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Exploring the Research Culture in Public Universities in Shanxi, China: Basis for Developing a Research Management Program

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Abstract

This study explores the research culture in public universities in Shanxi, China, aiming to identify challenges and opportunities for enhancing research management. It focuses on governance, support systems, values, and engagement within these institutions. Using a qualitative approach, the research involved interviews with faculty and staff from three Shanxi universities, with thematic analysis guiding data interpretation. Findings reveal significant variations in governance structures, resource allocation, and faculty involvement in shaping research agendas. Some departments have strong leadership and adequate resources, while others face bureaucratic hurdles, limited funding, and a lack of interdepartmental collaboration. The study emphasizes the roles of leadership, support systems, and collaborative engagement in building a robust research culture. It recommends establishing more transparent and inclusive governance, improving administrative support, and encouraging interdisciplinary collaborations to strengthen research culture in these universities.

Keywords: research culture, public universities, Shanxi China, governance, support systems, interdisciplinary collaboration, faculty engagement, leadership, administrative support

INTRODUCTION

In the rapidly evolving global landscape, universities have become critical hubs for scientific research, innovation, and socio-economic development. Public universities, particularly in China, are tasked with generating knowledge that contributes to both academic advancement and national growth. Recognizing the strategic importance of research and development (R&D), the Chinese government has implemented policies and allocated substantial financial resources to enhance the research capabilities of its public universities. These initiatives include funding for national research projects, the establishment of state key laboratories, and support for basic research, among others (Liu & Hu, 2020; Zhang, 2022). Such investments are designed to foster a robust scientific research culture that not only meets national objectives but also elevates China's position in the global academic community. In response to these policy directives, the Chinese government has imposed higher expectations on the research functions of universities. The 2020 "Double First-class"; initiative, issued by the Ministry of Education, the Ministry of Finance, and the National Development and Reform Commission, requires numerous traditional universities to transition into application-oriented institutions (Ministry of Education of the People's Republic of China, 2020). Additionally, the 14th Central Committee of the Communist Party of China (CPC) emphasized the importance of developing scientific and technological talents during its 2024 Plenary Session (Central Committee of the CPC,2024). These policy shifts reflect a broader governmental strategy to integrate scientific research with national development goals, necessitating a transformation in the research culture of Chinese public universities.

Research culture, defined as the shared values, practices, and behaviors that guide research activities within an institution, plays a pivotal role in the successful transformation of universities (Moran, 2020). A strong research culture is instrumental in fostering innovation, ensuring research integrity, and promoting

effective governance. Qiu et al. (2023) assert that a well-established research culture provides guidance, fosters cohesion, and standardizes practices, thereby enhancing the overall quality and impact of scientific research within institutions. However, the challenge of integrating a nationally advocated research culture into the unique institutional environments of individual universities remains significant. The process of aligning institutional practices with broader national goals is complex and underexplored, particularly in the context of Chinese public universities.

Despite the acknowledged importance of research culture, there is a dearth of empirical studies focusing on its development within Chinese public universities. This gap in the literature underscores the need for research that critically examines the current state of research culture in these institutions, identifies the key factors influencing its development and proposes strategies to enhance it. Addressing these challenges is essential for overcoming the obstacles that hinder the cultivation of a robust research culture, which is crucial for the continued growth and transformation of Chinese public universities. This study, therefore, aims to analyze the research culture at three universities in Shanxi, China, as a case study to provide insights into the broader challenges and opportunities faced by Chinese public universities during this transformative period.

Statement of the Problem. The purpose of this research is to optimize and enhance the scientific research culture of Chinese public universities by aligning with the research culture framework advocated by the Chinese government. The study seeks to identify management strategies that can foster a robust research culture, improve research performance, and support the integration of effective governance, sustainability, and inclusivity within the university's research environment. Faculty and staff perspectives will be central to this investigation.

To achieve these objectives, the following research questions were proposed:

1. What is the status of the research culture in Chinese public universities in terms of:
   1.1 Governance and Management;
   1.2 Support Systems;
   1.3 Value and Impact; and,
   1.4 Individual and collaborative engagement?

2. What factors that can help or hinder a strong research culture in the university?

3. Based from the findings, what research management program can be recommended to enhance the research culture in the university?

Theoretical Framework. This study is grounded in Edgar Schein's Organizational Culture Theory, which offers a comprehensive framework for understanding how culture is formed, sustained, and transformed within organizations. Schein's theory is particularly relevant to the exploration of research culture in Chinese public universities, as it provides insights into the complex layers of organizational culture that influence the behaviors, practices, and perceptions of university faculty and staff. According to Schein (2010), organizational culture operates on three distinct levels: artifacts, espoused values, and underlying assumptions.

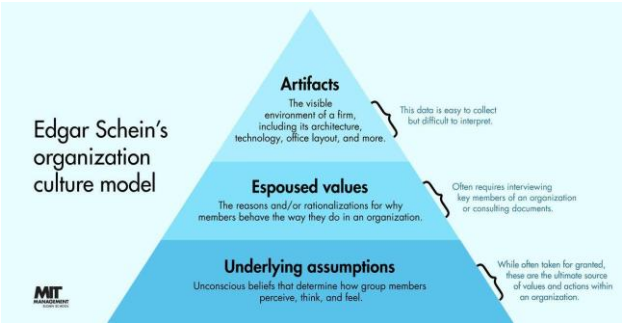

Figure 1
Theoretical Underpinning Based on Edgar Schein's Organizational Culture Model (2010)
**Source: https://www.cyprus-ceo.com/9342/take-a-skillsbased-approach-to-culture-change/*

Artifacts represent the visible elements of an organization's culture, including the physical environment, technology, and observable behaviors. Espoused values refer to the stated norms, beliefs, and values that an organization claims to uphold. These values often manifest in

policies, mission statements, and strategic goals. Underlying assumptions, the deepest layer of Schein's model, are the unconscious beliefs and perceptions that members of the organization take for granted.

In applying "Schein's Organizational Culture Theory" to this study, the research aims to optimize and enhance the scientific research culture in Chinese public universities by exploring the perspectives of faculty and staff. The study will examine the visible manifestations of research culture, such as the physical and digital environments where research activities occur, the tools and technologies used, and the formal practices observed in research governance and management. Understanding these artifacts will provide a foundation for assessing how well the university's research culture aligns with its stated goals and national policies. The research will also explore the espoused values of the university, focusing on how faculty and staff perceive the university's commitment to research governance, support systems, and the broader impact of research. By comparing these espoused values with the lived experiences of faculty and staff, the study can identify gaps or alignments between what the university says it values and what is actually practiced. A critical part of the study will involve uncovering the underlying assumptions that drive the behavior and attitudes of faculty and staff towards research. These assumptions, often unconscious, will be explored through in-depth interviews and focus groups, aiming to reveal the deeply held beliefs about the role of research in the university, the expectations of researchers, and the perceived barriers to or enablers of a strong research culture. Understanding these underlying assumptions will be key to developing management strategies that are not only effective but also culturally congruent with the institution's deeper values.

Conceptual Framework. The conceptual framework for this study seeks to identify both the factors that support and hinder its development. At the core of this framework is the Status of Research Culture, which is shaped by four critical components: Governance and Management, Support Systems, Value and Impact, and Individual and Collaborative Engagement. These components are considered essential in shaping a conducive research environment within academic institutions. The framework also incorporates Factors Helping and Factors Hindering Research Culture. These factors influence each of the four components and determine the overall health of the research culture. Positive factors may include strong leadership, adequate funding, and a culture of collaboration, while hindering factors may involve bureaucratic challenges, insufficient support systems, or a lack of academic freedom.

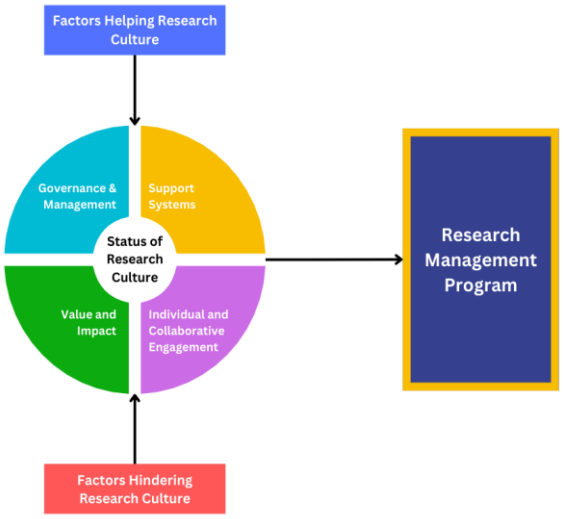

Figure 2
Conceptual Illustration and Interplay of Research Culture Variables

As shown in Figure 2, the culmination of this analysis leads to the development of a Recommended Research Management Program, which is based on the findings related to the status of research culture. The recommended program aims to address the hindrances and capitalize on the supportive factors identified in the study, thereby improving the overall research culture in Chinese public universities.

Scope and Delimitation. The study is delimited by several factors that shape its focus and methodology. First, by selecting only three public universities, the study limits the

generalizability of its findings. While these institutions are among Shanxi Province's leading research universities, the results may not fully represent the diversity of research cultures across all Chinese public universities. Additionally, the study focuses exclusively on the perspectives of faculty and staff, which means that insights from other stakeholders, such as students, external research partners, or policymakers, are not included.

Furthermore, the study is delimited by its qualitative approach, which relies on interviews and thematic analysis to understand the complex dynamics of research culture. This method allows for in-depth exploration but may limit the ability to quantify the impact of specific cultural factors. The scope is also limited to the exploration of current research culture without extending to the longitudinal impact of any proposed changes or interventions.

Finally, the study primarily focuses on research culture within the context of these universities; internal environments and does not extensively explore external influences such as governmental policies or global academic trends, except insofar as they are reflected in the perceptions of the faculty and staff. This delimitation ensures a focused analysis but also narrows the scope of the study's conclusions. By confining the research to these specific universities and respondent groups, the study aims to provide a detailed and context-specific understanding of research culture in some of Shanxi Province's most prestigious public universities, offering insights that may inform future strategies for enhancing research practices and outcomes.

Significance of the Study. Firstly, university administrators will benefit from this study as the findings will provide valuable insights into how governance and management practices can be optimized to better support research activities. This knowledge will enable administrators to develop and implement more effective policies and strategies that align with the institution's goals and enhance overall research productivity and impact. The Study's outcomes can also lead to improved support systems for faculty members. This includes better access to resources, professional development opportunities, and recognition programs. As a result, they will experience a more conducive environment for conducting research, fostering innovation, and achieving academic excellence. For administrative staffs, the study may highlight areas where their work can be more effectively integrated into the research process, leading to enhanced collaboration with faculty and improved operational efficiency in supporting research activities. For policy makers, the findings can aid them in developing efficient policies and frameworks that encourage innovation, collaboration, and the sustainable growth of research activities within higher education institutions. Lastly, this study will serve as a reference for future researchers interested in exploring research culture, governance, and management in higher education institutions. It can provide a theoretical and empirical foundation for further investigations, enabling scholars to expand upon the findings and propose new strategies for strengthening institutional research environments.

LITERATURES

Research Culture Overview. According to Brew et al. (2019), research culture is integral to the functioning of higher education institutions, influencing the behaviors of researchers and the overall research output. A strong research culture fosters an environment where creativity, critical thinking, and innovation can thrive, leading to the production of high-quality, impactful research. It is characterized by a shared commitment to ethical research practices, collaboration, continuous learning, and the pursuit of excellence in research. With this, the importance of research culture in higher education cannot be overstated. It serves as the foundation for developing researchers' skills, fostering interdisciplinary collaboration, and driving the institution's research agenda (Bennett; Jessani, 2020). A positive research culture not only enhances the quality of research but also contributes to the professional development of faculty and staff, supports the institution's strategic goals, and

enhances its reputation in the academic community. Moreover, it plays a critical role in attracting and retaining talented researchers, securing research funding, and ensuring that research outcomes are relevant and beneficial to society (Clegg, 2020).

The role of research culture in academic institutions extends beyond the boundaries of the university itself; it is a critical component of national development. According to McAlpine and Amundsen (2021), a robust research culture within universities is essential for fostering innovation, driving economic growth, and improving the overall quality of life. It enables the generation of new knowledge, the development of cutting-edge technologies, and the formulation of evidence-based policies that address national priorities. Research culture also plays a pivotal role in shaping the research agendas of academic institutions, aligning them with national development goals. Governments often rely on universities to contribute in solving complex societal issues, such as public health, environmental sustainability, and economic development (Hazelkorn, 2020). In this context, a strong research culture not only enhances the university's capacity to generate high-impact research but also ensures that research activities are aligned with national and global challenges.

In the context of Chinese public universities, The Chinese government has invested heavily in the research and development (R&D) sector, recognizing that a strong research culture within its universities is essential for achieving its ambitious goals. According to Zhao et al. (2022), research culture in Chinese public universities is shaped by a combination of traditional academic values and the government's emphasis on innovation and technological advancement. The relevance of research culture in Chinese public universities is underscored by the government's policies aimed at enhancing research output and quality. For instance, the "Double First-Class" initiative, introduced by the Chinese Ministry of Education, aims to develop world-class universities and disciplines, which necessitates a strong and supportive research culture (Ministry of Education, 2020). Moreover, research culture in Chinese public universities is influenced by the need to balance academic freedom with state-driven research agendas. As noted by Li and Xie (2021), Chinese universities are often under pressure to produce research that directly contributes to national development goals, such as technological innovation and economic modernization.

Conceptual Literatures. To explore the major concepts of the study, the following conceptual literatures were pooled to support in understanding their use and application in the study: (1) Governance and Management in University Research Culture, (2) Support Systems in Research Culture, (3) Individual and Collaborative Engagement in Research, and (4) Individual and Collaborative Engagement in Research.

Governance and management within universities play a crucial role in shaping and sustaining a positive research culture. As defined by Deem et al. (2020), governance in higher education refers to the frameworks and processes that guide decision-making, policy implementation, and resource allocation within an institution. These elements are critical in establishing a research culture that aligns with the institution's goals and values, ensuring that research activities are conducted with integrity and are supported by clear and consistent policies. Effective management complements governance by operationalizing the strategies and policies set forth by university leadership. According to Chen and Liu (2021), strong management practices, including transparent communication, accountability, and responsive leadership, are essential in fostering a positive research culture. On the other hand, support systems within universities, such as financial support, access to cutting-edge technology and facilities, administrative support, and opportunities for professional development, are integral to the success of research activities. According to Parker et al. (2020), the availability of robust support systems is directly correlated with the success and sustainability of research programs. Researchers who have access to adequate resources are more likely to produce

high-quality research, secure external funding, and contribute to the institution's reputation as a leader in research. Professional development is another critical component of support systems in research culture. Continuous learning and skill development opportunities, such as workshops, conferences, and mentorship programs, are essential for researchers to stay current with advancements in their fields and to develop new competencies (Darling-Hammond et al., 2021).

The value and impact of research within academic institutions are often defined by the extent to which research contributes to knowledge creation, solves societal problems, and enhances the institution's reputation. According to Hicks et al. (2021), measuring the value and impact of research requires a multidimensional approach that considers both quantitative metrics, such as citation counts and grant income, and qualitative outcomes, such as policy influence and community engagement. By effectively communicating the value of their research, universities can secure ongoing support and funding, attract top talent, and strengthen their partnerships with industry and other research institutions (Bornmann & Haunschild, 2020). Lastly, both individual and collaborative efforts are crucial for research productivity in academic institutions. While individual research allows for deep specialization and the pursuit of personal academic interests, collaborative research enables the pooling of diverse expertise, resources, and perspectives, leading to more comprehensive and innovative outcomes (Aboelela et al., 2021). Collaboration is particularly important in addressing complex, interdisciplinary research questions that require input from multiple fields and disciplines. Collaborative research also fosters a culture of teamwork and shared responsibility, which can enhance the quality of research outputs and increase the likelihood of successful project completion (D'Este & Patel, 2019). However, despite the benefits of collaboration, several barriers can hinder effective collaboration in academic research. These barriers include disciplinary silos, which can limit communication and knowledge sharing between researchers from different fields; competition for funding and recognition, which can discourage collaboration; and logistical challenges, such as coordinating schedules and managing collaborative projects across different institutions (Bozeman et al., 2019). According to Vallas and Kleinman (2021), universities can promote collaboration by creating interdisciplinary research centers, providing incentives for collaborative work, and offering training in collaborative skills, such as project management and team dynamics.

Research Culture in China: An Overview. Research culture in Chinese public universities has evolved significantly over the past few decades, reflecting the country's broader ambitions to become a global leader in science and technology. The research culture in these institutions is shaped by a combination of traditional academic values, the influence of Confucian educational philosophy, and the strategic goals set by the Chinese government (Li, 2021). Historically, Chinese universities have placed a strong emphasis on education, with research playing a secondary role. However, in recent years, there has been a concerted effort to enhance the research capabilities of these institutions, aligning them more closely with global standards of academic excellence (Zhou & Leydesdorff, 2019).

One of the defining characteristics of the research culture in Chinese public universities is the hierarchical structure that governs academic activities. Senior faculty members and administrators typically hold significant influence over research agendas, which can limit the autonomy of junior researchers and constrain the diversity of research topics (Chen & Li, 2020). Despite these challenges, there is a growing recognition of the need to foster a more inclusive and dynamic research environment, where collaboration, innovation, and academic freedom are encouraged. This shift is particularly evident in the increasing number of interdisciplinary research projects and international collaborations involving Chinese universities (Wang & Chen, 2022). The emphasis on research excellence in Chinese public universities is also reflected in the significant

investments made in research infrastructure and resources. The Chinese government has prioritized the development of state-of-the-art research facilities, particularly in key areas such as artificial intelligence, biotechnology, and renewable energy (Yang, 2021).

These investments have not only enhanced the capacity of Chinese universities to conduct cutting-edge research but have also helped to attract top talent from around the world. As a result, Chinese public universities are increasingly being recognized as important contributors to global scientific knowledge (Huang et al., 2020).

Developing a robust research culture in Chinese public universities is not without its challenges. One of the primary obstacles is the tension between the government's top-down approach to research management and the need for greater academic freedom and flexibility at the institutional level. The Chinese government plays a central role in setting research priorities and allocating resources, which can lead to a focus on short-term, high- impact projects that align with national goals, at the expense of basic research and long-term scientific inquiry (Zhou, 2021). This approach can also create pressure on researchers to produce results that meet government expectations, potentially compromising the integrity and independence of academic research (Liang & Wang, 2020).

Another significant challenge is the lack of a well-established research support system within many Chinese universities. While there has been substantial investment in physical infrastructure, the development of administrative and professional support services has lagged behind (Chen, 2020). Researchers often face bureaucratic hurdles in securing funding, managing projects, and disseminating their findings, which can impede the overall effectiveness of the research process. Furthermore, the emphasis on quantitative metrics, such as publication counts and citation indices, as measures of research success has led to concerns about the quality and originality of research outputs (Jiang, 2019).

Despite these challenges, there are numerous opportunities for enhancing the research culture in Chinese public universities. The growing trend towards internationalization presents a unique opportunity for Chinese universities to collaborate with leading institutions worldwide, share best practices, and adopt innovative approaches to research (Yang, 2020). Additionally, the increasing recognition of the importance of interdisciplinary research offers an opportunity to break down silos within Chinese universities and encourage collaboration across different fields of study. By embracing these opportunities, Chinese public universities can continue to strengthen their research culture and contribute to the academic community.

The Chinese government's policies have had a profound impact on the development of research culture in higher education institutions. One of the most significant policy initiatives is the "Double First-Class" initiative, launched in 2017, which aims to develop a group of world-class universities and disciplines in China (Ministry of Education, 2020). This initiative has led to increased funding for research activities, enhanced support for international collaborations, and a greater emphasis on research excellence across Chinese universities (Zhao & Wang, 2021). However, the implementation of this policy has also highlighted some of the challenges associated with a top-down approach to research management.

For example, the focus on achieving quick, high-impact results to meet the targets set by the "Double First-Class" initiative has, in some cases, led to a culture of competition rather than collaboration among universities (Liu, 2021). This competitive environment can create pressure on researchers to prioritize quantity over quality, potentially undermining the long-term sustainability of the research culture in Chinese universities. Moreover, the emphasis on global rankings and metrics can lead to an over-reliance on Western models of academic success, which may not always align with the unique cultural and institutional contexts of Chinese higher education (Wang & Zhao, 2022).

Despite these challenges, Chinese government policies have also provided important opportunities for the development of research culture in higher education institutions. For instance, the "Belt and Road" initiative has opened up new avenues for international research collaborations, particularly with universities in developing countries (Chen & Liu, 2021). These collaborations have not only expanded the global reach of Chinese universities but have also contributed to the diversification of research agendas and the promotion of knowledge exchange across different regions. Additionally, government policies aimed at encouraging innovation and entrepreneurship within universities have helped to bridge the gap between academic research and industry, leading to more practical applications of research findings (Liang & Zhang, 2020).

The literature on research culture in Chinese public universities reveals a complex landscape, shaped by a combination of government policies, institutional practices, and cultural factors. While there are significant challenges in developing a robust research culture, there are also numerous opportunities for growth and innovation. The impact of Chinese government policies on research culture is profound, offering both opportunities and challenges for higher education institutions. Case studies of prominent Chinese universities demonstrate the potential for creating a vibrant and sustainable research culture, highlighting the importance of strategic planning, interdisciplinary collaboration, and international partnerships. As Chinese universities continue to evolve, they will play an increasingly important role in the global academic community, contributing to the advancement of knowledge and the development of new technologies.

METHODOLOGY

Research Design. This study employed a qualitative research design to explore the intricacies of research culture within Chinese public universities. A qualitative approach is particularly suitable for this study as it allows for an in-depth understanding of the values, norms, practices, and challenges that define research culture in this context (Creswell & Poth, 2018). The study used a case study methodology, focusing on multiple public universities in China to capture a comprehensive view of how research culture is developed and sustained across different institutions. Case studies are effective in exploring complex phenomena within their real-life context, making them ideal for this type of research (Yin, 2018). Through interviews, focus groups, and document analysis, the study seeks to provide rich, descriptive data that will illuminate the characteristics and dynamics of research culture in these universities.

Context and Participants. This study was conducted in three public universities located in Shanxi Province, China: Shanxi University in Taiyuan, Taiyuan University of Technology, and Jinzhong University. These institutions were selected due to their strong emphasis on research activities and their notable contributions to various fields, making them ideal settings for exploring the dynamics of research culture in Chinese higher education. Each of these universities plays a significant role in the region's academic landscape and reflects the Chinese government's strategic priorities for advancing scientific research.

A purposive sampling approach was used to select 15 participants consisting of nine faculty members and six administrative staff members (three faculty and two administrative staff from each university). Faculty members were selected based on the following criteria: (1) Must be full-time faculty engaged in research activities within their institution; (2) Should have at least three years of research experience in

their current university to ensure familiarity with the institution's research culture; (3) Must have published research in peer-reviewed journals, presented at academic conferences, or secured research funding, indicating active research involvement, and (4) Must be from different academic disciplines (STEM and non-STEM) to capture diverse perspectives on research culture.

While administrative staff were chosen based on the following requirements: (1) Must have worked in departments related to research administration, funding allocation, or research policy implementation (e.g., research offices, grant management, academic affairs), (2) Should have at least two years of experience in a research-support role to ensure knowledge of administrative processes affecting research culture, and (3) Must have direct involvement in facilitating research funding, compliance, or institutional research policies, ensuring relevant insights into university research management. Distribution of respondents across the 3 universities is detailed in Table 1.

Table 1
Distribution of Respondents

University	Respondents		Total
	Faculty	Staff	
Shanxi University	3	2	5
Taiyuan University of Technology	3	2	5
Jinzhong University	3	2	5
Total:			15

This diverse participant group ensured a comprehensive exploration of research culture from multiple perspectives – those who conducted research (faculty) and those who have provided administrative support (staff). By including representatives from different academic disciplines and administrative roles, the study aimed to present a holistic understanding of governance, support systems, collaboration, and barriers affecting research productivity in Chinese public universities. This approach was aligned with the study's objective to identify both enabling and hindering factors within the institutional research environment.

Research Instruments. The research instrument used in this study was a semi-structured interview guide designed to investigate various dimensions of research culture within Chinese public universities. Semi-structured interviews are chosen for their flexibility, allowing the researcher to probe deeper into specific topics while also accommodating the participants' narratives (Kvale & Brinkmann, 2015). Organized into eight sections, the first part gathered the participants' background information to contextualize their responses. Then, the next focused on governance and management, exploring perceptions of leadership support, administrative influence on research agendas, and decision-making processes related to research funding. The support systems section delved into the adequacy of resources, including financial, administrative, and technical support, and examined inclusivity within the research environment. Subsequent sections addressed the value and impact of research, individual and collaborative engagement, and factors that helped or hindered the development of a positive research culture. Participants were also asked to provide recommendations for an ideal research management program and share additional thoughts in the concluding section.

Data Gathering Procedure. The data gathering procedure followed a systematic approach, beginning with the recruitment of participants through formal invitations sent to selected faculty and staff. Upon obtaining informed consent, semi-structured interviews were scheduled and conducted individually, either in person or via video conferencing platforms, depending on the participants' preferences and availability. Each interview lasted approximately 60 minutes and was audio-recorded with the participants' permission for transcription and analysis. Following the interviews, focus group discussions were organized, with each session lasting between 90 to 120 minutes. These discussions were moderated by the researcher to ensure that all participants have the opportunity to contribute their perspectives. Document analysis was conducted concurrently, with the researcher reviewing relevant institutional documents to triangulate the data obtained from the interviews and focus groups. All data were securely stored and managed throughout the research process, following best practices for data confidentiality and integrity (Saldaña, 2021).

Data Analysis. Data analysis was conducted using thematic analysis, a widely used method for identifying, analyzing, and reporting patterns

within qualitative data (Braun & Clarke, 2019). Thematic analysis involved several stages: familiarization with the data, coding, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Initially, the researcher immersed in the data by reading and re-reading the transcripts and documents to gain a deep understanding of the content. Codes were then generated to capture significant features of the data that are relevant to the research questions. These codes were organized into potential themes, which were reviewed and refined to ensure they accurately represent the data. The final themes were defined and named, providing a coherent narrative that answers the research questions. The analysis process was iterative, with ongoing reflection and adjustment as new insights emerge (Nowell et al., 2017).

Ethical Considerations. Ethical considerations were paramount in this study. Thus, informed consent was obtained from all participants, ensuring that they are fully aware of the study's purpose, procedures, and their rights, including the right to withdraw at any time without penalty. Confidentiality was maintained by anonymizing participant data and securely storing all research materials. Additionally, the researcher was mindful of potential power dynamics during interviews and focus groups, ensuring that participants feel comfortable and respected throughout the process. The study also considered the implications of its findings, striving to present the results in a way that is respectful and constructive, with the potential to positively influence research culture in Chinese public universities (Israel, 2015).

RESULTS AND DISCUSSION

Status of Research Culture in Chinese Public Universities. The following are the themes and patterns elicited from the structured interviews conducted to faculty members and administrative staff. These results were specifically ordered according to the following aspects: (1) Governance and Management, (2) Support Systems, (3) Value and Impact, and (4) Individual and collaborative engagement.

Governance and Management. Table 2 revealed a complex and fragmented foundation in the research culture of Chinese public universities, heavily influenced by inconsistent governance and support structures. Leadership was described as focusing more on administrative oversight than on fostering a collaborative or supportive research environment. This inconsistency led some respondents to feel that their contributions to research were undervalued or overlooked. These conflicting accounts highlight a disconnect between leadership's espoused priorities and the day-to-day experiences of faculty and staff, suggesting that leadership support may be more symbolic than substantive in certain cases.

Table 2

Governance and Management

Theme	Category	Code	Actual Responses
Governance and Management	Perception of Leadership Engagement	Supportive Leadership	"The university president is very supportive of research activities and often attends research events to show encouragement." – Faculty, University A
		Limited Engagement	"Our leaders are more focused on administrative tasks than on research support, which limits progress in research culture." – Staff, University B
	Effectiveness of Leadership	Effective	"The leadership sets clear goals for research development, which motivates faculty to align with these goals." – Faculty, University C
		Ineffective	"While leadership claims to support research, there is little follow-through in terms of actionable support for projects." – Staff, University A
	Shaping Research Agenda	Top-Down Approach	"The research agenda is largely dictated by the administration without much input from faculty members." – Faculty, University B
		Collaborative Efforts	"There is an attempt to involve faculty in shaping the research agenda, though decisions are often finalized by higher-ups." – Staff, University C
	Support Effectiveness	Adequate Support	"Administration provides reasonable support for research, though improvements could be made in resource allocation." – Faculty, University A
		Insufficient Support	"We struggle to get proper administrative support, which impacts our ability to conduct research effectively." – Staff, University B
	Decision-Making Process	Centralized Decision-Making	"Funding decisions are made by a select committee, which limits transparency and access to funds for many departments." – Faculty, University C
		Department-Level Autonomy	"Departments have some autonomy in resource allocation, which helps in addressing specific research needs." – Staff, University A
	Adequacy of Funding	Sufficient Funding	"The funding is adequate for most research projects, though high-demand areas need more resources." – Faculty, University B
		Limited Funding	"Our department often faces budget cuts, which restricts our ability to conduct comprehensive research." – Staff, University C
	Variation Across Departments	Well-Developed Culture	"Some departments, like engineering, have a strong research culture due to higher funding and administrative support." – Faculty, University A
		Underdeveloped Culture	"In the arts and humanities, we struggle to get recognition and funding, which impacts our research culture significantly." – Staff, University B
	Collaboration Between Departments	Collaborative	"There are occasional collaborative projects across departments, which enriches the research culture." – Faculty, University C
		Isolated Efforts	"Departments tend to work in silos, which limits interdisciplinary research opportunities." – Staff, University A

Administrative roles in shaping research agendas were also reported to vary widely, with some respondents describing a top-down approach often leaving faculty with limited input into the research agenda, hence, creating a sense of detachment from institutional research goals. Conversely, few participants

mentioned that their departments were given opportunities for collaborative decision-making, allowing for input in shaping research goals and agenda-setting. Resource allocation emerged as another area with significant variation. Some respondents from well-funded departments noted that their research needs were generally met, which allowed for a strong research culture within those areas. However, participants from underfunded departments expressed frustration with restricted budgets that limited their ability to pursue comprehensive research projects.

The analysis further reveals notable differences in research culture between departments, with some departments exhibiting a well-developed culture while other departments, particularly in fields who were less prioritized by institutional funding, struggled to establish a cohesive research culture. Faculty and staff in these departments often worked in isolation, lacking both interdepartmental collaboration opportunities and administrative support. This fragmentation in governance and support structures aligns with Schein's Organizational Culture Theory (1985), which emphasizes the critical role of consistent values, norms, and practices in forming a cohesive organizational culture. The espoused values within the universities appear to advocate for high-quality research and academic rigor, yet the underlying assumptions differ across departments, leading to diverse and sometimes conflicting interpretations of these values.

Research supports the idea that fragmented support structures and governance practices can weaken organizational culture. According to Zhang and Jia (2020), inconsistent leadership and lack of cohesive policies can create silos within academic institutions, undermining efforts to establish an integrated research environment. Additionally, Wang (2021) noted that without clear, unified goals, departmental variations in funding and decision-making lead to unequal opportunities for faculty and staff, contributing to dissatisfaction and limited collaboration. This fragmentation has broader implications for the overall efficacy and sustainability of research culture in Shanxi's universities. As indicated by Li et al. (2019), successful research cultures are marked by alignment between leadership and departmental goals, which fosters an environment where resources, incentives, and support systems consistently reflect the institution's research priorities. In the case of Shanxi's public universities, the fragmented foundations in governance and support not only inhibit this alignment but also suggest the need for more integrated, equitable practices to build a more cohesive research culture.

Support Systems. Table 3 below organizes the data into seven primary themes: Financial Support, Administrative Support, Technical Support, Challenges in Seeking Support, Professional Development, External Funding Access, and Inclusivity in Research Environment.

Table 3
Support Systems

Theme	Category	Code	Actual Responses
Financial Support	Adequacy of Financial Support	Sufficient Funding	"The financial support we receive is generally adequate for covering basic research needs, though sometimes there are delays in receiving funds." – Faculty, University A
		Limited Funding	"Funding is limited, especially for interdisciplinary projects that do not align with the university's strategic priorities." – Staff, University B
	Improvement Needs	More Research Grants	"There is a need for more internal grants to support small-scale research projects that cannot secure external funding." – Faculty, University C
Administrative Support	Adequacy of Administrative Support	Efficient Support	"Administrative staff are generally helpful and responsive when it comes to paperwork related to research projects." – Staff, University A
		Inadequate Administrative Support	"There is a lot of bureaucracy involved, and the process to get approvals for research proposals is time-consuming." – Faculty, University B
	Improvement Suggestions	Streamlining Processes	"The university needs to streamline administrative processes to reduce the time required for approval and paperwork." – Staff, University C
Technical Support	Access to Research Tools	Adequate Technical Resources	"Access to technology and research tools is sufficient, especially in science departments." – Faculty, University B
		Limited Access to Resources	"There is limited access to specialized research tools, particularly for newer faculty members." – Staff, University A
	Improvement Needs	Investment in Technology	"More investment is needed in research infrastructure, especially in terms of upgrading laboratory equipment." – Faculty, University C
Challenges in Seeking Support	Barriers to Support	Bureaucratic Challenges	"The paperwork required for accessing funds is overwhelming, which discourages many faculty from applying for grants." – Faculty, University A
		Lack of Transparency	"The decision-making process regarding funding allocation is not transparent, which creates uncertainty." – Staff, University B
Professional Development	Opportunities for Growth	Adequate Workshops	"The university provides adequate workshops and seminars for research skill development." – Faculty, University C
		Insufficient Mentorship	"There are not enough mentorship opportunities for early-career researchers." – Staff, University A
External Funding Access	Methods of Accessing Funds	Collaboration with Industry	"External funding is often accessed through collaborations with industry partners, which provides both funding and practical insights." – Faculty, University B
		Difficulty in Access	"It is challenging to secure external funding due to stiff competition and complex application procedures." – Staff, University C
Inclusivity in Research Environment	Support for Inclusivity	Cross-Disciplinary Collaboration	"The university encourages cross-disciplinary research, but support is often stronger for well-established fields." – Faculty, University A
		Limited Support for Marginal Areas	"Inclusivity across disciplines is lacking, especially for research areas that are not aligned with major funding initiatives." – Staff, University B

Within Financial Support, respondents mentioned both adequate and limited funding, with some indicating a need for additional research grants, especially for projects not

aligned with the university's strategic focus. Administrative Support responses varied, with some describing efficiency, while others expressed frustration over bureaucratic barriers and lengthy approval processes, suggesting a need for streamlined procedures. Technical Support feedback emphasized a lack of access to specialized tools and outdated equipment in some cases, signaling a need for greater investment in infrastructure. Challenges in Seeking Support revealed difficulties with bureaucratic processes and a lack of transparency in funding allocation, which affected faculty motivation. Professional Development opportunities were available, yet some respondents felt the need for stronger mentorship, particularly for early-career researchers. For External Funding Access, collaboration with industry partners proved beneficial for some, though competition and complex application requirements posed obstacles. Finally, the Inclusivity in Research Environment theme reflected a perceived imbalance in support across disciplines, with certain fields receiving more attention and resources than others.

The analysis of these findings can be understood through the lens of Schein's Organizational Culture Theory, which examines an organization's culture at three levels: artifacts, espoused values, and underlying assumptions. In this context, the artifacts in the universities' research culture include the visible support systems, such as funding structures, administrative processes, and research tools. According to Schein (2017), artifacts are the tangible elements of culture that employees encounter, and these play a crucial role in shaping perceptions of organizational priorities while the espoused values are reflected in how the universities claim to support a robust research culture. However, the gap between these espoused values and the actual support experienced by respondents suggests inconsistency, which is common in higher education institutions worldwide (Li & Chen, 2022). This gap aligns with findings by Wright et al. (2020), who found that such inconsistencies often lead to perceptions of inequity and can hinder faculty engagement in research activities. On the other hand, the underlying assumptions in the universities studied, is premised on the centralized decision-making processes and bureaucratic procedures revealing an underlying assumption that control over resources and support should remain at the administrative level. This perspective limits departmental autonomy and can hinder flexibility in accessing resources, especially for disciplines that do not align with institutional priorities (Liang & Wang, 2020).

Value and Impact. Table 4 organizes the categories related to the university's valuation of research, recognition of achievements, barriers to productivity, measurement of research impact, sustainability of research practices, and rewards and challenges associated with engaging in research.

Table 4
Value and Impact of Research

Theme	Category	Code	Actual Responses
Perceived Institutional Support for Research Value and Impact	Perceived Value of Research	High Institutional Value	"Our university emphasizes the importance of research and recognizes it as a core aspect of academic contributions." – Faculty, University A
		Limited Emphasis on Research	"Research is acknowledged, but there is more focus on teaching, which sometimes sidelines research priorities." – Staff, University B
	Incentives and Recognition	Formal Recognition	"Research achievements are formally recognized with awards and ceremonies annually, which boosts morale." – Faculty, University C
		Lack of Incentives	"There are few incentives to motivate researchers beyond basic recognition. This reduces enthusiasm for long-term projects." – Staff, University A
	Forms of Recognition	Awards and Grants	"Our university offers research awards and internal grants for outstanding work, which motivates us." – Faculty, University B
		Limited Acknowledgement	"Research achievements are often overlooked, especially if they do not bring in substantial funding." – Staff, University C
	Bureaucratic Challenges	Regulatory Delays	"There are significant delays in getting approvals for research proposals, which slows down productivity." – Faculty, University A
		Excessive Paperwork	"The amount of paperwork required is overwhelming, and it affects the time I can dedicate to actual research." – Staff, University B
	Collaboration Hurdles	Limited Interdepartmental Support	"There is limited support for cross-department collaborations, making it challenging to work with other disciplines." – Faculty, University C
		External Collaboration Barriers	"Collaborations with external institutions face numerous bureaucratic obstacles, limiting our research impact." – Staff, University A
	Success Metrics	Publication Counts	"The university values publication counts highly, which is how most research success is measured here." – Faculty, University B
		Citation Index Focus	"Success is often measured by the citation index, but it doesn't always capture the real impact of our work." – Staff, University C
	Sustainability Challenges	Inconsistent Funding	"Funding is not always consistent, which makes it hard to sustain long-term research projects." – Faculty, University A
		Limited Resources	"Resource constraints make it difficult to maintain sustainable research practices over time." – Staff, University B
	Long-Term Viability	Need for Structured Planning	"The university should have a more structured plan to ensure that research efforts are sustainable." – Faculty, University C
	Positive Aspects of Research	Professional Growth	"Engaging in research here has helped me grow professionally and refine my academic skills." – Faculty, University A
		Contribution to Society	"It feels rewarding to know that my research contributes to societal development, especially in local communities." – Staff, University B
	Difficulties Faced	Work-Life Balance Issues	"Balancing research with teaching and other duties is very challenging." – Faculty, University C
		Insufficient Support Systems	"There is a lack of support systems to help us manage the workload effectively." – Staff, University A

In examining the value placed on research output, responses indicated variability in institutional emphasis. Some respondents felt

the university valued research as a core function, which was underscored by formal recognition programs and research awards. Others, however, noted a lack of incentives and emphasis on teaching over research, leading to diminished motivation for long-term projects. Recognition practices were seen as inconsistent, where achievements, especially those without financial impact, were often underappreciated. Respondents also highlighted significant bureaucratic and regulatory challenges, which hindered their ability to maximize research productivity. Barriers such as paperwork, approval delays, and limited support for interdepartmental and external collaborations contributed to frustrations among researchers, who felt these issues limited the broader impact of their work. Metrics for measuring success, including publication counts and citation indices, were heavily emphasized by the institution, yet respondents noted that these metrics often failed to capture the full impact of research, especially when it contributed to social development or local communities.

The interpretation of these findings through Schein's Organizational Culture Theory reveals several layers of organizational culture impacting the perceived value of research. Schein's (2017) model categorizes organizational culture into artifacts, espoused values, and underlying assumptions, all of which play a role in shaping the research culture of an institution. The espoused values often include statements about supporting research excellence, innovation, and impact. However, as seen in the findings, the gap between these values and actual support practices – such as the inconsistent recognition of achievements and lack of incentives – creates dissonance. This discrepancy between what the institution espouses and what faculty and staff experience is consistent with previous research that found gaps between stated values and operational realities in higher education (Clegg et al., 2021). Such dissonance can lead to a sense of undervaluation among researchers, impacting their motivation to engage in long-term, impactful research. With respect to underlying assumptions, regulatory and bureaucratic structures are prevalent in the studies universities. These assumptions can manifest as a top-down approach to research support, with limited flexibility for researchers to engage in innovative or interdisciplinary projects (Liang & Wang, 2020). Similar findings by Wright et al. (2020) emphasized that underlying assumptions in academic institutions often prioritize standardized metrics over diverse impact measures, resulting in a restricted view of research value.

Individual and Collaborative Engagement. Table 5 reflects the overarching theme of Supportive Structures for Collaborative Research Engagement within Chinese public universities. Results reveal that while universities encourage collaboration to some degree, there are significant limitations in the formal support structures needed to facilitate successful research partnerships, especially across departments and international borders. Faculty members who pursue individual research noted a degree of autonomy but encountered limited resources and administrative support. Collaborative research, on the other hand, faced challenges due to siloed departmental structures and a lack of formalized processes for interdepartmental or international collaborations. Early-career researchers also indicated the need for greater mentorship and structured guidance, underscoring the importance of professional development opportunities that could improve engagement in collaborative research.

Schein's Organizational Culture Theory offers a valuable framework for understanding how these themes reflect deeper cultural and structural dynamics within these universities. In Schein's model, organizational culture is composed of artifacts, espoused values, and underlying assumptions that collectively shape the work environment (Schein, 2017). Espoused values include the university's stated emphasis on fostering collaboration and supporting research, yet the data revealed a gap between these values and actual practices. This gap between stated values and practical support is consistent with findings from Chen and Li (2022), who observed that discrepancies

between institutional values and tangible resources often undermine the collaborative environment necessary for impactful research.

Table 5
Individual and Collaborative Engagement

Theme	Category	Code	Actual Responses
Supportive Structures for Collaborative Research Engagement	Autonomy in Research	Flexibility in Individual Projects	"Working on individual projects allows me to explore topics of personal interest without needing approvals from others." – Faculty, University A
		Limited Institutional Support	"While I enjoy individual research, there's minimal support from the university in terms of resources for these projects." – Staff, University C
	Institutional Support for Collaboration	Encouragement of Interdepartmental Projects	"The university promotes interdepartmental research and occasionally organizes joint seminars." – Faculty, University B
		Lack of Structured Support	"There is a lack of formal systems to facilitate collaboration, so we have to arrange everything ourselves." – Staff, University A
	Collaboration Types	National-Level Collaboration	"Most of our collaborations are within China due to easier access to funding and less bureaucratic issues." – Faculty, University C
		Limited International Engagement	"We rarely engage in international collaborations due to language and funding barriers." – Staff, University B
	Barriers to Cross-Departmental Collaboration	Departmental Silos	"Departments tend to work in silos, making it challenging to initiate collaborative projects." – Faculty, University B
		Hierarchical Obstacles	"Collaboration often depends on department heads, and if they are not supportive, it can be difficult to move forward." – Staff, University A
	Mentorship and Guidance	Senior Faculty Mentorship	"I received valuable mentorship from senior faculty, which has been essential for my development." – Faculty, University C
		Limited Mentorship Opportunities	"There are few structured mentorship programs, and early-career researchers often struggle to find guidance." – Staff, University B
	Professional Development	Workshop and Training Sessions	"The university occasionally offers workshops on research methods, which helps young researchers." – Faculty, University A
		Limited International Exposure	"International collaboration is rare and often limited to conferences; actual research partnerships are uncommon." – Staff, University C
	Role and Impact	Importance of Global Connections	"Collaborating with international scholars would be beneficial, but it's difficult due to funding limitations." – Faculty, University B
		Importance of Supportive Environment	"To me, research culture means having an environment where faculty can freely collaborate and share ideas." – Faculty, University A
	Personal Meaning of Research Culture	Need for Recognition and Incentives	"A strong research culture includes recognition and incentives for both individual and collaborative achievements." – Staff, University C

The underlying assumptions within the universities, on the other hand, appear to prioritize hierarchical control over research practices, with department heads often determining the scope and feasibility of collaborative projects. Similar findings were noted by Zhang and Liu (2021), who found that such hierarchical structures in Chinese universities often restrict interdisciplinary collaboration, as researchers face bureaucratic hurdles that prioritize departmental autonomy over broader institutional goals.

Factors that Help or Hinder a Strong Research Culture in the University. The following results present the factors that helped or hindered the research culture in public universities in China. In Table 6, an analysis of the factors that helped cultivate a strong research culture is presented. The overarching theme identified is a Supportive and Constraining Organizational Environment, which encompasses institutional conditions that either foster or impede research productivity. Within this theme, three key categories were identified: Strong Leadership Support, Collaborative Culture, and Access to Resources. These categories highlight the critical elements that shape an institution's research climate, influencing faculty engagement, collaboration, and overall research output.

Table 6
Factors that Help Research Culture

Theme	Category	Code	Actual Responses
Supportive and Constraining Organizational Environment	Factors Promoting Positive Research Culture	Strong Leadership Support	"Our leaders actively encourage us to pursue research, creating a motivational atmosphere." – Faculty, University A
		Collaborative Culture	"We have regular research seminars that foster collaboration and new ideas." – Staff, University B
		Access to Resources	"Having access to funding and resources allows us to conduct meaningful research." – Faculty, University C

The first subtheme – Strong Leadership Support – reflects the role of university leadership in encouraging research activities. This aligns with Bryman's (2020) findings indicating that effective academic leadership fosters an environment where researchers feel supported and valued, directly impacting their motivation and research output. Collaborative Culture, the second subtheme, emphasizes the role of research collaboration in strengthening institutional research culture. Collaboration is widely recognized as a critical factor in advancing academic research. Research networks and interdisciplinary collaborations enhance knowledge sharing, improve research quality, and increase publication rates (Holliman et al., 2021). The last subtheme, Access to Resources, underscores the importance of funding and institutional support for sustaining research activities. Access to financial, technical, and administrative resources remains a fundamental determinant of research productivity. According to Kim and Lee (2023), universities that invest in research infrastructure, provide grants, and facilitate access to advanced research tools significantly

enhance their faculty's ability to conduct high-quality research. The findings above reinforce the importance of an institutional research culture that prioritizes strong leadership, collaboration, and resource accessibility. These elements are interconnected and contribute to a sustainable and productive research environment in public universities. Addressing these factors can help universities cultivate a more supportive research culture, ultimately enhancing research impact and institutional reputation. As Chinese universities continue to align with global research standards, fostering an environment that values leadership, collaboration, and resource accessibility will be critical for sustaining research excellence.

Table 7
Factors that Hinder Research Culture

Theme	Category	Code	Actual Responses
Supportive and Constraining Organizational Environment	Factors Hindering Research Culture	Bureaucratic Barriers	"The extensive paperwork and approval processes slow down research progress significantly." – Staff, University B
		Limited Funding for Non-STEM Fields	"Research support is mostly given to STEM projects, leaving other fields under-resourced." – Faculty, University A
		Lack of Interdepartmental Support	"Different departments rarely collaborate, which limits interdisciplinary research opportunities." – Faculty, University C

Meanwhile, Table 7 presents key factors that hinder the development of a strong research culture in Chinese public universities. Under the overarching theme of a Supportive and Constraining Organizational Environment, the findings categorize the primary obstacles into Bureaucratic Barriers, Limited Funding for Non-STEM Fields, and Lack of Interdepartmental Support. These issues highlight structural and systemic challenges that impede research progress, interdisciplinary collaboration, and equitable resource distribution.

The first challenge, Bureaucratic Barriers, refers to the extensive administrative processes that slow down research activities. This aligns with the findings of Horta and Mok (2020) indicating that excessive bureaucracy in academia can lead to delays in project approvals, funding disbursement, and ethical review processes. Such bureaucratic inefficiencies create a frustrating environment for researchers, potentially discouraging them from pursuing large-scale projects. Another major constraint is Limited Funding for Non-STEM Fields, as evidenced by a faculty member from University A who remarked, "Research support is mostly given to STEM projects, leaving other fields under-resourced." This statement highlights a prevalent issue in academic research funding distribution, where disciplines within the humanities, social sciences, and arts often receive less financial support compared to STEM (Science, Technology, Engineering, and Mathematics) fields. Studies have shown that universities worldwide, particularly in technologically driven economies like China, tend to prioritize research funding in areas that align with national economic and industrial goals, often at the expense of non-STEM disciplines (Kim & Lee, 2023). A well-balanced research ecosystem requires equitable funding to foster innovation across all disciplines. The third major hindrance, Lack of Interdepartmental Support, illustrates the barriers to interdisciplinary collaboration. A faculty member from University C noted, "Different departments rarely collaborate, which limits interdisciplinary research opportunities." Interdisciplinary collaboration is essential for addressing complex societal challenges that require diverse expertise, yet institutional structures often reinforce departmental separations (Klofsten et al., 2020). Universities that do not actively encourage cross-disciplinary engagement miss opportunities for innovative research breakthroughs. Hence, addressing these structural barriers requires deliberate efforts from university leadership to create an environment that fosters interdisciplinary communication and shared research goals.

Overall, the findings reinforce the idea that while Chinese public universities have significant research potential, systemic barriers must be addressed to foster a more inclusive and efficient research culture.

Recommended Research Management Program to Enhance the Research Culture in the University. The proposed research management program is designed to create an enabling research environment in Chinese public

universities by addressing both the facilitating and constraining factors identified in the study. Research culture is shaped by multiple dimensions, including Governance & Management, Support Systems, Value & Impact, and Individual & Collaborative Engagement. However, the study revealed that bureaucratic barriers, limited funding, lack of interdisciplinary collaboration, and an imbalanced distribution of resources between STEM and non-STEM fields hinder research productivity. To ensure a strong and sustainable research culture, universities must adopt an evidence-based, structured approach that improves research governance, strengthens support systems, enhances research impact, and fosters inclusivity in collaboration.

Figure 2
Research Management Program

The theoretical foundation of this program is based on Edgar Schein's Organizational Culture Theory, which emphasizes how institutional structures, shared values, and underlying assumptions shape organizational behavior. The artifacts (visible structures such as policies, funding mechanisms, and research infrastructure), espoused values (commitment to research excellence and interdisciplinary collaboration), and underlying assumptions (beliefs about the role of research in academia and national development) collectively influence research culture. By integrating these elements, the research management program ensures that institutional practices align with national research priorities while fostering an environment conducive to faculty and staff research engagement.

Objectives. The research management program aims to reform institutional practices by addressing the systemic challenges that impact research culture. The key objectives include:

1. Improving decision-making processes by ensuring transparency in research funding, leadership accountability, and policy formulation. Leadership training programs will be developed to enhance the ability of university administrators to set strategic research priorities and efficiently allocate resources.

2. Enhancing administrative, financial, and technical support by reducing bureaucracy, increasing funding accessibility, and ensuring that faculty and staff have the necessary infrastructure to conduct high-quality research.

3. Establishing incentive structures that recognize not only publication output but also interdisciplinary collaborations, policy influence, and real-world applications of research. Success metrics will be expanded beyond traditional bibliometric indicators to include societal impact and industry relevance.

4. Facilitating cross-departmental and international collaborations to encourage interdisciplinary research. Special initiatives will be launched to support inclusivity and ensure that all disciplines, including the humanities and social sciences, receive equitable research funding and institutional backing.

Implications. The findings of this study carry several important implications for the development and management of research culture in public universities in Shanxi, China. First, the need for transparent and supportive governance highlights the role of leadership in shaping a positive research environment. University administrators should consider

implementing clear communication strategies and participatory decision-making processes that allow faculty and staff to engage actively in research-related decisions. A supportive governance structure could foster a more inclusive and motivated research community, promoting a culture of shared responsibility for institutional research goals. Furthermore, the study's findings underscore the importance of equitable resource allocation. Institutions may benefit from reevaluating their funding models to ensure that both STEM and non-STEM fields receive adequate financial and technical support. This approach could encourage diverse research outputs, fostering innovation across a range of academic disciplines and creating a more balanced research culture. The need for improved support systems, including professional development and access to up-to-date research tools, suggests that universities should invest in infrastructure that promotes continuous learning and advancement. By providing comprehensive support systems, institutions can strengthen their research capabilities and enhance their global competitiveness.

Recommendations. Based on the findings and implications of this study, the following recommendations are proposed to enhance research culture in public universities in Shanxi, China. These recommendations are structured across three levels: educational institutions, policy level, and future research.

1. Educational Institutions. Universities can streamline administrative processes by digitizing workflows, reducing redundant paperwork, and establishing clear guidelines to expedite research approvals. While strengthening leadership involvement in research initiatives through structured training programs and accountability mechanisms may improve institutional commitment to research. More so, universities can implement a balanced funding allocation system that prioritizes research across diverse academic fields, ensuring that non-STEM disciplines also receive adequate resources for conducting meaningful research. Universities can also establish interdisciplinary research centers, incentivize cross-departmental projects, and provide platforms for faculty from different disciplines to collaborate on research initiatives.

2. Policy-Level Interventions. Policymakers can design funding programs that explicitly allocate resources to non-STEM research areas, ensuring a more holistic development of academic disciplines. Implementing policy reforms that simplify grant application and reporting processes may also enhance research efficiency and encourage faculty participation in externally funded projects. Policymakers can introduce a more comprehensive evaluation framework that includes qualitative measures such as policy influence, industry collaborations, and real-world applications of research findings. Additionally, policies that encourage university-industry partnerships may enhance research commercialization and provide faculty with alternative funding sources.

3. Future Research. Future research can explore longitudinal studies that assess how research culture evolves over time and the effectiveness of implemented research management strategies. Future studies can also conduct comparative analyses across different provinces in China or between public and private universities to identify broader patterns in research culture. Furthermore, future research can incorporate student perspectives to examine how research culture influences graduate research training and early-career research engagement. Investigating how digital technologies, artificial intelligence, and virtual collaboration tools impact research culture can also provide insights into how universities can adapt to emerging academic trends. By expanding the scope of research on university research culture, future studies may contribute to developing more effective policies and institutional strategies that support sustainable and high-impact research.

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