patient accumulation, and concentrate on research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Focus on the output of scientific research achievements, but should not ignore the cultivation of scientific	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Questionnaire topic	5= "very agree" / "very important"; 4= "agree" / "important"; 3= "general" / "uncertain"; 2= "disagree" / "unimportant"; 1= "strongly disagree" / "very unimportant")
research talents.	
Score according to the relevant assessment standards, and implement the corresponding corrective measures for those who fail to meet the standards.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Highlight the people-oriented orientation, to avoid too much bondage.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Follow the law of scientific research and implement differentiated assessment.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Not too paranoid "only scientific" thinking, should conform to the essential law of scientific research.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
Establish sound research performance files as the evaluation basis for annual evaluation of researchers, professional and technical position promotion and project recommendation.	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

This is the end of the questionnaire survey, hard work, thank you again! If you have any suggestions and requirements, please write them below:

Appendix D

The Results of the Quality Analysis of Research Instruments

1. Although most of the Guiyang university staff is satisfied with the current management mode, but some calls for increased flexibility and adaptability, especially in scientific research projects pay more attention to the importance of methodology, in order to improve the overall quality of scientific research, shows that management may need to reconsider the evaluation system to balance the attention of results and research process.
2. At present, the academic assessment of Guiyang University puts too much emphasis on quantity rather than quality, which may lead researchers to pay more attention to output and reduce the overall quality of scientific research. It is suggested that the university readjust the assessment standards and emphasize high-quality research, which may need to change the evaluation system, recognize the research quality and provide more in-depth research support.
3. The majority of respondents supported research policies, arguing that the natural and social sciences should be balanced, but some pointed out the lack of policies in humanistic care and called for more emphasis on comprehensive scientific management in future policy formulation.
4. The results of the school management survey show that most of the staff of Guiyang University are satisfied with the overall development, but about 17.5% believe that individual needs are ignored, and suggested that the management balance the overall and individual development, have a deeper understanding of the specific needs, and follow the "five only" principle of scientific management.
5. The survey results show that most staff believe that excessive pursuit of the quantity of research results may lead to the decline of academic quality. In contrast to the current "five only" principle of scientific research management, they emphasize that more attention should be paid to the quality of academic research rather than the quantity.
6. About 54.7% of the faculty and staff of Guiyang University believe that the academic evaluation system is comprehensive enough and is not excessively biased to science and engineering, 19.3% are not satisfied that it is too focused on science and engineering, and 26.0% hold a neutral attitude, emphasizing that the evaluation system should consider the needs of different disciplines and be further integrated and improved to improve the quality and fairness of scientific research.

7. Most of the faculty members of Guiyang University support the application of engineering management thinking in the field of scientific research. The survey results show that about 78.6% of the participants hold positive views. It is suggested that the university should deeply explore and implement them, and pay attention to the opinions of a few people who hold negative opinions to comprehensively improve the scientific research management methods.

8. Universities and universities in the 21st century education to cultivate talents and scientific research task, but the management mode deviation cause research problems, the current research management did not meet expectations, reward mechanism recognition is low, need to adjust the evaluation system, set up different mechanism, strengthen scientific research ethics education reform, in order to improve the quality of scientific research and promote the development of academic ecological.

9. Researchers are generally faced with strict management, high work pressure, excessive emphasis on output and ignoring quality in quantitative evaluation, and lack of autonomy and innovation support. At the same time, insufficient resources and excessive task time limit of research platforms become key issues, so measures need to be taken to improve the management system to stimulate the innovation potential of researchers.

10. The faculty and staff are highly satisfied with the project application and research process, but they are dissatisfied with the research quality, the achievement output, the implementation of regulations and other aspects. The university needs to strengthen incentive measures and resource allocation strategies to promote the personalized development of scientific research, so as to improve the overall research environment and the quality of the results.

11. Through the survey found that many problems in the process of improving scientific research quality, mainly focus on scientific research project management, appraisal system and performance file system, in order to solve these problems put forward the optimization evaluation mechanism, differentiation assessment, incentive system reform, scientific researchers development support, fair and transparent management system, scientific research performance file optimization and people-oriented cultural construction and other seven promotion guide, in order to realize the quality of scientific research achievements and researchers overall development of double ascension.

12. School scientific research quality improvement survey reveals the rigid management, research policy to natural science, individual development is neglected, suggest that flexible management, balance scientific research policy, pay attention to individual researchers development and establish feedback mechanism to achieve more reasonable and humanized scientific research management, to promote the scientific research quality improvement and academic environment.

13. There is a phenomenon of "emphasizing application rather than research" in the management of scientific research in universities. The survey shows that 53.2% of respondents agreed, emphasizing the need to balance project application and in-depth research, improve the quality of scientific research, avoid excessive emphasis on management process and formalized procedures, and really pay attention to the essence and core of scientific exploration.

14. At present, there is a phenomenon of "emphasizing results while neglecting process" in the scientific research management of our school. The survey shows that 49.1% of respondents support this situation. The reasons of the problem may include the deviation of evaluation system, uneven distribution of resources, and excessive pursuit of scientific research results. In order to improve the quality of scientific research, it is necessary to deeply analyze the causes and develop effective strategies to focus on the research process, ethics, methodology and teamwork. Research evaluation focuses on short-term quantitative results causes researchers to pay attention to quick effect and ignore the process, which affects the depth and quality of research. In order to avoid the trend of utilitarianism, it is necessary to reform the evaluation system based on "absolute quantification", rebalance the importance of "result" and "process", and promote the comprehensive and healthy development of the scientific research field.

15. At present, our scientific research environment academic problems, mainly from excessive rational scientific research management mode, especially the emphasis of digital index, in order to improve the quality of scientific research, need to review and adjust the system, reduce the excessive reliance on digital indicators, promote academic innovation and scientific research integrity culture, in order to realize the balance of resource allocation and the healthy development of academia.

16. Universities play a key role in social structure, and their contribution to education and scientific research cannot be ignored. In order to improve the quality of scientific research, the university management system should strictly follow national norms, emphasize clear hierarchy and efficient administrative network, and clarify the roles in scientific research management to prevent excessive involvement in scientific research activities to ensure the development of academic freedom and innovative thinking.

Appendix E
Certificate of English



English Language Proficiency Level Descriptors: Common European Framework of Reference for Languages (CEFR)

A1	<ul style="list-style-type: none"> Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.
A2	<ul style="list-style-type: none"> Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in care of immediate need.
B1	<ul style="list-style-type: none"> Can understand the main points of clear standard input on familiar matters regularly encountered in school, leisure, etc. Can deal with most situations likely to arise while travelling in an area where the language is spoken. Can produce simple connected text on topics that are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
B2	<ul style="list-style-type: none"> Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
C1	<ul style="list-style-type: none"> Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express ideas fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organizational patterns, connectors and cohesive devices.
C2	<ul style="list-style-type: none"> Can understand with ease virtually everything heard or read. Can summarize information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in the most complex situations.

Source: Common European Framework of Reference for Languages: Learning, teaching, assessment (www.coe.int)

BSRU-TEP Criteria

CEFR Level	BSRU-TEP
A1	1 - 20
A2	21 - 40
B1	41 - 60
B2	61 - 80
C1	81 - 100
C2	101 - 120

No.

Office of International Affairs and
ASEAN Network

Appendix F

The Document for Acceptance Research



มหาวิทยาลัยมหจุฬาลงกรณราชวิทยาลัย

วิทยาเขตนครศรีธรรมราช

๓/๓ ม.๕ ต.มะม่วงสองต้น อ.เมือง จ.นครศรีธรรมราช ๘๐๐๐๐

โทร. ๐๗๕-๓๕๒๘๘๘ โทรสาร ๐๗๕-๓๕๕๘๖๒

อว.๘๐๒๗ / ๐๑๕

๑๕ กุมภาพันธ์ ๒๕๖๗

เรื่อง รับรองการลงบทความวิจัยเพื่อตีพิมพ์ในวารสารมหาจุฬานาครทรรศน์

เรียน นางเงิน ถึง

ตามที่ นางเงิน ถึง และรองศาสตราจารย์ ดร.นิรันดร์ สุธิ์นิรันดร์, ผู้ช่วยศาสตราจารย์ ดร.นนท์ณิธิ ดุลยทวีสิทธิ์ และผู้ช่วยศาสตราจารย์ ดร.กุลสิรินทร์ อภิรัตน์วรเดช ได้ส่งบทความวิจัยเรื่อง “แนวปฏิบัติการบริหารจัดการเพื่อส่งเสริมคุณภาพการวิจัยทางวิทยาศาสตร์ที่มหาวิทยาลัยกุยหยาง” เพื่อพิจารณาตีพิมพ์ในวารสารมหาจุฬานาครทรรศน์ มหาวิทยาลัยมหจุฬาลงกรณราชวิทยาลัย วิทยาเขตนครศรีธรรมราช ซึ่งได้รับการคัดเลือกเข้าสู่ฐานข้อมูล ของศูนย์ดัชนีการอ้างอิงวารสารไทย (ศูนย์ TCI) ได้ถูกจัดกลุ่มคุณภาพวารสารประจำปี พ.ศ.๒๕๖๒ ให้เป็น วารสารที่มีคุณภาพกลุ่มที่ ๒ (TCI ฐาน ๒) และอยู่ในฐานข้อมูล TCI จนถึง ๓๑ ธันวาคม ๒๕๖๗ โดยจะดำเนินการจัดพิมพ์ในฉบับต่อไปตามระยะเวลาที่ได้กำหนดไว้ และวารสารมหาจุฬานาครทรรศน์ได้รับบทความวิจัยของท่านเป็นที่เรียบร้อยแล้ว

ในการนี้ วารสารมหาจุฬานาครทรรศน์ มหาวิทยาลัยมหจุฬาลงกรณราชวิทยาลัย วิทยาเขตนครศรีธรรมราช ขอรับรองว่าบทความของท่านได้ผ่านตอบรับเพื่อพิจารณาบทความตีพิมพ์เผยแพร่ในปีที่ ๑๑ ฉบับที่ ๓ (มีนาคม ๒๕๖๗) นี้ ซึ่งภายหลังจากนี้บทความจะผ่านการตรวจสอบความถูกต้องทางวิชาการ โดยกองบรรณาธิการวารสารฯ และผู้ทรงคุณวุฒิต่อไป

จึงเรียนมาเพื่อโปรดทราบและดำเนินการต่อไป

เรียนมาด้วยความเคารพ

๒/๗๖๓๓

(นางสาวปุกญาดา จงละเอียด)

บรรณาธิการวารสารมหาจุฬานาครทรรศน์

มหาวิทยาลัยมหจุฬาลงกรณราชวิทยาลัย วิทยาเขตนครศรีธรรมราช

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