DIMENSIONS OF ACADEMIC QUALITY IN HIGHER EDUCATION IN PAKISTAN

by

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DISSERTATION

Presented to the Swiss School of Business and Management in Geneva

In Partial Fulfillment

Of the Requirements

For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

January, 2025

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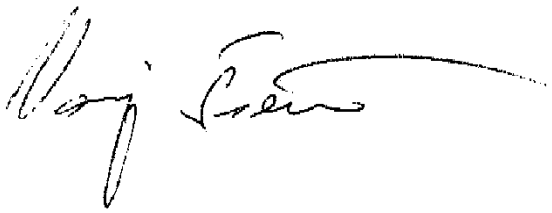
Approved as to style and content by:



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Dedication

This thesis is dedicated to my parents, teachers, great role models and friends, and the rest of my family, for always believing in me, inspiring me, and encouraging me to reach higher to achieve my goals.

Acknowledgments

Through the grace of Allah, I would like to express my deepest appreciation to the following individuals and organizations who have supported and encouraged me throughout my thesis research and writing: my thesis mentor, Dr. Volarević, who has provided invaluable guidance, support, and feedback throughout the process. Your expertise and insights have been instrumental in shaping my research.

My family and friends provided unwavering emotional support, encouragement, and motivation throughout my academic journey. The participants in this research study generously offered their time and insights, without whom this research would not have been possible.

The Swiss School of Business and Management provided technical or specialized assistance and guidance, which helped me complete my research.

Finally, I would like to acknowledge all the individuals who have contributed to my academic growth and development but whose names are not mentioned here. Thank you for your support, guidance, and encouragement throughout the manuscript. I greatly appreciate it.

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ABSTRACT

DIMENSIONS OF ACADEMIC QUALITY IN HIGHER EDUCATION IN PAKISTAN

Humaira Mumtaz
2024

This study examines the multidimensional aspects of academic quality at Pakistan's higher education institutions, particularly aiming at the significant roles played by faculty, academic resources, and accreditation. This research intends to get an integrated knowledge that influences national educational quality.

A quantitative research approach was used, which involved gathering data from faculty members through a survey tool. Utilizing such an approach made it possible to analyze the data gathered about the perceived quality of higher education institutions. The study applied the purposive sampling technique to draw a representative sample of institutions with diversity in size and types of academic disciplines. Data were evaluated using descriptive statistics and thematic analysis to explore patterns and relationships among the variables.

The findings indicate that to enhance academic quality, investment in faculty development programs, improvement of academic infrastructures, and simplification of the accreditation process must be made. Collaboration between higher education institutions and regulatory bodies will provide a single framework for ensuring quality in higher education.

This study impacts the existing body of literature by presenting empirical evidence regarding factors influencing academic quality in Pakistani higher education institutions. The findings may be useful for developing strategy-based approaches that focus on strengthening academic standards, improving student outcomes, and enhancing the reputation of Pakistani universities internationally.

Keywords: *Academic quality, Higher education, Pakistan, Faculty, Academic resources, Accreditation, Quantitative research, Survey, Determinants, Policy implications.*

CHAPTER 1: INTRODUCTION

Higher education is of paramount concern and quality in this global village, which is integrated to its fullest level. In the higher education scenario, Pakistan has undergone acute change and transformation over the last few decades. Pressures such as economic demands, the dynamism of globalization, and social changes have pushed growth. The changing situation of HE in Pakistan requires a thorough look at academic quality from different angles. As global education standards change quickly, it is important to consider how faculty participation, accreditation processes, and educational resources work together to influence academic experience. This examination not only shows the current state of universities in Pakistan but also points to the urgent need for changes to improve educational results. Recognizing the broader role of faculty goes beyond just teaching, as teachers are key to bringing in new teaching methods and creating a culture of academic success. Also, following established accreditation standards supplies a way to assess how well institutions perform, making sure they meet both national and international expectations. Together, these factors highlight the need for a strategic focus on academic quality, ultimately helping enhance higher education in Pakistan. The dimension of academic quality has a crucial base for determining a country's future, especially for emerging economies such as Pakistan. The academic scenario in Pakistan during the past decades has been saturated with challenges, making quality education a far cry from the higher education institutions in Pakistan. This is blamed on systemic issues, namely insufficient financial support, Lack of faculty, and poor infrastructure, which together create an atmosphere that seriously discourages effective learning and teaching. Although history shows a lengthy record of how HE is one of the prerequisites of any state's development, rarely does the investment of the government make it to the priority list, with hardly any percentage from total public spending making home to the budget of higher education. For instance, in 2021, Pakistan spent 2.5% of its GDP on education, far-reaching from the recommended benchmark of 4-6% by UNESCO. This creates poor infrastructure, outdated teaching Resources, an inadequacy of funds for research, and a bad learning environment. Advanced research-level educational institutions like universities find poor facilities and lack of advanced laboratories and libraries as the reason for lesser practical

learning and research output by the students, creating poor quality academics at the end of the higher educational institution in Pakistan.

When compared to the impact on the students, the effects of lowered academic quality are even more intense. The graduates of universities in Pakistan face reduced job opportunities and employment in a competitive job market. Employers commonly pass remarks on the disparity between the skills of their graduate employees and those required in the job market. For instance, a study by the Pakistan Business Council revealed that 65% of employers mentioned that fresh graduates were not ready for the workplace due to poor critical thinking as well as hands-on skills.

But the social repercussions of bad academic quality are more pervasive than that. They ring throughout the Pakistani economy: economic development slows down due to declination in academic quality, when a non-challenged and poorly educated faculty cannot meet the demands of modern growing industries. The growing institutions with little innovation and research output by universities make the matter even worse, shifting focus from learning at the expense of creativity and critical questioning. For instance, on global innovation indices, Pakistan stands at a low ranking. It spends only 0.08 percent of its GDP on research and development compared with South Korea at 2.8 percent. There is a relatively lagging investment in research that exposed the country to uncompetitive advantages in international markets of the sectors depending on technology and innovative development.

Due to multiple reasons rooted in the lack of funding, impoverished infrastructure, and minimal government support, the dimensions of academic quality in Pakistan look like this Lack of Academic Resources, Role of Faculty, and Accreditation The significance of quality assurance has escalated in the current higher education scenario. Despite abundant research on quality, there has been a dearth of attention paid to higher education. Hence, it is essential to ascertain the reasons that augment customer satisfaction (Gronroos 1990). Within the perspective of higher education, the term customer holds a unique connotation, as it encompasses a multitude of groups, such as academic staff, employers, government, students, and families, each with a distinct set of requirements. The integrity of academic programs fundamentally hinges on how effective faculty members are and what resources

are available, as both play crucial roles in creating a suitable environment for learning. The value of faculty goes beyond mere qualifications; their involvement in the development of the curriculum and teaching methods has a direct impact on a student's academic success and overall satisfaction. According to recent investigations, teaching standards include various aspects, where the credentials of the faculty and the quality of instruction are essential components of educational excellence (Baum et al., 2009). At the same time, the distribution of resources such as technology and library facilities contribute to the educational experience, making it necessary to plan strategically to enhance educational outcomes. Additionally, accreditation serves as an important mechanism to ensure that these aspects are properly addressed, offering a structure for both accountability and ongoing enhancement. By tackling these closely linked dimensions, institutions can create an atmosphere that fosters not only academic quality but also innovative teaching methods.

The concept of quality in higher education is complex and poses a major challenge in terms of definition. To address this issue, it is recommended to consider the various perspectives of stakeholders when defining Academic quality, as suggested by previous research. The main stakeholders in higher education include the management, employees, students, and organizations. All these parties are customers of an education system with diverse requirements.

Although high-quality management in higher education has been a major component of research worldwide, most of the literature suggests that studies have focused on the external customers of the educational system. The study is exhibited to obtain an internal customer's view by focusing on the faculty and intending a comprehensive framework for quality management in higher education.

This analyzes research on quality education and learning in higher education, particularly in Pakistan. According to Khalid (2010); and Iqbal et al., (2021), The key factors for success in academic performance include faculty capabilities, resources, and institutional policies. Zaki, S., & Rashidi, M. (2013) contributed a quality framework, pointing out eight important parameters for the assurance of quality within institutions of higher learning. Among others, some of these very critical parameters include curriculum, knowledge, and skills of faculty, institutional strategy, and leadership. The research posits constant

improvements in the quality of learning should accord with changing societal needs to develop the human capacity that will spurn innovation. The essential aspects of academic quality in higher education often involve creating a complex system that affects both student outcomes and how well schools operate. One key part is faculty engagement. Research shows that dedicated and skilled faculty members greatly improve how the curriculum is taught and how students learn. Additionally, the importance of accreditation is significant, as it acts not just as a set of rules but also as a driver for ongoing improvement in institutions, promoting a culture of responsibility and high standards (Dill et al., 2010). Academic resources, such as libraries, technology, and learning support services, also contribute to creating a good educational environment and assisting students to succeed in their studies. Together, these aspects highlight the complicated nature of academic quality, requiring a combined strategy to evaluate and improve higher education in Pakistan, where there are clear challenges and chances for progress. Quality education, as illustrated by Aldridge and Rowley (1998), provides good education opportunities. It has been suggested that the level of satisfaction or dissatisfaction in students' success or failure in learning harms their success or failure. Since the higher education sector is considered the service industry (Hill, 1995), besides the students' perception, Faculty perception is a crucial factor in determining academic quality.

Lagrosen S. et al. (2004) proposed various quality dimension frameworks from a student's perspective in higher education. This study addresses the question of what dimensions constitute quality from the perception of a faculty, or academic staff. Therefore, the main objective of this study was to determine whether the dimensions proposed in the literature concern quality. The proposal encompasses three dimensions: Academic Resources, Accreditation, and the Role of Faculty. The purpose of this study is to emphasize effective quality dimensions and to encourage practices that could help other organizations improve the quality of their teaching and thus, the quality of their student education.

Therefore, this study will critically examine the objective and scope of dimensions, the role played by the members of the faculty and try to pin down drivers for long-term improvement of institutional support for staff and the decision-making bodies, therefore

filling part of the data gap in information on outcome indicators regarding higher education.

1.1. Research Problem

The higher education scene in Pakistan has both chances and problems, especially as it tries to meet global quality and relevance standards. Recent studies highlight key issues that change academic success, such as poor infrastructure and lack of complete faculty training, which create a negative learning atmosphere in many schools (Khan S et al., 2022). In addition, the absence of accreditation systems has hindered notable quality improvements in technical and engineering education, which is crucial for the country's economic growth. Research says that there is a positive link between accreditation processes and quality improvements, suggesting that good accreditation can enhance educational standards (Ashraf I et al., 2020). However, ongoing issues like nepotism and low funding complicate the situation, calling for immediate reforms. Tackling these various issues is necessary to improve academic quality and create a better environment for student success in Pakistan's higher education system. The quality of higher education and how to measure it are complex issues (Parri, 2006). Furthermore, the process becomes more complex due to the scope of the quality attributes to be measured and their relative weight is not a constant but depends on several points of view offered by different stakeholders. Academic quality is an important sign of how effective the education is. Thus, the results affected are those of the students; the reputation of a particular institution is also involved. Academic quality is an important sign of how effective education is, affecting both students' results and the reputation of institutions. A strong academic structure makes sure that courses are not only relevant but also well-made, addressing the varied needs of students and the requirements of a changing workforce. For Pakistan's higher education system, focusing on academic quality means taking a comprehensive approach that includes constant review of curricula, faculty training, and the use of modern academic resources.

Despite the increasing demand for higher education for personal and economic development, concerns persist about the quality and value of many degrees. As a result, a growing need exists to understand and improve the academic quality of higher education institutions and programs. However, there must be more consensus on defining and

measuring academic quality in higher education, making it difficult to determine which institutions and programs offer quality student outcomes. This study seeks to critically check the dimensions of academic quality in higher education and develop a comprehensive and valid framework for evaluating and enhancing academic quality in higher education. This problem statement highlights the need for a more comprehensive understanding of academic quality and the development of a more thorough and systematic approach to its evaluation and expansion.

1.2. Purpose of Research

The purpose of this study is to thoroughly grasp the interrelations among academic quality and the factors that influence higher education settings. The primary objective is to determine the extent to which faculty qualifications, allocation of resources, and accreditation procedures affect the perceptions of academic quality within educational institutions. Principal inquiries that steer this research encompass: In what ways do faculty credentials and instructional approaches influence student achievement and rates of retention? Additionally, what significance do institutional resources hold in bolstering quality education, particularly considering the relevance of accreditation (Hasbún et al., 2018) Moreover, this study intends to delve into the efficiency of current quality assurance frameworks in cultivating an environment that encourages academic excellence, as indicated by the necessity for systematic evaluation (Doherty et al., 2009).

By tackling these objectives, the research endeavors to shed light on the essential aspects of academic quality that impact educational experiences within higher education contexts. Recent research suggests that the academic quality in the higher education sector of Pakistan is subject to criticism. Although students perceive that both universities and their academic programs are of low quality, it's relative because the private university sector is faring slightly better than public sector educational institutions (Shahzaf Iqbal et al., n.d.). Additionally, university teachers have also agreed that effective academic planning is a stimulus that fosters quality in education (Nasrullah & Hussain, 2024). It has been researched that the two most important barriers to achieving world-class status for Pakistani universities are unawareness of international quality standards and lack of interest from the top leadership level. The Higher Education Commission of Pakistan has taken

several quality assurance initiatives to pursue these deficiencies. As stated by K. Khalid 2010, Other recommendations relate to the promotion of quality standards and an increase in engagement from leadership, as well as the development of indigenous models of quality assurance appropriate for the local context in Pakistani higher education. This study would help in improving the performance of the institutions and contribute to continuous quality improvement in the higher education sector in this country. Furthermore, this study aims to establish and test dimensions for measuring quality in higher education, with specific reference to faculty. It also aims to analyze and analyze the factors that determine the quality.

The term 'Quality' is a widely used term that will be beneficial first to clarify the focus of this research. Many efforts have been made to define quality in higher education or even multiple models of quality (Cheng and Tam, 1997). The quality may also be based on purposes, whether to the purposes and views of customers or the institutions. This research does not consider customer-defined or institutionally defined concepts of quality as its initial point. Rather, an effort will be made to focus on what is known about what quality in higher education is associated with educational efficiency from faculty perspectives.

This study focuses on the quality of service within the higher education sector and assesses their effectiveness in determining quality from a faculty standpoint. The following are the objectives to be achieved after this study.

a) To identify the key dimensions contributing to higher education institutions' academic quality.
b) To analyze the role of faculty, staff, and resources in shaping Academic quality
c) To evaluate the impact of accreditation on academic quality as dimensions.
d) To find the contribution of Academic resources in enhancing Academic quality

1.3. Significance of the Study

The Research has several effects on the enhancement of academic quality in higher education, some of which are as follows:

- Enhancing Teaching and Learning: The study can help institutions focus on improving teaching and learning, which is crucial in higher education. By identifying the key factors contributing to academic quality, institutions can allocate resources to develop innovative teaching methods, improve faculty development programs, and provide students with high-quality learning resources.
- The findings emphasize the significance of accreditation in ensuring quality assurance in higher education. Accreditation ensures that institutions meet certain standards and benchmarks, which can help institutions identify areas for improvement. The study can also help institutions design and implement effective quality assurance systems.
- Faculty Development: The study emphasizes the critical role that faculty members play in maintaining and improving academic quality. By identifying the factors that contribute to faculty development, such as training programs, mentoring, and research opportunities, institutions can allocate resources to support faculty development.
- The study emphasizes the importance of resource allocation in maintaining and improving academic quality. Institutions need to allocate sufficient resources to support faculty development, research, and other academic activities, and this can have a substantial impact on the quality of education provided.
- Student Success: Ultimately, the study's significance lies in its potential to contribute to student success in higher education. By focusing on the key factors that contribute to academic quality, institutions can provide students with a high-quality education that trains them for accomplishment in their chosen fields.

In conclusion, the thesis on the dimensions of academic quality, including the role of faculty, accreditation, and academic resources, has significant implications for higher education. The study can help institutions enhance teaching and learning, improve quality

assurance systems, support faculty development, allocate resources effectively, and ultimately contribute to student success.

1.4. Research Objectives and Questions

The Academic Quality of Higher education achieves the development of human resources and knowledge, along with social development in the country. Today, institutions of higher learning, particularly policy-making bodies such as Pakistan's Higher Education Commission, increasingly understand how their role can make a difference in the nation's improvement through improved quality in higher education.

It has the following objectives: first, it will study the systems of quality improvements, modifications, and ingenuities that have occurred in Pakistan's higher education sector since its birth; secondly, it will review the existing quality assurance models applied to higher education institutions that can bring continuous quality improvement. Additionally, primary data will be accumulated to assess the faculty member's attitudes and perceptions regarding the quality improvement practice within higher education institutions. In addition to this, the research investigates the current level of quality assurance practices and the impact on institutional performance in the ever-changing higher education system.

The findings will be useful in addressing the issues in quality assurance at several levels: general policy, administration of HEIs, and various stakeholders including faculty members. Components contributing to continuous improvement of the quality system are addressed at a great pace in HEIs. Finally, the model employed in this work may be utilized at all the levels mentioned above for quality assurance.

In this study, the following research questions will be addressed.

a) Does the level of expertise, commitment, and engagement of the faculty improve the Academic Quality in Higher education institutions?
b) Does the availability of academic resources, such as classrooms, labs, libraries, and technology enhance the Academic Quality in Higher education institutions?

c) Does the level of accreditation contribute to the university's reputation and credibility and enhance the success of Academic Quality?

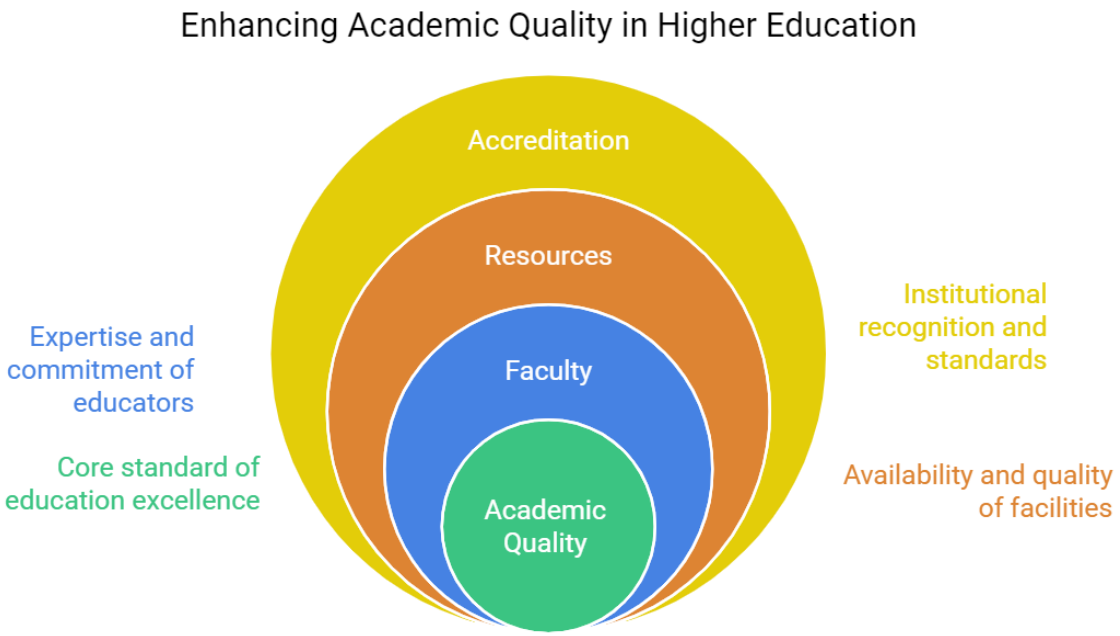

Figure 1.1 Enhancing the Academic Quality

CHAPTER 2: REVIEW OF LITERATURE

In the rapidly changing realm of higher education, certainty in academic quality stands as a critical element that differentiates institutions and has an impact on student achievements. As the sphere of higher education faces mounting pressures regarding accountability and performance metrics, grasping the various aspects of academic quality becomes indispensable for multiple stakeholder groups, which include faculty, administrative personnel, and bodies responsible for accreditation. More than just surface-level metrics, the concept of quality consists of various interrelated components; among these, the most significant include faculty qualification, availability of resources, and the legitimacy of the accreditation mechanisms in place. These components not only support the effectiveness of education but also play a considerable role in shaping the reputation of the institution and the level of satisfaction experienced by students. A comprehensive analysis of these aspects uncovers their mutual connections and the consequences they hold for strategic planning and policy development within educational establishments. Thus, the creation of a framework aimed at evaluating academic quality arises as an essential task, which necessitates a detailed comprehension of both internal and external forces influencing the higher education environment.

This research is intended to examine the quality of institutions of higher learning. Having analyzed the literature, to incorporate insights from these studies, the author proposes the set of quality dimensions in higher education institutions. The findings provide valuable and valuable insights into the quality of higher education institutions. The dimensions can thus serve as a checklist, where institutes of education can determine if all important issues and factors are being investigated. For academics, it provides a common language where the quality dimensions can be explored and researched from different perspectives. It thus validates and extends these dispersed findings into a comprehensive framework of quality dimensions that are relevant to higher education institutions. Recent literature reveals a mixed picture. While some universities have shown improvement in rankings and research output, systemic issues such as lack of funding, inadequate faculty training, and infrastructural challenges remain prevalent (Mahmood & Pasha, 2020; Hussain et al., 2021). Furthermore, socio-economic disparities continue to affect access to quality education, particularly for marginalized communities (Khan & Iqbal, 2019).

There is no universal definition for quality in higher education, and such a definition would certainly be an elusive and convoluted concept if it existed (Bendell, 1995; Schindler et al., 2015). The dominant areas that have been directed toward research in this area involve student learning, service quality, engagement, and satisfaction (Prakash, 2018). Numerous theories have been associated with quality; some are TQM, quality assurance, benchmarking, and accountability. Kundu (2016), came up with a set of quality dimensions for higher educational institutions that could work as a framework to talk about quality issues and enhance academic discussions. The definition of quality and quality assurance is very difficult since there are challenges regarding its definition observed in the literature, which may become culturally impinged while interpreting these terms by different stakeholders (Schindler et al.2015) Though the concepts of quality in higher education appear confusing (Bendell, 1995), there is an increasing focus on its rhetoric that shapes the importance of student satisfaction and the conceptualization of teaching excellence for policymakers and academic administrators alike (Prakash, 2018).

Quality in higher education has become a focal point in recent years, with institutions striving to meet the demands of modernization and development (Mishra & Kushwaha, 2016). The concept of quality encompasses multiple dimensions, including research, teaching-learning processes, curricular aspects, infrastructure, and student support (Kundu, 2016). The shift from elitist pursuit to massification has led to an increased emphasis on employability and lifelong learning (Gupta, 2021). The quality of higher education is complex, with various approaches proposed, such as the production model, value-added approach, and the total quality experience approach (Tam, 2001). These models aim to capture different aspects of educational experience and institutional performance. The multifaceted nature of quality in higher education necessitates a comprehensive framework that addresses essential factors and promotes continuous improvement (Kundu, 2016; Gupta, 2021). This focus on quality is crucial for preparing students to think critically and contribute to society beyond their university years.

In developing countries, higher education, particularly university education, is a potential source of modernization and development. This has caused a rise in demand for access to the same, not excluding challenges. This paper identifies the quality factors of higher education. The methods used in the study were both qualitative and quantitative in the

higher education sector to provide insights into comparative evaluations of quality dimensions.

The research seeks to evaluate the quality of the higher education institutions. It is based on a rigorous evaluation of literature and integrating insights from these studies that a set of quality dimensions that are relevant to higher education institutions has been proposed. The findings provide valuable, meaningful insights into the quality dimension of the HEI. This dimension set may act as a checklist that educational institutes can adopt to concentrate on the quality issues at hand. It will ensure that all the basic issues and factors have been covered when implementing. For academics, it is common to discuss and study quality dimensions from different perspectives. It demonstrates and extends the sometimes-disparate findings of previous literature, providing a useful unifying framework with which to discuss quality dimensions relevant to HEIs. The literature emphasizes the importance of the quality factor in HEI influencing teaching and learning effectiveness. Hénard (2010) asserted that institution-wide practices, organizational structure, and leadership commitment make teaching quality excel. Munna & Kalam (2021) emphasized that active learning environments, positive feedback, and inclusive practices enhance student performance. Prakash (2018) has identified the following key quality constructs in HEIs: student learning, engagement, and satisfaction. According to Makhoul (2019), the powerful tool for enforcing institutional change for improving teaching and learning lies within the accreditation process. In that respect, this research concluded that HEIs must learn to pay more attention to innovative teaching methods, better faculty development programs, and quality learning resources. Quality assurance measures and accreditation standards can also contribute to teaching excellence, thus fostering improvements in overall educational quality**.**

2.1. Theoretical Framework

A look into academic quality in higher education shows the major impact of past theories on today's views and methods. The move from old teaching styles to more student-focused approaches shows a big change influenced by constructivist theories, which highlight the need for active learning and involvement. This change shows a wider understanding that

education should not just give knowledge but also encourage critical thinking and real-world skills. In addition, the growth of quality assurance systems in different countries has highlighted the need for clear indicators of success, linking educational results with job market needs and societal demands. Studies show that graduates' success in their careers is a complex idea, requiring an understanding of the skills gained during their education (Pavlin, 2011). Also, as governments and institutions deal with these shifts, they need to see that students' views on quality are as important as factual results, requiring a thorough look at teaching strategies (Fialho et al., 2012). In today's world of higher education, the focus on academic quality is getting stronger, encouraging researchers to investigate its various aspects. Many frameworks and theories have appeared, each giving different views on what quality means in academic settings. These theories show how important educational resources and institutional practices are, but they also stress how student engagement and results play a part in judging academic success. For stakeholders like policymakers, educators, and students, understanding these various theories is crucial as they deal with the challenging world of educational excellence. As we dig deeper, the connection between quality and aspects like curriculum design, faculty qualifications, and assessment methods becomes clear. These aspects are key signs of academic excellence and need to be looked at thoroughly. A complete approach to understanding quality in education requires examining how these aspects are linked and how they affect overall educational results. In the end, this discussion aims to shed light on the important theories of academic quality, helping to create a better understanding of the complexities involved. By bringing together existing literature and theoretical frameworks, this study seeks to offer a solid base for grasping the different factors that influence academic quality in higher education environments. This analysis is not only relevant to existing discussions but also has real-world implications for improving educational practices and policies. There are various multi-dimensional and multi-perspective theoretical frameworks for researching academic quality. Fairweather & Brown (2017), attempted to prove empirically that single-variable or single-dimension concepts of quality are not adequate and stressed the need for considering the factors affecting program and institutional levels. Aithal & Maiya (2023), examined the different dimensions of excellence in teaching methodologies, curriculum design, and assessment practice. Bloxham (2012) added to this tension between theoretical

perspectives and the practical application of academic standards with an alternate framework for safeguarding standards. Zhang (2001) provided a coherent framework for examining the relationships between quality dimensions, perspectives, and practices that integrated internal-external focus and objective-subjective measurement. These studies, in their entirety, underscore the complexity of the quality variable in academia, therefore multi-dimensional approaches that balance theoretical frameworks with practice are needed to capture the essence of educational outcomes and institutional effectiveness.

Looking at theoretical frameworks is important for grasping the complex nature of academic quality. Various frameworks offer different views to look at qualities like dialogicity, accountability, and relevance found in the DART model (Macagno et al., 2019). These aspects help scholars break down and study the different parts that makeup quality academic discussion. Additionally, the use of Green Business Process Management (BPM) gives an interesting view on accountability in academia, suggesting that caring for the environment can improve organizational practices (Couckuyt et al., 2019). This shows the need to consider not just standard measures of academic quality but also the larger environmental context, which encourages cross-disciplinary approaches. Therefore, a well-rounded theoretical framework should include various methods and viewpoints, connecting the gaps between detailed academic research and real-world applications, which ultimately enhances the discussion on academic quality and its many aspects.

In recent talks about academic quality, different models have shown the connection between school culture and quality assurance methods. A key review shows that understanding academic quality goes beyond just following rules; it includes the core beliefs and actions within academic institutions. For example, the idea of "multiple cultural configurations" shows how different organizational cultures can affect teaching methods and results, impacting views on quality (Baughan et al., 2012). Additionally, the important role of identity and trust among stakeholders like faculty, students, and administration is vital for creating a space that encourages teamwork and innovation (Alao et al., 2014). These factors highlight the need for a comprehensive approach to academic quality that blends structural systems and cultural influences, leading institutions toward lasting excellence and ongoing improvement in their educational services. By adopting these

modern ideas, universities can handle the challenges of academic quality in a changing educational environment.

The theoretical framework for the study of academic quality and its dimensions can be based on several different theories and perspectives, including:

2.1.1. Systems Theory

Systems theory is a holistic, interdisciplinary approach that tries to view phenomena as constituted by their constituent relationships and interrelations with each other, rather than isolated parts (Mele et al., 2010). It provides a framework for analyzing and understanding complex systems across a wide range of domains: from atomic particles to galaxies (Sayin, 2015). Systems theory is a concept mainly developed in the 1950s by scholars such as Ludwig von Bertalanffy, with applications in geography, sociology, management, and economics. The theory considers systems as open, concerning those significant inputs and outputs pertinent to living systems. The important concepts in systems theory are state and state-space methods, which have been applied to the analysis and design of physical systems in the 1960s by Zadeh. Based on a systemic approach, embracing a holistic view means that the researchers get the big picture of the phenomena under study that would be impossible to appreciate using any reductionist single approach (Mele et al. 2010). This approach views education as a complex system with multiple interrelated components, including curriculum, faculty, infrastructure, and student outcomes, that need to be managed and coordinated to ensure academic quality. Systems theory emphasizes the interconnectedness of various elements in a university. Faculty expertise, curriculum design, student support services, learning infrastructure, and administrative policies all influence academic quality. A change in one element can have ripple effects on the entire system. It encourages a holistic view of academic quality, moving beyond a narrow focus on metrics like standardized tests. It acknowledges the importance of factors like student engagement, critical thinking skills, creativity, and social responsibility in defining a high-quality education.

2.1.2. Quality Management Theory

The theory of quality management has developed from early techniques of inspection and control to a holistic philosophy known as total quality management TQM (Augustyn et al. 2022). The development of the theory, which has been impacted by quality leaders, standard models, and experience gained through empirical research, denotes critical factors for successful implementation (Claver et al., 2003). Meta-analyses have shown that almost all individual quality management practices have a positive effect on organizational performance, although management leadership and supplier quality management are more important than others (Lu Xu et al., 2020). According to Koskela et al. The theoretical implications of the field of quality management are derived from Shewhart's theory of value generation and the Plan-Do-Check-Act cycle as an epistemology for improvement. It is these theoretical and philosophical original foundations that have often been forgotten or rejected in subsequent developments, thereby contributing to the loss of attraction perceived in quality management. In this context, there is a need for a rigorous effort to understand and develop the theoretical and philosophical basis of quality management.

This approach focuses on the importance of continuous improvement and the need for educational institutions to implement effective quality management strategies to ensure academic quality. Quality management theory is a comprehensive approach to improving the quality of an organization's products, services, and processes. It includes a range of principles and practices that aim to create a culture of continuous improvement, customer satisfaction, and data-driven decision-making. According to most quality academics, the widespread approval of the new ISO 9000:2000 standards and the Business Excellence movement through the American and European Quality Awards have been the principal approaches to quality improvement (Vouzas, 2009). Both provide a basis for implementing a TQM philosophy, characterized as a 'unique' way of improving organizational performance and achieving an edge.

QM has undergone development from the early inspection and control techniques to a holistic philosophy called TQM (Augustyn et al., 2022). TQM is a concept that emphasizes continuous improvement, prevention of problems, and satisfaction of customers at all

levels within the organization. Organizational theories employed to oversee QM implementation include the resource-based view, knowledge-based view, contingency theory, and institutional theory. Meta-analyses informed the links between QM practices and performance dimensions, revealing moderators, and helped develop QM theory in a context characterized by modern information technology (Lu Xu et al., 2020).

The modern quality movement originated in the 20th century when massive forces demanded a 'quality revolution' across various industries and sectors (Maguad, 2006). The most important task and goal for quality management is to achieve visible improvement in process quality (Mukherjee, 2018). This means enhancing the performance of all business processes, both core and support. Continuous process improvement is the motto, and with improved processes leading to new or improved products and services, the organization can offer such new or improved products and services over some time.

A key concept of Total Quality Management (TQM) in education is the focus on ongoing improvements in different areas of institutions. This method brings quality management ideas into education, improving the learning experience by encouraging teamwork among teachers, administrators, and students. For example, constructing and testing a tool to measure the quality of undergraduate programs in hospitality, tourism, and leisure (HTLP) shows how a research-based framework can establish standards that improve Academic quality. The six standards identified, like curriculum and instruction, faculty, and strategic planning, highlight TQM's broad approach to systematic improvement (Baum et al., 2009). Also, the link between quality management systems (QMS) and academic performance points out how applying organized frameworks can positively impact and improve supply chain quality performance in education (Lam et al., 2012). In conclusion, TQM's all-encompassing viewpoint shows its potential to be a powerful influence in achieving academic success.

2.1.3. Human Capital Theory (HCT)

The human capital theory asserts that an increase in productive capacity is only achieved by increasing formal education. Theorists contend that an educated population is equivalent to a productive population. It thus argues that education enhances workers' productivity

and efficiency by increasing the level of rational stock of economically productive human capabilities, which is a result of natural abilities and investments in human beings. Formal learning is regarded as an investment in human capital; a proposal the theory's advocates have regarded as equally or more valuable than that of physical capital. Economic power was largely regarded as being confined to tangible physical assets such as land, factories, and equipment. However, labor was required, the significant improvements in the value of the business derived from investment in capital equipment. Modern economists believe that the key to boosting human capital and, eventually, increasing the economic outputs of the nation in the new global economy are education and health care. Thomas Friedman, a journalist in his book, The World Is Flat, did a remarkable job highlighting how human capital rose in the new global knowledge economy. His easy-to-understand book has brought millions to the human capital theory. Evidence as to why people and education are the most essential elements in a nation's economic success is a recurring theme throughout the book. In his 1776 book The Wealth of Nations, economist Adam Smith formulated the foundation of what was later to become the science of human capital. In the past two centuries, two schools of thought were perceived: The first school classified learned capacities as capital and separated them from individuals. The second school of thought asserted that human beings were the capital. In the current theory of human capital, all human behavior is based on the economic perspective of individuals operating in competitive markets. Fagerlind and L.J. Saha contend that human capital theory provides a fundamental rationale for large public expenditure on education in both developing and developed nations. HCT views education and training as an asset in human capital, which increases productivity and economic growth (Almendarez, 2013; Fernando & Fernando, 2014). The theory was developed in the 1960s with the view of explaining economic growth beyond the conventional factors of production (Schultz, 1961). HCT argues that public expenditure on education justifies social benefits and is also beneficial to the individual (Almendarez, 2013). The theory has been applied to various kinds of economic decisions, including occupational choice and migration. (Fernando & Fernando, 2014). While HCT elaborates on the supply side of the labor market, the criticisms of the theory also suggest that the demand-side factors, comprising the actions of human resource managers, are important explanatory variables for wages and employment (Strober, 1990).

The research in this area started many decades ago, and the research in HCT took off with economists like Schultz, Mincer, and Becker building theoretical models and providing empirical foundations in the 1950s and 1960s. (Frazis, 2005).

This viewpoint contends that academic quality is largely determined by the knowledge, skills, and abilities of the faculty and students and that investment in human capital is essential for the development of a high-quality education system. Academic quality in higher education is a complex and complex concept that encompasses various dimensions and is influenced by a multitude of factors. One of the key dimensions of academic quality is human capital, which refers to the knowledge, skills, and abilities of individuals within the higher education system.(Sweetland, 1996). Human capital is a crucial element of the production process, as it directly contributes to the quality, innovation, and overall performance of higher education institutions. (Laverde et al., 2018) Human capital is viewed as a resource developed through formal education, training, and experience and can be aggregated at the national level to contribute to overall economic development (Mincer, 1984).

2.1.4. Student-Centered Learning Theory (SCL)

Student-centered learning is the method of teaching and learning that transfers the focus from instructor-led input to active student involvement and freedom. (Nanney, 2020; Singh, 2011; Lathika, 2016; Ćirić et al., 2020) This has been regarded as a paradigm with more emphasis on learning responsibility, learning at one's pace, and cooperative group situations (Lathika, 2016; Singh, 2011). Environments have been described to attempt to cater to the needs, interests, and styles of individual students while developing lifelong learning and skills for problem-solving independently. The teacher will act as a facilitator, delivering effective and need-based instructions while a democratic and child-friendly approach is fostered. It has been found that SCL promotes the interest of the student, commitment, confidence, and innovative abilities; it also helps develop better understanding, reasoning, and problem-solving skills. To implement this more appropriately in higher education, traditional educational systems must be revisited to suit the requirements of the knowledge society, (Cirić et al.,2020). Yet even though the

integration of this methodology can be effective, the way that it can often be implemented hampers the integration of SCL into the existing institutional culture and learning environment.

This approach emphasizes the importance of establishing a student-centered learning environment that is focused on meeting the needs and objectives of individual students. The potential benefits of SCL for improving student learning outcomes, creating a more engaging learning environment, and fostering critical thinking skills outweigh the challenges. When implemented thoughtfully and with appropriate faculty assistance, student-centered learning can be a powerful tool for enhancing academic quality in higher education.

2.1.5. The Baldrige Framework for Educational Excellence

The Baldrige Framework for Educational Excellence is based on total quality management ideas and offers a detailed model to check and improve how educational institutions do their jobs. This framework looks at results, where student success, satisfaction from stakeholders, and efficient processes are key parts. By using ideas from successful organizations, the framework promotes ongoing improvement and alignment with strategy. This helps schools focus on important areas like curriculum, teacher training, and managing resources. For example, using the context-input-process-product (CIPP) view, seen in studies that include broader quality management ideas, highlights the need for a clear method to get good results in higher education (Baum et al., 2009). Additionally, working with national accrediting groups like the National Commission for Assessment and Academic Accreditation (NCAAA) shows the importance of leadership and strategic planning in achieving high-quality education (Alsaleh et al., 2016). This connection is crucial for creating environments that support lasting excellence and responsibility.

2.1.6. The European Standards and Guidelines for Quality Assurance

In higher education, strong quality assurance frameworks are key for keeping and improving academic standards. The European Standards and Guidelines for Quality Assurance (ESGs) are important in directing institutions toward effective quality practices

that support academic excellence and accountability. These standards promote a systematic way to handle quality assurance, including self-evaluation and peer review to show a dedication to ongoing improvement. For example, methods like excellence show how reflective practices can greatly improve e-learning environments by ensuring thorough evaluations of educational programs (Kear et al., 2012). Moreover, work-based learning programs highlight the need to connect academic programs with industry demands, creating a more active educational setting that values hands-on experience and theoretical knowledge (Brennan et al., 1996). Ultimately, adopting the ESGs helps institutions build a more open, accountable, and responsive educational system that meets society's changing needs.

The situation of academic quality in higher education is complicated and shaped by different theories that try to explain how to assess and maintain standards. A main issue in these theories is balancing strict academic standards with what happens in education. Current theories often do not fully address the complicated relationship between what is formally known about standards and the informal knowledge that faculty use in grading. It has been pointed out that the academic world lacks a thorough theoretical explanation of standards, revealing a gap in understanding both norm-referenced and criterion-referenced grading methods (Bloxham, 2012). Moreover, the quality of argumentative texts in educational settings shows similar challenges, as it requires understanding aspects like dialogicity and accountability, which are not consistently covered in existing frameworks (Macagno, 2019). Therefore, developing these theoretical models to improve reliability and fairness in academic assessments is important.

2.2. Academic Quality (AQ)

The field of Academic quality in higher education has changed a lot in recent years, mainly because of a need for better education standards and more accountability. The Bologna Process began in 1999, demonstrating this change, as it created a way to align higher education systems in Europe, promoting a culture of quality assurance that values transparency and consistency in academic programs. With these changes, the focus has moved to not just matching curricula but also looking at the social results of educational

programs, especially in areas like administrative sciences. The research shows that “the Europeanism degree” and curriculum matching are key signs of educational quality and help prepare students for jobs. Also, understanding these changes is important, as they help institutions think about their management practices and adjust to the changing nature of higher education (Matei et al.). This shift suggests a more cooperative approach to maintaining academic quality in different educational settings. The concept of academic quality in higher education includes a complicated assessment of how effective teaching is, what kinds of resources institutions have, and what results come from the learning spaces. It goes beyond the simple performance measures like counting publications and securing grants, placing more emphasis on a comprehensive educational experience. This viewpoint is supported by the need to categorize lecturers into various profiles to assess their contributions meaningfully (López Álvarez et al., 2019). Such a detailed classification allows for a more specific method for evaluating teaching efficiency, ensuring that a variety of educational methods that align with institutional values are acknowledged and aided. Furthermore, the culture within an organization is vital for integrating key values like diversity into academic establishments, affecting how quality is perceived and put into practice (Byrtek et al., 2013). In the end, the definition of academic quality ought to incorporate both the structural components of educational organizations and the fluid interactions that occur among faculty, resources, and processes of accreditation. The quality of higher education has been in the mainstream of research, more so in the last few decades. Some of the dimensions explored include student learning, engagement, service quality, and satisfaction. According to Prakash (2018), without a doubt, quality assurance systems have increased documentation and transparency, but their influence on the enhancement of higher education has not been succinctly proven. External quality evaluations driven by accountability have been dismissed as having a minimal prescriptive impact on improvements and a negative impact on the erosion of trust. There are doubts regarding how far quality systems would be transferred to other contexts particularly poor countries. Models from industries like Total Quality Management have been applied very little in the context of HE is teaching and learning (Harvey & Williams, 2010). Despite these challenges, definite quality dimensions that would apply to all kinds of institutions working

towards the solving of quality issues and using a language common in studying and discussing quality from any view have been identified by research. (Kundu, 2016).

Academic quality in higher education is a multi-dimensional concept that receives great attention across the world. It is normally associated with academic standards and even outcomes of student learning (Dill, 2008). Quality is perceived by academics as transformation, fitness for purpose, and excellence. These perceptions are influenced by discipline, the perceived objective of higher education, and systemic issues. Quality academics feature several attributes or elements: academic qualifications, external attachments, teaching and learning, supervision, research, personal character, and leadership. According to Haslinda Yusoff et al. 2018. Internal and external quality assurance practices are employed in monitoring and improving the standards of different academic programs. Nevertheless, the term 'academic quality' has remained controversial because several individuals often argue that it is immeasurable or even vague (Dill, 2004). Even amidst all the challenges envisaged, the quality of academic experience is core to the concept of higher education, and its evaluation must be multi-dimensional due to the complexity of the constituents (Nabaho et al., 2017; Dill, 2004).

Harvey and Green (1993) observed from a study of the use of “quality” in literature that different interest groups attach different meanings to the term. The authors contend that this is not a distinct viewpoint on the same thing, but other viewpoints on different things with the same label. For instance, they noted that common usages included the following (Table 2.1)

Table 2.1

Harvey and Green's Classification of Quality

Classification	Brief Explanation
Quality as exceptional	A focus on meeting high standards, such as excellence
Quality as perfection or consistency	As embodied in the idea that something is done correctly or to a consistent standard every time.
Quality as fitness for purpose	Quality is defined in terms of achieving a desired educational or quality assurance goal.
Quality as value for money	A focus on ensuring that a stakeholder receives high value for their investment.
Quality as transformation	A focus on ensuring the students is genuinely empowered as a result of their learning.

The quality search is attributed to several changing phenomena (Avdjieva & Wilson, 2002; Birnbaum, 2001; Mehralizadeh, 2005; Temple, 2005). Higher education institutions are motivated to undertake major reforms in their structures and activities in various areas, including accountability, globalization, supply and demand issues, competition, and technology. Higher institutions' maintenance, improvement, and quality assurance have become issues of major concern and attention to governments, higher institutions, and other stakeholders. The importance of quality in higher education is not new (Peña, 1997). In the last few years, as a reflection of the emerging importance of quality in the business world and academic research, corporate and academic concepts, and methods have been extended to the public sector and university education. According to Peña, these edges assume that the perspective and methods of quality improvement in the business world apply to university teaching.

Tam (2001) stated that the concept of 'quality' is highly debated and has multiple meanings connected to the perception of higher education. She analyzed several perspectives on higher education and quality, measuring their significance in assessing the performance of universities and colleges. She also clarified impacts related to the proper selection of

criteria, methods, and strategies that ensure greater quality in higher education. Tam also pursued several models of measuring quality: the simple 'production model' which relates inputs directly with outputs; the 'value-added approach' that measures the difference in students' knowledge and skill sets before and after their time in university or college; and finally, the 'total quality experience approach' that gathers as much as possible from the overall learning experience undertaken by the students at universities or colleges. Lomas (2002) employed four of Harvey and Green's (1993) five definitions of quality as an analytical framework to determine whether the massification of higher education is causing the decline of quality. They conducted a small study with senior managers in higher education in the UK and concluded that fitness for purpose and transformation were the best definitions of quality.

Furthermore, academic quality has become a strategic tool for attaining operational competence and improving business and education performance (Hendrick et al.2001). In any quality improvement program, measurement is vital as it provides information for decision-making. To measure quality effectively, we must first identify its key characteristics. While research has explored quality dimensions in general services, there's a notable gap in understanding these dimensions within public services, particularly higher education. (Owlia & Aspinwall, 1996).

This desire to be among the top of the world competition has strengthened higher education and helped them to strive for better excellence. Moreover, the trend demands universities to offer a quality culture that promotes diversity in all aspects with global challenges in higher education (Smidt, 2015). Meanwhile, higher education institutions should never allow an opportunity to slip away without fostering internal and external trust, of which quality assurance form's part. Quality assurance, for that matter, is simply defined as "an independent, external, and objective evaluation undertaken on third parties." Cumulative checks scrutinize the university programs, other institution collaborations, academic service systems, as well as the processes of educating and administering, often coupled with proposals for improvement. These introduce other perspectives, dimensions, and contexts in applying quality assurance to maintain both students' and lecturers' standards (Smidt, 2015).

Some of the dimensions in ensuring the quality of higher education include values, meeting needs and expectations, delivering excellent service, and consistency. However, no single quality assurance system can measure a university in all those areas unless the institution identifies specific areas for assessment in advance (Harvey, 2014). In that respect, while talking about academic quality, faculty, and administrators easily identify the resources and processes necessary for making a living-learning environment. For many, academic quality has traditionally revolved around qualified and capable faculty, strong academic standards, research productivity, and a rich, diverse curriculum.

There are sufficient finances to support them and adequate physical facilities to operate (Judith, 2006).

According to Lagrosen, Seyyed-Hashemi, and Leitner (2004), the importance of academic quality in higher education is underscored by several key factors, including faculty expertise and accreditation standards. Quality in higher education has many facets that together form an integral part of the delivery of a comprehensive and total educational experience. Therefore, the Internal Quality Assurance Cell is pivotal in quality improvement processes" (Aithal, 2015, p. 75). The dimensions of quality in higher education are multifaceted" (Widrick, Mergen, & Grant, 2002, p. 125). These dimensions include academic, administrative, experiential, and research aspects:

1. Academic Dimension: This dimension addresses the core educational activities within an institution. It encompasses the quality of teaching, curriculum design, learning outcomes, and academic rigor. The quality in an academic dimension ensures that programs are aligned to industry standards, provide students with an environment that enhances critical thinking, and enable them to acquire knowledge and skills relevant for practice in their respective fields.

2. Administrative Dimension: This dimension deals with the efficiency and effectiveness of institutional operations and support services. It comprises governance structures, financial management, infrastructure; student support services, and policies that facilitate a conducive learning environment. High-quality administrative practices ensure smooth operations and support the institution's academic mission.

3. Exceptional Dimension: Higher education is not restricted to the classroom. It encompasses the students' entire experience, including extracurricular activities, internships, community engagement, and many other hands-on ways to apply their knowledge. A robust experiential dimension will propel holistic development, acquisition of soft skills, and all-rounded educational experience.

4. The Research Dimension: High quality in higher education is the top priority for institutions that are research-oriented and innovation-oriented. It considers the quality and impact of research done by the faculty, opportunities available to students for participating in research, the investment in research infrastructure, and so on, with knowledge advancement at the forefront of its different fields.

2.3. Academic Quality (AQ) and Academic Resource (AR)

In the modern setting of higher education, the aspects of academic quality along with access to resources have notably become critical factors affecting both student success and the reputation of institutions. The interaction between strong academic structures and the effective dispersal of resources directly affects educational results, as well as faculty effectiveness and the general learning environment. Institutions that place importance on improving their academic standards through new teaching techniques and challenging curricula frequently see better student involvement and higher retention percentages. In contrast, those who lack adequate support systems may face difficulties in keeping up competitive levels, resulting in a decline in both reputation and student success. Thus, analyzing in depth the nature of academic quality and resources is necessary for comprehending the dynamics present in contemporary educational settings. By inspecting important metrics and comparative case studies, this research aspires to clarify how these significant elements work together to influence the higher education sphere and eventually provide insight into best practices for fostering academic excellence. In the realm of higher education, the importance of accessibility and the caliber of academic resources is quite significant in determining the educational journey and outcomes that students achieve. Resources like libraries, digital databases, and research journals are fundamental in

presenting necessary materials that aid in critical inquiries and bolster academic proficiency. In the absence of sufficient access to such resources, students might find it challenging to engage deeply with course materials, thereby restricting their ability to enhance their higher-order thinking abilities. Furthermore, the proficient use of academic resources allows students to participate actively with innovative pedagogical strategies, thus promoting educational improvement. Social Recognition Theory indicates that recognizing the contributions of educational resources can serve to elevate motivation and promote engagement. On another note, the Innovation in Education Theory emphasizes the crucial role that these resources play in creating a learning atmosphere that adapts to modern-day challenges (Rachmad YE, 2024). The relationship between the quality of academic efforts and how resources are allocated stands as a significant focus within the realm of higher education. Educational institutions that give importance to the advancement and execution of effective practices in human resources management (HRM) are expected to see enhancements in educational standards, due to the direct impact these practices have on factors such as motivation, development of faculty, and the overall infrastructure of the institution (Kub Jík et al., 2023). Specifically, investing in quality assurance initiatives, like accreditation, typically requires a substantial allocation of resources. Although the link between accreditation and improved student performance might seem indirect, the emphasis on enhancing faculty development and support systems is positively associated with student learning outcomes (Almurayh A. et al., 2022). Thus, a methodical technique for resource utilization not only aids in immediate accreditation pursuits but also cultivates an atmosphere that promotes enduring improvements in educational quality. This situation highlights the importance for institutions to synchronize their strategies for resource distribution with their wider academic aims, thereby guaranteeing a continuous enhancement of academic quality amid a competitive educational environment.

Within the realm of higher education, the relationship that exists between the quality of academic offerings and the outcomes experienced by students is intricate and layered. The importance of academic quality is paramount, influencing not just the cognitive skill sets of students but also their emotional and psychological states. For example, a systematic review indicates that psychosocial elements notably affect academic performance, which

underscores the essentiality of adopting a holistic methodology in education that weaves student well-being into the fabric of academic practices (Kassaw C, 2024). Furthermore, the capacity to adjust to fluctuating academic writing requirements shows a direct association with the levels of perceived institutional support and self-efficacy in non-native English speakers, highlighting the urgent need for establishing substantial support mechanisms that cultivate effective learning environments (Li M, 2024) .Consequently, the endeavor of enhancing academic quality necessitates not merely the augmentation of educational resources but also the addressing of emotional as well as social aspects of the learning process. This in turn encourages a more all-encompassing framework that nurtures student success within the context of higher education.

The connection that exists between academic resources and the quality of education presents numerous complexities, which in turn affect both student performance and institutional effectiveness. Increased access to online learning materials and well-structured digital courses significantly influence student outcomes, as is evident in contemporary studies that recognize these resources as key to academic achievement. In addition, the establishment of solid technological infrastructure not only aids educators in the effective delivery of content but also enables students to interact with educational material in novel manners, thereby fostering a learning environment that is more interactive. Yet, the shift towards online instruction due to the coronavirus pandemic has brought forth considerable uncertainties regarding the quality assurance in the realm of digital education. A thorough bibliometric analysis indicates that even as online teaching has expanded rapidly, there persist critical deficiencies in grasping its implications for learning quality (Wu X et al., 2023). Hence, it is crucial to tackle these deficiencies through persistent research efforts to improve academic resources, which in turn could enhance the overarching quality of education within higher education institutions.

Academic resources within the realm of higher education consist of a variety of instruments and services that are crucial for promoting student achievement and improving the overall quality of academia. Libraries stand as key establishments, offering access to extensive collections of scholarly resources that are foundational for research and learning endeavors. Additionally, the incorporation of technological advancements has transformed the way

students interact with information and accomplish their academic tasks. For example, digital databases and e-books broaden the accessibility of library resources, allowing students to obtain materials at any time and from any location, which proves especially advantageous for students who are not proficient in English as they confront challenges in academic writing (Li M, 2024). The significance of technology is further accentuated by its ability to enhance communication and collaborative efforts between students and educators, thereby augmenting the educational experience. Therefore, it is critical for institutions to invest in both conventional library systems and digital technologies to maximize educational results and to tackle the psychosocial intricacies that influence academic success (Kassaw C, 2024).

Academic quality and resources are crucial factors in higher education. The quality of academic resources, including teaching facilities, library services, textbooks, and internet access, significantly impacts student satisfaction in universities (Muchiri et al., 2016). The student-faculty relationship and access to resources also play vital roles in enhancing educational quality (Pragnashree et al., 2020). To ensure quality, institutions must implement effective quality assurance and enhancement practices, addressing various aspects such as staff, resources, administration, and institutional culture (McGhee, 2021). In this regard, research has shown that good student-faculty relationships, as well as the availability of academic resources, enhance the quality of education. Many studies have proven that good academic resources, in terms of teaching facilities, library services, textbooks, and internet access, have been in a positive relationship with student satisfaction in public universities (Muchiri et al., 2016). However, the pressure on capability may be very intense if the university's ability to support such growth is not sufficiently funded. Practical manuals and good practice in issues concerning quality assurance and enhancement have, in general, been developed for use in academic institutions (McGhee, 2003). They address the total aspects of quality management starting with people, materials, and administration to the character of the institution.

Studies have shown that these factors make a great difference in the quality of education and student satisfaction: educational resources and academic relationships. It has been suggested, based on research findings, that the relationship with the faculty members and

the availability of resources influence the quality of education received by students (Pragnashree et al., 2020). Quality teaching facilities, library services, and availability of textbooks all had a positive effect on student satisfaction, while internet services did not have any significant impact (Muchiri et al., 2016). Students' good academic performance is significantly related to physical, material, financial, and human resources. However, these seem grossly inadequate in so many schools (Adeogun & Osifila, 2008). To mitigate the foregoing challenges, there is a growing need for institutions to embrace and put in measures that ensure enhancement and assurance of quality. Good practices in managing academic quality are issues such as staff, resources, administration, institutional culture, considering risks, and following the laid-down procedures by quality assurance agencies (McGhee, 2021).

According to Khawaja (2022), Physical resources and infrastructure in higher education are crucial for ensuring quality. The availability of high-quality facilities—classrooms, libraries, and computer laboratories—enhances quality, which in turn helps in retaining students, or rather, in minimizing the dropout rate. However, this may vary in terms of its importance to the perceived quality evaluation by students regarding the physical evidence. In another Brazilian study, the students identified the faculty to be more critical than the physical assets in the quality perception of the course in medicine (P. Vieira et al., 2012). Infrastructure inadequacy, faculty inadequacy, and third-party quality assurance are some of the essential determinants of quality in higher education (Dr. T. Sreenivas & N. Babu, 2015). In higher education, good maintenance and proper management of physical facilities are a mainstay of quality assurance. It contributes hugely to the economic and academic growth of institutions (F. Mormah, 2023). Facilities that ensure quality teaching and learning require innovation in technologies and maintenance cultures for sustenance and better operationalization in the 21st century.

Infrastructure and resources are essential in facilitating friendly learning environments and effective teaching and learning, as well as providing quality education.Access to higher education increased across the world, but this was not matched with corresponding resources and infrastructure in HEIs (Hubball & Burt, 2004). To this day, the majority of HEIs lack resources and strong infrastructures, extremely crucial in supporting teaching

and learning. In his work, Mbembe (2016), Murillo and Román, 2011, assert that a good university education is not feasible without a large material infrastructure/architecture Intellectual life can be dependent on the sort of buildings in which conversations take place."

The truth is that private higher education institutions in the UK were not attracting new students and their businesses were not expanding. The result was a heavy investment by the HEIs in infrastructure and facilities.

It is partly because infrastructure and resources are the main components of education. After all, the teaching and learning process does not occur in a vacuum but occurs within different environments that are highly influential. The classroom resources, the library, the computer lab, and the equipment are essential to a high-quality teaching and learning environment and the experience of a student. However, there are significant costs in maintaining, adapting, and relocating the existing infrastructure and facilities and in investing in new buildings and equipment. There is a greater challenge of how to fund such a development. The concept of quality education in higher education is complex and influenced by numerous variables. Academic interactions between teachers and students, along with resource accessibility, greatly impact the quality of education (Pragnashree et al., 2020). According to Sreenivas and Babu (2015), crucial factors include trained faculty, sufficient facilities, and external quality assurance programs. According to Abidin et al. (2013), graduate students have a significant role in research outputs, hence it is important to prioritize their growth through efficient resource allocation and assistance. In higher education, quality is the interaction between all users and available resources (Kumar & Kundu, 2017). Schools emphasize the value of achieving student expectations to draw in new students by offering high-quality instruction (Abiddin et al., 2013). Higher education needs help with staffing, regulation, privatization, quantity vs. quality, and studying overseas (Sreenivas & Babu, 2015).

Resource availability is of utmost importance in influencing the academic performance of students, serving as a significant factor in determining educational results in higher education. Research demonstrates that the availability of instructional resources - like textbooks, laboratory apparatus, and digital resources - has a considerable impact on the

academic success of postgraduate students, especially in specialized domains such as Library and Information Science in Nigeria (Arumuru L et al., 2024). In addition, the employment of innovative assessment techniques, such as the use of crib sheets during exams, not only diminishes anxiety related to testing but also fosters deeper learning practices, thus enhancing critical thinking and knowledge integration (Anita Woods et al., 2024). Such resources and strategies contribute to an enriched learning atmosphere in which students perceive support and empowerment to engage more effectively with the subject matter. Hence, it is imperative to invest in sufficient instructional materials as well as well-considered assessment approaches to improve educational quality and to ensure students can realize their full academic capabilities.

The incorporation of technology into academic resources represents an important approach aimed at improving educational results and meeting the changing needs of higher education. As educational institutions confront the issues related to conventional teaching methods, the use of new instructional techniques is becoming essential. The significant impact of technology, as indicated in modern studies, goes beyond just being useful teaching aids; it forms a broad framework that promotes individualized learning experiences and increases student involvement. For example, the use of big data analytics in educational settings can support timely learning interventions and effectively identify students' needs, thus enhancing the educational experience (Zhang Z-L, 2023). In addition, academic administrators must possess the necessary skills to motivate both faculty and students, making sure that the integration of technology is in line with the institution’s aim of promoting academic excellence and the progression of society (I. Siswanto et al., 2023). In conclusion, the smooth incorporation of technology in academic resources not only improves accessibility but also transforms how knowledge is generated, shared, and utilized within the realm of academia

These findings bring to the fore the need for adequate resources and sound management as a means of ensuring academic quality.

- Academic resources are an important factor in determining the academic quality of higher education institutions and programs. Adequate resources, including funding, technology, and infrastructure, are essential for providing students with a high-

quality educational experience and preparing them for the demands of the modern workforce. The following are some examples of academic resources that can impact academic quality:

- Funding: Adequate funding is necessary to support faculty and staff salaries, research, and facilities, as well as student services and programs. The assurance of quality education in institutions of higher learning is markedly dependent upon the effective management of financial resources. The provision of sufficient funding serves a dual purpose: it enhances the recruitment and retention of qualified faculty while concurrently facilitating the comprehensive development of academic programs, both of which are essential for the preservation of academic benchmarks. Within the framework of public administration, as delineated in the Handbook for Ethiopian Public Administration Program Accreditation, the investment in these areas not only aids in fulfilling educational objectives but is also aligned with broader concepts of pan-Africanism and sustainable development goals (SDGs 4 and 16) (Press LU', 2022). In addition, financial guidance for families of lower income brackets underscores the significance of strategic financial planning, demonstrating how directed financial resources can empower underprivileged sectors to attain quality educational opportunities (Baker C et al., 2007). By emphasizing financial scheming and the stewardship of resources, educational institutions can cultivate a milieu conducive to the flourishing of academic programs, which subsequently leads to improved educational outcomes and the achievement of accreditation credentials. Hence, the role of financial resources and budgeting methodologies becomes evident as pivotal components in the quest for scholarly excellence.
- Technology: The integration of technology into teaching and learning can enhance student engagement and learning outcomes, as well as enhance the effectiveness and effectiveness of administrative processes. The efficacy of higher education is notably affected by the infrastructures and tech resources that are present not only in institutions. Sufficient facilities, labs, and digital instruments are vital for improving the learning experience and satisfying modern educational requirements. In Latin America, a review has shown that there are continuous initiatives aimed at

aligning IT education with the requirements of the technological industry, which emphasizes the necessity of updated curricular structures that mirror the current technology trends (Angles et al., 2016). Similarly, the higher education framework in India shows considerable affiliations between educational bodies and the high-tech sector; however, the connections outside the labor market appear to be underdeveloped, thereby undermining the overall effectiveness of academic resources (Basant et al.). These observations highlight that, despite some strides being made in narrowing the gaps between academia and industry, higher education institutions require additional investments directed toward infrastructural and technological improvements. Such investments are imperative not solely for enhancing academic standards but also for ensuring that graduates acquire the requisite skills to thrive in an ever-more digital employment landscape.

- Library and information resources: Access to libraries and learning resources is an essential component that plays a significant role in impacting the quality of academics in higher education institutions. Institutions must cultivate environments where there exists not only an abundance of resources but also their accessibility is ensured for all students, including those with disabilities. In a period characterized by a range of institutional formats and advancements in technology, it has become necessary for universities to reevaluate their strategies concerning accessibility to adequately address the diverse needs of learners (Harley D et al., 2006). The adoption of open-access initiatives possesses the potential to improve the availability of resources by allowing for a flexible application and dissemination of educational materials, thereby being crucial for nurturing an inclusive academic setting (Committee for Council EDDC, 2009). Additionally, making certain that these resources adhere to accessibility standards fosters equity, enabling every student to actively engage with the academic material. In the absence of such commitments, there exists a risk that institutions will marginalize vulnerable demographics, which could ultimately compromise the integrity of their educational objectives and reduce the overall quality of academia.

- Laboratories and research facilities: Up-to-date laboratories and research facilities are necessary for conducting cutting-edge research, training students in hands-on methods, and advancing discipline.
- Student support services: Including counseling, career services, tutoring, and health services, are essential for student success and well-being. Support services that are effective for both students, as well as faculty, hold substantial significance in nurturing academic success and improving the overall quality associated with higher education. Such services, which include elements like academic advising, counseling, and professional development, are crucial in shaping an environment that is favorable for learning as well as institutional enhancement. The Achieving the Dream initiative emphasizes this necessity by bringing into focus the processes of self-assessment and peer review, which can greatly improve student success rates, particularly for minority and low-income groups (Biswas RR, 2006). Furthermore, the amalgamation of total quality management (TQM) with a context-input-process-product (CIPP) framework works towards assessing and boosting the quality of academic programs, thus ensuring a proper alignment of resources with educational results. Research findings from studies that create instruments such as the IHTLP illustrate how structured support systems for faculty lead to elevated instructional quality as well as enhancements in student success, driven by a clearly defined set of standards and dimensions that directly respond to their needs (Baum et al., 2009). In summary, the existence of strong support services is vital in fostering achievement among both students and faculty members.
- Physical infrastructure: Adequate physical infrastructure, including classrooms, offices, residence halls, and recreation facilities, is necessary for supporting student learning and well-being.
- Staff support: Adequate staffing levels, including administrative and technical support, are necessary for providing efficient and effective support to faculty and students.

The allocation of resources is significant in influencing student outcomes within institutions of higher education. Through the strategic dissemination of resources including faculty knowledge, technological advancements, and educational materials colleges and

universities can cultivate an academic milieu that is favorable for student success. For example, as the advancement of edge computing and sophisticated communication technologies continues, numerous institutions are progressively welcoming innovative instruments designed to improve learning experiences, similar to the potentially transformative aspects of the metaverse as outlined in recent research (Baidya T, 2024). This shifting atmosphere presents opportunities for distinct and immersive experiences that align with various learning modalities, thereby enhancing student engagement and success rates. Moreover, the development of self-confidence among students tends to be a pivotal factor affecting their educational outcomes, thereby highlighting the necessity for a nurturing academic environment and proficient resource allocation (Chen X, 2024). Recognizing these interconnections enables educational administrators to effectively distribute resources in a manner that not only boosts student achievement but also elevates the overall quality of the institution in coherence with accreditation expectations.

It is essential to invest in academic resources to enhance the academic performance of higher education institutions and programs, and to ensure that students have the resources they need to succeed. Quality may also be based on purposes, whether to the purposes and views of customers or institutional missions. This research does not take customer-defined or institutionally defined origins of quality as its starting point rather, an effort will be made to focus on what is known about what dimensions of quality are associated with educational effectiveness in general. Having strong academic resources is essential for improving the quality of education in Pakistan. Access to good libraries, research materials, and modern technology creates a better learning environment. These resources help teachers provide thorough curricula and allow students to think critically and do research on their own. As pointed out, faculty members in academic library and information science (LIS), who prepare future librarians and information specialists, depend on teaching, service, and research, all supported by these necessary resources (Hirsh S, 2024). Also, using simulation-based education in nursing programs shows how academic resources can change teaching methods, providing essential hands-on learning experiences critical in a clinical setting (Moreno J, 2024). In summary, improving academic resources is vital for the development of education in Pakistan, ensuring that institutions achieve local and international academic quality standards.

2.4. Academic Quality (AQ) and Role of Faculty (RF)

The roles of faculty members in higher education are changing with increased emphasis on quality and accountability. There is a great impact on students' performance and outcomes by the quality of the faculty (Malini & Suresh, 2018). As online education grows, there is a need to preserve faculty authority over the quality of academics while at the same time recognizing education centrality in promotion processes (Turoff, 2019). The unbundling of faculty roles is a centuries-long phenomenon (Gehrke & Kezar, 2015). Online learning has fanned it into a blaze, making a multi-theoretical approach imperative toward understanding the nuances of this development. For instance, contemporary institutions will be looking for "triple threat" faculty who can integrate discovery, learning, and engagement in their professional lives while involving students in the process. Models that stress quality research and well-balanced roles should thus be developed by institutions training new faculty while hiring institutions should choose faculty by goals they set (Thomas, 2003). Simultaneously, new faculty should discover their desired type of academic life and look for appropriate institutions accordingly. Faculty engagement and compensation are likely to take a lead role in enhancing academic quality at this level of education. Available literature shows that faculty involvement in decision-making within universities, generally, has positive effects on student enrollment and investments in academic quality therefore Faculty participation in institutional decision-making at their universities is one essential factor for the improvement of academic quality and increased student enrollment (Carroll et al., 2013). However, the challenges persist since most faculty members feel underpaid and underappreciated; consequently, there is reduced commitment and increased searching for external income moreover non-participation by faculty members may lead institutions to overinvest in nonacademic aspects, at the cost of compromising on standards of education. However, faculty job satisfaction is also a precondition if institutions are to maintain academic quality. A study reported that most faculty members believed they were underpaid, and unappreciated, and such feelings resulted in various forms of external income-seeking behavior that could impact their loyalty to the institution (Comm & Mathaisel, 2003). These concerns can be remedied by institutions through performance-based assessment and reward systems that will consider

parameters such as research, teaching, and contribution to the community (Davidovitch et al., 2011). Faculties' internal quality assurance engagements may be enhanced through strategies such as resource provision, relevant quality assurance model development, and recognition/reward schemes (Pham, 2022). This can be achieved, through impacting faculty satisfaction and engagement, by continually working at improvement to the advantage of teaching and learning for the students and broader academic community. Faculty roles have traditionally incorporated the four functions: teaching, research, administration, and community service. Although the Socratic model of teaching has survived for centuries, the twenty-first century is witnessing a subtle but sure shift to more interactive, technology-supported learning approaches (Shaw, 2009). This pedagogical shift, however, coupled with faculty influence on decision-making and job satisfaction enhancement, would serve to increase overall academic quality from within a higher education environment. Most of the research covered quality-related issues from students' perspectives e.g., student satisfaction, students' feedback, etc.; but little attention has been paid to internal customers i.e., faculty. On the other hand, a considerable amount of research has been conducted that supports the idea that employees are a great asset to the organization. Czepiel et al. (1985) argued that employees are not only the service providers but also the critical element of that service therefore satisfying employees reflects service quality. Moreover, Küskü (2003) found that there is a huge contribution by employees in higher education to achieve the milestone of academic quality. At the core of the discussion surrounding academic quality lies the essential function of faculty members, as they not only provide knowledge but also influence the educational atmosphere within schools. Their dual dedication to both teaching and research plays a key role in shaping academic surroundings, considering that proficient educators are vital in promoting a culture characterized by inquiry and intellectual involvement. Nevertheless, the assessment of faculty performance has frequently skewed toward the outcomes of research, which fosters an imbalance that could potentially detract from the educational experience (Wang X-W et al., 2024). This situation underscores the critical need for a comprehensive faculty evaluation framework that gives precedence to quality teaching along with research activities. Furthermore, effective management of education involves several aspects such as strategic planning and the creation of curricula, thus ensuring that faculty endeavors are

synchronized with institutional objectives (A. M. Karim et al., 2024). By emphasizing the role of faculty in upholding academic standards, educational institutions can develop an atmosphere that not only betters student learning but also strengthens their standing in the competitive realm of higher education.

The connection that exists between faculty and the standard of academia is quite necessary in determining the educational experience found in institutions of higher learning. Faculty members function not only as experts in content but also as guides for learning, which has a direct impact on the quality of the academic experience for students. The extent of their knowledge and involvement in teaching methods sets a fundamental standard for academic expectations, which are vital for preserving the integrity and esteemed reputation of the institution. The effectiveness of academic management styles, as underscored in various studies, plays an important role in ensuring that faculty's teaching approaches align with the prescribed academic standards, subsequently improving processes for quality assurance (Zalsos E et al., 2024). Additionally, elements like job satisfaction and commitment to the organization significantly affect this relationship. Evidence from research suggests that faculty who are content in their positions are more inclined to enhance the perceived quality of services offered, thereby influencing student outcomes (A. Al-Refaei et al., 2023). Hence, grasping the complexities of this interaction is essential for creating strategies directed toward improving overall academic quality in higher education.

In the field of higher education, the role of faculty members can be viewed as significant in the construction of curriculum. Their specialized knowledge serves a fundamental purpose in molding educational experiences that are by the goals of the institution and the requirements of the student body. Such familiarity with the subject matter, along with teaching methodologies, equips them to design curricula that not only reflect contemporary trends but also adjust to the shifting needs of both the discipline and the labor market. This vital participation is highlighted in academic discussions where effective educational management is reported to include strategic planning intertwined with curriculum development, showcasing both academic rigor and relevance to cultural contexts (A. M. Karim et al., 2024). Moreover, faculty engagement plays a critical role in defining clear educational objectives and structuring a curriculum that supports comprehensive student

growth. Through the incorporation of new assessment methods, faculty can ascertain the quality of education within the field of dance, as noted in studies that detail frameworks for effective evaluation systems (Meng Z et al., 2024)). Ultimately, this process, characterized by collaboration and reflection, strengthens the quality of academics, thereby improving the overall educational setting within higher education institutions. In the realm of modern higher education, the role of faculty in the creation of course content stands as significantly important for the maintenance of academic standards and the adaptation to the shifting requirements of students. Additionally, the incorporation of game-based learning frameworks showcases the beneficial effects of faculty-initiated programs on enhancing students' financial literacy (Cannistr Mà, 2024). By being involved in the design of courses, faculty not only add depth to educational experiences but also equip students for tackling intricate issues in a world increasingly dominated by technology. Such involvement ultimately cultivates an academic atmosphere that encourages ongoing enhancement and the success of students. The curriculum's pertinence within higher education is markedly shaped by faculty members' expertise, where their specialized knowledge and experience are instrumental in molding the educational milieu and augmenting student educational outcomes. Faculty serve as conduits between abstract theoretical frameworks and their practical application, thereby cultivating a stimulating educational atmosphere that not only conforms to established academic norms but also equips students for the intricacies inherent in the professional sphere. The research underscores the impact of the student-lecturer dynamic on decision-making processes as well as the enhancement of educational quality (Sundani ND et al., 2021). In scenarios wherein faculty members maintain current and pertinent knowledge, curricula are more inclined to mirror industry-specific standards and innovations, adapting to the rapid transformations in technology and pedagogical approaches. Furthermore, accreditation emerges as an essential measure for assessing educational quality; it emphasizes the imperative for faculty to maintain verifiable qualifications that are closely aligned with the structural design of the curricula (Kumar P et al., 2020). In summation, faculty proficiency holds critical importance in certifying the ongoing relevance of curricula while effectively facilitating student achievement. In higher education, the assessment of the curriculum effectively requires a joint effort between faculty and administration, making certain that

the academic quality is in synchronization with institutional objectives as well as student learning outcomes. Such collaboration creates a situation where faculty can disseminate their insights about course material, teaching tactics, and strategies for student engagement, while the administration delivers essential structures and resources that aid these efforts. A cooperative method permits acknowledgment of external factors, like accreditation procedures, which act as quality assurance tools that bolster the accountability and credibility of institutions of higher education (Kumar P et al., 2020). Additionally, as business-oriented quality management strategies become more prominent in higher education, faculty and administrators must collaborate in modifying these structures to guarantee their applicability and effectiveness for academic practices (Kalashnikova T et al., 2020). In the end, this partnership not only enhances the curriculum but also supports a culture characterized by ongoing improvement and innovation in both teaching and learning.

Faculty research acts as a fundamental element for the enhancement of academic quality in higher education institutions, fostering a milieu of persistent inquiry and innovation. The involvement of faculty members in research endeavors does not solely contribute to the emergence of new knowledge but also plays a crucial role in informing and enriching the design of curricula, and methodologies of teaching, alongside experiences of student learning. To illustrate, the interrelation between activities associated with research and practices associated with teaching establishes a feedback mechanism through which faculty can integrate their most recent discoveries into classroom environments, consequently leading to the enhancement of pedagogy and outcomes for students. Moreover, the collaborative endeavors among faculty, as noted in the examination by (M Asiedu et al., 2023), markedly expedite the generation of innovation within academic contexts; this form of collaboration highlights the significance of coordination across functions, which enables the sharing of knowledge and serves to bolster the quality of the education delivered. Hence, the dedication of faculty to research is not merely beneficial, but essential for fostering an academic culture that is based upon quality and persistent advancement, thereby ensuring that educational institutions maintain competitiveness and relevance in an increasingly changing global landscape.

The role of faculty in effective mentoring is identified as critical for the development of a dynamic research environment within institutions of higher education. Faculty members, using their advice, resources, and support, are pivotal in influencing the research capacities of students, especially in nursing, where the importance of leadership and innovation cannot be overstated. There exists evidence indicating that organized mentorship programs, like the National Organization of Nurse Practitioner Faculties Leadership Mentoring Program, have notably improved scholars' collaborative efforts and leadership experiences, thereby demonstrating the significant effects that faculty mentorship can have on both academic and professional growth (Ainslie M, 2024). Furthermore, with the continual progression of educational technologies, the necessity of faculty mentorship is heightened as it becomes imperative for students to proficiently navigate digital realms. Initiatives for peer mentoring, which permit students to acquire knowledge from one another while under faculty oversight, have been recognized as beneficial for enhancing digital skills and promoting more inclusive educational settings (María Jesús Rojas-Ocaña, 2024). Consequently, faculty contribute not merely to the augmentation of research standards but also to the empowerment of students, enabling them to evolve into skilled scholars and leaders within their specific disciplines.

Navigating the simultaneous demands placed on academic faculty by both teaching and research constitutes an ongoing challenge, especially in contexts increasingly shaped by neoliberal policies. With educators being pressured to prioritize performance metrics, particularly those related to research outputs, the inherent connection between teaching and research is often subjected to strain. Illustrative of this scenario are the experiences of language educators; a case study points to a CAL teacher who shifted from an initial resolve to weave research into instructional practices toward a state of disillusionment characterized by mere compliance with publication standards, which highlights the increasing schism between these vital roles (Gong, Zhang, & Li, 2024). In parallel, the widespread occurrence of workaholism among academic nursing educators further complicates the ambition to maintain a balanced lifestyle, leading to notable adverse impacts on personal well-being as well as professional efficacy (Hashish EAA, 2024). Consequently, it becomes imperative for institutions to re-evaluate their frameworks of support, thereby cultivating an environment conducive to the flourishing of both teaching

and research endeavors, which in turn would promote enhanced quality in academia and greater faculty involvement.

In the current fast-changing educational atmosphere, the quest for achieving high academic standards is heavily contingent upon the sustained advancement of faculty members. A well-structured faculty development initiative cultivates a setting wherein educators can hone their pedagogical techniques, acclimate to emerging technologies, and ultimately improve student learning results. As highlighted by the precepts of Total Quality Management, institutions are required to embrace a comprehensive methodology for faculty training and assistance, which includes systematically occurring evaluations and feedback systems that promote continual enhancement. For example, putting into practice an extensive assessment framework, as suggested within the realm of dance education, may provide a framework for gauging educational methodologies across various fields (Meng Z et al., 2024). Furthermore, tackling the hurdles associated with online pedagogy through specialized professional development initiatives can markedly elevate instructional standards, as evidenced by the favorable results stemming from innovative quality assurance practices within Chinese institutions of higher learning (Wei S et al., 2024). In summary, emphasizing faculty development is imperative for maintaining academic excellence and adeptly addressing the ever-evolving demands of the higher education landscape.

Continuous professional development initiatives for faculty are of paramount importance in cultivating an atmosphere of academic excellence and flexibility in higher education. The swift changes occurring in the educational field necessitate that educator stay not only updated on the most recent pedagogical and technological innovations but also become participants in lifelong learning endeavors. Such programs enable faculty to refine their teaching methodologies, consequently enriching the educational experiences and outcomes for students, as highlighted by research that demonstrates a favorable association between faculty development and improved instructional effectiveness (Hinneh T et al., 2023) Moreover, the enhancement of faculty skills through specific training serves to address critical issues within the academic arena, including heightened student engagement and retention. By channeling resources into extensive professional development programs,

institutions do not merely bolster individual faculty capabilities; they simultaneously foster a milieu of innovation and cooperation, vital for accommodating the varied requirements of students and enhancing the overall caliber and efficacy of higher education. The ideas in the literature have centered on faculty members and teaching rather than students and learning. Consequently, the opinions of a faculty member, who provides major input, on the essential factors affecting student learning and academic achievement are critical. Faculty are crucial in determining the organizational structure of a college or university through which academic programs will be observed. Moreover, Faculty are instrumental in both elevating and sustaining the quality of higher education. Their expertise in their fields is crucial for equipping students with valuable knowledge(P. Gupta, 2022). Quality assumes a paramount position in the prosperity and progress of any nation. The main factors that affect educational quality are the competence of the faculty, standards of curriculum, availability of infrastructure, research environment, and governance. (Kalaivani, 2022; Sultana et al., 2011). The quality of the faculty impacts students' performance and their prospects to a large extent. (Malini & Suresh, 2018). However, education faces problems such as inadequate infrastructure, a curriculum oriented only towards examinations, and an insufficient number of good-quality faculties. (Kalaivani, 2022) Even though good teaching is considered the core of any high-quality education, it mostly remains unrecognized and unsupported in universities. Besides, lately, there is a growing pressure to make educational institutions more accountable, efficient, and customer driven. (Sultana et al., 2011). In the context of education, quality management has been aimed mainly towards the external stakeholders, such as students and employers, and not from the internal customers' perspective regarding faculty. (Sahney et al., 2008). In higher education institutions, a rigorous evaluation of faculty performance is deemed indispensable for promoting academic quality. This assessment process is significant not just on faculty development, but also has a direct impact on the outcomes of students and the overall effectiveness of the institution. To illustrate, the initiation of training initiatives aimed at augmenting faculty assessment literacy can result in noteworthy enhancements in their pedagogical practices. Evidence shows increases in participant satisfaction and assessment proficiency post-training (Wessam Mohamed, 2024). Furthermore, the application of information technologies aids in the collection of data in real-time, which

allows institutions to systematically observe both faculty effectiveness and student performance. Thus, by employing IT tools to optimize quality management frameworks, educational bodies may be able to improve their faculty evaluation strategies and assure conformity with global standards, like ISO 9001:2015 (Natacha Jesus-Silva et al., 2023). Ultimately, a holistic assessment framework not only elevates faculty performance but also fosters a context conducive to the flourishing of academic excellence.

A faculty that exhibits a variety of backgrounds and experiences not only enhances the academic landscape but also stands as a pivotal factor in determining the overall quality of academic endeavors. The inclusion of differing perspectives invigorates critical thought and inventive problem-solving, as students interact with educators who introduce assorted experiences and outlooks into the educational setting. Such faculty diversity tends to challenge conventional disciplinary confines and promotes a more vigorous intellectual discussion, thereby fostering new teaching methods and developing curricula innovatively. Nonetheless, for diversity to be ingrained as a fundamental institutional principle, it often necessitates deliberate leadership and systematic support. Research suggests that simply declaring diversity as a principle falls short; what is required is an active and ongoing engagement that aligns with the larger institutional objectives (Byrtek et al., 2013). Furthermore, proficient governance, as emphasized in existing literature, plays a crucial role in managing the intricacies linked to nurturing this diversity, which in turn, serves to boost the quality of learning and research outcomes in academia (Areen et al., 2011).

The quality of academic programs finds itself closely intertwined with the effectiveness and engagement levels of faculty members, who assume a critical role within the educational framework. Faculty members are not merely providers of knowledge; they represent the institutional mission, thereby fostering an environment that is favorable for learning and inquiry. This interconnectedness becomes particularly apparent when one scrutinizes the equilibrium between teaching duties and research commitments. As discussed in (Wang X-W et al., 2024)), the skewed focus on research rather than teaching in faculty evaluation processes can deeply hinder the quality of education, resulting in the disregard of essential pedagogical duties. Moreover, the management of faculty and their job satisfaction has been demonstrated to have a noteworthy impact on academic

effectiveness. In research conducted at the Faculty of Business Sciences at the National University of Cañete, Ñañez-Silva et al. (2023) found a significant relationship between proficient teacher management and increased job satisfaction illustrating the importance of administrators to emphasize faculty development and acknowledgment. In summary, the involvement and backing of faculty members stand as vital components for the sustenance and enhancement of academic quality within higher education. Future Directions for Faculty Engagement in Higher Education

In the realm of higher education, as it exists today, the assertion of academic quality integrity is a crucial prerequisite for both institutional achievement and the readiness of students. As researchers and scholars traverse an increasingly intricate and global job marketplace, the imperative for stringent academic benchmarks emerges as exceedingly vital, guaranteeing that graduates possess not only critical thinking capabilities but also relevant knowledge. Dedication to academic quality engenders a rich educational atmosphere that not only nurtures intellectual curiosity but also propels faculty advancement and creativity in pedagogical techniques. Moreover, academic institutions that emphasize quality are more inclined to draw and maintain gifted educators, thereby enhancing the overall educational journey for enrolled students. Ultimately, the quest for excellence within academia surpasses mere adherence to accreditation criteria; it fosters a culture of inquiry and veneration for knowledge, thereby preparing forthcoming leaders who can meaningfully engage with societal contributions. Consequently, an unwavering commitment to sustaining high academic standards is essential for the progression of higher education and its placement within the larger society.

Moreover, Faculty are responsible for designing and delivering the curriculum, assessing student learning, and conducting research that advances the discipline and contributes to the intellectual life of the institution. (B. Gupta et al., n.d.)The following are some of the keyways in which to facilitate academic quality:

- Teaching excellence: High-quality instruction by knowledgeable and experienced faculty is essential for student learning and academic success. A vital part of enhancing student engagement in higher education involves the use of effective teaching methods, which include distinct skills and techniques crucial for academic

achievement. Research indicates that a well-organized teaching framework not only improves teaching effectiveness but also creates a favorable learning environment that encourages student involvement. Moreover, the link between teaching effectiveness and student engagement becomes even stronger when faculty possess clear indicators of quality assurance. For example, a model created for the Faculty of Education in Cambodia lays out a detailed framework consisting of six dimensions that together enhance educational quality, thus positively affecting student results (Chan et al., 2016). Such frameworks underscore the importance of ongoing faculty development and quality assurance strategies that adapt teaching methods to the varied requirements of the student population, thereby improving overall academic standards and institutional accreditation within higher education.

- Research productivity: Faculty research and scholarly activity can enhance the reputation and prestige of an institution and provide students with opportunities to engage in cutting-edge research. Engagement in research and scholarly activities stands as a central pillar for the enhancement of academic quality and the promotion of a dynamic learning environment within institutions of higher education. The faculty, regarded as pivotal agents in this intellectual domain, ought to give precedence to research endeavors that not solely broaden understanding in their respective disciplines but also bear significant societal relevance. The intricate relationship between research contributions and educational outcomes highlights that financial aid, although ostensibly designed to augment student possibilities, often serves contrasting purposes; as noted, “This [financial aid] money is not necessarily going to educate more students or to improve education” (Groshoff et al., 2012).Consequently, it is imperative to conduct a thorough scrutiny of funding structures to ensure that institutional assets align with authentic educational goals. Additionally, universities should adopt open information dissemination practices aimed at bolstering cooperative scholarship, a concept endorsed by authorities who argue for the integration of technological advancements into academic settings. Such transformations further solidify the essence of education as a comprehensive and equitable pursuit, one that extends beyond mere profit-making motives (Committee for Council EDDC, 2009).

- Faculty Development and Continuous Education

  Continued education furthermore faculty development holds significant weight in improving the academic caliber within institutions of higher learning. Engaging in professional development activities allows faculty members to improve their pedagogical methods, stay abreast of changing educational technologies, and develop inventive curricula that cater to the diverse needs of student bodies. The melding of total quality management (TQM) along with context-input-process-product (CIPP) viewpoints, as noted in (Baum et al., 2009), brings to light the critical nature of setting benchmarks for curricular excellence and effective instructional practices. As explained by Byrtek et al., (2013), leadership strategies that position diversity as a foundational value, underline the necessity of ongoing training to prepare faculty to cultivate inclusive educational settings. In the end, a methodical strategy towards faculty development not only elevates teaching quality but also aids in enhancing student results, thereby uplifting the academic integrity and accreditation standing of higher education establishments.
- Curriculum design: Faculty are responsible for creating and updating course materials that reflect the latest advances in their field and meet the needs of students.
- Assessment and evaluation**:** Faculty play a key role in designing and implementing assessment methods that accurately measure student learning and provide valuable feedback for improvement.
- Mentorship and Advising: Faculty can provide individualized guidance and support to students, helping them to develop the skills and knowledge they need to succeed.
- Collaboration and partnerships: Faculty can build relationships with other institutions, organizations, and individuals in their field, promoting interdisciplinary collaboration and cross-fertilization of ideas.

Faculty are integral to the mission and operations of institutions of higher learning, and their input in the maintenance and improvement of academic quality cannot be overemphasized. It says that faculty is what defines a college or a university at the very core, and their traditional goal has been to preserve knowledge and convey it to new generations of learners. Faculty development and support are important if the faculty are

to be well-prepared and equipped for the challenges that lie ahead in an academic landscape that is changing very fast. Faculty members must design quality education within their respective higher education departments. Being at the front line, they are perfectly placed to influence how the structure of the department will foster optimal learning. (Kleijnen et al., 2013). Current literature suggests that service satisfaction is necessary but not essentially the distinctive requirement for future commitment, indicating the potential influence of antecedents linked with the characteristics of higher education service and commitment behaviors relevant to employees' retention and future competitive advantage.

2.5. Academic Quality (AQ) and Accreditation (AC)

Accreditation processes are crucial to ensure quality and accountability within higher education institutions. Through thorough evaluations of how these institutions operate, accreditation agencies can lay out a system for ongoing enhancement, bolsters overall academic standards. The difficulties these institutions encounter, especially in keeping faculty involved and ensuring that resources are aligned with strategic goals, highlight the complicated nature of accreditation. For example, even slight discrepancies between faculty aspirations and institutional priorities can greatly jeopardize an institution's reputation, as shown by the Monte Carlo simulations mentioned in (Gaughan et al., 2020). Furthermore, incorporating principles like diversity into the fundamental structure of an institution requires consistent engagement among stakeholders, which is exemplified in (Byrtek et al., 2013).

In the continually shifting domain of higher education, the dedication to ongoing enhancement remains vital for institutions that seek to maintain academic standards and relevance. The focus on perpetual evaluation amplifies the educational experience, making certain that curricula correspond with present-day industry benchmarks and student requirements. Such a procedure not only nurtures creativity but also backs effective governance within academic structures, as illustrated by the advancement states achieve in pinpointing and training prospective school leaders, which is essential for systemic growth in educational quality (Jacobson A et al., 2002). Moreover, the accreditation mechanism

acts as a driving force for ongoing enhancement, obliging institutions to critically reflect on their educational methodologies and embrace optimal practices. Research advocating for the accreditation of Teacher Education in developing nations points out that creating a unified reference for quality metrics can ease the transfer of innovative concepts and encourage collaboration among establishments (Mahasin et al., 2011). Hence, prioritizing ongoing improvement is equivalent to investing in the future of education itself.

In a world that is more globalized than ever before, the quest for academic excellence has gained significant importance, leading educational institutions to pursue accreditation as a symbol of quality. The function of accreditation is twofold: it validates educational programs and guarantees compliance with established standards aimed at protecting the interests of students and society. This meticulous procedure not only improves the standing of institutions but also establishes a framework for ongoing enhancement, which ultimately aids learners and employers by validating competencies and readiness for the job market. Furthermore, the processes surrounding accreditation are shaped by a variety of stakeholders, such as educational agencies, governmental bodies, and professional organizations, each playing a role in forming a well-rounded perception of what high-quality education entails. Therefore, stakeholders need to engage with the accreditation processes to effectively manage the complexities involved in academic quality, assuring both institutional responsibility and the improvement of teaching effectiveness across various learning settings.

The emergence of accreditation within the realm of higher education began in the early part of the 20th century and was characterized by a growing concern regarding the quality of education and the integrity of institutions. Initially, the driving force behind the accreditation was the necessity to distinguish credible institutions from those showing a lack of legitimacy. The initial undertakings in accreditation aimed at the establishment of uniform criteria pertinent to academic programs. This initiative witnessed a notable increase in relevance during the period following World War II, as a significant influx of veterans sought enrollment in colleges and universities. This surge created a pressing need for a solid framework designed to ascertain that such educational establishments could adequately cater to the heightened demand for higher education. It was during this time

that accrediting agencies began to formalize mechanisms for the assessment of institutions based on specified quality benchmarks. As time progressed, these initiatives transformed into a more holistic system that not only inspected academic rigor but also stressed the importance of ongoing enhancement and accountability, ensuring that educational results are harmonized with the needs of society at large (Martinez L, 2015). Consequently, the historical backdrop of accreditation embodies a continuous dedication to upholding educational excellence amidst a landscape that is perpetually evolving.

The accreditation processes have seen notable changes due to the shifting educational requirements and societal expectations. Initially, the focus was on merely verifying adherence to certain educational standards. However, it has now transferred toward a more dynamic model, prioritizing ongoing improvement and accountability. This shift is highlighted by the need for accredited organizations, such as universities, to not just comply with set standards but also to show a commitment to promoting innovation and academic excellence. In addition, regarding higher education, the relationship between university entrepreneurial orientation (U-EO) and academic innovation illustrates how accreditation can enhance the capabilities of institutions (Wardani DK, 2024). Additionally, the incorporation of organized quality frameworks in areas such as immune effector cell therapies signify the rising trend of interdisciplinary approaches to accreditation, aiming to guarantee both safety and effectiveness in therapeutic uses (Christopher E Dandoy, 2024). These advancements indicate a wider recognition of the necessity for flexible standards that are in harmony with current educational and professional practices.

The evolution of accreditation is characterized by several significant milestones that have significantly influenced the growth of higher education in the United States. Beginning in the late 19th century, the establishment of the North Central Association in 1895 marked one of the first organized efforts to assess educational quality, setting a precedent for future accrediting bodies. The post-World War II era saw further advancements, particularly with the formation of the Council on Higher Education Accreditation in 1952, which aimed to unify the accreditation process and enhance accountability among institutions. By the late 20th century, the introduction of federal recognition requirements in the Higher Education

Act of 1965 reinforced the importance of accreditation as a gatekeeper for federal funding, emphasizing quality in education. These milestones collectively illustrate the ongoing evolution of accreditation and its role in maintaining educational standards and quality assurance (Robert T Burris, 2008).

The phenomenon of globalization, characterized by its interlinked nature, has exerted a notable impact on the standards of accreditation across various academic institutions all around the globe. As universities seek to draw in students from other nations and vie for positions in a worldwide market of knowledge, the impetus to conform to stringent accreditation processes has escalated. This quest for adherence not only aims to bolster the quality of academics but also enables a sharing of best practices among different institutions, which in turn contributes to better educational outcomes. An illustration of this is the focus on entrepreneurial orientation, referenced in (Wardani DK, 2024), which depicts how universities are reassessing their academic innovations to ensure alignment with both national and global standards. Additionally, the progress made in quality assurance frameworks, as Christopher E Dandoy (2024), highlights the criticality of employing structured protocols reflective of a worldwide viewpoint. Therefore, globalization serves as a driving force, prompting institutions to perpetually enhance their accreditation standards in the face of changing expectations within an increasingly competitive educational environment.

Accreditation functions as an essential mechanism for maintaining academic quality in higher education institutions. By presenting an evaluative framework, organizations that provide accreditation scrutinize educational programs against predefined standards, thereby promoting ongoing improvement and accountability. This procedure not only guarantees stakeholders of a program's legitimacy but similarly aids students in obtaining federal financial aid within the United States. Furthermore, the incorporation of transnational education (TNE) programs calls for a resilient accreditation system that confronts the intricacies across national borders. In the examination of institutional audit reports, notable trends surface concerning governance and quality assurance within TNE efforts, indicating potential opportunities for optimization in management practices (Stafford S, 2016). A process of accreditation that underscores institutional strategy and

oversight can effectively lessen risks associated with globalization, thus ensuring that higher education institutions uphold rigorous academic standards whilst adjusting to the shifting educational environment (Panda SN et al., 2023) Therefore, accreditation is a crucial understructure for preserving academic excellence and institutional integrity.

The relationship that exists between the caliber of academic offerings and the process of accreditation is crucial for the augmentation of educational excellence and the trustworthiness of institutions. Accreditation functions as a formal acknowledgment, indicating that a given institution adheres to quality standards, which can subsequently impact both student enrollment figures and the confidence of stakeholders. As noted in the research from (Aithal S, 2024), there are implications of accreditation that enhance the work-life balance for those engaged in academic professions, thereby creating a setting that is favorable for the provision of quality education. Additionally, as pointed out in (Moscoso-Bernal SA et al., 2023) the bonds between higher education institutions and the demands of society are fortified via accreditation processes that require these institutions to be attuned to the issues faced by their respective communities. This two-way interaction not only augments traditional academic programs but also bolsters the commitment of the institution to uphold quality. Consequently, the accreditation mechanisms employed accurately must represent and maintain elevated academic standards, as this is vital for the continual progress of educational outcomes, ultimately laying down a solid foundation for the preservation of quality amidst the swiftly changing landscape of higher education.

Accreditation functions as a critical mechanism for guaranteeing educational quality and can be divided into two main types: institutional and programmatic. Institutional accreditation concentrates on the whole institution, scrutinizing its overarching mission, governance structures, and the resources allocated for the support of its educational offerings. This comprehensive evaluation verifies that the entire institution adheres to stipulated quality benchmarks, thereby influencing all its programs and degrees. Conversely, as per K. Dattey (2018) programmatic accreditation zeroes in on specific academic programs, assessing factors like curriculum, faculty qualifications, and student outcomes. The necessity of this dual approach is evident as it promotes both institutional integrity and the excellence of programs, as shown by research that illustrates incremental

improvements after accreditation evaluations in diverse scenarios (Abigail C. Gomez et al., 2024) Both institutional and programmatic accreditations are essential for advancing educational accountability and ongoing enhancement, emphasizing the interrelation between broad institutional standards and specific program criteria in attaining academic quality.

Accreditation is very important for bettering academic levels in colleges, helping to create a sense of responsibility and constant growth. By matching educational programs with set quality standards, accreditation pushes teachers to conduct thorough self-evaluations and improve their teaching methods to boost student success. For example, the faculty at Princess Nourah University faced both complex problems and benefits during the accreditation process, showing the importance of proper training and advice before starting it (Albdr, 2020). Additionally, the link between federal student loans and accreditation shows some issues that can affect school trustworthiness, pointing out that good accreditation practices are needed to guarantee that student financial aid funds good educational experiences instead of just increasing debt (Negri, 2013). Therefore, accreditation is not only a guarantee of academic excellence but also a guide for broader economic issues related to access and responsibility in higher education. That is why High-quality education is an absolute goal in the contemporary, ever-changing, and unstable world. This would then imply that university education needs to focus on the goal of developing the graduates' personalities and intellectual abilities, along with providing them with further education, rather than being an end to simply bestowing on them diplomas and job market entry tickets.

As a result, pursuing Quality education is the newest but most necessary resource for any nation that does not want to continue being underdeveloped and dependent. It is long known that the growth of physical capital and labor does not drive economic development but the establishment of knowledge and the rate at which it grows. Better quality standards of education are no longer a high-cost luxury, even for universities in underdeveloped nations. Unless it engages in quality education or self-evaluation procedures, these institutions may not avoid stagnation or worse. Generally, the promotion of quality assurance is encouraged through continuous self-assessment and seeking internal or

external validation, such as accreditation. Accreditation is a formal process whereby the program or educational institution under scrutiny is evaluated for conformance to some set standards or criteria set by the association or agency in terms of delivery for quality education. But above all, accreditation gives public trust and accountability. It gains mutual recognition of qualifications, facilitates mobility of academic personnel, and fosters unity within professions by combining practitioners, educators, and students in a collective effort to improve professional preparation and practice. Seeking accreditation from bodies outside can sometimes trap an institution in merely focusing more on the production of paper documents and the formulation of policies than on actual actions that support academic quality.

The next significant area played by academic accreditation is to ensure and enhance quality education in higher education institutions. Literature has shown that this contributes to enhanced processes and practices, particularly in recent institutions and during initial accreditation (Ulker & Bakioğlu, 2019). These aspects of education include quality enhancements in program specifications, assessment, and student support. Accreditation also facilitates public confidence, accountability, and the mobility of academic staff. However, challenges of the process include unified governance on resources that belong to the institution and community partnership; the latter is a challenge in that consorted governance on resources that belong to the institution and those belonging to the community might be difficult to figure out. Moreover, institutions may emphasize the production of documents without bothering to ensure that the documents contain statements of strategies applied for quality assurance that are introduced incrementally. This is regarded as 'challenged fidelity' by Al-haj Ibrahim (2014). "Despite these problems, accreditation is still considered the key for the continuation of quality enhancement efforts in higher education; some feel that alternative models from other sectors and even other parts of the world should be considered that would strengthen the process" (Dill et al., 1996).

The accreditation process has been one of the ever-present themes in many articles discussing quality assurance processes. Haakstad (2001) further claimed that the discourse on higher education in Europe started its transition into another stage after ten years with a

strong trend towards accreditation. From quality enhancement to quality control, this progression was motivated by a series of factors, including European efforts at harmonization and an intent to improve international mobility. A governmental report on Norwegian higher education reform highlighted concerns that accreditation would undermine the highly sophisticated tradition of constructive, developmental evaluations based on a dynamic and relative quality concept. To keep the dynamic quality concept alive, Haakstad (2001) recommended accreditation at the institutional, rather than the program level, along with a flexible but strengthened audit methodology. Despite this perspicacious recommendation, many European countries have since established expensive and redundant program accreditation schemes-often at the behest of political actors. Furthermore, Wester Heijden (2001) reports that though the Bologna Declaration of 1999 was a call to reform the bachelor-master structure, the declaration pointed out for emphasis transparency through the description of the levels and types of quality of study programs. Although the Bologna Declaration did not require or even suggest accreditation of programs, in most countries of Western Europe, it is considered a responsibility to become part of already established systems of external quality assurance. Most countries of Central and Eastern Europe embraced mechanisms of accreditation a long time ago after Communism had collapsed. Heusser (2006) elaborated on the European Consortium for Accreditation in Higher Education project commenting that he witnessed crucial steps toward mutual understanding and recognition between the accreditation organizations. The public and policymakers have expressed their concerns over student achievement, substandard institutions, and public accountability. These pressures made the accrediting agencies, especially regional ones, review and transform their approaches. As Judith (2006) pointed out, higher education must provide clear assurances that accreditation genuinely guarantees educational quality. When implemented well, accreditation provides potential students, policymakers, and the public with strong assurances that an institution is reputable, honest, and provides a quality education. At the same time, accreditation provides institutions being reviewed with valuable feedback to improve academic quality.

Accreditation involves evaluating standards, ongoing improvement efforts, external validation, credit transferability, employer confidence, and eligibility for financial aid. It provides a form of quality assurance and can give comfort to the stakeholders involved,

such as employers and students, that an institution or program meets recognized standards of excellence (Blanco-Ramírez & Berger, 2014). More than that, accreditation serves as a key indicator of academic quality, showing by accrediting bodies that an institution complies with regulations and standards (Sarabia & Biray, 2022). It is the process whereby higher learning institutions together with their programs are assessed against the given criteria to determine their quality and capability of delivering high-level education. Accreditation remains a powerful tool in measures put in place to evaluate the quality of national systems of higher education.

External peer review ensures the quality of academic programs and institutions as accredited programs are evaluated and compared to well-defined quality standards. This paper reports on enhancing excellence in higher education institutions based on a review of the literature and empirical research. The research reviews the available literature across a range of national contexts to explore whether accreditation improves HEI excellence and what factors influence this positive change. Kumar et al. (2020) researched the impact of accreditation on the quality and excellence of Higher Education Institutions, whereas Brahimi et al. (2016) discussed the role of accreditation in student learning outcomes, which to a great extent influences the effectiveness of institutions and success of students in higher education institutions. Some of the factors influencing are:

(1) Institutional Effectiveness:

(i) Quality Assurance: The process of accreditation assures that the educational institutions meet the predetermined standards and requirements of resources, governing policies, curriculum, faculty qualifications, and other such aspects. Compliance with the standards is indicative of the school's effectiveness in delivering high-quality education.

(ii) Continuous Improvement: The accreditation process fosters continuous improvement. Institutions engage in self-assessment exercises in combination with data-driven decision-making and strategic planning, which helps to improve the identified lapses. This is an iterative process of institutional effectiveness through the identification of weaknesses and correcting them.

(iii) Resource Allocation: Resource allocation and how it is being used are often also reviewed during accreditation. Institutions are prodded to use resources efficiently for academics, student services, infrastructure, and research to achieve overall effectiveness.

(2) Student Outcomes:

(i) Quality Education: This is where accredited institutions must maintain high standards in the three core functions: teaching, learning, and academic programs. In relation to this, this strong emphasis on quality in education has implications for student outcomes by assuring that graduates have relevant preparation in skills and knowledge.

(ii) Employability: Many employers view degrees from accredited institutions as indicative of quality. The accreditation process shall add further credibility to this educational experience, reflecting positively on job prospects and career opportunities for the students.

iii. Student Satisfaction and Success: The pursuit of accreditation compels any institution to increase focus on student support services, advising, and academic resources that lead to increased satisfaction rates and better metrics for student success, such as in retention and graduation.

(3) Stakeholder Confidence:

(i) Public Trust: The benefit of accreditation to an institution is a sign that it has met the recognized quality standards; thus, stakeholders are assured of quality education from that institution.

(ii) Global Recognition: The accreditation status can assist in international recognition and partnering. Many institutions with accredited programs or institutional accreditation attract a varied student body and collaborations with global entities that extend their reach and impact. In summary, accreditation significantly influences institutional effectiveness by promoting continuous improvement, resource optimization, and adherence to quality standards. It also directly impacts students, Moreover, it is an important aspect of maintaining and enhancing academic quality in higher education, and it can have a significant impact on several key factors, including:

Student achievement: Accreditation provides a framework for evaluating student learning and outcomes and helps to ensure that institutions are delivering a high-quality education that prepares students for success.

Faculty quality: Accreditation standards often include requirements related to faculty qualifications, teaching experience, and professional development, which can help to ensure that institutions have highly qualified and competent faculty.

Curriculum quality: Accreditation standards guide the development and delivery of a high-quality curriculum that meets the needs of students and prepares them for the demands of the modern workforce.

Institutional resources: Accreditation standards often include requirements related to funding, technology, and infrastructure, which can help to ensure that institutions have the resources they need to deliver high-quality education.

Student support services: Accreditation standards often include requirements related to student support services, including counseling, career services, tutoring, and health services, which can help to ensure that students have access to the resources they need to succeed.

Transferability of credits: Accreditation can help to ensure that credits earned at one institution are recognized and transferable to other institutions, making it easier for students to pursue further education and career opportunities. Accreditation is an important aspect of maintaining and enhancing academic quality in higher education, and it provides a valuable framework for evaluating the quality of institutions and programs, as well as guiding continuous improvement efforts.

Strategies that are deemed effective in the enhancement of academic quality within the realm of higher education necessitate being multifaceted, as it is imperative to address areas such as faculty development, allocation of resources, and overarching institutional practices. A vital component within this initiative is the cultivation of strong partnerships existing between universities and the industry, which can be effectively illustrated by cooperative education initiatives that serve to integrate theoretical frameworks with practical applications. These forms of collaborations yield reciprocal advantages,

contributing to the elevation of industry professionalism while simultaneously enriching what is offered academically, as noted by (Breen et al., 2012). Furthermore, educational institutions possess the ability to utilize global rankings to guide strategic planning and the distribution of resources, thereby enhancing their academic stature and attracting higher-caliber talent (Institute for Higher Education Policy, 2009). The assurance of quality mechanisms must persist in being both transparent and stringent, as they provide assurances to involved stakeholders regarding the value that is delivered by academic programs. In the end, a steadfast commitment to ongoing improvement, facilitated through engagement with stakeholders, innovation in research, and curricula that are responsive to changing demands, enables institutions to sustain elevated academic standards while adeptly addressing the shifting societal needs and market exigencies.

In the undertaking of a comparative analysis concerning academic quality, it is vital to acknowledge how institutional accreditations influence educational norms and methodologies. Accreditation organizations like AACSB and EQUIS hold significant sway in setting the quality standards that educational institutions are required to fulfill, which consequently leads to a kind of competitive imitation among schools in the United Kingdom and France while simultaneously eroding their national characteristics (Ambrosini et al., 2013). Although such competitive pressures may enhance the job chances for graduates owing to a bolstered reputation of the institutions, these factors also engender worries about the consistency of academic outcomes. Studies have shown that graduates frequently secure positions in reasonably good employment, hinting at a positive perspective on the effectiveness of higher education; nonetheless, critiques about discrepancies in skills within sectors remain (Brennan et al., 2004). Therefore, the equilibrium between preserving distinctive academic legacies and conforming to worldwide standards is crucial for institutions striving to improve their educational quality while simultaneously equipping students for a progressively competitive work environment.

To sum up, the complex interplay between academic quality and accreditation highlights the important function established norms held in education. Accreditation is not merely a tool to confirm that educational institutions fulfill certain quality thresholds but also

encourages a mindset of ongoing enhancement and responsibility. Important participants, which include students, employers, and faculty members, derive advantages from a strong accreditation system as it amplifies institutional credibility and supports clarity in educational results. Moreover, the shifting characteristics of academic programs require an accreditation framework that can swiftly adjust to new trends and obstacles in higher education. Such flexibility proves vital for preserving relevance and spurring innovation within educational establishments. Ultimately, the quest for academic quality via efficient accreditation mechanisms lays down a groundwork for rigorous research and significantly aids in the overall progress of educational standards within the United States (United States. Congress. Senate. Committee on Health et al., 2004). In the end, the success of accreditation mechanisms relies significantly on the dedication of both faculty members and institutional leaders to maintain common values and wisely distribute resources toward achieving excellence.

Based on this literature, a theoretical framework is suggested with three dimensions of Academic Quality as shown in Fig 2.1.

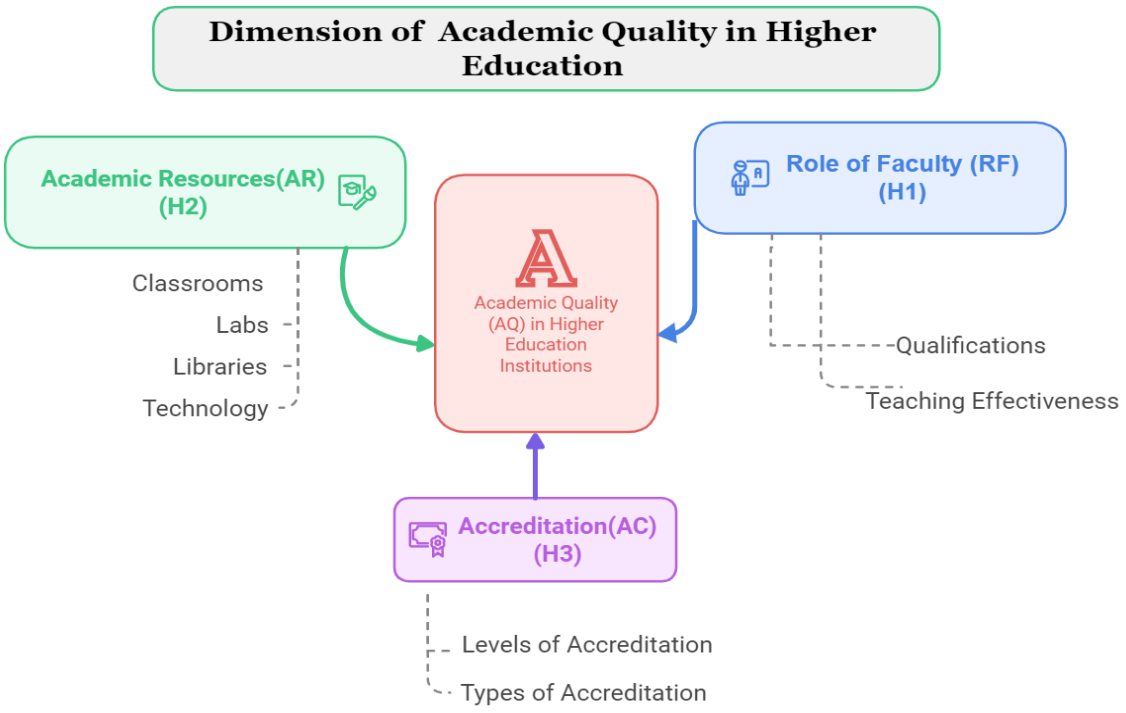

Figure 2.1 Theoretical Framework

2.6. Hypothesis

Following is the hypothesis for the relationship between academic quality and the role of faculty, Academic Resources, and accreditation.

H1: "The level of academic quality in Higher Education is positively correlated with the level of expertise, commitment, and engagement of the faculty."

This hypothesis suggests that the qualifications, expertise, and engagement of the faculty play a crucial role in determining the overall level of academic quality in an educational institution. Research shows that academic quality in higher education is positively related to faculty expertise, commitment, and engagement. Employee engagement plays an important role in sustaining employee productivity and performance within educational institutions that eventually contribute towards extraordinary academic quality and services (Ahmad Azmy, 2019). The quality of the student-faculty relationship is an important driver of student engagement and loyalty, while affective commitment and conflict are two relevant aspects of student-faculty relationships that impact employee engagement at work, which eventually contributes to extraordinary performance and productivity levels of employees working within educational institutions (Snijders et al., 2020). Faculty are also instrumental in internal quality assurance of academic programs, not without problems like faculty resistance. For them to be engaged, universities should be keen on resources being available, the efforts that academics make being recognized, and their competence. (Pham, 2022). Institutional and education capacities, as well as academic competencies, contribute to positive perception and the committed community regarding the betterment of higher education. These studies point to faculty engagement and satisfaction as being at the core of the quest for academic quality and positive student outcomes in higher education. (Prodanova & Kocarev, 2023). This hypothesis can be tested through research that measures the level of academic quality in educational institutions and examines the qualifications, expertise, and engagement of the faculty.

H2: "The level of academic quality in Higher Education is positively correlated with the availability and quality of academic resources, such as classrooms, labs, libraries, and technology."

This hypothesis suggests that the availability and quality of academic resources play a crucial role in determining the overall level of academic quality in an educational institution. A wealth of evidence identifies the direct relationship between the quality of educational resources and academic excellence in higher education. Other literature finds a significant impact of teaching facilities, libraries, technology, and their quality on student satisfaction and eventual learning outcomes (Muchiri et al., 2016; Khawaja, 2022). It means that access to quality education goes hand in hand with access to resources in terms of classrooms, laboratories, and Internet services, which helps enhance the educational experience as a whole and leads to better quality education. (Pragnashree et al., 2020). Not only will the students' performance be affected by the quality of institutional infrastructure and its resources, but the faculty's satisfaction and engagement will also affect the quality of education. (Prodanova & Kocarev, 2023). Also, sufficient funds for the maintenance and renovation of those facilities are vital, as good infrastructure has been associated with better student outcomes and a smaller dropout rate in schools and colleges (Khawaja, 2022). These findings underpin the necessity of investment in academic resources in pursuit of quality enhancement in higher education. Furthermore, the efficacy of higher education is notably affected by the infrastructures and tech resources that are present not only in institutions. Sufficient facilities, labs, and digital instruments are vital for improving the learning experience and satisfying modern educational requirements. In Latin America, a review has shown that there are continuous initiatives aimed at aligning IT education with the requirements of the technological industry, which emphasizes the necessity of updated curricular structures that mirror the current technology trends (Angles et al., 2016). These observations highlight that, despite some strides being made in narrowing the gaps between academia and industry, higher education institutions require additional investments directed toward infrastructural and technological improvements. This hypothesis can be tested through research that measures the level of academic quality in educational institutions and examines the availability and quality of academic resources.

H3: "The level of academic quality in higher education is positively correlated with the level of accreditation the institution receives."

This hypothesis suggests that the level of accreditation an educational institution receives is an indicator of its overall level of academic quality. Indeed, there is a positive relationship between academic quality and accreditation in higher educational establishments. It can be stated that accreditation highly contributes to the process and practice improvement basically in cases of new institutions or at the start of their first accreditation (Ulker & Bakioğlu, 2019). It enhances the meaning given to student learning outcomes and program quality in general. (Prado, 2020; Ulker & Bakioğlu, 2019). Literature confirms accreditation to be a quality assurance tool, a means of ensuring that institutions abide by prescribed standards and are under very stringent external evaluation. (Kumar et al., 2020) The best institutional accreditation exerts positive and significant effects on knowledge management at Colombian universities (González-Campo et al., 2021). Pursuing excellence is therefore very relevant to the best practices in the preparation phase for and implementation of an accreditation process. Challenges during the visits for accreditation, however, need to be dealt with by the administration. Accreditation functions as a notable means for the assurance of quality and integrity within institutions of higher learning. Conversely, programmatic accreditation enhances on programs contained within the institution, usually governed by specialized accrediting organizations that scrutinize the curriculum, qualifications of faculty, and the resources allotted to a specific domain, such as hospitality and tourism management. To illustrate, in the context of programs related to hospitality, tourism, and leisure, there are standards laid out through constructs like total quality management (TQM) that assure a thorough evaluation of educational provisions (Baum et al., 2009). Additionally, although the role of technology integration in education has become progressively essential, the obstacles such as the requirement for immediate responsiveness in learning settings persist as pivotal factors for consideration in the accreditation processes (File et al., 2003). In general, though, accreditation plays a huge role in enhancing the quality and excellence of a higher education institution. (Prado, 2020). This hypothesis can be tested through research that measures the level of academic quality in educational institutions and examines the level of accreditation they receive.

Conclusion:

The literature review concludes that dimensions of quality in higher education are the Role of Faculty, Academic Resources, and., Accreditation. By associating the dimensions with earlier research into higher education quality it was found that the findings of this study rhyme well with some of the earlier publications regarding quality in higher education and provide a valuable development for them.

The inquiry into the caliber of academia within higher learning institutes uncovers noteworthy observations regarding the relationships among educators, resources, and the processes of accreditation. A major discovery accentuates the essential function of the quality of faculty, underscoring that the effectiveness of teaching is intrinsically tied to clearly articulated performance benchmarks and continuous professional enhancement. This matter is especially pertinent considering the current situation where numerous departments do not provide uniform training for novice lecturers, potentially resulting in variations in teaching proficiency across different institutions. Moreover, the distribution of resources emerged as a vital aspect that fundamentally supports both the quality of instruction and the success of students. The investigation conducted by (Baum et al., 2009) delineates six principal standards curriculum and instruction; faculty; strategic planning; administrative oversight; achievements of students; and resources - illustrating that these elements together cultivate an atmosphere favorable to elevated academic outcomes. The interrelation of these facets highlights the imperative for comprehensive strategies aimed at improving academic quality while also bolstering the efforts related to institutional accreditation. Considering the general research on service quality, we found that there is a reasonable correspondence but also several differences. The differences indicate the importance of identifying specific quality dimensions for each activity. Further research into this area would be beneficial. First, it would be beneficial to complement this study with studies from perspectives other than the students. Any single stakeholder perspective can only give a limited view and needs to be complemented by different perspectives.

CHAPTER 3: METHODOLOGY

3.1. Introduction

The research attempts to study various dimensions of Academic Quality in Higher Education, focusing on Pakistan. Emphasis on academic quality is essential and directly linked to student learning outcomes, institutional reputation, and the overall effectiveness of the educational system. The study focuses on three primary variables.

- Academic Quality (AQ):
- Role of Faculty (RF): This refers to the qualification, teaching methods, and individual faculty member's contribution to the academic environment.
- Accreditation Processes (AC): The institutions go through standards, guidelines, and reviews to maintain some quality threshold.
- Academic Resources (AR): This is the rate at which and quality of libraries, laboratories, technology infrastructure, or other resources are available in aiding the academic environment. This study will investigate the multiple dimensions of Academic Quality in Higher Education: a case from Pakistan; and the role of Faculty, Accreditation & Academic resources are selected due to their importance (see Fig. 1).

3.2. Operationalizing Conceptual Constructs

The research gap occurs between:

- The overestimation of the role of faculty, accreditation, and resources in determining academic quality.
- No empirical evidence shows how each contributes or interacts within the Pakistani higher education system.

3.3. Rationale of the PhD thesis

This Ph D. aims to fill this void, by:

- Use of a reliable and valid instrument (Scale): To Evaluate Academic Excellence in Pakistani Universities
- Exploring the Relationships: Correlation and Regression Analysis and Exploratory factor analysis of Faculty Expertise, Accreditation Level, and Academic Resources with Academic Quality
- Examining the significance of each factor and their collective predictive validity on academic quality. Insight of approach the aim of investigating this research problem is not merely to find a retailing point but also to investigate insights that can guide policymakers, university administrators, and educators in Pakistan. The findings can further guide the policy measures to enhance higher education quality by targeting highly relevant factors in a particular setting like Pakistani universities.

3.4. A Design for Research

This has been a growing concern among policymakers, educators, and stakeholders over Pakistan's higher education quality. Some universities have not changed the academic quality system despite numerous attempts to improve standards in education at different levels of learning institutions in Pakistan. These difficulties encompass different areas such as faculty competencies, accreditation, and availability of learning resources. There is currently little research examining the relationships between faculty expertise, accreditation processes, academic resources, and their combined effect on the overall quality of educational programs in Pakistan. The research gap restricts efforts to enhance the educational landscape towards ensuring that Pakistani universities are providing a high level of education to students.

This study seeks to investigate:

- How the level of faculty's expertise, commitment, and engagement affect the academic quality.
- How availability and quality of learning materials such as libraries; laboratories; and technology infrastructure aid student learning and hence enhance academic quality.
- To what extent do accreditation processes and standards enhance the overall quality of academic programs.

By analyzing these key factors, the research seeks to establish a more comprehensive understanding of the drivers of academic quality in Pakistani higher education. This knowledge can then be used to develop targeted strategies for improvement across faculty development, accreditation processes, and resource allocation within universities.

3.5. Population and sample

- Target Population: This study's target population will involve faculty from the top 10 universities of Pakistan. The selection is based on their rankings and good reputation as an academic institution. The reason for selecting faculty members is that they are very important in a quality academic process involving teaching, research, and institutional development.
- Sampling Frame: Faculty directories and contact lists acquired from the top 10 universities of Pakistan represent the sampling frame. These institutions are determined through national and international ranking bodies such as the Higher Education Commission (HEC) of Pakistan.
- Sampling Technique: A purposive sampling technique will ensure that there is a representation of faculties from different disciplines, experience levels, and academic positions among others. This method has been chosen to gain a comprehensive understanding of the dimensions in which academic quality varies across different academic settings within universities.
- Sample Size: The study covers extensive areas; hence, it aims at a sample size consisting of around 500 faculty members. Hence, this number has been picked balancing between statistical power requirements and operational difficulties

related to data collection. In total, A minimum of 45-50 faculty members were selected from each of the 10 universities, ensuring adequate representation from each institution.

- Sampling process
  - Invite To Participate: This study was communicated to the faculty members through the official email communications of their respective universities. The email briefly introduced the research, its objectives, and why they need to participate.
  - Follow-up: To increase response rates, reminder emails were sent out. In addition, the University Administration was approached to enhance participation.

3.6. Data Collection and Instrumentation

This research employed a quantitative approach to collect data about academic quality in Pakistani universities. A self-administered survey instrument was designed and distributed to faculty members.

Survey Platform:

• Google Forms: An easily accessible online platform that faculty members could also use led us to choose Google Forms as our method for developing and administering the survey, making it easy for data collection. Link of the form: https://forms.gle/umBSXwWDQS89DSdi9

- Questionnaire Design:
- Closed-Ended Questions: There were 21 closed-ended questions in the survey. The use of this format ensured consistency in responses and thus facilitated straightforward data analysis.
- Likert Scale (1-5): Each question had a 5-point Likert scale with responses ranging from strongly disagree (1) to strongly agree (5). For instance, these related statements were expressed by faculty members' level of agreement on a five-point scale where one meant they didn't agree at all and five meant they agreed on:
- Faculty Role: The items were assessed on a scale that measured whether the faculty members felt that they were the experts in the field and that they had adopted the best teaching methods and the highest level of accessibility.

- Academic Resources: This section has items that focus on the accessibility of library resources as well as technological and infrastructure support Accreditation:
- How far does accreditation determine the quality of the returned data which is the aim of this question?
- Academic Quality: The questions are based on the faculty's opinions on different parts of the student learning outcomes, curriculum relevance, and overall satisfaction with the education quality. The items were also related to student satisfaction with the quality of education and access to library resources and technology.

3.7. Data Collection Procedures

How to distribute the Survey:

- After the university's approval, the survey link was emailed to the selected faculty members.
- The email pointed out the importance of the project, the focus on participant confidentiality, the reassurance of their anonymity, and the call to participate.

Follow-up:

When the initial result is not promised, then emails to the faculty members are sent for reminders after a reasonable period.

Data Management:

- Download or export the survey data from Google Forms into a spreadsheet format for analysis.
- Anonymize all data by assigning participant codes for identification during analysis.

3.8. Data Analysis Techniques:

The information sourced from the faculty survey was processed using SPSS statistics software. Here are the alternative modes of data analysis and processing:

Table 3.1

Summary of Data Analysis Techniques

S.No.	Description	Statistical Test
1	Respondent Profiles	Frequency distribution Percentages Calculation
2.	Validity of Scales	
	Pearson Correlation methods	Inter-item Correlation m Total item Correlation Inter scale Correlation, Total scale Correlation.
	Factor analysis	Exploratory factor Analysis using the Principal Component Method (PCA) and Varimax Rotation method.
3.	Reliability	Cronbach's Alpha Coefficient
4.	Data Description	Mean Standard Deviation
5.	Data Normality	Shapiro Wilk Test
6.	Nonparametric Test	Mann-Whitney Test Kruskal H-Test Spearman's Rank Correlation
7.	Regression	Linear Regression/Anova /Coefficient
8.	Multicollinearity	Variance Inflation Factor Tolerance Test

- **Descriptive Statistics:** Analyze sought for basic statistical applications like frequencies, means, and standard deviations to comprehend the distribution of responses per a single variable (faculty role, accreditation, resources, and academic quality).
- **Reliability:**

  Reliability is the consistency and dependability of a measurement instrument. It ensures that the instrument measures what it intends to measure consistently across different times, contexts, and raters. **Cronbach's alpha** is a statistical method used to determine the internal consistency reliability of a set of items within a scale. It essentially measures how closely related a set of items are as a group.

- **Validity:**

  Validity refers to the extent to which a measurement instrument operates what it intends to measure. Two techniques are used to assess the validity of an measurement instrument.

  Exploratory Factor Analysis (EFA) and correlation analysis are two statistical methods commonly employed.

- **Correlation Analysis**: The correlation coefficient is calculated to measure the strength of the relationship between two variables, linearly related to a scatter plot. The coefficient only takes values between −1 and +1, where the numerical magnitude describes the strength, and the sign describes the direction of the relationship. Therefore, a plus or minus sign attached to a correlation coefficient is not a + or − in the arithmetic sense. Review the strength and direction of the relationships between the variables. This will help identify if faculty perceptions of strong roles, accreditation, and resources are associated with higher reported academic quality. (Pandey, S. 2020).

- **Exploratory Factor Analysis (EFA):**

  Factor Analysis is a method of identifying the factors that, or dimensions, are underlying the relationships between a set of variables. It transforms the correlations between a set of observed variables into a smaller number of underlying factors, which contain all the essential information about the linear interrelationship between the original test scores. Furthermore, Factor analysis is the statistical procedure focusing on the relationship between the measured variables and the latent underlying variables.

- **Regression Analysis:**

  Regression analysis is a statistical technique employed in the analysis of the relationships between variables. The investigator often tries to establish the cause-and-effect of one variable on the other. (Sykes, 1993). Moreover, according to (Gogtay et al., 2017) Regression analysis is a set of statistics that gives room for relationship assessment between a dependent variable and one or more independent or predictor variables. Mean, of course, implies telling us in which way the dependent variable changes in changes in the independent variable and, therefore,

is applied in prognosis and prediction. The technique must, however, be used with a clear understanding of the assumptions in each type of regression analysis, their limitations, and the potential error that might occur when models are applied to a larger population. This technique explores the relationship between the factors (faculty role, accreditation, resources) with academic quality. It is also the best method to find out which of these are most closely related to academic performance and, thus, make them the primary concerns of the institution.

- **A multicollinearity** test evaluates the level of correlation between two or more independent variables in a regression model to determine if multicollinearity exists. Multicollinearity is the condition where two or more independent variables are correlated at a high level, thus causing the results from the regression analysis to be inaccurate and resulting in unreliable estimates of coefficients. The test can detect multicollinearity.
    - Variance Inflation Factor (VIF): Measures how much the variance of a regression coefficient is inflated due to multicollinearity.
    - Tolerance is the reciprocal of VIF (Tolerance = 1/VIF). Values close to 0 indicate high multicollinearity.
    - Condition Index and Eigenvalues: Used in conjunction with the variance decomposition matrix to detect multicollinearity.
- **Normality Test:**

  Normality tests are statistical methods for determining whether a set of values might be drawn from a normal distribution. A normal distribution, often the curve of a bell, is one of the assumptions for many statistical or parametric tests. There are Statistical tests to perform this normality.
    - Histogram: Visual inspection of data distribution.
    - Shapiro-Wilk Test: One of the most effective tests for small to medium-sized datasets.
    - Kolmogorov-Smirnov Test: Compares the dataset's distribution to a normal distribution.

- **Non-Parametric Test:**

  A non-parametric test is a statistical test that assumes no precise distribution of data, such as normality. Such tests are known as "distribution-free" methods and are generally used to analyze ordinal or nominal data, or data not normally distributed. These are.

  - Mann-Whitney U Test (Wilcoxon Rank-Sum Test): Used for comparing two independent samples (Gender). Equivalent to the independent t-test.
  - Kruskal-Wallis H Test: Used for comparing more than two independent groups. (Age and Designation) Equivalent to one-way ANOVA.
  - Spearman's Rank Correlation: Used to measure the strength and direction of the relationship between two continuous or ordinal variables. Equivalent to Pearson correlation.

3.9. Limitations of Data Analysis:

• Correlations Don't Imply Causation: While correlations may be found, they don't have to be taken as evidence that one variable cause another. Other influencing factors might not have been included in the study.

• Perceptions vs. Reality: The data relies on faculty perceptions, which may not always reflect objective measures of quality or resources.

• Sampling Bias: Despite using stratified random sampling, there's a chance the sample might not perfectly represent the entire population of faculty members in Pakistani universities.

• Survey Limitations: Closed-ended questions may not capture the full range of faculty experiences or perspectives. Social desirability bias could also influence responses.

• Generalizability: This research studied the top 10 universities. Its findings might not be generalizable to all universities in Pakistan, especially those with different features.

3.10. Ethics related to human subject participation

- Obtain ethical approval from the school before the survey administration starts.
- Protecting the anonymity and confidentiality of the participant's data.
- Getting the consent of the faculty members before they take the survey must be the priority.

CHAPTER 4: RESULT ANALYSIS

4.1. Organization of Data Analysis

Analyzing data focuses on the accuracy and reliability of the scales used in the survey questionnaire. It includes item-to-total correlations, inter-item correlations, inter-scale correlations, total-scale correlations, as well as exploratory factor analysis that were all part of the diagnosis of the questionnaire scale. Also, Cronbach's Alpha was again computing reliability. Well as you can see, data are non-normally distributed thus, non-parametric tests (Mann-Whitney U test, and Kruskal-Walli's test) were chosen to compare mean differences in demographic factors.

4.2. Hypothesis Testing and Model Evaluation:

SEM (Structural equation Model evaluation) was utilized to test the model and determine whether it matches the data. Structural equation modeling is a collection of statistical techniques that are utilized to examine the relationships between variables. It is a general approach to the testing of hypotheses about relations among observed and latent variables in an overall general model (Hoyle, 1995). The structural equation model is a method that is utilized for the representation, estimation, and testing of a theoretical network of linear relationships between variables (Rigdon, 1998). MacCallum and Austin (2000) examine hypothesized patterns of directional and nondirectional relationships between a set of observed, measured, unobserved, or latent variables. It is therefore a continuation of the path analysis. Structural equation modeling will involve creating a path diagram with arrows between variables and their respective path coefficients for each arrow. Other terms used to refer to SEM include causal modeling, causal analysis, simultaneous equation modeling, analysis of covariance structure, path analysis, and confirmatory factor analysis. Werner (2010) defines SEM as the statistical technique that eliminates the main features of multivariate models, such as regression analysis, factor analysis, and simultaneous equation modeling. It can explicitly account for the lack of sufficient reliability of the observed variables, providing analyses of attenuation and estimation of bias due to measurement error. The SEM approach is sometimes referred to as causal modeling because competing models can be informed about the data and tested against each other. Traditional statistical approaches to data analysis, including path or regression analysis,

analysis of variance (ANOVA), and correlation, specify default models, assume measurement occurs without error, and are somewhat inflexible, but structural equation modeling requires a specification of the model based on theoretic and relevant empirical research. It is a multivariate method that incorporates measured variables and latent constructs and explicitly identifies measurement error. SEM is a hybrid of a path analysis and a measurement model, or simply, it is the estimation of two models: one that is like a path model or structural model, and the other that is a measurement model. In preparing the SEM framework, we confirmed the required assumptions. The model fit indices represented quite a good congruency between the given model and the sampling data. Besides, SEM conclusions gave clear and valid clues for the absolute support of all the direct relationship hypotheses (H1, H2, H3)

4.3. Demographic Analysis

The **demographic analysis** of the sample gives a broad view of respondent characteristics, pointing towards diversity across gender, age, and designation. The sample has 451 participants with nearly balanced gender, slightly skewed towards one gender, ensuring a wide spectrum of views within the analysis. A balanced gender proportion can create a more respectful workplace because, according to research, diverse teams perform better in creativity and problem-solving.

The **age distribution** is on the younger side, because the mean age is to the left side of the scale, indicating that possibly most of the respondents work at an early career stage. The association with innovative ideas and adaptability has been seen to accompany younger age distributions.

The **designation levels** reveal also that most of the respondents were junior level, but there is variability in the designations, which suggests an equal spread across all ranks. This combination of young professionals and junior positions will mean a potential pipeline approach to future leadership development.

This **demographic composition** makes sense in the workforce sense in that it is youth with mixed experience levels. The diversity of gender, age, and designation levels can impact organizational dynamics and culture and may encourage innovation and adaptability but increase the requirement for development programs to assist junior employees in career advancement.

Here's a demographic analysis based on the data provided, examining the characteristics of the sample by gender, age, and designation:(Table 4.1)

Table 4.1
Descriptive Statistics-Demographic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	451	1.0	2.0	1.450	.4981
Age	451	1.0	3.0	1.632	.7787
Designation	451	1.0	4.0	1.825	1.0679
Valid N (listwise)	451				

1. Gender Distribution

- Sample Size (N): 451 respondents.
- Values: The gender variable ranges from 1.0 to 2.0, suggesting two categories (e.g., possibly 1 = Male and 2 = Female, or vice versa).
- Mean (1.450): This mean, closer to 1.0, indicates a slight overrepresentation of one gender group. However, with a standard deviation of 0.4981, the gender distribution is balanced.

2. Age Distribution

- Range: Age values span from 1.0 to 3.0, suggesting three distinct age groups (e.g., younger, middle-aged, older).
- Mean (1.632): The mean is closer to the lower end of the scale, indicating a concentration in the younger age category. This is confirmed by the standard deviation (0.7787), showing some variability but with a tendency towards younger ages.

3. Designation Levels

- Range: The designation variable spans four levels (1.0 to 4.0), likely representing increasing levels of responsibility or seniority.
- Mean (1.825): The mean, closer to 1, suggests that most respondents hold junior-level positions. The standard deviation (1.0679), however, indicates a broader spread, suggesting some representation across all designation levels.

While the sample primarily comprises individuals in junior roles, the widespread in responses hint at a range of experience levels within the sample. This could offer diverse perspectives in terms of job responsibilities and experience within the organization. This demographic analysis suggests a balanced gender representation but leans towards a younger, predominantly junior workforce. This composition might influence organizational dynamics, with younger individuals likely to contribute fresh perspectives, while the spread across designations could foster a blend of junior and more experienced viewpoints.

Gender distribution in the study population is as balanced as possible to allow meaningful gender-based comparisons, with 55% male and 45% female distributed in the sample. Suitable enough for exploration of any possible differences based on gender toward the dependent variable, such as Academic Quality, this supports the reliability of the study. (Table 4.2.)

Table 4.2
Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	248	55.0	55.0	55.0
	2.0	203	45.0	45.0	100.0
	Total	451	100.0	100.0	

1 For male and 2 for Female

Most of the age distribution falls in Group 1.0 (55.4%), Group 2.0 (25.9%), and Group 3.0 (18.6%). Such an uneven age distribution calls for a cautious interpretation of the results regarding age if it is a predictor or moderating variable for this research. However, the overall data is balanced for group-based analysis. The age groups are unevenly distributed, with Group 1.0 (55.4%) dominating the sample. This could reflect a younger population or one where this group has a higher representation in the study. Groups 2.0 and 3.0 account for 44.6% of the sample combined, suggesting their presence is notable but secondary to Group 1.0. (Table 4.3).

Table 4.3
Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0*	250	55.4	55.4	55.4
	2.0*	117	25.9	25.9	81.4
	3.0*	84	18.6	18.6	100.0
	Total	451	100.0	100.0	

1 For (25-35 years), 2 for (36-45 years) and 3 for (46 and above)

The designation demonstrates an unequal distribution of subjects in four categories:

Category 1.0: The largest category had a count of 57.4% of the sample.
Category 2.0: A smaller category took 12.4% of the participants.
Category 3.0: It was the second largest group which catered to 20.4%.
Category 4.0: This was the smallest category, which had only 9.8% of the sample size.
This unequal allocation will affect statistical analyses, as overrepresentation by Category 1.0 may influence outcomes, while smaller sizes of Categories 2.0 and 4.0 may reduce the power of statistics. Interpretations should be cautious and may need to be adjusted with post-hoc tests to ensure that all groups are adequately represented. (Table 4.4)

Table 4.4

Designation

Designation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0*	259	57.4	57.4	57.4
	2.0*	56	12.4	12.4	69.8
	3.0*	92	20.4	20.4	90.2
	4.0*	44	9.8	9.8	100.0
	Total	451	100.0	100.0	

1 For (Lecturer), 2 for (Assistant Professor), 3 for (Associate Professor) and 4 for (Professor)

4.4. Descriptive Statistics of Variables.

The descriptive statistics for the four evaluated factors- Academic Quality, Faculty, Resources, and Accreditation. Overall, comments offered by most of the respondents for all four factors are positive with, however, some interesting features as to how such perceptions are grasped by respondents. (Table 4.5)

Table 4.5

Descriptive Statistics of Variables

Descriptive Statistics Variables

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Academic quality	451	4.0926	.49063	-.244	.115	-.424	.229
Faculty	451	4.0423	.46193	-.676	.115	.148	.229
Resources	451	4.0541	.42111	.007	.115	-1.039	.229
Accreditation	451	4.0602	.44791	-.075	.115	-.841	.229
Valid N (listwise)	451						

Academic Quality: Based on a mean score of 4.09, it can be concluded that most respondents' attitudes toward academic quality are positive. The responses also show a standard deviation of 0.49 suggesting that there are inconsistencies in the responses

although this inconsistency is moderate and suggests that evaluations are made consistently. There is a slight negative skewness (-0.244), in other words, more people rated less people rated figures in the upper range in the attitude towards academic quality, which implies there were respondents who were more satisfied than others. Similarly, the strangely low kurtosis figure (-0.424) guarantees a horizontal distribution in which the number of people who rated the extremes (either unacceptably low or high) are decidedly less than those who rate the middle of the scale.

Faculty: The faculty ratings are also quite favorable with the mean rating being 4.04. The standard deviation which is 0.46 demonstrates that as is the case with academic quality, opinions on the faculty have a moderate range. The negative skewness (-0.676) shows that more respondents had higher ratings which implies that many respondents were pleased with the faculty. The kurtosis of 0.148 which is close to zero means that most of the responses have distributions that are evenly distributed around the mean since only a few of the respondents had ratings that were more than the expected average.

Resources: The mean of 4.05 is also high, which indicates that resources have been positively perceived. The standard deviation of 0.42, the least of the four categories, shows that in terms of this resource factor, the respondents display less variability as regards the responses. The skewness of 0.007 is consistent and demonstrates that responses are statistically close to the mean, above or below the average. However, kurtosis (-1.039) indicates that some respondents are more reluctant to extremes decreasing the number of respondents providing extreme ratings thus producing more evenly perceived resources.

Accreditation: Worry not, however, accreditation also scored the highest mean, 4.06, suggesting an overwhelming trust in the process of accreditation. The standard deviation of 0.44 depicts moderate variability in allowances, in line with the other variables. The skewness value (-0.075) is almost zero, informing that the distribution of the ratings are almost symmetrically about the mean, with the probability of being above or below the mean being the same. Negative (-0.841) kurtosis depicts that most of the ratings lie close to the average rating so extreme ratings will be less thus tapering off the distribution more than expected.

All four factors were consistently high scoring. This means that generally there was satisfaction in all the areas evaluated. Standard deviations of the means are moderate implying as much there is some level of difference in the perceptions across the group, however, the differences are not drastic. The skewness values seem even more explanative, especially for faculty -0.676, which suggests the ratings for the faculty tend to be higher, but not much. Negative kurtosis values across all the variables are indicative of a flatter distribution meaning more moderate scoring by most respondents resulting in less extreme scores.

To sum up, the respondents give generally positive assessments concerning academic quality, faculty and resources, and accreditation with few extremes or outliers. The skewness and kurtosis values imply that there is some slant towards positive ratings, especially for faculty, but most respondents have rated all factors in a middle and steady range. These results indicate a majority standard of the population who are contented and do not have extreme views regarding the two aspects under consideration.

4.5. Reliability Analysis

Reliability analyses the reliability of the tool in survey research. That refers to the Convention's alpha of the measurement instrument, which was calculated for the (DV) and the (IVs) in our investigation to verify the scales' internal consistencies. The sample size for the analysis is 451. A high Cronbach's Alpha indicates the scale has construct validity. It says that the items as a block provide a good measurement of the theoretical concept they are designed to measure. Because of its excellent reliability, this scale may be confidently used in research studies. The consistent measure will allow for more accurate comparisons and analyses, enhancing the quality of the research.

4.5.1. Academic Quality (AQ) with Cronbach's Alpha (0.746)

A Cronbach's alpha of 0.746 indicates a good level of internal consistency. This means items were reliable and consistently reflected underlying construct measurements about academic quality. It falls within the acceptable range, usually good for psychological and educational measurements. Researchers can have confidence that items in this scale are

successfully recording the dimension of academic quality, and the measurement derived using this scale will likely be consistent and reliable. (Table 4.6)

Table 4.6

Academic Quality (AQ) Reliability Statistics

AQ-Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.746	.746	4

AQ-Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AQ1	12.262	2.349	.553	.327	.681
AQ2	12.348	2.285	.542	.314	.687
AQ3	12.211	2.313	.548	.324	.684
AQ4	12.290	2.451	.518	.295	.700

4.5.2. Role of Faculty (RF) with Cronbach's Alpha (0.812)

The Cronbach's alpha for the Role of Faculty scale is 0.812, indicating that the items are very strongly internally consistent. This value is considered strong, reflecting that item are highly correlated and thus measure the same underlying construct reliably. This high level of internal consistency implies that the Role of Faculty scale is a reliable measure. This is very important in that items used to assess the role of faculty are consistent in catching relevant features of the performance of faculty members and impacts on education. (Table 4.7)

Table 4.7

Role of Faculty (RF) Reliability Statistics

RF- Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.812	.811	6

RF- Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AQF1	20.227	5.975	.498	.260	.797
AQF2	20.253	5.441	.558	.339	.786
AQF3	20.229	5.758	.538	.341	.789
AQF4	20.224	5.217	.658	.469	.762
AQF5	20.109	5.336	.627	.440	.769
AQF6	20.202	5.516	.555	.325	.786

4.5.3. Academic Resources (AR) (Cronbach's Alpha: 0.713)

The Academic Resources scale has a Cronbach's Alpha of 0.713, indicating good internal consistency but at the lower end of the 'good' range. These items are generally reliable and consistent; however, compared to other scales, there is a bit more variability within this scale. This suggests that the items measuring academic resources are typically reliable but with room for improvement. Greater item construct alignment could further increase the reliability of this scale. (Table 4.8)

Table 4.8

Academic Resource (AR) Reliability Statistics

AR- Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.713	.713	5

4.5.4. Accreditation (AC) Cronbach's Alpha 0.805

A Cronbach's Alpha of 0.805 indicates very strong internal consistency for the scale of Accreditation. The greater the value, the more reliable the items are, indicating consistency in measures for the construct of 'accreditation'. The strong internal consistency of the Accreditation scale offers an implication that the items have captured the essence of accreditation effectively, and in a reliable manner. Researchers and policymakers can have confidence that results derived from this scale truly reflect the real state of accreditation. (Table 4.9)

Table 4.9

Accreditation (AC) Reliability Statistics

AC- Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.805	.805	6

AC-Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AQAC1	20.350	5.268	.538	.295	.780
AQAC2	20.317	5.159	.562	.348	.775
AQAC3	20.286	4.969	.659	.483	.752
AQAC4	20.239	5.178	.595	.406	.767
AQAC5	20.302	5.540	.498	.274	.788
AQAC6	20.313	5.153	.527	.310	.784

Reliability: The Cronbach's Alpha values for all four scales suggest that the items within each scale are reliable and provide consistent measurements of their respective constructs.

Measurement Quality: The scales demonstrate good to strong internal consistency. This means that the instruments used in this survey, or research, are well-designed and they effectively capture the concepts intended.

Consequently, Cronbach's alpha values serve to prove that the scales used for measuring Academic Quality, Role of Faculty, Academic Resources, and Accreditation are reliable and consistent; hence, a vital prerequisite to ensure the validity of any deduction to be derived from the data.

The reliability analysis indicates that all the scales used in this research demonstrated acceptable internal consistency, as Cronbach's Alpha ranged from 0.713 to 0.812. Especially high was the reliability of the scales for the Role of Faculty and Accreditation since these are variables relevant for predicting academic quality.

These findings suggest that the scales constructed for the constructs are valid and reliable in measuring their respective dimensions, providing support for the robustness of data for further statistical analysis.

4.6. Validity

The validity and reliability tests are employed to assess the quality of the data. Validity and reliability go hand in hand because, as Babbie (2008) suggests, "unreliable data are invalid." Thus, data validity and dependability must be assessed to gauge the strength of

the data (Luthans, 1998). Measurement of the notion that the data is intended to measure is called the validity of data (Joppe, 2000; Suter, 2006; Sekaran & Bougie, 2010). According to Norusis (2008) and Pallant (2010), correlations can be used to gauge data validity. Therefore, Pearson correlation methods (item-to-total correlation, inter-item correlation, and inter-scale and total-scale correlation) are used in this study to assess the validity of the data. Additionally, factor analysis is performed on all scales to extract variables.

4.7. Correlation Analysis

The table provides the correlation coefficients for four variables in the data set: Academic Quality, Role of Faculty, Academic Resources, and Accreditation. All of these were measured in 451 observations. The p-values represent the probability that the correlations occurred by chance alone. All p-values are less than 0.01 to establish that the correlations are significant at the 0.01 level. (Table 4.10)

Table 4.10

Correlation

Correlations

		Academic quality	Faculty	Resources	Accreditation
Academic quality	Pearson Correlation	1	.719**	.675**	.748**
	Sig. (2-tailed)		.000	.000	.000
	N	451	451	451	451
Faculty	Pearson Correlation	.719**	1	.690**	.703**
	Sig. (2-tailed)	.000		.000	.000
	N	451	451	451	451
Resources	Pearson Correlation	.675**	.690**	1	.697**
	Sig. (2-tailed)	.000	.000		.000
	N	451	451	451	451
Accreditation	Pearson Correlation	.748**	.703**	.697**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	451	451	451	451

**. Correlation is significant at the 0.01 level (2-tailed).

4.7.1. Correlation of Academic Quality (AQ) with Other Variables

- **Role of Faculty: (r = 0.719, p < 0.01).** The correlation between Academic Quality and the Role of Faculty is 0.719, indicating a strong positive relationship. It means that if the role of faculty improves, academic quality improves to the same extent.
- **Academic Resources: (r = 0.675, p < 0.01)** The correlation coefficient linking the measures of Academic Quality to Academic Resources was 0.675, reflecting a positive strong relationship. It interprets that the higher the levels of academic resources, the higher the amounts of measure for quality.
- **Accreditation: (r = 0.748, p < 0.01),** it is the strongest of the variables, a very strong positive relationship. Increasing accreditation status links strongly to increased academic quality.

4.7.2. Correlation of Role of Faculty (RF) with Other Variables

- **Academic Quality** This has already been noted in explaining Academic Quality. There is a strong positive, 0.719, correlation with Academic Quality.
- **Academic Resources**: **(r = 0.690, p < 0.01).** This has a correlation of 0.690 with the Role of Faculty, hence it is positively associated. This would mean that better academic resources are correlated with a greater role of faculty.
- **Accreditation: (r = 0.703, p < 0.01)** If the correlation between the Role of Faculty and Accreditation was to be 0.703, then it would also be of a strong positive relationship. This means a more important role played by the faculty going along with better status in terms of accreditation.

4.7.3. Correlation of Academic Resources (AR) with Other Variables

- **Academic Quality:** The correlation with Academic Quality comes out to be 0.675, pointing to a strong positive correlation.
- **Role of Faculty:** The correlation with the Role of Faculty, as was expected, comes out to be 0.690, which again points to a strong positive correlation.
- **Accreditation: (r = 0.697, p < 0.01),** Academic Resources and Accreditation are correlated as 0.697, as would have been expected, pointing to a strong positive

correlation. That means that better academic resources are strongly linked to better conditions of accreditation.

4.7.4. Correlation of Accreditation (AC) with Other Variables

- **Academic Quality**: It has an extremely high positive correlation of 0.748 with Academic Quality.
- **Role of Faculty:** As earlier mentioned, a strong positive relationship was seen, of 0.703, with the Role of Faculty.
- **Academic Resources**: It shows a strong correlation of 0.697.

All the correlations are positive and significant, with the strongest being that between Academic Quality and Accreditation, at 0.748. This suggests that there is a very strong relationship between the two variables, demarcating accreditation as one of the major determinants to measure academic quality. Other rich warheads of the academic quality enclave were the Role of Faculty and Academic Resources, both strongly correlated to Academic Quality. The data generally shows that these variables are very closely linked and thus relate to one another in the attainment of this goal of excellence in academics findings suggest a highly interrelated system in which Academic Quality, Faculty, Resources, and Accreditation are each influencing one another. This highlights that efforts at reform in educational institutions require a holistic approach in which efforts in one domain might have salutary effects on others.

High positive correlations for all variables would be indicative that an improvement in any of the variables is likely to be related to improvements in the others. For example: Improving the role of faculty is likely to lead to improved academic quality, resources, and national accreditation. A betterment of academic resources is likely to improve academic quality, the role of faculty, and national accreditation. Better accrediting status was strongly associated with improvements in academic quality, faculty roles, and resources.

4.8. Exploratory Factor Analysis

Factor analysis works on the principle that measurable. It is then possible to reduce the observable variables into fewer latent variables. Variables sharing a common variance and being It is known as reducing dimensionality and is unobservable.
(Bartholomew, Knott, & Moustaki, 2011).

4.8.1. Academic Quality (AQ)

Kaiser-Meyer-Olkin measure of sampling adequacy:
KMO value: 0.731 KMO measures how much of the variance in variables might be caused by underlying factors. The value ranges from 0 to 1; the higher the value, the more suitable factor analysis is for data. Usually, a KMO value greater than 0.6 is considered sufficient. Here, the value of KMO equals .731, so data is moderate for factor analysis.

Bartlett's Test of Sphericity: Bartlett's Test of Sphericity assists in the evaluation of whether the correlation matrix is an identity one. This would say that variables in this case are uncorrelated and unsuitable for structure detection. A significant result, p-value less than 0.05, guarantees that the correlations between variables are large enough for PCA to be performed. As observed here, the significance value is 0.000, less than 0.05, hence factor analysis can be appropriately carried out on data. (Table 4.11)

Table 4.11

KMO and Bartlett's Test- (AQ)

AQ- KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.731
Bartlett's Test of Sphericity	Approx. Chi-Square	398.312
	df	6
	Sig.	.000

Total Variance Explained: This table indicates the total variance accounted for by each component: Component 1: Eigenvalue: 2.272; Variance: 56.808%. Only one component was extracted, with an eigenvalue greater than 1, explaining 56.808% of the total variance.

This can be interpreted to mean that one component can very well explain the underlying structure of your variables. (Table 4.12)

Table 4.12

Total Variance Explained (AQ)

AQ- Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.272	56.808	56.808	2.272	56.808	56.808
2	.719	17.973	74.781			
3	.558	13.948	88.730			
4	.451	11.270	100.000			

Extraction Method: Principal Component Analysis.

Communality refers to the proportion of variance of each variable that can be accounted for by the extracted component: These values indicate that 54.1% and 58.7% of the variance of each variable are explained by the extracted component, which is a good proportion for extraction by a single component.

AQ- Communalities

	Initial	Extraction
AQ1	1.000	.587
AQ2	1.000	.569
AQ3	1.000	.575
AQ4	1.000	.541

Extraction Method: Principal Component Analysis. (PCA)

The Component Matrix contains the loadings of each variable onto the extracted component: These loadings are the correlation of each variable with the extracted component. The loadings are all high, above 0.7, and therefore each variable strongly contributes to the element.

Component Matrix[a]

	Component
	1
AQ1	.766
AQ2	.754
AQ3	.758
AQ4	.736

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

From the KMO measure, Bartlett's Test, and PCA, the result shows that data is suitable for factor analysis. One component is enough to explain most of the variables. This component validates well, as indicated by each variable loading strongly to it, thus confirming its relevance to the underlying structure. On this basis, the analysis provides a solid platform for further exploration or use of the extracted component in subsequent analyses.

4.8.2. Academic Quality (AQ) and Role of Faculty (RF)

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is 0.825, indicating the sample size is large enough to carry out the factor analysis. A KMO value above 0.80 reflects a meritorious level of adequacy; meaning data collected is good enough for structure detection.

Bartlett's Test of Sphericity results in a Chi-Square value of 777.493 with 15 degrees of freedom (df) and a Sig. of 0.000. This result shows that the correlation matrix differs significantly from an identity matrix where the variables are uncorrelated. This confirms further that factor analysis is appropriate for this dataset.

The KMO and Bartlett's Test results are also confirmed and thus meet the assumptions necessary for conducting factor analysis, stating that the relationships among variables are strong enough for dimension reduction or identifying underlying factors. (Table 4.13)

Table 4.13

KMO and Bartlett's Test (RF)

KMO and Bartlett's Test- (RF)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	777.493
	df	15
	Sig.	.000

The Total Variance Explained table shows the contribution of each component to the total variance in the data. Applying PCA results in the following:

Component 1 possesses an Eigenvalue of 3.095, accounting for 51.588% of the overall variance. This suggests that it is the most influential component, encompassing more than half of the variance present in the dataset.

The next factor contributes 12.742%. Thus, the total explained variance stands as the outcome at 64.330%.

Subsequent components contribute less to variance: Component 3 contributes 10.799%; Component 4 contributes 10.006%; Component 5 contributes 8.986%. These collectively account for 94.121% of explained variance in the cumulative variance with very little unexplained variance in the data. (Table 4.14)

Table 4.14

Total Variance Explained (RF)

Total Variance Explained-(RF)

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.095	51.588	51.588	3.095	51.588	51.588
2	.765	12.742	64.330			
3	.648	10.799	75.129			
4	.600	10.006	85.135			
5	.539	8.986	94.121			
6	.353	5.879	100.000			

Extraction Method: Principal Component Analysis.

The table of communalities presents the proportion of the variance that is explainable by the PCA components for each of the variables. For all the variables, the "Initial" value is 1.000. This is the starting point when all the variance is allocated to each variable. The "Extraction" value shows the proportion of variance accounted for by the components that have been extracted from the data for each variable.

AQF1: It explains 41.8% of its variance by the components.

AQF2, the variance explained is 49.7%.

AQF3 explains 47.0 percent of the observed variance.

AQF4 Explains 62.9% of its variance (the largest of all the variables).

AQF5 accounts for 58.5% of the variance observed.

The variance explained by AQF6 accounts for 49.5%.

The communalities indicate that the variance of the extracted components contributed the most to AQF4, at 62.9%. While the lowest communality exists for AQF1, at 41.8%, this suggests that the components poorly represent it. For PCA, communalities of more than 0.40 are generally acceptable, and all the variables meet the requirement. This essentially translates to the fact that the extracted components do a pretty good job of describing the data.

Communalities

	Initial	Extraction
AQF1	1.000	.418
AQF2	1.000	.497
AQF3	1.000	.470
AQF4	1.000	.629
AQF5	1.000	.585
AQF6	1.000	.495

Extraction Method: Principal Component Analysis.

The Component Matrix contains the loadings of each variable onto the extracted component: These loadings are the correlation of each variable with the extracted component. The loadings are all high, above 0.6, and therefore each variable strongly contributes to the element.

Component Matrix[a]

	Component
	1
AQF1	.647
AQF2	.705
AQF3	.685
AQF4	.793
AQF5	.765
AQF6	.704

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.3. Academic Quality (AQ) and Academic Resources (AR)

- A KMO value above 0.6 is considered generally acceptable. In this case, a KMO value of 0.685 suggests that data is adequate for factor analysis.
- Bartlett's Test: A significant Chi-Square value (467.214) with a p-value of 0.000 confirms that the correlations between your variables are sufficient for performing factor analysis. (Table 4.15)

Table 4.15

KMO and Bartlett's Test (AR)

KMO and Bartlett's Test-(AR)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.685
Bartlett's Test of Sphericity	Approx. Chi-Square	467.214
	df	10
	Sig.	.000

The Total Variance Explained table presents the amount of variance in the data accounted for by the components extracted during Principal Component Analysis (PCA). This analysis extracted 2 components, as both had eigenvalues greater than 1, based on Kaiser's criterion.

- Two Principal Components: The first two components are significant, with 67.293% of the total variance of the data explained. This suggests that a two-component solution is adequate to capture most of the variability in the dataset.
- Substantial Contribution: Component 1 was close to half of the explained variance, which suggests a dominant factor. Component 2 adds up well, too.
- Diminished Returns: The remaining factors 3 through 5 explain progressively smaller portions of the variance and add little in the way of explanatory power over the first two. (Table 4.16)

Table 4.16

Total Variance Explained (AR)

Total Variance Explained-AR

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.341	46.819	46.819	2.341	46.819	46.819
2	1.024	20.474	67.293	1.024	20.474	67.293
3	.709	14.174	81.468			
4	.549	10.986	92.453			
5	.377	7.547	100.000			

Extraction Method: Principal Component Analysis.

The communalities suggest that most of the variables are well represented by the extracted factors, especially AQAR2, AQAR3, AQAR4, and AQAR5, whose communalities value is above 0.67. AQAR1 has the lowest communality at 0.489, indicating that less than half of its variance is accounted for by the extracted factors. Overall, these communalities indicate that the factor model is a good fit for most of the variables in the analysis.

Communalities

	Initial	Extraction
AQAR1	1.000	.489
AQAR2	1.000	.802
AQAR3	1.000	.718
AQAR4	1.000	.684
AQAR5	1.000	.672

Extraction Method: Principal Component Analysis.

Component 1:

The loadings for all variables are high, with AQAR2 at 0.745 and AQAR3 at 0.732. Therefore, this component could be interpreted as the general factor affecting the overall assessment.

Component 2:

Such a component brings about a split with AQAR4 having a positive loading of 0.610 and AQAR5 having a positive loading of 0.472, while AQAR2 has a negative loading of –0.496 and AQAR3 having a negative loading of –0.426. Component 2, therefore, is an opposing factor or a different dimension that involves these variables oppositely.

Component Matrix[a]

	Component	
	1	2
AQAR1	.699	.035
AQAR2	.745	-.496
AQAR3	.732	-.426
AQAR4	.559	.610
AQAR5	.670	.472

Extraction Method: Principal Component Analysis.
a. 2 components extracted.

Therefore Component 1 can be seen as a general factor influencing each of the questions measuring this product to some degree. Component 2 also represents an opposing dimension: AQAR4 and AQAR5 load positively; AQAR2 and AQAR3, negatively. Hence it can be interpreted as defining a second, distinct factor influencing these two groups of variables differentially. These two elements in combination therefore provide a complete overview of the structure underlying your variables, accounting for as large a proportion of the total variance as possible, as described above.

4.8.4. Academic Quality (AQ)and Accreditation (AC)

These statistics are often read in conjunction with one another and yield the following results for the KMO measure and Bartlett's Test, respectively for AQ and AC:

KMO Measure: The sampling adequacy is very good at a value of 0.832; thus, data has very good suitability for factor analysis.

Bartlett's Test: A Chi-Square value of 756.159 with a p-value of 0.000 indicates that the correlations between your variables are sufficient for factor analysis.

From these results, you can confidently factor-analyze your dataset since the data satisfies all assumptions and requirements. (Table 4.17)

Table 4.17

KMO and Bartlett's Test (AC)

KMO and Bartlett's Test-AC

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of Sphericity	Approx. Chi-Square	756.159
	df	15
	Sig.	.000

One Principal Component: The first component explains about 50.854% of the total variance, making it a strong factor within the dataset. This component aids in understanding the underlying structure.

Two Principal Components: The first two components explain 64.717% of the variance, which indicates that they have been able to capture a lot of variability from the data.

Additional Components: The remaining components 3 through 6, have progressively less of a contribution to the overall variance. While they do capture some additional variance, their contribution tapers off, suggesting that often just looking at the first two components will be enough for most analyses. (Table4.18)

Table 4.18

Total Variance Explained-AC

Total Variance Explained-AC

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.051	50.854	50.854	3.051	50.854	50.854
2	.832	13.863	64.717			
3	.653	10.890	75.607			
4	.566	9.433	85.040			
5	.520	8.660	93.700			
6	.378	6.300	100.000			

Extraction Method: Principal Component Analysis.

Using communalities, one can notice that AQAC3 and AQAC4 have the largest communalities, 0.636 and 0.557, respectively, indicating that a large part of their variation is very well explained by the extracted factors.

The lowest communality is that of AQAC5, 0.415; it shows that less of its variance is explained by the extracted factors in comparison with other variables.

The communalities suggest that extracted factors account for most of the variance on most variables, especially AQAC3 and AQAC4. This means the factor model captures most of the underlying structure of data well.

Based on the total variance explained:

Communalities

	Initial	Extraction
AQAC1	1.000	.473
AQAC2	1.000	.514
AQAC3	1.000	.636
AQAC4	1.000	.557
AQAC5	1.000	.415
AQAC6	1.000	.456

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
AQAC1	.688
AQAC2	.717
AQAC3	.798
AQAC4	.747
AQAC5	.644
AQAC6	.675

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Component 1: All variables (AQAC1 to AQAC6) have high loadings on Component 1. The loadings range from 0.644 to 0.798.

- AQAC1 (0.688): This variable has a moderate to high loading on Component 1, suggesting a significant relationship with this component.
- AQAC2 (0.717): This variable has a high loading, indicating it is well represented by Component 1.
- AQAC3 (0.798): This variable has the highest loading on Component 1, indicating a very strong relationship with this component.
- AQAC4 (0.747): This variable also has a high loading, suggesting it is strongly associated with Component 1.
- AQAC5 (0.644): This variable has the lowest loading among the variables but still indicates a significant relationship with Component 1.
- AQAC6 (0.675): This variable has a moderate to high loading, showing a strong association with Component 1.

High Loadings: The high loadings indicate that Component 1 represents a strong underlying factor that influences all the variables.

Single Component Solution: Given that Component 1 explains a substantial portion of the variance (50.854% as indicated by the total variance explained) and all variables have high loadings on them, this component is the primary factor driving the relationships among the variables.

Component Effectiveness: The high loadings across all variables suggest that Component 1 is a robust and effective summary of the data, providing a clear understanding of the underlying structure. Overall, focusing on Component 1 is appropriate for summarizing and interpreting the data, as it captures the most significant underlying factor affecting all the variables.

4.9. Normality Test

4.9.1. Normality Tests for Gender Groups

The Tests of Normality table produces the output of both the Kolmogorov-Smirnov and Shapiro-Wilk tests to see whether the distribution of Academic Quality ratings is normal for each gender group. Both tests: Kolmogorov-Smirnov and Shapiro-Wilk, provide Sig. = 0.000 for each gender group. Being below the standard alpha value of 0.05, we reject the null hypothesis that the data set is normally distributed. In other words, the Academic Quality ratings distribution is not normal in both cases of Gender = 1.0 and Gender = 2.0 groups.

The results indicate that the Academic Quality ratings do not follow a normal distribution for either gender group because the p-values for both Kolmogorov-Smirnov and Shapiro-Wilk tests are highly significant at 0.000. (Table 4.19)

Table 4.19

Tests of Normality-Gender

Tests of Normality-Gender

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
Academic quality	1.0	.111	248	.000	.956	248	.000
	2.0	.142	203	.000	.944	203	.000

a. Lilliefors Significance Correction

Even though the histograms are nearly normal, the statistical tests indicate that the deviation from normality is statistically significant. (Fig 4.1)

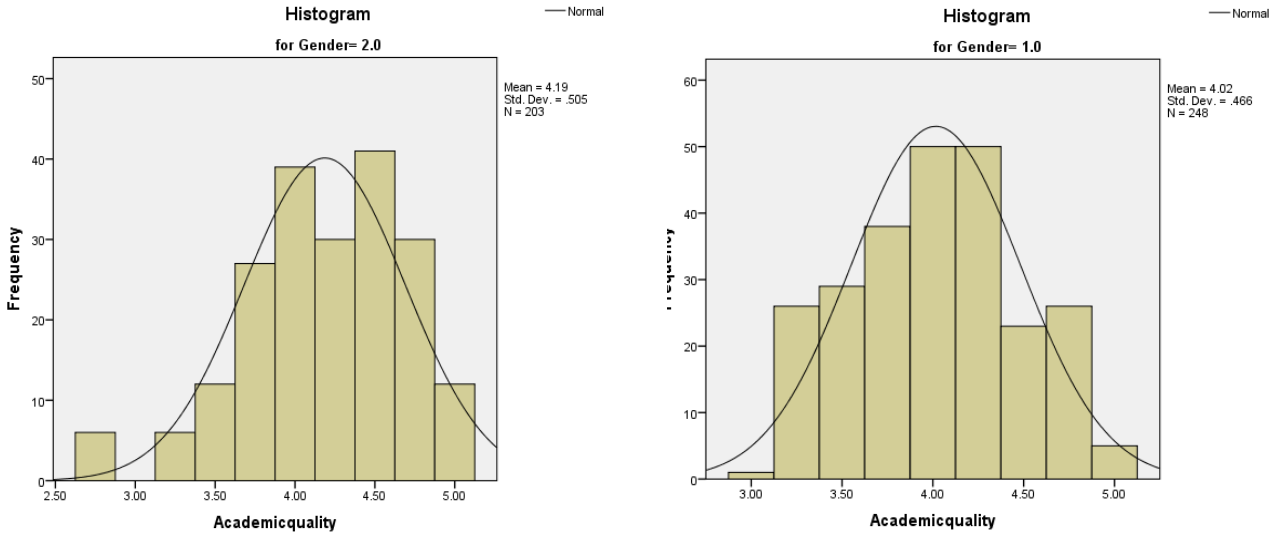

Figure 4.1 **Histogram-Gender**

Comparison of the Gender

Mean Comparison: The mean rating for Academic Quality is larger for Gender = 2.0 than for Gender = 1.0, at 4.19 vs 4.02. This would suggest that, overall, respondents in the sample rate Gender = 2.0 somewhat more positively about Academic Quality.

Variability: The standard deviation for Gender = 2.0 is slightly higher at 0.505 than it is for Gender = 1.0 at 0.466, meaning there is more variability in the response given to Gender = 2.0. This may indicate that perceptions of Academic Quality tend to be a bit more diverse within this group.

Shapes of Distributions: Both histograms are about normally shaped, meaning the rating of Academic Quality is symmetrically around the mean for both subgroups. If the distribution is non-normal, then it becomes more relevant to use some non-parametric tests to compare the Academic Quality rating between two gender groups, t-tests that are

typically used for it. Instead, we prefer to make use of any non-parametric test where normality is not supposed to hold, such as the Mann-Whitney U test.

4.9.2. Normality Tests for Age Groups

The Kolmogorov-Smirnov and Shapiro-Wilk tests assess whether the ratings on academic quality vary by the **age groups** coded as 1.0, 2.0, and 3.0.

For all the age groups, the Sig. value is 0.000 using both the Kolmogorov-Smirnov and Shapiro-Wilk tests. Since the values obtained are less than the widely accepted alpha level of 0.05, we will reject the null hypothesis that the data is normally distributed for all the age groups. This means the ratings for Academic Quality are not normally distributed for any of the age groups: 1.0, 2.0, and 3.0.

The p-values for the tests for the different age groups are 0.000 for both tests. Although the graphical methods indicate that the distributions of the Academic Quality ratings look normal, the tests indicate that the deviations are sufficiently large to assume that the distributions are not normal. (Table 4.20)

Table 4.20

Tests of Normality-Age

Tests of Normality-Age

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Age	Statistic	df	Sig.	Statistic	df	Sig.
Academic quality	1.0	.177	250	.000	.921	250	.000
	2.0	.293	117	.000	.684	117	.000
	3.0	.181	84	.000	.909	84	.000

a. Lilliefors Significance Correction

The histograms provide the distribution of Academic Quality ratings by age group. This will give a means of comparison on the mean, standard deviation, and shape of the distribution for each age group. (Fig 4.2)

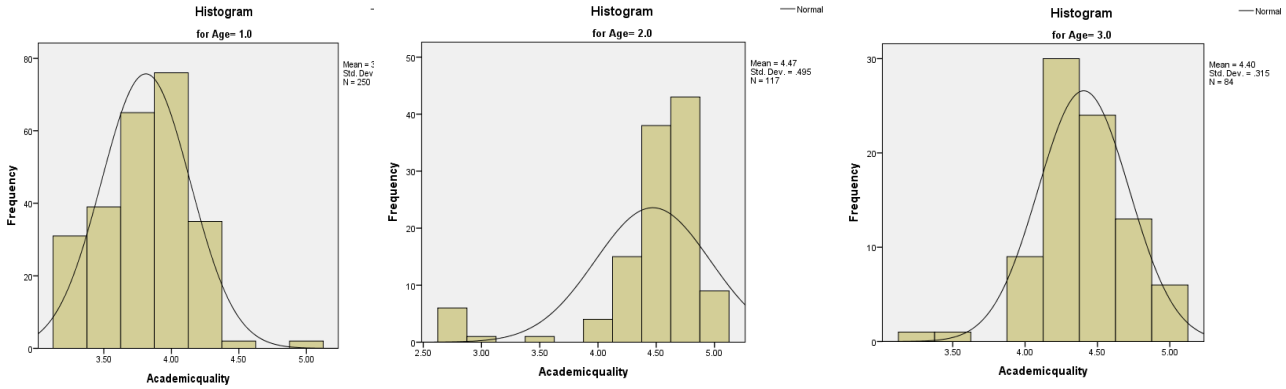

Figure 4.2 **Histogram - Age**

The histogram for **Age = 1.0** is nearly normal but positively skewed to the right. The mean Academic Quality rating is 4.02, which indicates that the respondents in this age group are likely to score Academic Quality a little higher than the 4.0 mark. The standard deviation of 0.466 implies that the responses are moderately close to the mean with most ratings lying between 3.5 and 4.5.

The distribution for **Age = 2.0** is positively skewed, and the mean rating for Academic Quality was much higher, at 4.47; this suggests that they rate Academic Quality more favorably than their peers in the other age groups. The standard deviation of 0.495 is moderate in spread around the mean.

For **Age = 3.0**, the distribution looks more clumped together tightly around the mean, rather than spread out. A mean of 4.40 is also high, indicating that perceptions of Academic Quality in this population are positive. The lower standard deviation of 0.315 indicates that responses were more consistently close to the mean and less variable compared to the other groups.

Comparison Across the Age Groups

Mean Comparison: The mean rating for Academic Quality for age group 2.0 is 4.47, and then comes Age group 3.0 at 4.40. Age group 1.0 is the least with a mean rating of 4.02, therefore suggesting that the younger may perhaps rate Academic Quality less positively compared to the old.

Variability: Age group 3.0 has the lowest standard deviation of 0.315. This appears to indicate that the ratings for this category have the most consistent rating around the mean. Compare with Age group 2.0, showing a little more variability or spread in ratings, because it had a standard deviation of 0.495. Age group 1.0 stands in the middle (0.466).

Distribution Shape: All three age groups have approximations of normal distributions. However, their skewnesses vary. Age group 2.0 is highly positively skewed, indicating that in most of the people of this age group Academic Quality was rated highly by the respondents, while for the other two age groups, 1.0 and 3.0 their respective distributions are closer to symmetrical.

This finding indicates that Academic Quality ratings vary with age groups as older age groups (Age = 2.0 and Age = 3.0) report higher ratings of Academic Quality compared to the younger group (Age = 1.0). Also, tighter clustering of the response in Age group 3.0 indicates more homogeneity in the perception of the respondents toward Academic Quality whereas the younger age group (Age = 1.0) depicts wider variation in opinions.

4.9.3. Normality Tests for Designation Groups

The Tests of Normality table reports the results of the Kolmogorov-Smirnov and Shapiro-Wilk tests evaluating whether ratings on Academic Quality are normally distributed for each of the four **designation groups, which are coded** 1.0, 2.0, 3.0, and 4.0.

The Kolmogorov-Smirnov. All the designation groups are 1.0, 2.0, 3.0, and 4.0 p-value or Sig. of all designation groups is lower than 0.05. It means that we refuse the null hypothesis of normality in each group. As done in Kolmogorov-Smirnov, the Sig. of the p-value of

each group of designations is also less than 0.05, therefore, it implies that their distributions are considerably different from normal.

All groups of designation 1.0, 2.0, 3.0, and 4.0 vary significantly from normality on the ratings of Academic Quality in both Kolmogorov-Smirnov and Shapiro-Wilk tests by having p-values less than 0.05 on all occasions. We conclude, therefore that ratings of Academic Quality are not normally distributed in any of the designation groups. (Table 4.21)

Table 4.21

Tests of Normality-Designation

Tests of Normality-Designation

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Designation	Statistic	df	Sig.	Statistic	df	Sig.
Academic quality	1.0	.172	259	.000	.933	259	.000
	2.0	.210	56	.000	.879	56	.000
	3.0	.228	92	.000	.890	92	.000
	4.0	.156	44	.009	.933	44	.014

a. Lilliefors Significance Correction

The Academic Quality variable does not follow a normal distribution across the designation groups (1.0, 2.0, 3.0, and 4.0), supporting the use of non-parametric methods for analyses involving designation.

The following histograms illustrate the distribution of scores for four different designation groups: 1.0, 2.0, 3.0, and 4.0. Each histogram has an overlay of a normal curve so that one can inspect visually how closely each of these distributions matches a normal distribution. (Fig 4.3)

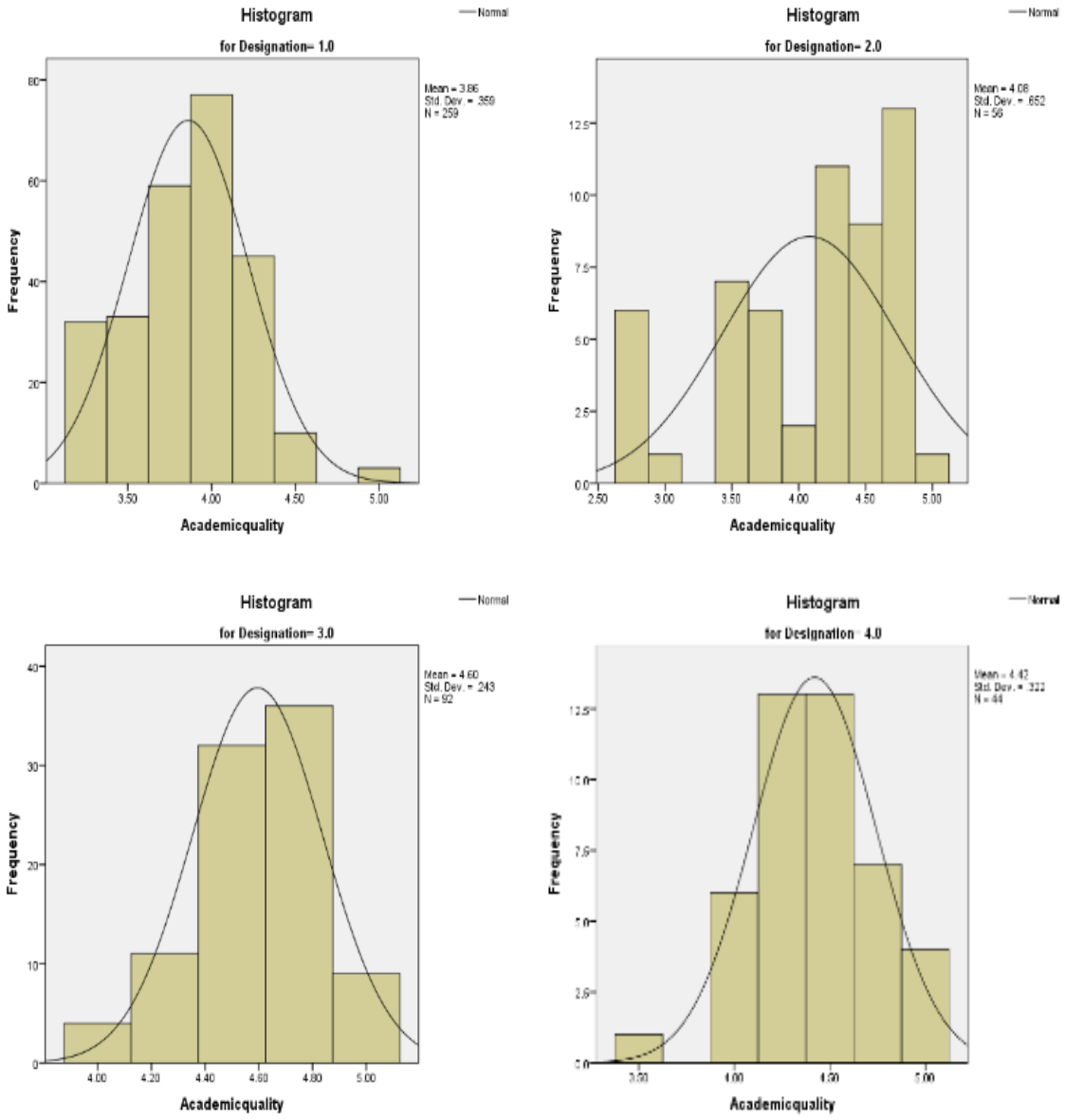

Fig 4.3 **Histogram Designation**

Designation = 1.0

The number of cases in this sample is the largest (N = 259) and tends toward a roughly symmetrical appearance around the mean, while the histogram indicates some skews. The normal distribution fits somewhat but has an obvious deviation, especially when looking at the tails for mild non-normality.

Designation = 2.0

For N = 56, a distribution is more right skewed with a peak closer toward the upper end of a scale. There is an evident misalignment with the normal curve, which again supports the conclusions from the normality tests that the data is heavily non-normal.

Designation = 3.0

This category distribution is even closer to symmetry compared to Designation 2.0, but it is still not nearly normal in form, especially in the tails. This distribution is not close enough to the normal curve for alignment, and it confirms the findings from the Shapiro-Wilk and Kolmogorov-Smirnov tests that stated that the data is not normal.

Designation = 4.0

This group has the smallest sample size with N = 44, and their distribution is nearly symmetrical but with fewer observations. The histogram indicates that although it is closer to normal in shape than the others, the sample size may cause some observed deviation from the normal curve since the test results for normality were significant.

4.10. Non-Parametric Test

The non-normality findings hold for each of the Gender, Age, and Designation groups. That is, in no subgroup can it be considered that scores on Academic Quality are normally distributed. To proceed with the analysis of ratings, it is recommended that non-parametric statistical methods like the Mann-Whitney U test, and Kruskal-Wallis test be used. For correlation non-parametric Correlation Methods Spearman's Rank Correlation Coefficient. these don't require a normal distribution, making them suitable for use when skewed or irregular data distributions.

4.11. Non-Parametric Correlation

Table (4.22) presents **Spearman's Rank Correlation** results among four variables: Academic Quality, Faculty, Resources, and Accreditation. Here's a detailed interpretation:

4.11.1. Academic Quality and Role of Faculty

Correlation Coefficient (rs=0.715)

The positive correlation is high; thus, this means that the Role of Faculty factors has a high effect on Academic Quality. In other words, institutions with more skilled, motivated, and well-supported faculties have higher academic expectations and standards.

Level of Significance (p<0.01):

The statistical correlation means that the relation is unlikely to result from random variation.

Interpretation: Higher faculty competencies and engagement would lead to an increase in Academic Quality. For example, spending on teacher development activities,

streamlining faculty loads, and making excellence a normative culture would all contribute to this stream of benefits. (Table 4.22)

Table 4.22 Spearman's Correlation

Correlations

			Academic quality	Faculty	Resources	Accreditation
Spearman's rho	Academic quality	Correlation Coefficient	1.000	.715**	.721**	.758**
		Sig. (2-tailed)	.	.000	.000	.000
		N	451	451	451	451
	Faculty	Correlation Coefficient	**.715****	1.000	.737**	.703**
		Sig. (2-tailed)	.000	.	.000	.000
		N	451	451	451	451
	Resources	Correlation Coefficient	**.721****	.737**	1.000	.709**
		Sig. (2-tailed)	.000	.000	.	.000
		N	451	451	451	451
	Accreditation	Correlation Coefficient	**.758****	.703**	.709**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	451	451	451	451

**. Correlation is significant at the 0.01 level (2-tailed).

4.11.2. Academic Quality and Resources

Correlation Coefficient (rs= 0.721):

Academic Quality and Resources have a strong positive correlation. Resources include monetary support, physical settings such as libraries, labs, and classrooms, and technological equipment. The availability of resources could be adequately portrayed to

fulfill both the teaching and learning needs of students and teachers. The main affected areas of resources are:

- Availability of learning materials and equipment.
- Facilities for research and funding.
- Up-to-date technology.

Significance Level (p<0.01):

This is statistically significant, and the ability to sustain and build on Academic Quality relies crucially on resource availability.

Interpretation: Upgrading resources that may be relevant for study and research should remain the focus of all institutions looking towards developing Academic Quality.

4.11.3. Academic Quality and Accreditation

Correlation Coefficient (rs=0.758):

Accreditation registers the strongest positive correlation with Academic Quality among the studied variables. Accreditation is concerned with meeting established standards for academic programs, faculty qualifications, and infrastructure. Therefore, this suggests that:

- Institutions accredited maintain quality.
- Accreditation promotes a culture of continuous improvement.
- External validation through accreditation enhances trust and reputation.

Significance Level (p<0.01):

The powerful statistical significance underlines the importance of accreditation about ensuring and improving quality.

Interpretation: Accreditation is a vital mechanism for quality assurance. Institutions should prioritize compliance with accreditation standards and actively seek re-accreditation to maintain quality and competitiveness.

Inter-Relationships Among Independent Variables

The correlations between faculty, resources, and accreditation illustrate some significant interdependencies:

Faculty and Resources (rs = 0.737):

The strong positive relationship is that faculty performance depends closely on resource availability. Resourceful universities make it possible for faculty to do a better job in teaching and research.

Faculty and Accreditation (rs= 0.703):

Faculty plays an important role in accreditation. Participants in curriculum development, research, and student involvement enhance the probability of serving accreditation requirements.

Resources and Accreditation (rs = 0.709):

Accreditation is a heavily resource-intensive process which, for the most part, only the best-equipped institutions will win or maintain.

Interpretation: Improvement in one of these variables often re-enforces the others. For instance, improvement in resources supports faculty effectiveness, which in turn supports accreditation efforts.

4.12. Mann-Whitney U Test for Academic Quality by Gender

The Mann-Whitney U test was implemented to see if, in any way, scores of Academic Quality were significantly different between the gender groups named Gender 1.0 and Gender 2.0. Here's how the related results were interpreted in detail:

Significance of the Difference:

The Mann-Whitney U test had a U value of 19,754.5 with a Z-score of -3.979 and a p-value of 0.000. With the given 95 percent confidence level, the obtained p-value is less than 0.05, thereby indicating that a significant difference exists in Academic Quality scores between

the two gender groups. Since the p-value was considerably small, it is legitimate enough to deny the null hypothesis that states the scores for Academic Quality do not differ according to gender. (Table 4.23)

Table 4.23

Mann-Whitney U Test Statistics - Gender

Gender- Mann-Whitney U Test Statistics[a]

	Academic quality
Mann-Whitney U	19754.500
Wilcoxon W	50630.500
Z	-3.979
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Gender

Mean Ranks: Gender 1.0 (men) scored a mean rank of 204.16 while Gender 2.0 (women) scored a mean rank of 252.69. Therefore, the higher mean rank for Gender 2.0 implies that the group scored higher in Academic Quality on average than Gender 1.0. The total sum of ranks also reinforces this gap; apparently, Gender 2.0 scored 51,295.50, compared to 50,630.50 for Gender 1.0.

Ranks-Gender

	Gender	N	Mean Rank	Sum of Ranks
Academic quality	1.0	248	204.16	50630.50
	2.0	203	252.69	51295.50
	Total	451		

In other words, the Mann-Whitney U test suggests that scores for Academic Quality differ significantly between the two gender groups, with Gender 2.0 scoring higher, on average.

This result could establish a link between gender and perceptions or achievement in academic quality that could be pursued with a more comprehensive study to understand the causes and ramifications for educational practice and policies.

4.13. Kruskal-Wallis Test Analysis for Academic Quality Per Age Group

The Kruskal-Walls test was conducted to see if scores for Academic Quality are significantly different based on age. It is helpful if one has multiple independent groups from which to compare median ranks when the assumptions of the parametric ANOVA, such as normal distribution, do not hold.

Kruskal-Wallis Test Statistics:

Chi-Square Value 228.101, Degrees of Freedom (df) 2

Asymptotic Significance (p-value) 0.000. Since the p-value is equal to 0.000, which is less than 0.05, it's statistical, and we can conclude Academic Quality scores significantly differ by age group since the differences are tremendous, so we reject the null hypothesis indicating that no difference is found between ratings of Academic Quality across age groupings. The pattern of mean ranks suggests that the older population in Age Groups 2.0 and 3.0- more likely than others younger are to have a favorable perception of Academic Quality. This may result from greater experience and maturity, different expectations, and an understanding of academic climates. (Table 4.24)

Table 4.24

Kruskal-Wallis Test Statistics-Age

Test Statistics[a,b]

	Academic quality
Chi-Square	228.101
df	2
Asymp. Sig.	.000

a. Kruskal Wallis Test
b. Grouping Variable: Age

Mean Rank for Age Group

The mean rank for Age Group 1.0 has been observed at 144.16, which is relatively low in Academic Quality.

The mean rank for Age Group 2.0 has been observed at 338.45, which is high in Academic Quality.

The mean rank for Age Group 3.0 has been observed at 312.94, which is more significant in comparison to Age Group 1.0.

The sizeable mean rank differences between Age Group 1.0 and the remaining two groups reveal a better perception of Academic Quality among older age groups.

Ranks

	Age	N	Mean Rank
Academic quality	1.0	250	144.16
	2.0	117	338.45
	3.0	84	312.94
	Total	451	

These outcomes may have potential implications for understanding age-related perceptions in academic settings. It may be that the more one ages, the more experienced, and perhaps one develops a perception about the academic quality being more favorable, due to the learning or sometimes due to the change in expectations.

The difference between the ages through the Kruskal-Wallis test findings reflects differences in scores from the dimension of Academic Quality, with this importance reflecting more of an upward trend with age. This would mean that such a difference in perceiving academic quality may be contingent upon age and maybe even guided by experience, maturity, or changing expectations. Further analysis would allow for finer details into such differences.

4.14. Kruskal-Wallis Test on Academic Quality by Designation

The Kruskal-Walls test was conducted to see if scores for Academic Quality are significantly different based on Designation. It is helpful if one has multiple independent groups from which to compare median ranks when the assumptions of the parametric ANOVA, such as normal distribution, do not hold.

Kruskal-Wallis Test

Chi-Square Value 197.384, Degrees of Freedom (df): 3, Asymptotic Significance (p-value): 0.000

Since the p-value equals 0.000, the difference in scores on Academic Quality across the groups of designation is statistically significant. We could then reject the null hypothesis with a message that indeed, no differences exist in their academic quality scores among the different groups of designation. (Table 4.25)

Table 4.25

Kruskal-Wallis Test -Designation

Test Statistics[a,b]

	Academic quality
Chi-Square	197.384
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test
b. Grouping Variable: Designation

This finding is strongly suggestive that, after all, designation is a factor in Academic Quality evaluation. For example, respondents with positions that are presumably of higher rank or, perhaps, older (Designations 3.0 and 4.0) graded Academic Quality higher than those in more subordinate positions (Designation 1.0).

The Kruskal-Wallis test does reveal various statistical differences in Academic Quality scores, where respondents in higher designations generally assessed Academic Quality more favorably. Thus, at least designation and possibly experience at this level seem to influence academic quality perceptions. Additional analysis might help explain the detailed specifications of expectations and perspectives of the different designations.

Mean Ranks by Designation:

Designation 1.0 (Lecturer) has a mean rank of 158.98, which is the lowest of all groups.

Designation (Assistant Professor) 2.0 has a mean rank of 238.78.

Designation 3.0(Associate Professor) has the highest mean rank of 364.01 suggesting the most favorable Academic Quality scores in this group.

Designation 4.0 (Professor) has a mean rank of 315.69.

The trend in mean ranks suggests that individuals who are placed at higher or leading positions in more stratified situations (Designations 3.0 and 4.0) had a better estimation of Academic Quality than those respondents who are relatively less specialized or probably entry-level ones (Designation 1.0).

Ranks

	Designation	N	Mean Rank
Academic quality	1.0	259	158.98
	2.0	56	238.78
	3.0	92	364.01
	4.0	44	315.69
	Total	451	

The analysis reveals that gender, age, and designation are significant factors influencing perceptions of Academic Quality. Specifically:

- Gender differences suggest one group rates Academic Quality higher.
- Age shows a trend of increasing Academic Quality ratings with age, likely due to experience or changing expectations.
- Designation highlights that individual in higher positions perceive Academic Quality more positively, possibly due to accumulated experience and familiarity with quality standards.

These findings suggest that perceptions of Academic Quality are complex and influenced by various demographic factors, which could inform tailored interventions or further studies into demographic-specific expectations and experiences.

4.15. Regression Analysis

A multiple regression analysis was conducted to determine the extent to which the role of faculty, academic resources, and accreditation level predict academic quality. (Table 4.26)

Table 4.26

Regression -Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.804[a]	.647	.644	.29254	.647	272.922	3	447	.000

a. Predictors: (Constant), Accreditation, Resources, Faculty

Interpretation:

• **R (0.804):** The coefficient of correlation between observed and predicted values for the dependent variable, Academic Quality. The value 0.804 indicates an R correlation which is a strong positive correlation between the predictors and Academic Quality.

• **R Square (0.647):** This is the coefficient of determination, meaning it denotes the amount of variance in the dependent variable accounted for by independent variables. An **R Square of 0.647** would mean that about 64.7 percent variation in Academic Quality would be explained by the Faculty, Resources, and Accreditation together.

• **Adjusted R-Square:** 0.644 The Adjusted R-Square adjusts the normal R-Square to account for the number of predictors in the model, improving its estimate when there are several predictors. With an Adjusted R-Square of 0.644, it would suggest that accounting for the number of variables, 64.4% of the variation in Academic Quality would be explained.

• **Std. Error of the Estimate (0.29254)** The standard error of the estimate is the standard deviation of the residuals or the forecast errors. It gives an approximate idea of the average

distance of the observations from the regression line. The smaller the value of the standard error, the better it is because the model's predictions will have a higher accuracy.

• **R Square Change (0.647):** This is the measure of how much adding those predictors to the model changed R Square. All variables are entered together in one block, so the R Square change is like the overall R Square value of 0.647.

• F Change: 272.922; Sig. F Change: 0.000 The value of F Change tests if the predictors significantly enhance the model's predictability on Academic Quality. For F Change = 0.000, it reads that the inclusion of Faculty, Resources, and Accreditation significantly enhances the model ($p < 0.05$).

The R-squared value of .647 indicates that approximately 64.7% of the variance in academic quality can be explained by the combined effects of faculty expertise, academic resources, and accreditation level.

4.16. The ANOVA Table

The ANOVA table summarizes the total significance of the regression model with Academic Quality as the dependent variable and Faculty, Resources, and Accreditation as predictors. Here's a decomposition of the result. (Table 4.27)

Table 4.27

ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.069	3	23.356	272.922	.000[b]
	Residual	38.254	447	.086		
	Total	108.323	450			

a. Dependent Variable: Academic quality

b. Predictors: (Constant), Accreditation, Resources, Faculty

Interpretation of ANOVA Table

Regression Sum of Squares: This is equal to the sum of the regression sum of squares and the residual sum of squares. Regression Sum of Squares (70.069): This means this sum of squares contains the variation in Academic Quality as explained by the independent variables, namely Faculty, Resources, and Accreditation. The greater the sum of squares, the more variance is captured in the model.

Residual Sum of Squares (38.254): Variation in Academic Quality that has not been captured or explained by the model, including error and poor fit.

Total Sum of Squares (108.323): This is the total variance in Academic Quality, split into explained (Regression) and unexplained (Residual) variance.

Mean Square:

Mean Square for Regression (23.356): The average explained variance per predictor is determined by dividing the Regression Sum of Squares by the degrees of freedom, df = 3.

Mean Square for Residual (0.086): This is the average unexplained variance per data point, calculated by dividing the Residual Sum of Squares by its degrees of freedom (df = 447).

• **F-statistic (272.922):** The ratio of the Regression Mean Square to the Residual Mean Square is used in testing the overall significance of the model. The greater F-value indicates that the model has an essential impact on the prediction of Academic Quality.

• **Sig. (0.000):** The p-value holds information about whether the F-statistic is statistically significant. A p-value of 0.000 (often reported as $p < 0.001$) indicates that the model has high significance, and the independent variables explain a considerable amount of variance in Academic Quality together.

The ANOVA table supports the fact that this model is statistically significant ($p < 0.001$). In other words, the collective effect of Faculty, Resources, and Accreditation on the dependent variable is highly predictive in terms of Academic Quality. A high value of F-statistic further supports the model's ability to predict the dependent variable.

Therefore, it shows that the regression model is statistically significant ($F = 272.922$, $p < .001$), indicating that the predictors collectively provide a significant explanation of the variance in academic quality.

4.17. Coefficient

The Coefficients table depicts the relationship between the dependent variable (Academic Quality) and the independent variables of the model namely, Faculty, Resources, and Accreditation. (Table 4.28)

Table 4.28

Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.114	.143		.799	.425	-.166	.395		
	Faculty	.330	.046	.310	7.221	.000	.240	.419	.428	2.337
	Resources	.208	.050	.178	4.183	.000	.110	.305	.435	2.301
	Accreditation	.444	.048	.406	9.347	.000	.351	.538	.420	2.383

a. Dependent Variable: Academic quality

Interpretation of Coefficients:

Constant Coefficient (B = 0.114): It is the intercept, which is the estimated value of Academic Quality when Faculty, Resources, and Accreditation are equal to zero. It is sometimes of lesser interest in multiple regressions, but it offers the baseline value.

Faculty:

- Unstandardized Coefficient (B = 0.330): For every one-unit increase in Faculty, holding other variables constant, Academic Quality will increase by 0.330 units.
- Coefficient Beta = 0.310: This is considered a significant value because the importance of Faculty in predicting Academic Quality is shown by how an independent value will translate to an output variable. The higher the coefficient; the stronger the relationship indicated. In this case, Faculty is moderately important.

- t-value = 7.221 and Sig. = 0.000: t-test, in this regard, assures whether faculty is statistically a very significant predictor of Academic Quality. Since $p < 0.001$, faculty contributes significantly toward the model.
- 95% Confidence Interval for B: The interval [0.240, 0.419] means that we are 95% confident that the true effect of Faculty lies in this interval.

Resources:

- Unstandardized Coefficient (B = 0.208): Incrementally, with one unit increase of Resources, the effect is 0.208 in Academic Quality controlling for other variables.
- Standardized Coefficient (Beta = 0.178): The Beta coefficient shows that Resources have a relatively smaller effect on Academic Quality than Faculty does.
- t-value (4.183) and Sig. (0.000): Resources are also a statistically significant predictor of Academic Quality with $p < 0.001$.
- 95% Confidence Interval for B: The interval [0.110, 0.305] means the true effect of Resources is likely within this range.

Accreditation:

- Unstandardized Coefficient (B = 0.444): This means that an increase of one unit in Accreditation increases the Academic Quality by a magnitude of 0.444, ceteris paribus.
- Relative Effect on Academic Quality In the three predictors, accreditation has the strongest relative effect where the highest beta value is exhibited.
- N/A t-value (9.347) and Sig. (0.000): The predictor accreditation is statically significant with $p < 0.001$.
- 95% Confidence Interval for B: The interval [0.351, 0.538] implies that the true effect of Accreditation lies within this interval.

Conclusion:

With Faculty and Resources as controls, an increase of one unit in Accreditation has a .444 rise in Academic Quality. With a Beta value of .406, Accreditation has the highest effect on Academic Quality compared with other predictors. Beta values show the highest-order effect on Academic Quality from Accreditation followed by Faculty and then by Resources.

Sig. for these coefficients will tell for each predictor if it is statistically significant in predicting Academic Quality.

From the above, all the predictors have contributed positively towards Academic Quality though Accreditation accounts for the highest positive contribution in this model.

4.18. Collinearity Diagnostics

This table enables the evaluation of multicollinearity for the independent variables (Faculty, Resources, and Accreditation) to prevent this threat as potential redundancy of variables may distort the model. (Table4. 29)

Table 4.29

Collinearity Diagnostics

Collinearity Diagnostics[a]

				Variance Proportions			
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Faculty	Resources	Accreditation
1	1	3.986	1.000	.00	.00	.00	.00
	2	.007	23.504	.94	.12	.01	.06
	3	.004	32.763	.02	.86	.10	.45
	4	.003	34.327	.04	.02	.88	.49

a. Dependent Variable: Academic quality

This model fits well without multicollinearity problems and the Predictors explain a significant variance of Academic Quality.

Eigenvalues:

These are the variances explained by each dimension (or component). The closer an eigenvalue is to zero, the more likely that there is collinearity between the variables. For this example, Dimension 1 has a very large eigenvalue while Dimensions 2, 3, and 4 have very small eigenvalues and so are close to zero. This means that some multicollinearity may be present.

Condition Index:

That is, this value is a measure of the variation of the regression coefficients by limited changes in the data. A Condition Index larger than 15 is treated as a strong indication for moderate multicollinearity; while Condition Indices above 30 points at strong multicollinearity. In this case, Condition Indices of dimensions 2, 3, and 4 are greater than 15: 23.504, 32.763, and 34.327. That may be a hint of moderate to high multicollinearity. This does not confirm multicollinearity issues; we should also refer to the Variance Proportions.

Variance Proportions:

These percentages indicate the amount of each predictor's variance that is explained by each dimension. Large values (almost 1.0) in more than one predictor for a single dimension may be indicative of multicollinearity.

There is large variance for Dimension 2 of the intercept (.94) and Faculty (.12).

There is large variance for Dimension 3 of Faculty (.86) and Resources (.10)
There is large variance for Dimension 4 of Resources (.88) and Accreditation (.49).
Several variables under various dimensions have high variance proportions, which suggests that there is a degree of multicollinearity but not extreme enough to consider, though indicated by the VIF and Tolerance in the Coefficients table.

While the Condition Indices and Variance Proportions show signs of moderate multicollinearity, the VIF values in the Coefficients table are below 10, so multicollinearity is not likely a serious issue. The model should still provide reliable estimates for Academic Quality predictions.

4.19. Summary of the Findings

Correlation and regression analyses show that the expertise of faculties, academic resources, and accreditation level all significantly predict the quality of academics in Pakistani higher education institutions. The correlations were very strong; plus, the significant regression coefficients further reiterate that these chosen factors are vital for developing academic quality.

The variance predicted for academic quality from this regression model is about 64.7%; it does show that all these predictors are significant contributors. Indeed, each of the dimensions added some unique value to the overall quality index; therefore, in this case, the strongest contributor turns out to be accreditation, followed by faculty expertise and finally academic resources.

CHAPTER 5: DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

5.1. Discussion of Research Question One (H1)

H1: "The level of academic quality in Higher Education is positively correlated with the level of expertise, commitment, and engagement of the faculty."

Role of Faculty (RF) and Academic Quality (AQ):

5.1.1. Interpretation: Pearson Correlation:

r=.719r Significance (2-tailed): p<.001. With a high positive correlation, if the faculty expertise is high, so will the academic quality. Therefore, this finding confirms the likelihood that well-qualified and more experienced faculty members will have a positive impact on the educational outcomes of the institutions and, hence, their overall academic quality.

5.1.2. Interpretation of Results in Regression:

The standardized coefficient (β =.310) indicates that with every unit change in faculty expertise, academic quality improves by .310 units, controlling all other variables. This thus confirms that the rise in faculty qualifications and experience significantly enhances the outcome in academics.

5.1.3. Interpretation of Results in EFA:

Exploratory Factor Analysis was conducted to unravel the relationship between RF and AQ. The key results from EFA including factor loadings, communalities, and the total variance explained as indicated here throw valuable insight into the validity of this hypothesis.

- *Kaiser-Meyer-Olkin Measure and Bartlett's Test*- Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is 0.825, indicating the sample size is large enough to carry out the factor analysis. A KMO value above 0.80 reflects a meritorious level of adequacy; meaning data collected is good enough for structure detection.

- *Bartlett's Test of Sphericity*

Bartlett's Test of Sphericity results in a Chi-Square value of 777.493 with 15 degrees of freedom (df) and a Sig. of 0.000 that the correlation matrix is not an identity matrix; there exist significant relationships between the variables. This is a prerequisite to be able to explore how faculty expertise impacts academic quality. This result shows that the correlation matrix differs significantly from an identity matrix where the variables are uncorrelated. This confirms further that factor analysis is appropriate for this dataset.

- *Factor Structure and Communalities*

AQ and RF Variables-Communalities: The communalities for the variables related to RF, which is the faculty expertise, and AQ, which is the quality of academics, are from 0.418 to 0.629. This means that a large part of the variance in those variables is explained by the extracted components. It goes on to prove that faculty expertise, including qualifications and teaching methods, causes a variation in academic quality.

- *Component Loadings*: High loadings of the AQ-related variables on the first factor indicate that this factor is picking up an effect of faculty expertise in academic quality. For example, AQRF4 (0.793) and AQRF5 (0.765) load strongly onto Component 1, suggesting that these dimensions of academic quality are highly influenced by the underlying factor, which may be interpreted as faculty expertise. Other RF variables, like teaching methods and qualifications, also load significantly on the same component and, therefore, indicate a common underlying structure with the academic quality.
- *Total Variance Explained*

Component 1 explained 51.588% of the total variance, indicating that more than half of the AQ variability can be accounted for by that factor, including RF. This strong power of explanation confirms the hypothesis that there is a significant effect of faculty expertise on academic quality.

5.1.4. Non-parametric Spearman's Rank Correlation

There is a positive relationship between Academic Quality and the Role of Faculty based on Spearman's Rank Correlation results: (rs=0.715) and the p-value is less than 0.01, confirming the relationship is statistically significant (p=.0001).

H1: "There is a positive relationship between Academic Quality and the Role of Faculty." (Approved)

5.1.5. Hypothesis Implications (H1)

- H1 Support**:** Results from EFA strongly support the hypothesis that faculty expertise, as defined by qualifications and teaching methodology, significantly influences academic quality. High communalities and substantial variance explained by the first component indicated RF factors of vital importance to AQ.
- Practical Interpretation: Institutions that seek to increase the quality of the academic enterprise should focus on faculty qualifications and more refined techniques for teaching; both are strongly related to higher expectations and better academic achievement.

The EFA thus provides strong empirical support to the hypothesis that RF significantly influences AQ. High loadings, communalities, and variance explained by the primary factor underscore the critical role faculty qualification and pedagogy play in shaping the academic experience. A key implication of this study is that faculty development can be an important means of improving academic quality within educational institutions.

5.2. Discussion of Research Question Two (H2)

H2: "The level of academic quality in Higher Education is positively correlated with the availability and quality of academic resources, such as classrooms, labs, libraries, and technology."

Academic Resources (AR) and Academic Quality (AQ):

5.2.1. Pearson Correlation: r=.675r Significance (2-tailed): p<.001. The strong positive correlation suggests that the availability and quality of academic resources, such as libraries, laboratories, and technological infrastructure, are significantly associated with higher academic quality. This underscores the importance of adequate resources in supporting effective teaching and learning processes.

5.2.2. Interpretation of Regression Results:

Academic Resources: The standardized coefficient (β=.178\beta) shows that academic resources positively influence academic quality. A unit increase in academic resources leads to a .178 unit increase in academic quality, controlling for other factors. This finding highlights the critical role of providing sufficient and high-quality resources to support academic activities.

5.2.3. Interpretation of Results in EFA:

The results of the EFA help the study gain relevant insights into the interplay of academic resources and academic quality. This study will, therefore, explore AR-related variables and how AR influences AQ.

- *Kaiser-Meyer-Olkin Measure and Bartlett's Test*

KMO Value: 0.685. This value shows that sampling adequacy for factor analysis is at the lower boundary of being adequate. Although it is lower than 0.7, it is higher than 0.6, so the value is indicative of the marginal adequacy of the dataset for factor analysis.

Bartlett's Test of Sphericity (Sig. = 0.000): Here, the one obtained is significant at the 0.05 level. As it indicates the correlation matrix is not an identity matrix, it can be said for sure that the dataset is proper for conducting a study on the factor structure and hypothesis testing.

- *Communalities*

Communalities of AR Variables: ranging from 0.489 to 0.802, which suggests how much variance of each AR-related variable is accounted for by the extracted factors. In other words, where the communalities are high—for instance, AQAR2 at 0.802—it means most of the variance in this variable is due to the factors and, hence, has a strong contribution to

the underlying structure of academic quality. AQAR2 (0.802) and AQAR3 (0.718) are generally considered to have very high communalities, which imply the existence of a considerably identifiable fluctuation in certain dimensions of academic resources, like the quality of some facilities or technology, that are highly related to variables that influence academic quality.

- *Total Variance Explained*

Component 1 expresses 46.819% of the overall variance, and the addition of Component 2 brings the cumulative variability explained to 67.293%. It follows that the first two components account for just over two-thirds worth of variability in the dataset, which provides rather compelling evidence that many resources for academic quality are in place. All the other components have contributed lower individual variances, which could therefore indicate that the first two components are stronger in explaining the relationship between AR and AQ.

- *Component Matrix*

For instance, AQAR, AQAR1, with 0.699, AQAR2 with 0.745, and AQAR3 with 0.732, have very strong loadings on component one. They represent core characteristics among academic resources that directly influence academic productivity. The variables produce a very strong loading on component 1, which may indicate the central factor in representing the dimensions of the role of AR determining AQ.

Component 2 also has loadings, with AQAR4 at 0.610 and AQAR5 at 0.472, which perhaps suggests secondary but important dimensions of AR. Hence in that respect, the second component could perhaps account for dimensions of academic resources that contribute in ways more sharply defined and nuanced to the quality of academic output.

5.2.4. Non-parametric Spearman's Rank Correlation

There is a positive relationship between Academic Quality and Academic Resources based on Spearman's Rank Correlation results: (rs=0.721) and the p-value is less than 0.01, confirming the relationship is statistically significant (p=.0001).

H2: "There is a positive relationship between Academic Quality (AQ) and Academic Resources (AR)." (Approved)

5.2.5. Implications for the Hypothesis (H2)

Support for H2: The results of the EFA give very strong support to the hypothesis that the availability and quality of academic resources serially contribute toward student learning outcomes and, accordingly, academic quality. It is likely, therefore, that the AR variables are very important determinants of AQ, indicated by both the strong communalities and the high variance explained by the first two components.

Two-Factor Structure: Considering that two substantial components emerged from it, it is plausible that academic resources would work through multiple pathways to influence the quality of learning outcomes. For example, Component 1 could reflect a set of general resources that have widespread influences on AQ, and Component 2 may reflect a set of relatively more specific resources or conditions that make additional and somewhat different contributions.

Practical Interpretation: Attention should be paid to improving the quality and availability of key academic resources, those embodied in the high-load variables of Component 1, to aid in increasing quality. In enhancing academic quality, secondary forces, as they are represented by Component 2, need to be given much attention, since they also have a high-impacting effect on academic outcomes.

Results from EFA support the hypothesis that the availability and quality of academic resources contribute strongly to academic quality. The results show that these main components of the resources exert an influence on AQ through general and specific mechanisms. Hence, academic resources like libraries, laboratories, and technology infrastructures have vital importance for the betterment of students' learning outcomes and bettering the overall academic standards.

5.3 Discussion of Research Question Three (H3)

H3: "There is a positive relationship between Academic Quality and Accreditation."

5.3.1. Accreditation (AC)and Academic Quality (AQ)

Pearson Correlation: r=.748r Significance 2-tailed: p<.001 The very strong positive relationship between Accreditation and Academic Quality would suggest that those institutions bearing recognized accreditation would tend to enjoy higher academic quality; therefore, accreditation would seem to be very important for maintaining and enhancing educational standards.

5.3.2. Interpretation of Regression Results:

Accreditation: The standardized coefficient (β =.406β) indicates that among the three predictors, it has the greatest effect on academic quality. One unit of the increased status of accreditation results in an increase of .406 units in academic quality while holding other variables constant. This establishes the fact that the rise of accreditation is very significant in the maintenance and improvement of high standards for institutions of higher education.

5.3.3. Interpretation of Results in EFA:

Exploratory Factor Analysis of variables related to accreditation processes and academic quality was carried out. An understanding of the EFA results, such as the KMO measure, Bartlett's test, communalities, total variance explained, and component matrix, is presented to enable one to understand how the impact of accreditation processes and standards on academic quality is wrought out.

- Kaiser-Meyer-Olkin (KMO) Measure, and Bartlett's Test

KMO Value: 0.832: The high KMO value indicates the best adequacy of the sample, hence setting the data fit for doing factor analysis. A high KMO value indicates high adequacy, meaning that the relationships between the variables are strong enough to extract meaningful factors that could further support the investigation into how the accreditation processes affect academic quality.

- Bartlett's Test of Sphericity (Sig. = 0.000): The test is significant with $p < 0.05$. The probability implies that the correlation matrix is not an identity matrix; in other words,

variables have a significant correlation. This gives one of the necessary conditions for using factor analysis and gives advanced evidence that the accreditation at least relates to academic quality.

- Communalities

Communalities for AC Variables: Communalities range from 0.415 to 0.636, indicating that a high percentage of variance in the AC variables is explained by the extracted factors. Higher communalities come for variables AQAC3 at 0.636 and AQAC4 at 0.557, thus putting forth the accreditation processes and standards aspects as the main driver for academic quality.

The largest communality was for AQAC3 at 0.636, which indicates that the variable is the most affected by the underlying factor and is also the most correlated with total academic quality. This may imply that there are subcomponents in the accreditation standards, or the procedures followed that render the total academic quality process particularly effective.

- Total Variance Explained

Component 1 explains 50.854% of the total variance, which says that the accreditation processes and standards taken together contribute more than half of the variability to the academic quality. This very strong percentage explains that accreditation is a very important determinant of academic quality. The remaining components are therefore proposed to contribute a much weaker individual share of variance, the first being the principal factor capturing the interrelationship between accreditation processes and academic quality.

- Component Matrix

Component 1 has high loadings for variables such as AQAC3 (0.798), AQAC4 (0.747), and AQAC2 (0.717). These loadings are comparatively high; the variables were believed, in turn, to be important determinants of academic quality regarding the processes and standards of accreditation. Further, from the fact of consistency that they had high loadings into a single component, characteristics relating to the processes and standards of accreditation represent a factor coherently influencing academic quality. That only one component was extracted suggests that accreditation processes and standards are having an

impact on academic quality that is broad and undivided, rather than affecting it through several different discrete pathways.

5.3.4. Non-parametric Spearman's Rank Correlation

There is a positive relationship between Academic Quality and Accreditation based on Spearman's Rank Correlation results: (r_s=0.758) and the p-value is less than 0.01, confirming the relationship is statistically significant (p=.0001). Hence:

H3: "There is a positive relationship between Academic Quality (AQ) and Accreditation (AC)." (Approved)

5.3.5. Implications for the Hypothesis (H3)

The results of the EFA turn out to raise very strong support for the view that accreditation processes and standards contribute significantly to overall academic quality. High commonalities and large variance explained by the first component indicate that accreditation is a critical factor in determining academic quality.

Unidirectional Effect: Extraction of one single dominant component may envision that the processes and standards of accreditation impact academic quality unidimensional; that is, the classification of the whole system into two categories respectively by the processes and standards would work together within the system while producing a cohesive form of good education all over the institutions.

Interpretation: Practical educational institutions should highly value the standards and processes given by the accreditation council since these appear to exert a large unitary effect on academic quality. The setting of high accreditation standards and undergoing quality accreditation processes are primary tools for improvement and key processes to maintain high academic quality levels.

The results for EFA strongly point out the view that accreditation is very significant in AQ. The extraction of one dominant component with more than half of the variance in AQ being accounted for underlines the place of accreditation in academic settings. The larger the focus on rigorous AC processes coupled with holding high standards at institutions would likely be their academic outcomes.

5.4. Discussion of Results

The correlation analysis strongly reveals the positive relationships between academic quality and independent variables such as faculty expertise, academic resources, and accreditation. The highest correlation of academic quality with any test variable is with accreditation, which is r = .748, underlining the critical role of accreditation in supporting academic excellence. Faculty expertise is strongly related to academic quality, with Wert r = 0.719, while academic resources have Wert r = 0.675. Both these variables come out very essential in HEI. It intends to improve its educational outcomes at its various campuses. These findings are in tandem and corroborate earlier studies arguing that growth in faculty qualifications, more resources, and greater emphasis on accreditation could result in better academic quality (Astin, 1993, Terenzini, & Pascarella, 1994, and Harvey, 2004). It is through these aspects that the institutions seeking to enhance their academic quality must work more, to have better educational outcomes. The interdependencies of the variables of faculty expertise, academic resources, and accreditation on academic quality are, hence, underlined by their strong correlations found in the study. These strong positive relationships indicate that should any one of those variables improve, the overall quality is likely to have a positive effect on the academic quality in HEIs of Pakistan.

Overall Interpretation:

According to the EFA and Regression analysis, all three independent variables, Faculty, Resources, and Accreditation, have a considerable positive relationship with Academic Quality in higher educational institutions. The model can explain more than 64% of the variance in Academic Quality. Much baser on Academic Quality is the relative influence of faculty expertise, commitment, and engagement, followed by Accreditation and then Resources.

5.5. Conclusion

Correlation, regression, and EFA indicate that faculty competence, academic resources, and accreditation in Pakistani higher education are all strongly associated with the predictor variable academic quality. These strong correlations and significant regression coefficients reemphasize the importance of these factors in building academic quality. Therefore, an institution of higher education desirous of better academic standards must, in essence, address these areas to have better educational results. These results, therefore, strengthen the past literature arguing that qualified faculty, adequate resources, and accreditation are necessary to ensure the excellent performance of their institutions. (Astin, 1993; Terenzini & Pascarella, 1994; Harvey, 2004). These results can, therefore, be used as useful guidelines for policymakers, administrators, and educators in the betterment of quality-related concerns in higher education in Pakistan. Moreover, This study shows important findings that shine a light on current issues and suggest areas needing work. First, there is a big gap between national quality standards for teacher education and international standards, which brings up doubts about how well current policies are working. This difference shows there is an urgent need to better match and improve faculty qualifications and teaching methods. Aajiz et al. (2020) conducted a meta-analysis of quality standards for teacher education which reveals that some criteria are not treated equally among institutions, which raises worries about fairness and consistency in academic quality evaluations. Additionally, the research highlights the need for better academic resources and thorough accreditation processes, implying that a more coordinated approach to quality markers could greatly improve teacher education. In summary, the findings call for a significant reform of quality assessment methods, stressing the need for regular checks, strong evaluations, and fair standards. These actions are vital for building a solid framework that can raise academic quality and support ongoing improvements in Pakistan's higher education system.

Figure 5.1 **How to improve Academic Quality**

CHAPTER 6: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1. Summary of the study and findings Conclusions

The table below provides the results of the multiple regression analysis where Academic Quality is the dependent variable, and the independent variables are Accreditation, Resources, and Faculty. What follows is the explanation of the key elements along with their interpretation:

Model Summary:

- **R:** 0.804 The coefficient of correlation gives the intensity of the relationship between the predicted and the actual values for Academic Quality. A value of 0.804 indicates a highly positive correlation.
- **R-squared:** 0.647—It is the amount of variation in the dependent variable (Academic Quality) accounted for by the independent variables in this model (Accreditation, Resources, Faculty). Here, the factors explain 64.7% of the variation in Academic Quality.
- **Adjusted R-squared:** 0.644: This is a more informative measure of R-square. It corrects the R-square for the number of independent variables in your model. A value of 0.644 still indicates a good fit for your model, given your number of predictors.
- **Std. Error of the Estimate:** 0.29254: This is your standard deviation of the residuals or your unexplained variance. A lower number usually indicates a more reliable model.
- **ANOVA Table:**
    - F-statistic: 272.922 (significant at $p < 0.000$) -The overall model is significant. In other words, the combination of Accreditation, Resources, and Faculty significantly predicts Academic Quality.
- **Coefficients Table:**
- This table consists of the coefficients for every independent variable and the constant term in the regression equation.

- **Unstandardized Coefficients (B):** This indicates the change in Academic Quality that will be observed if the independent variable changes by one unit, with all the other variables in the model being held constant.

- **Faculty:** 0.330 Suppose a one-unit change in Faculty score (where each unit denotes a one-point increase in faculty expertise, commitment, etc.). Then there is still the same rise of 0.330 in Academic Quality.
- **Resources:** 0.208 - Resource Score is interpreted similarly for Resources (a higher representation of resources). For every one-point increase in Resources, Academic Quality would be expected to increase by a difference of 0.208.
- **Accreditation:** 0.444 - For every one-unit increase in Accreditation, it would be predicted that Academic Quality would increase by 0.444 units, everything else being held constant (meaning a higher accreditation level).
- **Standardized Coefficients (Beta):** The Beta coefficients show the relative strength in the dependence of each of the independent variables on Academic Quality, given other independent variables. They are usually more straightforward to interpret than unstandardized coefficients.
- **Faculty (0.310):** This effect is the strongest found in the standardized coefficients for this variable. Hence, the Faculty variable has the strongest relative effect on Academic Quality.
- **Accreditation (0.406)** has beta coefficients too, being positive, thus related positively to Academic Quality.
- **Resources (0.178)** have beta coefficients too, being positive, thus related positively to Academic Quality. But the effect of Faculty seems relatively stronger.
- **Sig. Values:** each p-value is less than 0.000. This means that all the independent variables (Faculty, Resources, Accreditation) are significant at the 0.000 level which means that they all have a statistically significant relationship with Academic Quality.

6.2 Implications

The study attempted to find the relationship between the faculty role, accreditation, and resources on academic quality in Pakistani universities. The following findings, if disclosed, can have far-reaching implications for stakeholders of higher education:

Administrators at Universities: Such findings on the significance of faculty-role perceptions and resource allocation can be especially useful in driving measures for leading the faculty, improving teaching methodologies, and the ability to enhance resources within departments. Additionally, at the university level, the state of accreditation and how it impacts quality can provide a potential roadmap for administrators on areas that need to be focused on for potential improvement to meet or maintain standards of accreditation.

Faculty members: Awareness of how their perceived role, the availability of resources, and issues of accreditation all contribute to reported academic quality can motivate faculty to become more proactively involved in professional development and a more vocal supporter of change within their institutions.

Policymakers: Findings of the research will inform policymakers on the inception and implementation of educational policies based on faculty development and resource provision for universities as well as the upholding of standards of accreditation. This potentially can further add to the betterment of the quality of higher education in Pakistan.

When thinking about the many sides of academic quality in higher education in Pakistan, it is important to see how faculty performance, available academic resources, and accreditation processes are connected. These factors are tied together and are key to providing a good educational experience for students. Although both public and private universities aim to produce a skilled workforce that can tackle today's job market challenges, the overall quality of education is still affected by governance problems and regulatory limitations. This is due to weak links between higher education and the high-tech industry, which prevent the flow of innovation and knowledge (Basant et al, 2009). Additionally, research has shown that better facilities and faculty qualities play a vital role in educational quality (yousouf et al., 2015). To improve the academic environment and boost the global standing of Pakistan's higher education, strategic changes are needed. These changes should focus on enhancing faculty qualifications, improving both physical and technological infrastructure, and strengthening accreditation standards to make them clear and effective. By tackling these issues and creating comprehensive strategies to encourage partnerships between academic institutions and industry, Pakistan can develop a strong higher education system that meets the changing needs of local and global

economies. These efforts would not only raise academic standards but also help create a workforce that is educated, adaptable, innovative, and ready to lead progress in different parts of society.

6.3 Recommendations for Future Research

The academic quality dimensions of higher education institutes in Pakistan have been focused on finding important insights into faculty expertise, academic resources, and accreditation. The following recommendations are:

1. **Longitudinal Studies:** Conduct longitudinal studies aimed at following changes and trends over some period in the quality of the offer of teaching. This will be a way to understand the long-term effects resulting from faculty development, resource allocation, accreditation, and academic quality.
2. **Diverse Institutional Samples:** Include too wide the spread of the sample to include institutions from the mid-tier and emerging states, from public and private institutions; findings may, therefore, be more varied and generalized to provide a richer and clearer picture of academic quality in those institutions.
3. **Exploration of other Variables:** Examination of other variables could be those of institutional leadership and governance, curriculum design, students' support services, and external partnerships. These are some of the aspects worth further exploration, which could be revealed to have a closer look in more sensitive ways under which academic quality rests.
4. **Comparative studies:** Comparative studies can be carried out between higher education institutions in two different countries or regions to identify best practices and understand contextual differences. This can be done for an extension of this research into a global understanding of strategies for the enhancement of academic quality.

6.4 Conclusion

Overall, this study provides valuable insights and guidelines for enhancing academic quality in Pakistani higher education institutions and offers a foundation for future research in this area. The quality of higher education has mostly been examined in the context of student's perception of the quality of the university and the consecutive selection or continuance that leads to the institution in the marketplace. Furthermore, teachers' perception of quality in higher education and quality of teaching or good teaching practices have been the subject of research that brought insights into mechanisms for improving educational quality. The institution's image, superiority, and competitiveness could not last without an employee's efforts to achieve the objectives of the university. Higher education institutions have emphasized educational quality and resources as indicators for universities to determine the quality elements they should prioritize. Indeed, universities' educational facilities and employees' capabilities are the resources that, in the long term, will provide value to the institution with qualified professionals who provide quality education. Employee engagement can be regarded as an essential component of job satisfaction perceptions and motivations that are related to the academic contribution of academics, and it thus determines the success of the institution. It will be crucial to understand the perceptions of employees regarding the performance of the organization and the outcomes of their competencies and practices as distinct assets in establishing a commitment. The resources available in the universities, relating to educational quality and the antecedents of academics' aptitudes, were observed as the purpose of this study and further engagement. The study of academic quality in higher education in Pakistan shows several key points about how faculty involvement, accreditation systems, and access to academic resources work together. According to Hirsh, S. (2024) faculty play a critical role since they train future professionals and aid in the research and innovation of their institutions, which is supported by the findings. The research also indicates that having a strong entrepreneurial approach within university departments is linked to better performance in academic innovation. This link is even stronger by efficient accreditation systems, which affirm and enhance the functioning of academic programs, aligning with the outcomes. (Wardani, 2024). All of these factors emphasize the need to create an

academic environment that focuses on faculty growth, adheres to accreditation criteria, and provides sufficient resources to enhance the quality of higher education in Pakistan.

In wrapping up the investigation into the many aspects related to academic quality, it is crucial to acknowledge how faculty effectiveness, resource availability, and accreditation processes interact with one another. Each of these components adds its distinct value to the educational experience, affecting student outcomes and how institutions are perceived. Faculty engagement, noted for their areas of expertise and commitment to teaching practices, has a direct effect on how students learn and how likely they are to stay in school; therefore, making investments in hiring practices and ongoing professional development is necessary. Additionally, sufficient resources like libraries, technology, and funding for research provide critical support that enables effective teaching and learning to take place. Moreover, stringent accreditation standards act as an external confirmation of academic quality, encouraging ongoing improvement and accountability among educational institutions. In the end, adopting a comprehensive approach to these various aspects creates a setting that is favorable for academic excellence, urging institutions to design and maintain collaborative relationships among faculty, resources, and accreditation to successfully fulfill their educational missions.

Furthermore, big improvements in the quality of higher education in Pakistan can happen through well-planned faculty development programs that look closely at current teaching methods as well as the changing needs of education. Spending on ongoing training for teachers helps them keep up with new teaching strategies and advancements in their subjects while also allowing them to review and modify these methods for their classrooms. By creating a space that supports research-based teaching and mentorship, schools can build a culture of academic excellence that questions traditional ideas and encourages creative thinking among teachers and students. Also, increasing teamwork among faculty from different universities will help share knowledge, creating a dynamic academic community dedicated to both innovation and solid scholarship. Adding better academic resources, like access to online databases and new teaching tools, will foster a better learning environment where students can engage critically with materials and build analytical skills. Lastly, creating strong accreditation systems that hold schools to

internationally accepted standards not only ensures that graduates have the essential skills and knowledge for the global job market but also encourages schools to continuously review and improve their teaching practices. Altogether, these suggestions will greatly enhance the academic environment in Pakistan's higher education, providing a solid base for ongoing progress and quality enhancement.

In conclusion, it firmly establishes the role of faculty capabilities, academic resources, and accreditation to add value to academic quality in higher education institutions in Pakistan. Stemming from these fundamental issues, improvements by stakeholders lead to improved educational quality and standards. The research is highly beneficial for the furthering of such studies in the future, and some useful guidelines are distilled for improving academic quality within the setting of Pakistani higher education and, in general. The purpose of such efforts is to ensure that higher education institutions are prepared to meet the new needs of both students and society and to foster a climate of academic excellence and innovation.

Figure 6.1 **Enhancing Academic quality.**

BIBLIOGRAPHY

1) Aajiz, N. M., Raza, K., Khisro, Niazi, A., & Aisha (2020). Meta-analysis of quality standards for teacher education [Report]. Sarhad University of Science & Information Technology, Peshawar. https://core.ac.uk/download/553168970.pdf
2) Abiddin, N.Z., Ismail, A., & Taniredja, T. (2013). Enhancing quality of higher education for graduate research students' development.
3) Abou Hashish, E. A., Alsayed, S. A., & Alnajjar, H. A. (2024). Exploring workaholism determinants and life balance: A mixed-method study among academic nurse educators. Journal of Professional Nursing.
4) Ainslie, M., Bigley, M. B., Yingling, C., Hooks, J. D., & DeClerk, L. (2024). The national organization of nurse practitioner faculties leadership mentoring program: Ten years of positive outcomes. Journal of Professional Nursing.
5) Aithal, P. S. (2015). Internal quality assurance cell and its contribution to quality improvement in higher education institutions: A case of SIMS. GE-International Journal of Management Research, 3, 70-83. Google Scholar
6) Aithal, P.S., & Maiya, A.K. (2023). Exploring Quality in Higher Education: An Introduction and Theoretical Framework. International Journal of Philosophy and Languages (IJPL).
7) Aithal, S. (2024). Stress management and work-life balance. in stress management and work-life balance (p. 104). Srinivas Publication, India. https://doi.org/10.5281/zenodo.10852723
8) Albdr, L. (2020). An Analysis Case Study: Experiences of the Faculty Members during the Program Accreditation Process in Saudi Arabian Higher Education.
9) Almendarez, L. (2013). Human Capital Theory: Implications for Educational Development in Belize and the Caribbean. Caribbean Quarterly, 59, 21 - 33.
10) Alsaleh, G. (2016). Do the Standards of the National Commission for Academic Accreditation& Assessment (NCAAA) Lead to Organization Excellence? European Scientific Journal, 12(34), 1857-7881.
11) Alzahem, A. (2022). Institutional Academic Accreditation Journey and Challenges. Journal of Medicine and Health Studies.
12) Areen, J. (2011). Accreditation reconsidered. Iowa L. Rev., 96, 1471.
13) Ashraf, I., & Huma, A. (2020). Role of accreditation in quality enhancement of technical and engineering education. Global Regional Review, 1, 308-322.
14) Asiedu, M. A., Anyigba, H., & Doe, J. K. (2023). Absorptive capacity and innovation generation in higher education institutions: the mediating role of inter-functional coordination. The Learning Organization, 30(4), 385-405. Al-Refaei, A.A., Ali, H.B.,
15) Aldaba, A.M., & Zumrah, A.R. (2023). Determinants of customer-perceived service quality in higher education: the roles of job satisfaction and organizational commitment. International Journal of Quality and Service Sciences.

16) Astin, A. W. (1993). What matters in college? Four critical years revisited. San Francisco, CA: Jossey-Bass.
17) Augustyn, M.M., Seakhoa-King, A., & Mason, P. (2022). Quality Management. Encyclopedia of Tourism Management and Marketing.
18) Azmy, A. (2019). Employee Engagement Factors in A Higher Education Institution. Binus Business Review, 10, 187-200.
19) Baidya, T., & Moh, S. (2024). A comprehensive survey on resource allocation for edge-computing-enabled metaverse. Computer Science Review, 54, 100680.
20) Bartholomew, D., Knotts, M., & Moustaki, I. (2011). Latent variable models and factor analysis: A unified approach. (3rd ed.). West Sussex, UK: John Wiley & Sons.
21) Basant, R., & Mukhopadhyay, P. (2009). An Arrested Virtuous Circle? Higher Education and High-Tech Industries in India.
22) Baughan, P. (2012). Culture and culture change in a higher education context: what works and what doesn't. Learning at City Journal, 2(1), 19-28.
23) Becker building theoretical models and providing empirical foundations in the 1950s and 1960s. (Frazis, 2005).
24) Bendell, T. (1995). Quality in higher education; a confusion of concepts.
25) Bertalanffy, L.V., Rapoport, A., Boulding, K.E., Ashby, W.R., Mead, M..., & Bateson, G. (2022). Bertalanffy's General Systems Theory: The Topology of Mind Development.
26) Biswas, R. R. (2006). A Supporting Role: How Accreditors Can Help Promote the Success of Community College Students. An Achieving the Dream Policy Brief. Jobs for the Future.
27) Blanco-Ramírez, G., & B. Berger, J. (2014). Rankings, accreditation, and the international quest for quality: Organizing an approach to value in higher education. Quality Assurance in Education, 22(1), 88-104.
28) Bloxham, S. (2012). 'You can see the quality in front of your eyes': grounding academic standards between rationality and interpretation. Quality in Higher Education, 18, 185 - 204.
29) Brahimi, T., Sarirete, A., & Ibrahim, R. M. (2016). The impact of accreditation on student learning outcomes. International Journal of Knowledge Society Research (IJKSR), 7(4), 51-62.
30) Breen, H., & Hing, N. (2001). Improving competitiveness through cooperation: Assessing the benefits of cooperative education partnerships in gaming management. UNLV Gaming Research & Review Journal, 6(1), 5.
31) Brennan, J. (2004). Graduate employment: issues for debate and enquiry. International Higher Education, 34(Winter), 12-14.
32) Byrtek, G. J., & Dickerson, M. (2013). Actualizing organizational core values: Putting theory into practice.

33) Cannistrà, M., De Beckker, K., Agasisti, T., Amagir, A., Põder, K., Vartiak, L., & De Witte, K. (2024). The impact of an online game-based financial education course: Multi-country experimental evidence. Journal of Comparative Economics.
34) Carroll, K.A., Dickson, L.M., & Ruseski, J.E. (2013). Do Faculty Matter? Effects of Faculty Participation on University Decisions.
35) Chan, S., & Kanjanawasee, S. (2016). Development of internal quality assurance indicators of the Faculty of Education in Cambodia. Scholar: Human Sciences, 8(1), 186-186.
36) Chen, X., Ding, Z., Gao, Y., Zhang, H., & Dong, Y. (2024). Competitive resource allocation on a network considering opinion dynamics with self-confidence evolution. Information Fusion, 102680. https://doi.org/10.1016/j.inffus.2023.102680
37) Ćirić, M., Petrović, J., & Jovanović, D. (2020). Student-centered learning: The paradigm of modern higher education. Sinteze.
38) Claver, E., Tarí, J.J., & Molina, J.F. (2003). Critical factors and results of quality management: An empirical study. Total Quality Management & Business Excellence, 14, 118 - 91.
39) Collins, M. J., Baker, C., & Gorey, R. (2007). Financial Coaching: A New Approach for Asset Building.
40) Comm, C.L., & Mathaisel, D.F. (2003). A case study of the implications of faculty workload and compensation for improving academic quality. International Journal of Educational Management, 17, 200-210.
41) Conderman, G. and McCarty, B., 2003. Shared insights from university co-teaching. Academic Exchange Quarterly, 7(4), pp.23-27.
42) Couckuyt, D., & Van Looy, A. (2019). Green BPM as a business-oriented discipline: a systematic mapping study and research agenda. Sustainability, 11(15), 4200.
43) Dandoy, C. E., Adams, J., Artz, A., Bredeson, C., Dahi, P. B., Dodd, T., ... & Howard, D. S. (2024). In Pursuit of Optimal Outcomes: A Framework for Quality Standards in Immune Effector Cell Therapy. Transplantation and Cellular Therapy.
44) Dattey, K. (2018). Impact of accreditation on quality assurance: A case study of public and private universities in Ghana.
45) Davidovitch, N., Soen, D., & Sinuani-Stern, Z. (2011). Performance measures of academic faculty – a case study. Journal of Further and Higher Education, 35, 355 - 373.
46) Debela, B. K., Bouckaert, G., Temesgen Eshetu, B., Deyessa Fita, C., Megersa Tola, H., Worku Angaw, K., ... & Gebru, S. G. (2022). Handbook for Ethiopian Public Administration Program Accreditation (p. 108). Leuven University Press.
47) di Negara Membangun (2011) P. G. A Proposed Guide for Accreditation of Teacher Education in Developing Countries (A Descriptive Analytical Study).
48) Dill, D.D. (2004). The 'Catch 22' of Academic Quality: Implications for Universities and Public Policy ∗.

49) Dill, D.D. (2008). Quality Assurance in Higher Education: Practices and Issues 1.
50) Dill, D.D., Massy, W.F., Williams, P.R., & Cook, C.M. (1996). Accreditation & Academic Quality Assurance: Can We Get There from Here? Change: The Magazine of Higher Learning, 28, 16-24.
51) Dillenbourg, P., Fox, A., Kirchner, C., Mitchell, J.C., & Wirsing, M. (2014). Massive Open Online Courses: Current State and Perspectives (Dagstuhl Perspectives Workshop 14112). Dagstuhl Manifestos, 4, 1-27.
52) Dooris, M. T., & Doherty, S. H. (2009). National research and development project on healthy universities.
53) Fairweather, J.S., & Brown, D.F. (2017). Dimensions of Academic Program Quality. The Review of Higher Education, 14, 155 - 176.
54) Ferdi, W.P., 2013. Pembiayaan pendidikan: Suatu kajian teoritis. Jurnal Pendidikan dan Kebudayaan, 19(4), pp.565-578.
55) Fernando, S., & Fernando, M. (2014). Human Capital Theory.
56) Fialho, I., Saragoça, J., Rebelo, H., Cid, M., Oliveira, M., Bonito, J., ... & Trindade, V. (2012). Academic achievement in public higher education quality–A study on the effects of teachers' commitment, teaching and evaluation methodologies in Nursing and Management degrees students
57) Frazis, H. (2005). Worker training: what we've learned from the NLSY79.
58) Gaughan, P. H., & Prince, S. J. (2020). Facilitating distinctive and meaningful change within US Law Schools (part 2): Pursuing successful plan implementation through better resource management. UNHL Rev., 18, 173.
59) Gehrke, S., & Kezar, A. (2015). Unbundling the Faculty Role in Higher Education: Utilizing Historical, Theoretical, and Empirical Frameworks to Inform Future Research.
60) Gharibi, F., Imani, A., Ebrahimi Tavani, M., & Dalal, K. (2023). Evaluating Educational Performance of Postgraduate Students Based on the Tennessee Academic Audit Model. Shiraz E-Medical Journal.
61) Gogtay, N. J., Deshpande, S. P., & Thatte, U. M. (2017). Principles of regression analysis. J. Assoc. Physicians India, 65(48), 48-52.
62) Gomez, A.C., De Grano, R.T., Valdez, L.A., & Gomez, A.C. (2024). Comparative Analysis of a State University's Physical Plant and Facilities: Internal vs External Evaluations. International Journal of Multidisciplinary: Applied Business and Education Research.
63) Gong, Y. F., Zhang, L. E., & Li, W. M. (2024). 'Finally, it's all in vain': A Chinese as an additional language teacher's agency in navigating the teaching-research nexus in a neoliberal Chinese university. System, 125, 103420.
64) González-Campo, C.H., Murillo-Vargas, G., & García-Solarte, M. (2021). Efecto de la acreditación institucional de alta calidad sobre la gestión del conocimiento. Formación universitaria.

65) Groshoff, D. (2012). Creatively Financed Legal Education in a Marketed Environment: How Faculty Leveraged Buyouts Can Maximize Law Schools' Stakeholder Values. Fordham J. Corp. & Fin. L., 17, 387.
66) Gupta, A. (2021). Focus on Quality in Higher Education in India. Indian Journal of Public Administration, 67, 54 - 70. Akpan, C. P., & Etor, C. R. (2018). Accreditation of academic programs and quality university education in South-South Nigeria. International Journal of Educational Studies, 13(2), 16- 20.
67) Gupta, Badrilal & Scholar, Joseph & Bhoj, Pratik. (2021). role of faculty members in assuring quality of education.
68) Gupta, P. (2022). Role Of Faculty In Higher Education (No. 2022-43-03).
69) Haakstad, J. 2001, 'Accreditation: The new quality assurance formula? Some reflections as Norway is about to reform its quality assurance system', Quality in Higher Education, 7(1), pp. 77–82.
70) Harley, D., & Lawrence, S. (2007). The regulation of e-learning: New national and international policy perspectives.
71) Harvey, L. & Green, D. 1993, 'Defining quality', Assessment and Evaluation in Higher Education, 18(1), pp. 9–34.
72) Harvey, L., & Newton, J. (2004). Transforming quality evaluation. Quality in higher education, 10(2), 149-165.
73) Harvey, L., & Williams, J. (2010). Fifteen Years of Quality in Higher Education (Part Two). Quality in Higher Education, 16, 113 - 81.
74) Hebbar, D.L. (2020). ROLL OF TEACHER AS AN INNOVATOR OF THE BEST PRACTICES IN HIGHER EDUCATION. Journal of emerging technologies and innovative research.
75) Hendricks, K.B. and Singhal, V.R., 2001. Firm characteristics, total quality management, and financial performance. Journal of Operations Management, 19(3), pp.269-285.
76) Heusser, R. 2006, 'Mutual recognition of accreditation decisions in Europe', Quality in Higher Education, 12(3), pp. 253–256.
77) Hill, F.M., 1995. Managing service quality in higher education: the role of the student as a primary consumer. Quality assurance in education.
78) Hinneh, T., Baah, F. O., Amoako, E., Baptiste, D., Turkson-Ocran, R. A., Agore, A., ... & Commodore-Mensah, Y. (2023). Towards advancement of nursing in Ghana: The role of the Ghanaian-Diaspora Nursing Alliance (G-DNA). Nursing Open, 10(12), 7450.
79) Hirsh, S. (Ed.). (2024). Library 2035: Imagining the Next Generation of Libraries. Rowman & Littlefield.
80) Horng, J. S., Teng, C. C., & Baum, T. G. (2009). Evaluating the quality of undergraduate hospitality, tourism, and leisure programs. Journal of Hospitality, Leisure, Sport, and Tourism Education, 8(1), 37-54.

81) Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues.
82) Hubball, H. & H. Burt (2004). An Integrated Approach to Developing and Implementing Learning-Centred Curricula. International Journal for Academic Development, 9(1): 51–65. DOI 10.1080/1360144042000296053.
83) Ibrahim, H.A. (2014). Quality Assurance and Accreditation in Education.
84) Iqbal, Z., Hussain, I.A., Wadood, A., Khan, R., & Mufti, F.N. (2021). Status of Higher Education in Pakistan: Underlying Issues and Prospective Strategies for Improvement.
85) Isani, U. A. G. and M. L, Virk. 2005. Higher Education in Pakistan. Historical and Futuristic Perspective. National Book Foundation Islamabad. PP. 256-258.
86) Jacobson, A. (2002). Are SREB states making progress? Tapping, preparing, and licensing school leaders who can influence student achievement. Southern Regional Education Board.
87) Jerez, O., Orsini, C., Hasbún, B., Lobos, E., & Muñoz, M. (2018). Is undergraduate programme accreditation influenced by educational public policy quality indicators? An exploratory study of the Chilean higher education quality assurance system. Higher Education Policy, 31, 121-138.
88) Jesus-Silva, N., Carvalho, L., & Cardoso, A. (2023). Information Technologies in Quality Management in Higher Education. 2023 XIII International Conference on Virtual Campus (JICV), 1-3.
89) Kalaivani, D.S. (2022). Quality Concerns in Higher Education. Shanlax International Journal of Arts, Science and Humanities.
90) Kalashnikova, T., Salun, M., Katan, L., & Marenych, T. (2020). edu-business: prerequisites for commercial quality management in ukrainian higher education. International Journal for Quality Research, 14(4).
91) Karim, A.M., Chowdhury, T.I., Karim, A.M., & Ahmed, A.R. (2024). The Impact of Educational Management on the Higher Education: International Perspective. International Journal of Academic Research in Business and Social Sciences.
92) Kear, K., Rosewell, J., & Williams, K. (2012). Social networking and open educational resources: updating quality assurance for e-learning excellence.
93) Khalid, K. (2010). Indigenous Model of Higher Education Reforms in Pakistan: Higher Education Quality Assurance Initiatives.
94) Khan, S., Ali, R., & Arain, S. S. (2022). Quality Education in Pakistan: A case study of Abdul Wali Khan University, Mardan and its affiliated colleges. Indian Journal of Economics and Business, 21(2), 73-83.
95) Khawaja, S. (2022). Some insight on infrastructure and resources for private higher education institutions in the UK. European Journal of Education Studies.
96) Kleijnen, J., Dolmans, D., Willems, J., & Hout, H. V. (2013). Teachers' conceptions of quality and organizational values in higher education: compliance or enhancement? Assessment & Evaluation in higher education, 38(2), 152-166.

97) Koskela, L., Tezel, A., & Patel, V. (2019). Theory of Quality Management: Its Origins and History. Proc. 27th Annual Conference of the International Group for Lean Construction (IGLC).
98) Kumar, P., Shukla, B., & Passey, D. (2020). Impact of Accreditation on Quality and Excellence of Higher Education Institutions.
99) Kumar, P., Shukla, B., & Passey, D. (2020). Impact of accreditation on quality and excellence of higher education institutions. Revista Investigación Operacional, 41(2), 151-167.
100) Kundu, G.K. (2016). Higher education quality Literature review.
101) Lagrosen, S., Seyyed-Hashemi, R., & Leitner, M. (2004). Examination of the dimensions of quality in higher education. Quality assurance in education, 12(2), 61-69.
102) Lathika, K. (2016). Student-Centred Learning.
103) Laverde, H., Correa, J. C., & Jaffe, K. (2018). A New Index of Human Capital to Predict Economic Growth. arXiv preprint arXiv:1807.07051.
104) Lenn, M. P. (1992). The USA accreditation system. In A. Craft (Ed.), Quality assurance in higher education: proceedings of an international conference Hong Kong, 1991 (pp. 161-186). London, UK: The Falmer Press.
105) Lin, S., 2010. The Construction of the guaranteed system of quality in graduate education. China Electric Power Edition (15), pp.34-35.
106) Ling, L.T., Yuen, B., Loo, W.L., Prinsloo, C., & Gan, M.J. (2020). Students' Conceptions of Bell Curve Grading Fairness in Relation to Goal Orientation and Motivation. International Journal for the Scholarship of Teaching and Learning.
107) Little, B., & Brennan, J. (1996). A review of work-based learning in higher education.
108) Lomas, L. 2002, 'Does the development of mass education necessarily mean the end of quality?', Quality in Higher Education, 8(1), pp. 71–79.
109) Lopez, D. (2019, October). A lecturer profile categorization for evaluating education practice quality. In 2019 IEEE Frontiers in Education Conference (FIE) (pp. 1-5). IEEE.
110) Macagno, F. (2019). The dimensions of argumentative texts and their assessment. Studia paedagogica, 24(4), 11-44.
111) MacCallum, R. C. and Austin, J. T. (2000). Applications of structural equation modeling in psychological research. Annual Review of Psychology, 51, 201-226.
112) Maguad, B. A. (2006). The modern quality movement: Origins, development, and trends. Total Quality Management & Business Excellence, 17(2), 179–203. doi:10.1080/14783360500450608
113) Makhoul, S. (2019). Higher education accreditation, quality assurance and their impact to teaching and learning enhancement. Journal of Economic and Administrative Sciences.

114) Malini, H., & Suresh, L. (2018). Data Mining in Higher Education System and the Quality of Faculty Affecting Students Academic Performance: A Systematic Review.
115) Malini, H., & Suresh, L. (2018). Data Mining in Higher Education System and the Quality of Faculty Affecting Students Academic Performance: A Systematic Review.
116) Maxwell, E. (2010). Harnessing Openness to Improve Research, Teaching and Learning in Higher Education. Innovations: Technology, Governance, Globalization, 5(2), 155-166.
117) Mbembe, A. J. (2016). Decolonizing the university: new directions. Arts & Humanities in Higher Education, 15(1): 29–45.
118) McGhee, P.S. (2003). The Academic Quality Handbook: Enhancing Higher Education in Universities and Further Education Colleges.
119) Mele, C., Pels, J., & Polese, F. (2010). A Brief Review of Systems Theories and Their Managerial Applications. Service Science archive, 2, 126-135.
120) Meng, Z., & Luen, L.C. (2024). A Comprehensive Method in Dance Quality Education Assessment for Higher Education. International Journal of Academic Research in Business and Social Sciences.
121) Mishra, D.B., & Kushwaha, G.S. (2016). A review of Quality Factors of Higher Education.
122) Mohamed, W. (2024). Impact of educating faculty on student assessment: beyond satisfaction level. Journal of Applied Research in Higher Education.
123) Moreno, J., Epp, H., & Neville, S. (2024). Academic nursing administrators' perceptions of replacing clinical hours with simulation. Journal of Professional Nursing.
124) Morgan, B. & D'Andrea, V.-M. 2009, 'Introduction', Quality in Higher Education, 15(1), pp. 1–3.
125) Mormah, F.O. (2023). The management and maintenance of physical facilities for quality assurance in higher education in the 21st century with innovative technologies. African Educational Research Journal.
126) Muchiri, K.A., Tanui, E., & Kalai, J.M. (2016). Quality of Academic Resources and Students' Satisfaction in Public Universities in Kenya. International Journal of Learning, Teaching and Educational Research, 15.
127) Mukherjee, S. (2019). Improving Process Quality. In: Quality. India Studies in Business and Economics. Springer, Singapore. https://doi.org/10.1007/978-981-13-1271-7_9.
128) Munna, A.S., & Kalam, M.A. (2021). Teaching and learning process to enhance teaching effectiveness: literature review.
129) Nabaho, L., Aguti, J.N., & Oonyu, J. (2017). Making Sense of an Elusive Concept: Academics' Perspectives of Quality in Higher Education. Higher Learning Research Communications, 7, 25-45.

130) Ñañez-Silva, M., Quispe-Calderón, J., & Santos-Jiménez, O. (2023). Teacher management and its impact on job satisfaction in higher education: A case study in Peru. International Journal of ADVANCED AND APPLIED SCIENCES.
131) Nanney, B. (2020). Student-Centered Learning. The SAGE Encyclopedia of Higher Education.
132) Negri, K. (2013). Mortgaging the American dream: The misplaced role of accreditation in the federal student loan system. Fordham L. Rev., 82, 1905.
133) Obadara, O.E. and Alaka, A., 2013. Accreditation and quality assurance in Nigerian universities. Journal of education and practice, 4(8).
134) Oinam, S. (2017). Student-Centered Approach to Teaching and Learning in Higher Education for Quality Enhancement. IOSR Journal of Humanities and Social Science, 22, 27-30.
135) Okebukola, P., 2006. Okebukola counts the blessing of the varsity system. Vanguard, Thursday, Jan 26.
136) Owlia, M. S., & Aspinwall, E. M. (1996). A framework for the dimensions of quality in higher education. Quality assurance in education, 4(2), 12-20.
137) Pandey, S. (2020). Principles of correlation and regression analysis. Journal of the practice of cardiovascular sciences, 6(1), 7-11.
138) Pavlin, S. (2011). Varieties of Professional Domains and Employability Determinants in Higher Education (No. 36).
139) Peña D. (1997a). "Measuring service quality by Linear Indicators". Management Service Quality. (P. Kunst and J. Lemmink, eds). Chapman Publishing Ltd. London, 35-51
140) Pham, N.T. (2022). Faculty Engagement in Internal Quality Assurance of Academic Programs: A Literature Review. Vietnam Journal of Education.
141) Prado, N.I. (2020). Impact of Accreditation on the Quality of Academic Programs in a Private Higher Education Institution. Liceo Journal of Higher Education Research.
142) Pragnashree, M.P., Vidyasagar, M., & Reddy, T.N. (2020). Academic Relationships and Resources: Assessing the Impact on Quality of Education. Asian Journal of Managerial Science.
143) Prakash, G. (2018). Quality in higher education institutions: insights from literature. The TQM Journal.
144) Prodanova, J., & Kocarev, L. (2023). Universities and Academics' Resources Shaping Satisfaction and Engagement: An Empirical Investigation of the Higher Education System. Education Sciences.
145) Relationships and Resources: Assessing the Impact on Quality of Education. Asian Journal of Managerial Science.
146) Rigdon, E. E. (1998). Structural equation modeling. In Modern methods for business research (pp. 251-294). Psychology Press.

147) Rojas-Ocaña, M. J., Romero-Martín, M., Araujo-Hernández, M., Teresa-Morales, C., Feria-Ramírez, C., Navarro, F. J. M., & Fernández-Martínez, E. (2024). Peer mentoring experience related to information and communication technologies. A qualitative study. Nurse Education Today, 106333.
148) Sabin, M., Viola, B., Impagliazzo, J., Angles, R., Curiel, M., Leger, P., ... & Trejos, I. (2016). Latin American perspectives to internationalize undergraduate information technology education. In Proceedings of the 2016 ITiCSE Working Group Reports (pp. 1-22).
149) Sahney, S., Banwet, D.K., & Karunes, S. (2008). An integrated framework of indices for quality management in education: a faculty perspective. The Tqm Journal, 20, 502-519.
150) Santiago Arturo Moscoso-Bernal, Cristina Alexandra Pulla Abad, Wilson Rene Minchala Bacuilima, & Doris Priscila Castro López. (2023). La vinculación con la sociedad como factor clave para acrecentar los niveles de calidad en la universidad ecuatoriana (Version v1). OpenAlex. https://doi.org/10.60692/zxd1v-f5c23
151) Sarabia, P. E. S., & Biray, E. T. Civil Engineering Program Compliance of SUCs in Western Visayas to Philippine Technological Council–Washington Accord Standards. International Journal of Educational Management and Development Studies, 3(3), 84-105.
152) Satheesh, G., Nandakumar, K., Panda, S. N., Nambiar, D., & Goodman, C. (2023, October 12). Global e-pharmacy regulations: protocol for a scoping review. https://doi.org/10.17605/OSF.IO/2D3JM
153) Sayin, U. (2015). A Short Introduction to System Theory: Indispensible Postulate Systems and Basic Structures of the Systems in Quantum Physics, Biology And Neuroscience. Neuroquantology, 14.
154) Schindler, L.A., Puls-Elvidge, S., Welzant, H., & Crawford, L. (2015). Definitions of quality in higher education: A synthesis of literature. Higher Learning Research Communications, 5, 3-13.
155) Shaw, G.P. (2009). The Changing Role of Faculty.
156) Singh, N. (2011). Student-centered learning (SCL) in classrooms — A comprehensive overview. Educational Quest: An International Journal of Education and Applied Social Sciences, 2, 275-282.
157) Smidt, H., 2015. European quality assurance is a success story for a European higher education area [overview paper]. In the European Higher Education Area (pp. 625-637). Springer, Cham.
158) Snijders, I., Wijnia, L., Rikers, R.M., & Loyens, S.M. (2020). Building bridges in higher education: Student-faculty relationship quality, student engagement, and student loyalty. International Journal of Educational Research, 100, 101538.

159) Sreenivas, D.T., & Babu, N.S. (2015). HIGHER EDUCATION IN INDIA - QUALITY PERSPECTIVE. International Journal of Advanced Research in Management and Social Sciences, 4, 27-43.
160) Stafford, S. C. (2016). Strengthening institutional management of transnational higher education: Implications derived from a thematic analysis of the Cycle 2 audit reports of the Australian Universities Quality Agency. The University of Liverpool (United Kingdom).
161) Stanlick, S.E., & Clayton, P.H. (2017). Introduction: Special Section on the SLCE Future Directions Project. Michigan Journal of Community Service-Learning, 22, 78.=
162) Strober, M.H. (1990). Human Capital Theory: Implications for HR Managers. Industrial Relations, 29, 214-239.
163) Sultana, N., Yousuf, M.I., Din, M.N., & Rehman, S. (2011). The Higher The Quality Of Teaching The Higher The Quality Of Education. Contemporary Issues in Education Research, 2, 59-64.
164) Sundani, N. D., & Mamokhere, J. (2021). The impact of student-lecturer relationship on good decision-making and quality promotion in the institutions of higher education and training.
165) Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. Review of educational research, 66(3), 341-359.
166) Sykes, A. O. (1993). An introduction to regression analysis.
167) Tam, M. (2001). Measuring Quality and Performance in Higher Education. Quality in Higher Education, 7, 47 - 54.
168) Tam, M. 2001, 'Measuring quality and performance in higher education', Quality in Higher Education, 7(1), pp. 47–54.
169) Terenzini, P. T., Rendon, L. I., Upcraft, M. E., Millar, S. B., Allison, K. W., Gregg, P. L., and Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. Research in Higher Education, 35(1), 57-73.The TQM Journal.
170) Their Managerial Applications. Service Science archive, 2, 126-135.
171) Thomas, J.R. (2003). Preparing for Faculty Roles in Discovery, Learning, and Engagement. Quest, 55, 17 - 4.
172) Thomas, L., Billsberry, J., Ambrosini, V., & Barton, H. (2014). Convergence and Divergence Dynamics in British and French Business Schools: How Will the Pressure for Accreditation Influence these Dynamics. British Journal of Management, 25(2), 305-319.
173) Tomul, E., & Savasci, H. S. (2012). Socioeconomic Determinants of Academic Achievement. Educational Assessment, Evaluation, and Accountability, 24(3), 175-187. http://dx.doi.org/10.1007/s11092-012-9149-3
174) Turoff, M. (2006). The changing role of faculty and online education. Journal of Asynchronous Learning Networks, 10(4), 129-138.

175) Turoff, M. (2019). THE CHANGING ROLE OF FACULTY AND ONLINE EDUCATION. Online Learning.
176) Ulker, N., & Bakioğlu, A. (2019). International research on the influence of accreditation on academic quality. Studies in Higher Education, 44, 1507 - 1518.
177) Ulker, N., & Bakioğlu, A. (2019). International research on the influence of accreditation on academic quality. Studies in Higher Education, 44, 1507 - 1518.
178) UNESCO, 1998. Higher education in the Twenty-first Century, Vision and action, Paris. P. 3, 46, 51, 53, 57.
179) Vieira, P.R., Troccoli, I.R., & Silva, J.L. (2012). perceived quality in higher education service in brazil: the importance of physical evidence. InterScience Place, 1, 16-40.
180) Walker, M., 2001. Reconstructing professionalism in university teaching: Teachers and learners in action. McGraw-Hill Education (UK).
181) Wang, X., Zhang, Y., & Du, Q. (2024). Research into the impact of an imbalanced teaching-academic research evaluation system on the quality of higher education: based on the mediation effect of the sense of belonging to a university. Frontiers in Education.
182) Wardani, D. K., Sabandi, M., Setyowibowo, F., & Andriyati, R. (2024). The relationship of university entrepreneurial orientation, academic innovation performance, and accreditation as moderation. Journal of Open Innovation: Technology, Market, and Complexity, 100373.
183) Wei, S., & Yin, G. (2024). Optimizing Online Teaching: Total Quality Management in Action for Quality Assurance Measures. Journal of Education and Learning.
184) Westerheijden, D. F. 2001, 'Exoriente lux? National and multiple accreditation in Europe after the fall of the Wall and after Bologna', Quality in Higher Education, 7(1), pp. 65–75.
185) Widrick, S. M., Mergen, E., & Grant, D. (2002). Measuring the dimensions of quality in higher education. Total Quality Management, 13(1), 123-131.
186) Woodhouse, D. (1999). Quality and quality assurance: an overview. In H. De Wit & J. Knight (Eds.), Quality and internationalization in higher education (pp. 29-43). Paris: OECD.
187) Wothke, W. (2010). Introduction to Structural Equation Modeling course notes, L., Peng, X., Pavur, R.J., & Prybutok, V.R. (2020). Quality management theory development via meta-analysis. International Journal of Production Economics, 229, 107759.
188) Yusoff, H., Baba, J., Ariffin, S., & Embong, R. (2018). Quality Academics in Higher Education: Mapping the Key Components. International Journal of Asian Social Science, 8, 948-957.
189) Zadeh, L.A. (1962). General System Theory. Ire Transactions on Education, 5, 63-63.

190) Zaman, T. U. 1998. Higher education. Faculty of Education Teacher Education Department Allama Iqbal Open University, Islamabad pp. 2, 4.
191) Zhang, Q. (2001). Quality dimensions, perspectives, and practices. International Journal of Quality & Reliability Management, 18, 708-722
192) Zhang, S. and An, N., 2010. Analysis of the Concepts and Theories of the Quality of Graduate Education. Asian Social Science, 6(12), p.86.

APPENDIX - A

Survey Instrument: Questionnaire

Dimension of Academic Quality in Higher Education Pakistan

Dear Participant,

As a DBA scholar at the Swiss School of Business and Management (SSBM), I am conducting a study that focuses on investigating the dimensions of academic quality in higher education in Pakistan. Your invaluable insights and experiences will greatly contribute to our efforts in comprehensively understanding the strengths, weaknesses, and potential areas for improvement in the Higher education landscape. I kindly request that you spare just 4 minutes of your time to complete this survey. Your participation is highly appreciated. Thank you for your valuable contribution.

Demographic Questions

Gender:

1. Male
2. Female

Age:

1. 25-35
2. 36-45
3. 46 and Above

Designation:

1. Lecturer
2. Assistant Professor
3. Associate Professor
4. Professor

	Academic Quality (AQ)	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5
1	The academic resources have positively contributed to Academic Quality in HE.					
2	A culture of academic quality and excellence in HE is due to the faculty member's contribution to teaching.					
3	Academic quality in higher education's crucial element is accreditation.					
4	The faculty members play a vital role in enhancing the academic quality of HE.					

H1: "The level of expertise, commitment, and engagement of the faculty is positively correlated with academic quality in Higher Education"

	Academic Quality and Role of Faculty AQ/ RF	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5
1	The faculty members foster an intellectually stimulating learning environment in HE.					
2	The faculty members contribute to research and scholarly activities in HE.					
3	The faculty members collaborate with students on research or academic projects in HE.					
4	The faculty members bring real-world experience and examples into the classroom in HE.					
5	The faculty members in HE is instrumental in creating a positive learning environment.					
6	The faculty members significantly impact the overall educational experience in HE.					

H2: "The availability of academic resources, such as classrooms, labs, libraries, and technology positively correlated with academic quality in Higher Education"

	Academic Quality and Academic Resources **AQ/ AR**	**Strongly Agree 1**	**Agree 2**	**Neutral 3**	**Disagree 4**	**Strongly disagree 5**
1	The availability of sufficient educational resources greatly contributes to the quality of higher education					
2	The presence of modern technology and up-to-date resources positively impacts the level of academic quality in higher education					
3	The quality of classrooms, labs, libraries, and technology contributes to the overall academic quality of higher education.					
4	Providing technical support and assistance for technological resources improves the quality of education in higher education.					
5	Including technology in the curriculum is essential to ensure effective and high-quality learning.					

H3: "The level of academic quality in higher education is positively correlated with the level of accreditation the institution receives."

	Academic Quality and Accreditation **AQ/ ACR**	**Strongly Agree 1**	**Agree 2**	**Neutral 3**	**Disagree 4**	**Strongly disagree 5**
1	Accreditation demonstrates a dedication to meeting established educational standards in higher education.					
2	Accreditation has a positive impact on the institution's reputation in higher education.					
3	Accreditation status affects its ability to attract and retain high-quality faculty members.					
4	Accreditation status affects its ability to attract and					

	retain high-quality students.					
5	Accreditation promotes accountability and transparency in educational processes.					
6	Accreditation nurtures a culture of excellence and ongoing learning within higher education.					

Google forms: https://forms.gle/umBSXwWDQS89DSdi9