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Analysis of Factors Influencing the Sustainable Competitiveness of Private Universities in China

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Abstract: The sustainable competitiveness of private universities has become an increasingly important research topic due to intensified competition in higher education, demographic changes, and evolving educational demands. However, limited studies have explored the underlying mechanisms through which organizational resources and capabilities contribute to the long-term competitiveness of private universities, particularly in the context of China. This study aims to investigate the factors influencing the sustainable competitiveness of Chinese private universities by developing a structural equation model grounded in the Resource-Based View, Dynamic Capability Theory, and Organizational Resilience Theory. A quantitative research approach was adopted, and data were collected from 426 respondents through a structured questionnaire survey. The proposed model examines the effects of four antecedent factors, including Faculty Resource Capability, Brand Reputation Capability, Governance Capability, and Innovation Capability, on Private University Competitiveness. Furthermore, Dynamic Capability and Organizational Resilience were introduced as mediating variables to explore the mechanisms through which organizational resources and capabilities are transformed into competitive advantages. Structural equation modeling was employed to test the hypothesized relationships. The findings reveal that Faculty Resource Capability and Brand Reputation Capability significantly enhance Dynamic Capability, while Governance Capability and Innovation Capability positively influence Organizational Resilience. Both Dynamic Capability and Organizational Resilience have significant positive effects on Private University Competitiveness, with Organizational Resilience demonstrating the strongest impact. Mediation analysis confirms that Dynamic Capability partially mediates the relationships between Faculty Resource Capability, Brand Reputation Capability, and competitiveness, while Organizational Resilience fully mediates the relationship between Governance Capability and competitiveness and partially mediates the effect of Innovation Capability. This study contributes to higher education management literature by integrating resource-based and capability-oriented perspectives to explain the formation mechanisms of private university competitiveness.

Keywords: private universities; sustainable competitiveness; resource-based view; dynamic capability; organizational resilience; structural equation modeling

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1. Introduction

The rapid growth of higher education globally has heightened competition among institutions, prompting universities to cultivate sustainable competitive advantages that extend beyond conventional academic performance metrics. Evaluation of universities now encompasses not only teaching quality and research output but also adaptability to environmental shifts, capacity to attract high-caliber resources, maintenance of institutional standing, and achievement of long-term organizational sustainability. Within this competitive environment, private universities confront distinctive challenges arising from the dual imperatives of market responsiveness and educational mission fulfillment. In contrast to public institutions, which often benefit from more substantial governmental

support and longer-established institutional legitimacy, private universities depend more intensively on internal strengths, strategic leadership, and proactive resource development to sustain competitiveness [1]. Accordingly, identifying the determinants of sustainable competitiveness in private universities has emerged as a critical focus in higher education management research.

In China, private universities have transitioned from a phase emphasizing scale growth to one prioritizing quality enhancement. Following adjustments to national higher education policies, private institutions have become an integral part of the broader higher education system, supporting educational diversity and talent development. However, intensifying inter-institutional competition, shifting demographic patterns, evolving student expectations, and ongoing policy refinements present considerable pressures. Many private universities continue to encounter challenges related to faculty expertise, institutional recognition, governance effectiveness, and capacity for innovation. As a result, sustainable competitiveness is increasingly contingent not on enrollment volume or capital infusion alone, but on how effectively universities identify, integrate, and leverage strategic resources and organizational capabilities [2].

The Resource-Based View offers a foundational theoretical lens for analyzing competitive advantage, highlighting that superior organizational performance stems from resources that are valuable, rare, difficult to replicate, and not readily substitutable. Within higher education, institutional advantages are closely tied to internal assets such as academic expertise, institutional recognition, organizational knowledge, and pedagogical infrastructure [3]. Faculty expertise constitutes one of the most pivotal strategic assets, as academic staff directly shape instructional quality, research outcomes, and institutional standing. Likewise, institutional recognition reflects external validation and stakeholder confidence—factors that influence student recruitment, social acceptance, and prospects for long-term advancement. Consequently, faculty resource capability and brand reputation capability serve as core resource-based drivers of private university competitiveness.

Yet the Resource-Based View alone cannot fully account for divergent competitive outcomes among institutions possessing comparable resources. Merely holding valuable assets does not ensure sustained advantage; rather, organizations must demonstrate consistent capacity to adapt, reconfigure, and deploy those assets amid changing conditions. Dynamic Capability Theory extends this perspective by underscoring an organization's ability to detect environmental shifts, capitalize on emerging opportunities, and realign resources to preserve competitive positioning. For universities, dynamic capability manifests in strategic agility—such as adjusting curricular frameworks, optimizing resource deployment, aligning with societal needs, and executing institutional renewal [4]. Empirical work has shown that organizational capabilities mediate the link between resources and performance, as they determine how effectively resources are mobilized and converted into strategic value. This study therefore posits that dynamic capability mediates the influence of faculty resource capability and brand reputation capability on private university competitiveness.

Beyond resource accumulation and adaptive responsiveness, universities require robust organizational resilience to navigate uncertainty and maintain continuity. Organizational resilience denotes the capacity to anticipate challenges, respond effectively, and recover while sustaining core operations and developmental momentum. The higher education sector faces growing complexity driven by demographic trends, digital transformation, regulatory evolution, and escalating institutional rivalry. Under such conditions, sound governance and forward-looking innovation become vital enablers of stability and progress. Governance capability shapes strategic decision-making, cross-functional coordination, and institutional efficacy, whereas innovation capability supports the design of novel pedagogical approaches, refinement of administrative systems, and alignment with emerging societal priorities. Thus, organizational resilience provides a conceptual mechanism through which governance capability and innovation capability contribute to sustainable competitiveness.

Although prior scholarship has examined university competitiveness through lenses such as teaching excellence, institutional performance, and resource utilization, several gaps persist. First, many studies isolate individual determinants without clarifying the mechanisms by which resources and capabilities translate into durable competitive advantage. Second, research on private universities remains comparatively underdeveloped relative to that on public institutions, despite their unique challenges in resource acquisition, reputation formation, and long-term viability [4]. Third, few empirical investigations have synthesized resource-based factors, dynamic capabilities, and organizational resilience into a unified structural framework for explaining sustainable competitiveness.

To address these limitations, this study constructs a structural equation model to analyze the antecedents of sustainable competitiveness among private universities in China. Grounded in the Resource-Based View and Dynamic Capability Theory, the model examines four primary antecedent factors: faculty resource capability, brand reputation capability, governance capability, and innovation capability. Two mediating pathways are proposed: dynamic capability, which transmits the effects of faculty resource capability and brand reputation capability on competitiveness; and organizational resilience, which conveys the influence of governance capability and innovation capability. By mapping these interrelationships, the study advances higher education management literature with a theoretically coherent explanation of how Chinese private universities build and sustain competitive advantage [2]. Practically, the findings offer evidence-informed guidance for institutional leaders seeking to prioritize capability development strategies that strengthen competitiveness and support enduring institutional vitality.

2. Literature Review

The competitiveness of higher education institutions has increasingly become a critical research topic due to intensified global competition, demographic shifts, technological advancement, and rising expectations for educational quality [5]. Unlike traditional organizations, universities operate within complex institutional environments where competitive advantages depend not only on tangible resources but also on organizational capabilities, adaptability, and stakeholder recognition. For private universities, sustainable competitiveness is particularly important because these institutions often rely on self-generated resources, market reputation, and organizational flexibility to thrive within increasingly competitive higher education systems.

The Resource-Based View provides a fundamental explanation of how organizations achieve competitive advantages through valuable and distinctive internal resources. According to this perspective, resources become sources of sustained competitive advantage when they are valuable, rare, difficult to imitate, and organizationally embedded. In the university context, strategic resources include academic staff quality, institutional reputation, knowledge assets, governance systems, and innovation resources. However, resources alone cannot fully explain long-term competitiveness because the higher education environment is continuously evolving. Therefore, Dynamic Capability Theory extends this view by emphasizing organizations' abilities to sense environmental changes, integrate resources, and reconfigure organizational structures to maintain competitiveness.

Furthermore, recent studies highlight that resilience has become increasingly important for universities facing uncertainty, including policy adjustments, technological advancement, and shifting student demographics. Organizational resilience reflects the ability of institutions to absorb challenges, adapt to changes, and continue achieving strategic objectives [5]. Therefore, integrating the Resource-Based View, dynamic capability theory, and organizational resilience theory provides a comprehensive framework for explaining how private universities transform internal resources and organizational capabilities into sustainable competitiveness.

Faculty resource capability refers to a university's ability to attract, develop, and utilize high-quality academic staff to support teaching, research, and institutional development. In higher education, faculty members represent strategic human capital because they directly influence educational quality, research productivity, innovation performance, and institutional reputation. From the Resource-Based View, human resources with specialized knowledge and professional expertise constitute valuable and difficult-to-imitate assets that contribute to organizational competitiveness.

Recent research suggests that universities with stronger faculty capabilities are more likely to develop adaptive organizational capabilities. High-quality academic staff contribute not only through knowledge production but also through curriculum innovation, interdisciplinary collaboration, and strategic transformation. In private universities, where resource limitations are often more pronounced than in public institutions, faculty capability becomes a critical mechanism for improving educational quality and strengthening institutional differentiation [6, 7].

However, faculty resources generate competitive advantages only when universities possess the capability to effectively integrate and utilize these resources. Dynamic capability theory suggests that organizations must transform existing resources into new strategic opportunities through sensing, integration, and reconfiguration processes [8]. Therefore, faculty resources are expected to enhance dynamic capability by improving knowledge acquisition, innovation potential, and organizational learning. Thus:

H1: Faculty Resource Capability positively influences Dynamic Capability [4].

Brand reputation capability represents a university's ability to establish, maintain, and enhance its institutional image and stakeholder recognition. In higher education, reputation has become a critical competitive resource because students, parents, employers, and governments increasingly rely on institutional reputation when evaluating university quality. For private universities, reputation is particularly important because limited historical legitimacy and weaker public recognition may constrain their ability to attract students and external resources [9].

From the Resource-Based View perspective, reputation is an intangible strategic resource because it is socially constructed, accumulated over time, and difficult for competitors to replicate. Recent studies indicate that university reputation influences student recruitment, partnership opportunities, and institutional sustainability. Strong reputation enhances stakeholder trust and provides universities with greater strategic flexibility.

Nevertheless, reputation itself does not automatically guarantee competitiveness. Universities must continuously adapt their educational strategies and organizational practices to sustain reputation under changing environments [9]. Dynamic capability theory suggests that organizations with strong external recognition are better positioned to acquire information, access external resources, and respond to environmental changes. Therefore, brand reputation capability can facilitate the development of dynamic capability. Thus:

H2: Brand Reputation Capability positively influences Dynamic Capability [10].

Governance capability refers to the effectiveness of institutional decision-making, strategic planning, resource coordination, and organizational management. Unlike public universities with relatively stable governmental support, private universities depend heavily on efficient governance structures to achieve sustainable development. Effective governance enables universities to coordinate internal resources, respond to external pressures, and maintain organizational stability [3].

Recent higher education studies emphasize that governance quality influences institutional performance by shaping strategic orientation, accountability mechanisms, and organizational flexibility [11]. Universities with stronger governance capabilities are more capable of anticipating risks and implementing timely responses.

Organizational resilience theory provides an important explanation for this relationship. Resilient organizations are characterized by adaptive capacity, strategic flexibility, and the ability to recover from challenges [5]. Governance capability

contributes to resilience by establishing effective decision-making processes and improving organizational coordination. For private universities facing uncertain environments, governance capability is therefore expected to strengthen organizational resilience. Thus:

H3: Governance Capability positively influences Organizational Resilience.

Innovation capability refers to an organization's ability to generate and implement new ideas, technologies, educational models, and management approaches [12]. In higher education, innovation capability has become essential due to digital transformation, changing learning behaviors, and increasing competition among institutions.

Innovation enables universities to develop new educational services, improve operational efficiency, and differentiate themselves from competitors. According to dynamic capability theory, innovation represents a key mechanism through which organizations renew their capabilities and maintain competitiveness [13]. Recent research indicates that universities with stronger innovation capabilities demonstrate greater adaptability and organizational flexibility.

Furthermore, innovation capability contributes to organizational resilience because innovative institutions are more capable of exploring alternative solutions and adjusting strategies during periods of uncertainty [14]. During major transitions such as those prompted by global health developments, universities with stronger digital innovation capabilities demonstrated higher levels of operational continuity and adaptability. Therefore:

H4: Innovation Capability positively influences Organizational Resilience.

Dynamic capability represents an organization's ability to identify environmental changes, seize opportunities, and restructure resources to achieve long-term advantages. In higher education, dynamic capability enables universities to adjust academic programs, improve management systems, and respond to societal demands [1].

Previous studies demonstrate that organizational capabilities significantly influence university performance because they determine how effectively resources are transformed into outcomes. For private universities, dynamic capability is particularly important because these institutions must continuously adapt to market-oriented competition and policy adjustments. Therefore:

H5: Dynamic Capability positively influences Private University Competitiveness [15].

Organizational resilience has increasingly been recognized as a key determinant of sustainable competitiveness. Resilient organizations are able to maintain strategic direction while adapting to environmental uncertainty. In higher education, resilience enables universities to manage financial pressure, demographic changes, technological advancement, and policy uncertainty.

Private universities with stronger resilience are more capable of maintaining educational quality, protecting institutional reputation, and sustaining long-term development. Recent studies suggest that resilience contributes to organizational performance by enhancing adaptability and supporting continuity during challenging circumstances. Therefore:

H6: Organizational Resilience positively influences Private University Competitiveness [16].

Although previous studies have examined individual factors influencing university competitiveness, limited research has explored the mechanisms through which resources and organizational capabilities are transformed into competitive advantages. Based on the Resource-Based View and dynamic capability theory, resources influence competitiveness indirectly through organizational capabilities rather than through direct effects alone. Therefore, this study proposes that dynamic capability mediates the relationships between faculty resource capability, brand reputation capability, and private university competitiveness.

H7: Dynamic Capability mediates the relationship between Faculty Resource Capability and Private University Competitiveness.

H8: Dynamic Capability mediates the relationship between Brand Reputation Capability and Private University Competitiveness [13].

Similarly, organizational resilience provides a mechanism through which governance capability and innovation capability contribute to competitiveness.

H9: Organizational Resilience mediates the relationship between Governance Capability and Private University Competitiveness [17, 18].

H10: Organizational Resilience mediates the relationship between Innovation Capability and Private University Competitiveness [19] (As shown in Figure 1).

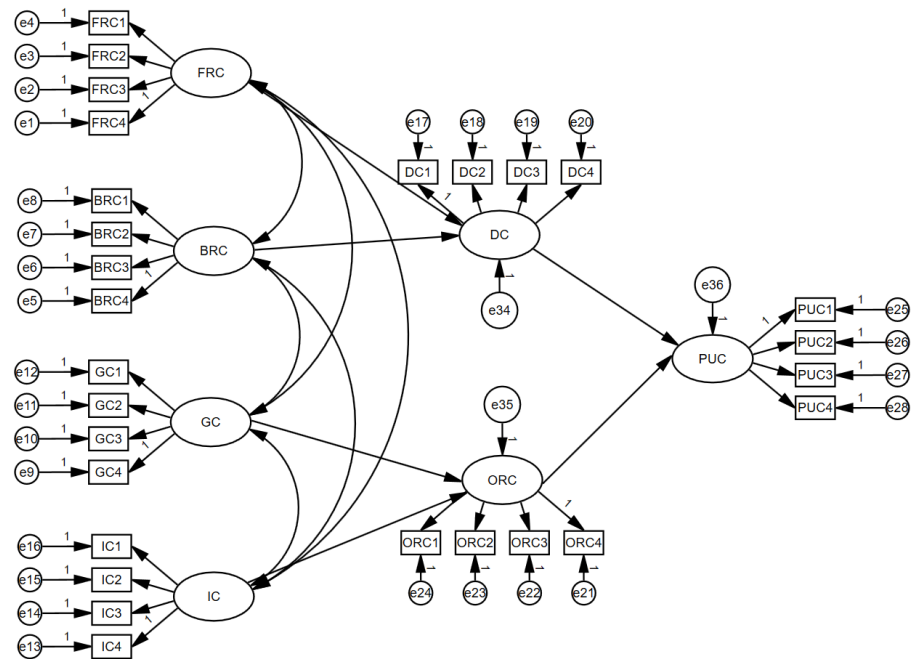


Figure 1. Conceptual Framework

3. Research Methodology

This study adopts a quantitative research approach to investigate the factors influencing the sustainable competitiveness of private universities in China. A quantitative methodology is appropriate because the research aims to examine the structural relationships among multiple latent constructs and test theoretically derived hypotheses through statistical analysis. Grounded in the Resource-Based View, Dynamic Capability Theory, and Organizational Resilience Theory, this study develops a structural equation model (SEM) to examine how internal capabilities influence private university competitiveness through organizational mechanisms. Structural equation modeling is selected because it allows researchers to simultaneously examine measurement relationships between latent variables and their observed indicators, as well as causal relationships among multiple constructs. Compared with traditional regression analysis, SEM provides a more comprehensive approach for evaluating complex theoretical models involving direct and indirect effects [20, 21]. Therefore, SEM is suitable for analyzing the mediating roles of Dynamic Capability (DC) and Organizational Resilience (ORC) in the relationship between organizational capabilities and private university competitiveness.

The proposed research model consists of four independent variables, two mediating variables, and one dependent variable. The independent variables include Faculty Resource Capability (FRC), Brand Reputation Capability (BRC), Governance Capability (GC), and Innovation Capability (IC). These variables represent the major organizational resources and capabilities that contribute to university development. Dynamic Capability (DC) and Organizational Resilience (ORC) are proposed as mediating variables. Specifically, DC explains how faculty resources and brand reputation are transformed

into competitive advantages through resource integration, organizational learning, and strategic adaptation. Meanwhile, ORC explains how governance capability and innovation capability enhance universities' ability to respond to uncertainty and maintain sustainable development. The dependent variable, Private University Competitiveness (PUC), represents the overall ability of private universities to achieve long-term advantages through educational quality, institutional reputation, innovation performance, and sustainable development capacity.

The empirical data will be collected through a structured questionnaire survey targeting employees and administrators of private universities in China. Since university competitiveness is a multidimensional organizational phenomenon, respondents with sufficient knowledge of institutional operations—including academic staff, administrative personnel, and management staff—are considered appropriate sources of information. A convenience sampling method combined with purposive sampling will be adopted. Participants will be selected based on their experience and familiarity with university development strategies and institutional practices. Before formal data collection, a pilot test will be conducted to evaluate the clarity, reliability, and validity of the questionnaire items. All measurement items will be adapted from previously validated scales in the literature and modified to fit the higher education context. A seven-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree") will be used to measure respondents' perceptions of each construct.

Data analysis will be conducted using Structural Equation Modeling (SEM) through AMOS. The analysis will consist of two stages. First, the measurement model will be evaluated by examining reliability and validity, including Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and discriminant validity. Second, the structural model will be tested to evaluate the hypothesized relationships among variables. Path coefficients and significance levels will be examined to assess the explanatory power of the model. Furthermore, bootstrapping procedures will be applied to test the mediating effects of Dynamic Capability and Organizational Resilience. Through this analytical process, the study aims to provide empirical evidence regarding the mechanisms through which Chinese private universities develop sustainable competitiveness. A total of 500 questionnaires were distributed via Wenjuanxing, resulting in 426 valid responses and a validity rate of 85.2%.

4. Data Analysis

Table 1 presents the demographic characteristics of the 426 respondents participating in this study. In terms of gender distribution, the sample consisted of 224 male respondents (52.58%) and 202 female respondents (47.42%), indicating a relatively balanced gender composition. Regarding age distribution, the majority of respondents were between 30 and 40 years old (44.01%), followed by those below 30 years old (35.38%). Respondents aged 41–50 accounted for 12.86%, while those above 50 represented 7.75% of the sample. This indicates that the participants were mainly young and middle-aged professionals with sufficient knowledge and experience regarding university operations and development.

Table 1. Descriptive Analysis of Basic Information

Name	Options	Frequency	Percentage(%)
gender	female	202	47.42
	male	224	52.58
age	Within 30	151	35.38
	30-40	187	44.01
	41-50	55	12.86
	50 and above	33	7.75

Education	Undergraduate	143	33.57
	Postgraduate and above	283	66.43
	total	426	100

Regarding educational background, 283 respondents (66.43%) held postgraduate degrees or above, while 143 respondents (33.57%) held undergraduate degrees. The relatively high educational level of participants suggests that most respondents possessed strong academic backgrounds and professional capabilities, which enhances the reliability of their evaluations of university resources, organizational capabilities, and competitiveness. Overall, the demographic characteristics indicate that the sample has adequate diversity and representativeness for examining the factors influencing the sustainable competitiveness of private universities in China.

Table 2 presents the descriptive statistics and normality test results for all constructs. The mean values of the seven variables range from 5.227 to 5.781, indicating that respondents generally demonstrated positive perceptions of the factors influencing private university competitiveness [22]. Among them, Innovation Capability (IC) achieved the highest mean value ($M=5.781$), while Faculty Resource Capability (FRC) showed the lowest mean value ($M=5.227$). The skewness values range from -0.946 to -0.275 , and kurtosis values range from 0.911 to 1.783, all within acceptable thresholds, indicating that the data approximately follow a normal distribution and are suitable for further structural equation modeling analysis.

Table 2. Means and Normality Tests for Different Dimensions

Name	average value	Standard deviation	Skewness	Kudo
FRC	5.227	0.795	-0.275	1.111
BRC	5.515	0.943	-0.809	1.322
GC	5.425	0.905	-0.538	0.911
IC	5.781	0.883	-0.946	1.783
DC	5.619	0.83	-0.658	1.415
ORC	5.58	0.876	-0.901	1.455
PUC	5.546	0.835	-0.718	1.432

Table 3 presents the reliability and convergent validity results of the measurement model. The results demonstrate that all measurement items have significant factor loadings, with standardized loading values ranging from 0.725 to 0.878, exceeding the recommended threshold of 0.70. This indicates that all observed indicators provide adequate representation of their corresponding latent constructs [21].

Table 3. Reliability and Validity Tests

Latent variables	visible variables	Standard error	z (CR value)	p	Standard factor load	AVE	CR	Cronbach's α
FRC	FRC1	-	-	-	0.729	0.574	0.843	0.842
FRC	FRC2	0.074	14.131	0	0.748			
FRC	FRC3	0.074	13.735	0	0.725			
FRC	FRC4	0.082	15.251	0	0.824			
BRC	BRC1	-	-	-	0.855	0.732	0.916	0.916
BRC	BRC2	0.047	21.456	0	0.835			

BRC	BRC3	0.044	23.29	0	0.878			
BRC	BRC4	0.044	22.327	0	0.855			
GC	GC1	-	-	-	0.822	0.679	0.894	0.894
GC	GC2	0.051	19.811	0	0.845			
GC	GC3	0.053	19.989	0	0.851			
GC	GC4	0.053	17.785	0	0.778			
IC	IC1	-	-	-	0.856	0.628	0.87	0.868
IC	IC2	0.054	16.61	0	0.731			
IC	IC3	0.05	18.863	0	0.806			
IC	IC4	0.051	17.79	0	0.77			
DC	DC1	-	-	-	0.817	0.684	0.896	0.896
DC	DC2	0.05	19.172	0	0.826			
DC	DC3	0.052	18.809	0	0.814			
DC	DC4	0.054	19.86	0	0.849			
DRC	ORC1	-	-	-	0.807	0.643	0.878	0.878
DRC	ORC2	0.054	18.602	0	0.823			
DRC	ORC3	0.056	17.014	0	0.766			
DRC	ORC4	0.055	18.255	0	0.81			
PUC	PUC1	-	-	-	0.811	0.608	0.861	0.86
PUC	PUC2	0.057	16.239	0	0.747			
PUC	PUC3	0.055	17.274	0	0.787			
PUC	PUC4	0.057	16.907	0	0.772			

Furthermore, the reliability analysis shows that Cronbach's alpha coefficients for all constructs range from 0.842 to 0.916, while composite reliability (CR) values range from 0.843 to 0.916, exceeding the recommended value of 0.70. These results confirm the satisfactory internal consistency of the measurement scales. In terms of convergent validity, the average variance extracted (AVE) values of all constructs range from 0.574 to 0.732, which are above the acceptable threshold of 0.50. Therefore, the measurement model demonstrates strong reliability and convergent validity, confirming that the constructs of Faculty Resource Capability (FRC), Brand Reputation Capability (BRC), Governance Capability (GC), Innovation Capability (IC), Dynamic Capability (DC), Organizational Resilience (ORC), and Private University Competitiveness (PUC) are appropriately measured and suitable for subsequent structural model analysis.

Table 4 presents the discriminant validity results of the measurement model using the Fornell–Larcker criterion. The square roots of AVE for all constructs are higher than their correlations with other constructs, indicating satisfactory discriminant validity. Specifically, the diagonal values range from 0.758 to 0.856, which are greater than the corresponding inter-construct correlation coefficients. These results confirm that Faculty Resource Capability (FRC), Brand Reputation Capability (BRC), Governance Capability (GC), Innovation Capability (IC), Dynamic Capability (DC), Organizational Resilience (ORC), and Private University Competitiveness (PUC) represent distinct theoretical concepts. Therefore, the measurement model demonstrates adequate discriminant validity for subsequent structural model testing.

Table 4. Discriminant Validity

	FRC	BRC	GC	IC	DC	ORC	PUC
FRC	0.758						

BRC	0.281	0.856					
GC	0.266	0.17	0.824				
IC	0.208	0.429	0.173	0.792			
DC	0.275	0.278	0.208	0.22	0.827		
ORC	0.345	0.342	0.287	0.328	0.429	0.802	
PUC	0.396	0.392	0.201	0.363	0.36	0.62	0.78

Table 5 presents the goodness-of-fit indices of the structural equation model. The results indicate that the model achieves an acceptable fit with $\chi^2/df = 1.744$, RMSEA = 0.042, GFI = 0.914, NFI = 0.920, IFI = 0.964, and TLI = 0.960. All indices meet the recommended criteria, demonstrating that the proposed model has satisfactory explanatory and fitting ability and is suitable for hypothesis testing [23].

Table 5. Model Fitting Results

Fit index	critical value	Current value	result
Card		589.455	
Degrees of freedom		338	
Chi-square/degrees of freedom	<3	1.744	Meets standards
RMSEA	<0.10	0.042	Meets standards
GFI	>0.8	0.914	Meets standards
AGFI	>0.8	0.896	Meets standards
NFI	>0.9	0.920	Meets standards
IFI	>0.9	0.964	Meets standards
TLI	>0.9	0.960	Meets standards
CFI	>0.9	0.64	Meets standards

Table 6 presents the results of the structural model analysis, including path coefficients, critical ratios, and significance levels. The findings indicate that Faculty Resource Capability (FRC) has a significant positive effect on Dynamic Capability (DC) ($\beta=0.249$, $p<0.001$), supporting H1. Similarly, Brand Reputation Capability (BRC) significantly influences Dynamic Capability (DC) ($\beta=0.233$, $p<0.001$), supporting H2. These results suggest that faculty resources and institutional reputation contribute to the development of universities' adaptive capabilities [24].

Table 6. Results of Structural Equation Modeling

			SE	CR	P	Estimate
DC	<---	FRC	0.053	4.377	*	0.249
ORC	<---	GC	0.054	5.066	*	0.263
DC	<---	BRC	0.048	4.281	*	0.233
ORC	<---	IC	0.057	6.742	*	0.364
PUC	<---	DC	0.045	3.148	0.002	0.14
PUC	<---	ORC	0.052	12.297	*	0.677
FRC4	<---	FRC				0.821
FRC3	<---	FRC	0.054	15.101	*	0.729
FRC2	<---	FRC	0.054	15.394	*	0.743
FRC1	<---	FRC	0.053	15.186	*	0.733

BRC4	<---	BRC				0.854
BRC3	<---	BRC	0.045	23.104	*	0.876
BRC2	<---	BRC	0.048	21.359	*	0.835
BRC1	<---	BRC	0.046	22.321	*	0.858
GC4	<---	GC				0.777
GC3	<---	GC	0.061	18.42	*	0.85
GC2	<---	GC	0.059	18.28	*	0.844
GC1	<---	GC	0.06	17.758	*	0.822
IC4	<---	IC				0.768
IC3	<---	IC	0.063	16.665	*	0.803
IC2	<---	IC	0.066	15.078	*	0.732
IC1	<---	IC	0.063	17.694	*	0.856
DC1	<---	DC				0.815
DC2	<---	DC	0.051	19.073	*	0.828
DC3	<---	DC	0.053	18.561	*	0.81
DC4	<---	DC	0.054	19.775	*	0.852
ORC4	<---	ORC				0.814
ORC3	<---	ORC	0.055	16.876	*	0.759
ORC2	<---	ORC	0.053	18.776	*	0.827
ORC1	<---	ORC	0.054	18.004	*	0.799
PUC1	<---	PUC				0.807
PUC2	<---	PUC	0.059	15.539	*	0.734
PUC3	<---	PUC	0.057	16.584	*	0.777
PUC4	<---	PUC	0.059	16.277	*	0.764

Regarding Organizational Resilience (ORC), Governance Capability (GC) demonstrates a significant positive impact on ORC ($\beta=0.263$, $p<0.001$), while Innovation Capability (IC) has a stronger positive effect on ORC ($\beta=0.364$, $p<0.001$), supporting H3 and H4. Furthermore, Dynamic Capability significantly affects Private University Competitiveness (PUC) ($\beta=0.140$, $p=0.002$), and Organizational Resilience shows a stronger positive effect on PUC ($\beta=0.677$, $p<0.001$). These findings support H5 and H6, indicating that both adaptive capability and resilience mechanisms play important roles in enhancing the sustainable competitiveness of private universities. Overall, the structural model confirms the proposed theoretical relationships among organizational resources, capabilities, and competitiveness (As shown in Figure 2).

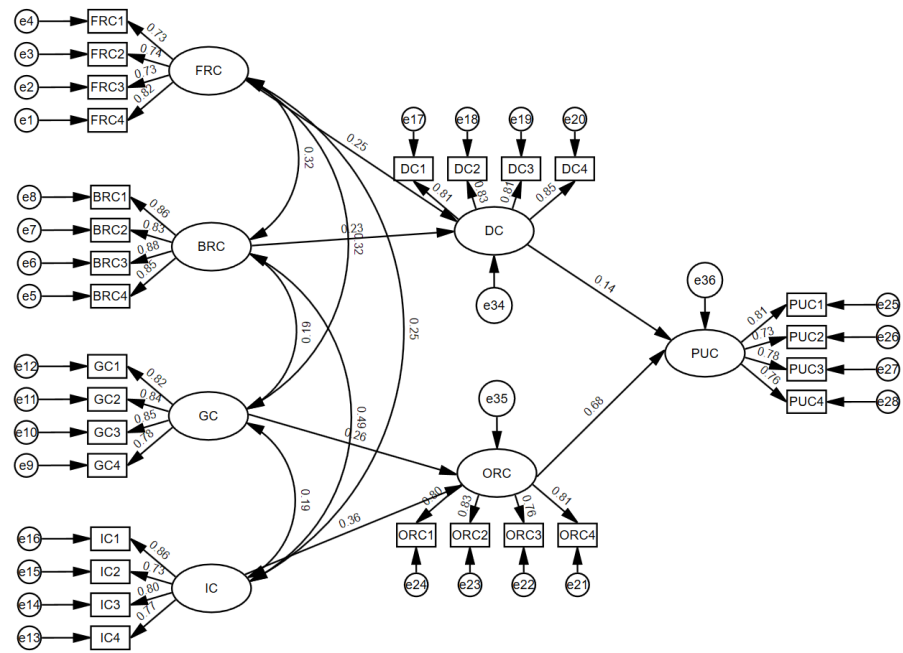


Figure 2. Structural Equation Modeling (SEM)

Table 7 presents the results of the mediation effect analysis using the bootstrap method. The findings demonstrate that Dynamic Capability (DC) plays a significant mediating role between resource-based factors and Private University Competitiveness (PUC). Specifically, the indirect effect of Faculty Resource Capability (FRC) on PUC through DC is significant ($\beta=0.049$, $p=0.008$, 95% BootCI = [0.018, 0.088]), while the direct effect remains significant ($\beta=0.278$, $p<0.001$), indicating a partial mediation effect [25]. Similarly, Dynamic Capability partially mediates the relationship between Brand Reputation Capability (BRC) and PUC, with a significant indirect effect ($\beta=0.042$, $p=0.004$, 95% BootCI = [0.018, 0.072]).

Table 7. Results of the Mediation Test

item	Total effect	Mediation effect value	p value	95% BootCI	direct effects	Test conclusions
FRC => DC => PUC	0.326***	0.049	0.008	0.018 ~ 0.088	0.278***	Some intermediaries
BRC => DC => PUC	0.270***	0.042	0.004	0.018 ~ 0.072	0.228***	Some intermediaries
GC => ORC => PUC	0.131**	0.122	0	0.065 ~ 0.184	0.009	Fully Intermediated
IC => ORC => PUC	0.320***	0.151	0	0.091 ~ 0.213	0.168***	Some intermediaries

Notes: * $p<0.05$ ** $p<0.01$ *** $p<0.001$

bootstrap type = percentile bootstrap method

Furthermore, Organizational Resilience (ORC) demonstrates different mediation patterns. The indirect effect of Governance Capability (GC) on PUC through ORC is significant ($\beta=0.122$, $p<0.001$), while the direct effect is insignificant ($\beta=0.009$), indicating a full mediation effect [26]. In contrast, ORC partially mediates the relationship between Innovation Capability (IC) and PUC, as both the indirect effect ($\beta=0.151$, $p<0.001$) and direct effect ($\beta=0.168$, $p<0.001$) are significant. Overall, the results confirm that DC and ORC serve as important mechanisms through which organizational capabilities enhance the sustainable competitiveness of private universities.

5. Finding and Conclusions

This study investigated the factors influencing the sustainable competitiveness of private universities in China by developing and empirically testing a structural equation model grounded in the Resource-Based View, Dynamic Capability Theory, and Organizational Resilience Theory. The proposed model examined the direct effects of four organizational capabilities—Faculty Resource Capability (FRC), Brand Reputation Capability (BRC), Governance Capability (GC), and Innovation Capability (IC)—as well as the mediating roles of Dynamic Capability (DC) and Organizational Resilience (ORC). The empirical findings provide important insights into how private universities transform internal resources and organizational capabilities into sustainable competitive advantages.

First, the findings confirm that resource-based factors significantly contribute to the development of Dynamic Capability. Specifically, Faculty Resource Capability and Brand Reputation Capability were found to have significant positive effects on Dynamic Capability. This finding indicates that faculty resources and institutional reputation are not merely static assets but serve as foundations for developing adaptive organizational capabilities. Faculty members represent critical knowledge resources that support teaching improvement, research development, and organizational learning. When private universities possess stronger faculty capabilities, they are better able to identify educational trends, integrate knowledge resources, and implement strategic adjustments. Similarly, brand reputation provides universities with legitimacy and stakeholder trust, enabling them to access external resources and respond more effectively to environmental changes. These findings extend the Resource-Based View by demonstrating that valuable resources influence competitiveness not only through direct effects but also through capability-building mechanisms.

Second, the results demonstrate that Governance Capability and Innovation Capability significantly enhance Organizational Resilience. Among these relationships, Innovation Capability showed a stronger influence on Organizational Resilience than Governance Capability, suggesting that innovation has become a critical mechanism for private universities to cope with uncertainty. In the context of Chinese higher education, private universities face challenges including demographic decline, intensified competition, digital transformation, and changing educational demands. Innovation capability enables institutions to redesign educational models, improve management practices, and develop new strategic responses. Meanwhile, governance capability provides the institutional foundation for coordination, decision-making efficiency, and strategic implementation. Together, these capabilities strengthen universities' ability to absorb external pressures and maintain sustainable development.

Third, the findings reveal that both Dynamic Capability and Organizational Resilience significantly influence Private University Competitiveness. However, Organizational Resilience demonstrated a substantially stronger effect on competitiveness than Dynamic Capability. This result highlights that the ability to maintain stability, recover from challenges, and continue operations under uncertainty is particularly important for private universities. While dynamic capability helps institutions identify opportunities and adjust strategies, resilience ensures that these strategies can be effectively sustained during environmental volatility. Therefore, sustainable

competitiveness is not only determined by growth-oriented capabilities but also by the ability to withstand uncertainty and maintain organizational continuity.

Fourth, the mediation analysis provides further evidence regarding the mechanisms underlying private university competitiveness. Dynamic Capability partially mediates the relationships between Faculty Resource Capability, Brand Reputation Capability, and Private University Competitiveness. This indicates that faculty resources and reputation directly contribute to competitiveness while also indirectly enhancing competitiveness through adaptive capability development. These findings support Dynamic Capability Theory by demonstrating that organizational capabilities act as transformation mechanisms between resources and competitive outcomes.

In contrast, Organizational Resilience fully mediates the relationship between Governance Capability and Private University Competitiveness. This suggests that governance capability alone may not directly generate competitive advantages; instead, effective governance enhances competitiveness by improving institutional resilience. In other words, governance mechanisms create value when they enable universities to respond effectively to environmental challenges. Furthermore, Organizational Resilience partially mediates the relationship between Innovation Capability and Competitiveness, indicating that innovation contributes to competitiveness through both direct improvement and resilience enhancement.

This study contributes to the existing literature in three important ways. First, it expands research on university competitiveness by developing an integrated theoretical model combining the Resource-Based View, Dynamic Capability Theory, and Organizational Resilience Theory. Previous studies have often examined individual factors such as educational quality, reputation, or innovation separately, while providing limited explanation of how these factors interact to produce sustainable competitiveness. This study demonstrates that competitiveness is a dynamic process involving resource accumulation, capability development, and organizational adaptation. Second, this study extends Dynamic Capability Theory into the context of private higher education. Existing dynamic capability research has mainly focused on business organizations, while limited attention has been given to universities as complex knowledge-based institutions. The findings demonstrate that dynamic capability is also an important mechanism through which educational institutions transform resources into long-term advantages. Third, this research highlights the importance of organizational resilience in higher education competitiveness. Previous studies have emphasized innovation and performance improvement, but fewer studies have considered resilience as a strategic mechanism for maintaining competitiveness. The strong effect of Organizational Resilience on Private University Competitiveness suggests that resilience should be regarded as a core strategic capability for private universities operating in uncertain environments.

The findings provide several practical implications for private university administrators. First, universities should prioritize faculty development as a strategic investment rather than viewing faculty resources only as operational inputs. Enhancing academic recruitment, professional development, and research support can strengthen both institutional capability and long-term competitiveness. Second, private universities should actively cultivate institutional reputation through improving educational quality, strengthening stakeholder relationships, and developing distinctive academic characteristics. Reputation accumulation can enhance external legitimacy and provide important resources for future development. Third, governance structures should be designed to support organizational flexibility and resilience. Effective governance should enable faster decision-making, resource coordination, and strategic responsiveness to external changes. Finally, universities should strengthen innovation capability, particularly in digital transformation, curriculum change, and organizational management. Innovation should not only aim at short-term improvement but also enhance institutional resilience and sustainable development capacity. This study concludes that the sustainable competitiveness of Chinese private universities is shaped by a combination of resource capabilities, adaptive capabilities, and resilience

mechanisms. Faculty Resource Capability and Brand Reputation Capability enhance competitiveness primarily through the development of Dynamic Capability, while Governance Capability and Innovation Capability strengthen competitiveness through Organizational Resilience. The findings demonstrate that sustainable competitiveness is not simply a consequence of possessing valuable resources but results from the effective transformation of resources into adaptive and resilient organizational capabilities. By establishing and validating a comprehensive structural equation model, this study provides a deeper understanding of the mechanisms through which private universities achieve sustainable competitive advantages. The results suggest that future development strategies should move beyond resource accumulation and focus on building dynamic, innovative, and resilient institutions capable of responding to continuous environmental change. For Chinese private universities, sustainable competitiveness depends on the integration of internal resources, strategic capabilities, and organizational adaptability.

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