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Unveiling Key Factors Shaping Strategically Empowered Saudi Arabia's Academic Employee Career Trajectories

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ABSTRACT

This study examines the key elements that impact the career paths of academic staff in Saudi Arabia, with the goal of understanding the methods by which strategic empowerment can be achieved within the academic sector. The research utilizes the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method to examine the connections between important factors that influence the advancement of an academic career. An intentional sample consisting of 30 academic staff members, each with more than ten years of experience at Saudi universities, offers valuable insights into the complex nature of career growth within the Saudi Arabian academic environment. The study outlines five key characteristics that are crucial for the strategic empowerment of academic employees: career goal progress, professional competence development, promotion speed, pay increase, and mentorship. The research analyses these factors thoroughly to reveal the important effects and complex dynamics that affect academic career paths. Significantly, elements such as the improvement of professional skills and the rate of promotion are identified as key determinants, emphasizing the significance of enhancing abilities and advancing careers within the academic environment in Saudi Arabia. The results of our research provide significant knowledge for academics, policymakers, and professionals, giving a thorough grasp of the elements that influence strategic empowerment in the academic sector in Saudi Arabia.

Keywords: Career empowerment, career growth, promotion speed, skill

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INTRODUCTION

Saudi Arabia's workforce has shifted from being predominantly made up of foreign expatriates to being primarily comprised of Saudi nationals (Samarin & Al-Asfour, 2023). This has been achieved through nationalization programs that mandate companies to employ a specific proportion

of Saudi citizens. The government is actively promoting female participation in the workforce by providing opportunities in various sectors and striving for gender integration as part of the Saudi Vision 2030. The work environment and benefits of Saudi Arabian higher education are heavily influenced by Islamic traditions and the strict regulations governing employment in the state sector (Salam, 2022). In Saudi Arabia, the salaries, benefits, and career growth opportunities for Saudi nationals are generally more structured and predictable than those of Western academic institutions. One reason for this is the emphasis on seniority and rank over performance (Tlaiss & Elamin, 2016).

Supplementary forms of compensation, such as allowances, incentives, and paid sabbatical leave, can greatly augment the base wages of academic staff. The Ministry of Civil Service is responsible for developing and implementing employment policies and regulations (Salam, 2022). The Royal Decree determines the remuneration rates for civil servants No. A/93 on Civil Service, in accordance with their rank. Universities and other higher education institutions are commonly classified as parastatal organizations. Civil servants have their own unique pay scale and employment regulations, and they are typically associated with a government department or ministry, either directly or indirectly. Universities are affiliated with the Ministry of Education.

Job seekers in Saudi Arabia have a range of preferences regarding job seeking, job characteristics, and career goals (Thompson & Almoaibed, 2021). The future of Saudi Arabia hinges on the well-educated and highly skilled youth who will comprise the workforce of tomorrow. Given the current state of globalization and the challenges posed by the rapidly growing economy and declining oil revenues, younger individuals are increasingly inclined to pursue employment opportunities in the public and private sectors. Factors that can influence this include an individual's educational background, the specific circumstances of their job, and the recent trends in the job market. Enhancing prospects for professional advancement in these industries is expected to have a positive impact on both present and future quality of life. The ambitious young generation has lofty professional aspirations and objectives. It is clear that individuals in every society aspire to pursue careers that offer financial stability, job security, social status, and opportunities for advancement. Academic areas are highly regarded in Saudi Arabia, which is why young Saudi students and job seekers have high expectations for their future careers. Many individuals aspire to secure professional or managerial positions that can enhance their career paths. Many individuals are interested in pursuing careers that align with their qualifications and personal interests. This holds particular significance for individuals who possess higher education credentials.

Saudi Arabia's academic staff aspirations include a secure and successful career. Currently, the career advancement and employment landscape for young individuals is rather ambiguous. This

is seen as the result of an imbalance in the job growth rate in KSA compared to the increasing numbers of well-educated Saudis, job availability, and the nature of some existing jobs that foreign workers largely hold.

Based on previous research, it has been found that the labor force in Saudi Arabia is comprised of over 27% foreign workers (Abdulrahman, 2024). The Saudi government has implemented measures to increase the employment of Saudi nationals in the workforce. This initiative, commonly referred to as "Saudization," involves providing incentives and setting quotas for companies to hire more Saudi nationals (Sobaih, 2023). This initiative is timely as it focuses on enhancing citizens' work ethic and job opportunities, particularly the younger generation, to help them achieve their career aspirations. The main objective of this study is to identify the key factors that shape the career trajectories of academically empowered employees in Saudi Arabia.

LITERATURE REVIEW

Numerous research studies have been conducted on the issues related to the career paths of academic staff in Saudi Arabia. The study by Ratyan and Mohammad (2016) revealed no significant statistical relationship between the dimensions of university teaching and the career paths of Saudi Arabia's academic staff. However, it is important to note that a variety of factors influence the career trajectories of these staff members. Studies have shown that implementing high-performance human resource practices (HPHRPs) such as internal mobility, recognition, and training can have a positive effect on the career success and research performance of faculty members (Alshaikhmubarak et al., 2020). Ensuring job satisfaction among academic staff in Saudi Arabia's Eastern Province is of utmost importance for the ongoing enhancement of academic institutions and professional growth (El-Zoubi & Wirba, 2017). Female medical graduates in Saudi Arabia encounter obstacles to progress in academic medicine, such as family obligations and a dearth of mentoring connections (Habib et al., 2022).

In a study conducted by Alshammari (2023), the impact of communication skills and job requirements on professional career development at the University of Hail, Saudi Arabia, is explored. The study found that job requirements have a significant impact on students' career development, while academic performance also plays a significant role in shaping their career prospects.

In a recent study conducted by Alharthey et al. (2022), the researchers explored the factors influencing employee satisfaction and retention in the educational sector in Saudi Arabia. The findings revealed that work engagement, co-worker relationships, and a supportive work environment are crucial in enhancing employee satisfaction. The study found that work engagement, co-worker relationships, and a supportive work environment influence employee satisfaction in the educational sector in Saudi Arabia.

In a recent study, Alshaikhmubarak and colleagues (2020) examined the effects of high-performance human resource practices (HPHRPs) on the research performance and career success of academics. The researchers discovered that internal mobility and recognition, two specific HPHRPs, significantly influenced the career success of faculty members. Furthermore, they found that these effects were mediated by research performance.

In their study, Gorondutse and colleagues (2018) examined the impact of leadership and training on employee performance in the higher education sector of the Kingdom of Saudi Arabia (KSA), with a particular focus on the moderating role of role ambiguity. The study found that leadership and training have a notable positive influence on employee performance within the higher education sector of Saudi Arabia. The presence of role ambiguity has a moderating effect on the connection between different leadership styles and the performance of employees, ultimately having a negative impact on this relationship.

In their study, Singh et al. (2022) investigated the impact of education, training, and e-learning (ETL) on empowering Saudi society and promoting sustainable employment in Saudi Arabia. The study revealed that education, training, and e-learning play a crucial role in promoting social empowerment and fostering sustainable employment opportunities in Saudi Arabia. The role of government policies in relation to education, training, e-learning, sustainable employment generation, and social empowerment has been recognized as crucial.

There is a research gap in the current understanding of the factors that contribute to a supportive environment for academic employees in Saudi Arabia. Several studies have emphasized the significance of supportive institutional cultures and leadership practices. However, there is a need for comprehensive frameworks that clarify the essential elements of these environments and their influence on employee empowerment and career development. In order for institutions to effectively foster academic talent, it is crucial to have a comprehensive understanding of the factors that contribute to a supportive environment. Without this understanding, it becomes difficult to develop policies and practices that are effective in nurturing academic talent. Furthermore, existing research lacks integration and causal understanding of the interaction among supportive environments, effective supervision, continuous learning opportunities, and academic employee career trajectories in Saudi Arabia. Although researchers often study these factors separately, it is important to develop comprehensive frameworks that clarify how they are interconnected and influence each other. It is crucial to comprehend the role of supportive environments in promoting effective supervision, improving access to continuous learning opportunities, and ultimately impacting career trajectories. This understanding is vital for developing evidence-based strategies to empower academic employees.

Theoretical and Conceptual Developments

Career theories provide insight into the intricate nature of career choice and development. In line with this, "Career Construction Theory (CCT)" perceives career development as a gradual process of constructing an individual's career story or narrative, drawing from personal experiences, interests, and values (Nalis et al., 2022; Ulaş-Kılıç & Peila-Shuster, 2023). The significance of meaning-making and identity in career decision-making is emphasized (Yates, 2020).

The CCT theory is widely recognized for its comprehensive analysis of various aspects of career development. Studies have shown the importance of CCT in understanding subjective career success, adjustment among undergraduate students, the acceptance of HR analytics by professionals, career self-management, and the ability to adapt to growing demands through career crafting. In addition, CCT has greatly influenced the development of computer-assisted career guidance systems (CACGS) by offering valuable insights and practical applications for career exploration and self-identity formation (Leung, 2022). The concept emphasizes the importance of proactive career orientation, career adaptability, mentoring, and technological readiness in shaping individuals' career paths and enhancing their subjective career accomplishments. The CCT provides a thorough framework for understanding and navigating the complexities of modern professional development.

The concept of "Organizational career growth" has been studied using the Cognitive Career Theory (CCT). Weng (2018) defined it as the measure of employees' career growth within their current organization rather than evaluating their overall career outcomes. The study proposed that career growth can be measured through four main components: Career Goal Progress (CG), Professional Ability Development (PA), Promotion Speed (PS), and Remuneration Growth (RG). The author discussed how the current organization creates an environment that supports employees in reaching their career objectives. PA outlines the process of acquiring new knowledge, skills, and abilities. The study by Dhankhar and Singh (2023) examines how organizations reinforce employee achievements through promotions and also explores the trend of increasing compensation.

Another aspect of career growth direction is mentoring. Research has shown that mentoring can moderate the relationship between proactive career orientation and career adaptability. Specifically, the positive relationship is stronger for individuals who receive more mentoring compared to those who receive less mentoring (Chang et al., 2023). Given the aforementioned factors, the present study utilized the five dimensions and put forth a conceptual framework (Figure 1). The five criteria have been empirically tested and shown to have an impact on organizational career growth (Dhankhar & Singh, 2023; Weng, 2018). However, previous studies did not determine the key criteria that shape strategically

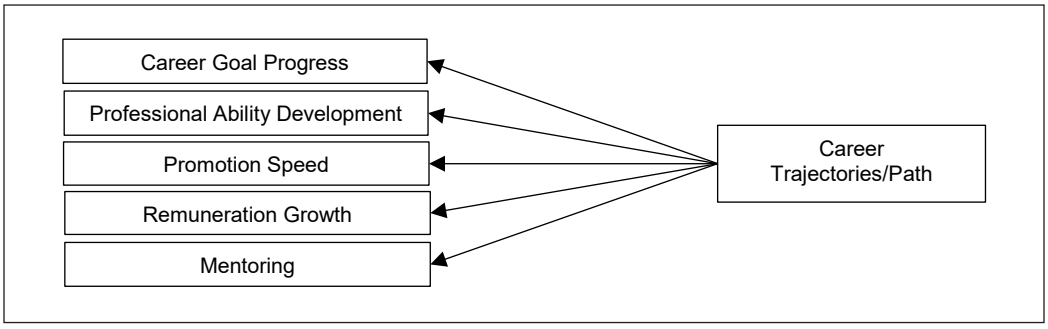

Figure 1. The proposed conceptual framework

empowered employee career trajectories. This study aimed to measure the cause-effect relationship.

Career Goal Progress

This study defines "Career Goal Progress" as the quantifiable progress made toward achieving one's career objectives, based on the works of Weng (2018) and Dhankhar and Singh (2023). It involves making tangible advancements, attaining noteworthy objectives, and overcoming obstacles in the pursuit of professional aspirations. Evaluating the progress of career objectives can be achieved through a range of approaches that take into account an individual's specific goals, circumstances, and personal inclinations. By combining various assessment methods, individuals can gain a comprehensive understanding of their progress toward their career goals, identify areas that need improvement, and make informed adjustments to their career plans and strategies. Previous research studies have not yet examined the measurement of this phenomenon using decision-making criteria.

Professional Ability Development

This research defines Professional Ability Development as the systematic improvement of an individual's abilities, knowledge, and competencies to achieve excellence in their chosen profession or professional field. It is based on the works of Weng (2018) and Dhankhar and Singh (2023). This encompasses specialized knowledge and skills related to specific job responsibilities, as well as interpersonal abilities like communication, leadership, and problem-solving. Organizations can enhance their effectiveness by actively investing in professional development and prioritizing improving employees' skills and competencies.

Promotion Speed

The concept of speed is derived from the works of Weng (2018) and Dhankhar and Singh (2023). It is defined in practical terms as the rate at which an individual progresses through the various levels of an organization's hierarchy, typically in relation to job titles, responsibilities, and compensation. It signifies the rate at

which someone advances in their career within a particular company or industry. Various factors, including human elements, organizational dynamics, and external variables, influence the promotion rate. While the allure of quick advancement in one's career may be tempting, it is imperative for individuals to prioritize continuous learning, improving performance, and building a strong foundation of skills and experience to guarantee long-term success in their professional pursuits.

Remuneration Growth

The concept of Remuneration Growth is derived from the works of Weng (2018) and Dhankhar and Singh (2023). It is defined as the gradual increase in an individual's remuneration, wages, or earnings over a specific timeframe. This encompasses various forms of financial compensation employees receive for their work, such as wage increases, bonuses, incentives, and other monetary rewards. A blend of individual factors, corporate policies, market dynamics, and economic conditions influences the rise in remuneration. Employees can enhance their chances of receiving more pay and advancing in their careers by prioritizing performance, honing their skills, and mastering bargaining techniques.

Mentoring

Mentoring is derived from the work of Dhankhar and Singh (2023) and is defined as a formal relationship in which a knowledgeable individual (the mentor) provides guidance, support, and advice to a less experienced person (the mentee) to help them develop their skills, knowledge, and professional path. Mentoring has yielded significant developmental advantages directly connected to the mentee's professional endeavors and long-term career prospects (Zong & Tsaur, 2023).

A mentor with extensive experience can provide valuable information and guidance to their mentees, reducing the trial-and-error process. This can be achieved through training and regular communication (Ivey & Dupré, 2022). In addition, employees who have a proactive approach to their careers actively pursue different opportunities to enhance their skills. A mentor can play a crucial role in providing them with coaching, assigning challenging tasks, offering feedback, and giving suggestions for their professional development (J. H. Park et al., 2016; M. L. Park & Lee, 2018). Research has shown that employees who have been mentored are more inclined to cultivate a distinct career identity and engage in self-regulatory behaviors (Kao et al., 2022). When employees face challenges at work, their mentor offers psychological support, including acceptance, friendship, and counseling (Lin et al., 2024). The mentor aims to help mentees overcome obstacles and return to work with a renewed and positive mindset. Research has shown that employees who receive effective mentoring experience improved psychological and emotional well-being, enabling them to effectively navigate career challenges and enhance their career adaptability (Nuis et al., 2023).

METHOD

This study utilizes the Multi-Criteria Decision-Making (MCDM) technique, specifically a DEMATEL technique (Ferdous et al., 2024). The DEMATEL technique is a systematic approach to evaluating and prioritizing alternatives or courses of action when multiple, often conflicting, criteria require simultaneous consideration (Priyanka et al., 2023).

This study employs a method based on the expertise of individuals who possess in-depth knowledge about the factors that shape the career trajectories of academic employees in strategically empowered Saudi Arabia. These individuals have the potential to provide substantial insights into the skills, abilities, and characteristics that are necessary for success. Expert evaluation is required for DEMATEL, using a comprehensive understanding of the ever-shifting dynamics of the industry as a foundation. Individuals who are professionals and have a profound awareness of a variety of cultures and expertise in the key factors that shape Saudi Arabia's academic employee career trajectories play a crucial role in strategically empowering Saudi Arabia.

DEMATEL Strategy and Analytical Flow

The DEMATEL approach is a complex analytical tool used in decision-making to understand the intricate correlations between different components. Understanding the connections between different criteria or elements is valuable for decision-makers as it allows them to identify important factors and relationships within a system (Du & Shen, 2023). DEMATEL is particularly useful when multiple criteria or variables interact, posing challenges in determining each factor's relative importance or impact.

The objective of the activity was for specialists to assess the criteria by carefully examining each criterion's various components. The design of these components aims to enhance the expatriates' autonomy and give them greater agency in shaping their personal experience.

Experts assign a numerical value to $\boldsymbol{x_{ij}}$ to denote the importance of each criterion's influence. The values are determined using criteria denoted by *i* and *j*, which consider cause and effect. For each value of n, an expert's response is obtained. Equation 1 forms a non-negative $n \times n$ direct relation matrix:

$$\boldsymbol{x^y} = \left[\boldsymbol{x_{ij}^y}\right]_{n \times n} \quad [1]$$

y represents the number of representations for each expert, ranging from 1 to q. The equation produces a matrix q for $x^1, x^2, \ldots x^q$, where q represents the total number of experts. Equation 2 displays the average aggregated decision matrix for all the experts $Z=, \left[\boldsymbol{z_{ij}}\right]$.

$$\boldsymbol{Z_{ij}} = \frac{\boldsymbol{1}}{\boldsymbol{q}} \sum_{\boldsymbol{i=1}}^{\boldsymbol{q}} \boldsymbol{x_{ij}^y} \quad [2]$$

The second step in the process is the production of the normalized direct relation matrix. Using equation 3, one may build matrix *D*, which represents the direct

relations. This matrix is generated by using equation 3:

$$D=max\left(\max_{1\le i\le n}\sum_{j=1}^{n} z_{ij}, \max_{1\le j\le n}\sum_{i=1}^{n} z_{ij}\right) \quad [3]$$

In light of this, each cell contained within matrix Z will have a value that falls somewhere between the range of 0 and 1 in terms of numerical values.

Exponentiating the normalized initial direct-relation matrix *D* to the power of *m*, where *m* represents the indirect impact D^m; this is the third step in generating the total relation matrix. In the matrix that was produced, which is designated by the letter *T*, the cumulative influence generated by the participant's response is displayed. When the direct-relation matrices $D+D^2+...+D^m$ are added together, the total relation matrix *T* can be formed. As the value of D^m approaches zero, we are able to conclude that *T* is the same as the direct-relation matrix *D* that was first used. Therefore, the total relation matrix T may be represented as:

$T=D+D^2+...+D^\infty$. This expression can be further simplified as $T=D+D^2+...+D^\infty$ *is* $T=\lim_{m\to\infty}(D+D^2...+D^m)=D(I-D)$. As a result, equation 4 is derived

$$T=D(I-D)^{-1} \quad [4]$$

where I is an identity matrix of dimensions $n\times n$.

The process of constructing the rows and columns of the matrix begins with the fourth phase and continues through the fifth stage. The vectors utilized to show the rows and columns components of the exhaustive relation matrix are referred to as relations. In the event that the vectors *r* and *c*, respectively, are utilized to represent the sum of the rows of matrix *T* and the sum of the columns of matrix *T*, then equation 5 is utilized to build the row and column vectors:

$$\boldsymbol{r}=[\boldsymbol{r_i}]_{n\times 1}=\left[\sum_{j=1}^{n}\boldsymbol{t_{ij}}\right]_n\times_1 \text{ and}$$
$$\boldsymbol{c}=[\boldsymbol{c_j}]_{1\times n}=\left[\sum_{j=1}^{n}\boldsymbol{t_{ij}}\right]_1\times_n \quad [5]$$

If *j* is equal to *i*, then the influence that criterion *i* has on *j* will be represented by the difference between the total of r_i and c_j. In the event that *j* is not equal to *i*, the sum will reveal the overall effects that criterion i has experienced, while the difference will demonstrate the overall influence that criterion *i* has contributed to the system for the system as a whole. On the other hand, if the value is positive, then the criteria *i* serves as a primary cause, and if the value is negative, then it serves as a primary effect. Classifying the criteria as belonging to the cause group is possible if the difference between r_i and c_j is positive. This indicates that the criteria have a considerable influence on the other criteria. On the other hand, if the difference between r_i and c_j is determined to be negative, this suggests that the other criteria influencing the criteria in the issue collectively and ought to be categorized as the "effect." For this reason, the sum of *r* and *c* is referred to as the "Prominence," while the difference between *r* and *c* is referred to as the "Relation."

During the fifth step, the process involves determining a threshold value

(α) to generate an interaction diagram. It is possible to determine the threshold value for the impact connection by using Equation 6:

$$\alpha = \sum_{i=1}^{n}\sum_{j=1}^{n} t_{ij} / N \quad [6]$$

In this context, the symbol α represents the quotient of the sum of the t_{ij} values and the number *N*. The variable *N* represents the total number of matrix elements obtained by calculating the average of the elements in matrix *T*. This will yield the total count of matrix elements. This computation identifies and eliminates any impacts deemed moderate. This is conducted to ensure quality control. Given that no impacts will be less severe than the threshold value, it can be concluded that the impact connections will not encompass any consequences below this threshold.

In the sixth phase, you are required to construct a relational diagram illustrating the causal relationships among the components and their respective effects. The correlation between cause and effect has been assigned to each coordinate set within the complete array of rows and columns to generate the relationship diagram. This was conducted to ensure the accuracy of the diagram. This was conducted to ensure that no elements were overlooked in the process. This image consists of rows and columns that depict the interactions among the individual criteria. The information presented in these rows and columns allows for identifying the relative relevance of each criterion and their interactions.

RESULT

The main elements that determine the effectiveness of key determinants that influence the career trajectories of academic staff in Saudi Arabia were identified via the use of a strategic framework to conduct a study. DEMATEL was utilized to accomplish this goal. The first step in the research was the collecting of data. After the questions/items were developed, two prominent professors were responsible for developing and validating the five key criteria, which comprised five items or questions with respect to the criteria. It is crucial to have the involvement of two professors in developing and validating the key criteria and items. The involvement of two professors in the validation process enhances the quality assurance. With their extensive experience and expertise, they are able to assess the criteria and items carefully to ensure they precisely capture the constructs being measured. Feedback and suggestions from others have the potential to enhance the clarity, coherence, and validity of the measurement instrument.

A purposive sample of 30 faculty members from Saudi universities was selected. Every one of these members had a career in academia that spanned more than ten years of experience, necessary to ensure the study's rigor and reliability. Six of the total number of experts were international staff, while the remaining twenty-four were Saudi natives. This sample is considered sizable and diverse enough for the study (Priyanka et al., 2023). These individuals have a deep understanding and expertise

in academia, which makes them highly qualified to offer insights into the factors that impact career paths. The perspectives encompass diverse experiences within the academic community, thereby bolstering the credibility and applicability of the findings.

The items were linked with a Likert scale that ranged from 0 (which meant "no influence") to 4 (which meant "high influence") for each question. Every single one of the 30 staff members responded, which were subsequently integrated into $n \times n$ non-negative direct relation matrix based on equation 1 within a spreadsheet created in Microsoft Excel (Matrix 1).

In order to calculate the average of the n×n non-negative direct relation matrix, which is also known as the mean total of decision matrices (Z), Equation 2 is utilized. The matrices that are provided (Matrix 2) as follows are obtained from Equation 2:

$$Z = \begin{bmatrix} 0 & 3.3 & 2.6 & 1.9 & 2.1 \\ 1.9 & 0 & 2.6 & 3.9 & 2.6 \\ 4 & 2.6 & 0 & 2 & 2.3 \\ 2.1 & 3.9 & 2 & 0 & 2.4 \\ 2.6 & 2.3 & 2.6 & 2.4 & 0 \end{bmatrix}$$

Matrix 2. Average Non-Negative Direct Relation Matrix

$$X^{1} \begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 3 & 4 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix} \quad X^{2} \begin{bmatrix} 0 & 3 & 4 & 2 & 1 \\ 1 & 0 & 2 & 3 & 4 \\ 4 & 2 & 0 & 1 & 3 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 1 & 3 & 4 & 0 \end{bmatrix} \quad X^{3} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 2 & 1 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix} \quad X^{4} \begin{bmatrix} 0 & 2 & 4 & 1 & 3 \\ 3 & 0 & 1 & 2 & 4 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 2 & 4 & 0 \end{bmatrix} \quad X^{5} \begin{bmatrix} 0 & 3 & 1 & 2 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 1 & 4 & 3 & 0 \end{bmatrix} \quad X^{6} \begin{bmatrix} 0 & 2 & 4 & 3 & 1 \\ 3 & 0 & 2 & 4 & 1 \\ 1 & 4 & 0 & 2 & 3 \\ 4 & 3 & 1 & 0 & 2 \\ 2 & 1 & 3 & 4 & 0 \end{bmatrix}$$

$$X^{7} \begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix} \quad X^{8} \begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix} \quad X^{9} \begin{bmatrix} 0 & 4 & 3 & 2 & 1 \\ 1 & 0 & 2 & 3 & 4 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 4 & 1 & 4 & 0 \end{bmatrix} \quad X^{10} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 1 & 2 & 1 & 0 & 4 \\ 3 & 1 & 2 & 4 & 0 \end{bmatrix} \quad X^{11} \begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix} \quad X^{12} \begin{bmatrix} 0 & 4 & 3 & 2 & 1 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 1 & 0 \end{bmatrix}$$

$$X^{13} \begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 3 & 4 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix} \quad X^{14} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix} \quad X^{15} \begin{bmatrix} 0 & 4 & 2 & 1 & 3 \\ 3 & 0 & 1 & 4 & 2 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 1 & 4 & 0 & 3 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix} \quad X^{16} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix} \quad X^{17} \begin{bmatrix} 0 & 4 & 2 & 1 & 3 \\ 3 & 0 & 1 & 4 & 2 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 1 & 4 & 0 & 3 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix} \quad X^{18} \begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix}$$

$$X^{19} \begin{bmatrix} 0 & 3 & 2 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{20} \begin{bmatrix} 0 & 2 & 3 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{21} \begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix} \quad X^{22} \begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix} \quad X^{23} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{24} \begin{bmatrix} 0 & 3 & 2 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

$$X^{25} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{26} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{27} \begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix} \quad X^{28} \begin{bmatrix} 0 & 2 & 3 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{29} \begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix} \quad X^{30} \begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix}$$

Matrix 1. A. Non-Negative Direct Relation Matrix

The total decision normalized direct influence matrix. Calculating the total decision normalized direct effect matrix provides a foundational framework for simplifying data to comprehend the complex relationships and dynamics inherent in a decision-making environment. Consequently, this enhances decision-making and problem-solving capabilities, which is advantageous.

To identify the cell in a matrix with the highest value, one must first discover the total number of rows and columns. The resultant normalized matrix D, displayed in Matrix 3, is derived by dividing all matrix values by the maximum value. This is executed to obtain the following outcomes:

An identity matrix, denoted by the letter *i*, is necessary to produce the complete relation matrix. A fundamental reference for constructing the total relation matrix is the identity matrix, which is used in formulating the total relation matrix. Within the scope of DEMATEL, the identity matrix is commonly represented by a square matrix. This has been the case for quite some time. The diagonal members of this matrix are all equal to one, whereas the other elements are all equal to zero within this matrix. The fact that this matrix is empty provides evidence of no connections or impacts between the elements. By using this identity matrix (Matrix 4), one may more easily determine the direct connections that exist between components as well as the indirect interactions that exist between pieces.

In a similar manner, once the identity matrix has been established, the subsequent step is to construct a matrix by computing the difference between the identity matrix and the direct relationships matrix *i-D*. Through the use of the new matrix, direct and indirect relationships will be established. When compared to indirect interactions, direct relationships reflect the immediate impact that one element has on another. In contrast, indirect interactions indicate the impact that one component has on another factor through intermediate factors. Perform matrix subtraction between the identity matrix and the total relation matrix to individually isolate and analyze the direct

$$D = \begin{bmatrix} 0 & 0.272727273 & 0.214876033 & 0.157024793 & 0.173533719 \\ 0.157024793 & 0 & 0.214876033 & 0.32231405 & 0.214876033 \\ 0.330578512 & 0.214876033 & 0 & 0.165289256 & 0.190082645 \\ 0.173553719 & 0.32231405 & 0.165289256 & 0 & 0.198347107 \\ 0.214876033 & 0.190082645 & 0.214876033 & 0.198347107 & 0 \end{bmatrix}$$

Matrix 3. Normalized Relation Matrix

$$i = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$

Matrix 4. Identity Matrix

relationships between factors. This can be done by subtracting the identity matrix from the total relation matrix using $T = D(I - D)^{-1}$ as shown in Matrix 5.

Taking the inverse of the matrix above $(I - D)^{-1}$ squared is the next step in the process. Taking the inverse of the matrix is one method for normalizing the matrix. This method ensures that the influence values are contained within a predetermined range, which makes it simpler to comprehend and measure the differences between the variables. Inverse operations are used to convert the values in the matrix into influence scores, which precisely describe the amount of the effect between factors as well as the direction in which the effect should be directed (Matrix 6).

Following the discovery of the inverse matrix, the subsequent step is to determine the total relation matrix T by employing Equation 4. This matrix is an indispensable tool for examining the interrelationships between the many different aspects or criteria that make up a complex system. $T = D(I - D)^{-1}$ is a complete relation matrix that offers a comprehensive examination of the relationships between the variables. This analysis provides significant insights into the dynamics of the system that is being investigated (See Matrix 7).

The criteria relevant to the career path can be determined from the total relation matrix T using Equation 5. The r and c values denote the magnitude and orientation of the associations among the criteria. Analyzing the distinctions between rows and columns reveals significant insights into the causal relationships among key factors and the career trajectories of

$$i - D = \begin{bmatrix} 1 & -0.272727273 & -0.214876033 & -0.157024793 & -0.173553719 \\ -0.157024793 & 1 & -0.214876033 & -0.32231405 & -0.214876033 \\ -0.330578512 & -0.214876033 & 1 & -0.165289256 & -0.190082645 \\ -0.173553719 & -0.32231405 & -0.165289256 & 1 & -0.198347107 \\ -0.214876033 & -0.190082645 & -0.214876033 & -0.198347107 & 1 \end{bmatrix}$$

Matrix 5. Identity Matrix Extraction from Total Relation Matrix

$$(i - D)^{-1} = \begin{bmatrix} 2.071296896 & 1.425612233 & 1.194119623 & 1.206670095 & 1.12213212 \\ 1.301160331 & 2.322338885 & 1.280216832 & 1.412030821 & 1.248255411 \\ 1.408972402 & 1.479656556 & 2.094354712 & 1.285430276 & 1.215536991 \\ 1.258655014 & 1.511353398 & 1.201750962 & 2.11985603 & 1.192097194 \\ 1.244805039 & 1.365481524 & 1.188325148 & 1.224362506 & 1.978178545 \end{bmatrix}$$

Matrix 6. Inversed Identity Matrix Extraction from Total Relation Matrix

$$T = \begin{bmatrix} 1.071296896 & 1.425612233 & 1.194119623 & 1.206670095 & 1.123213212 \\ 1.301160331 & 1.322338885 & 1.280216832 & 1.412030821 & 1.248255411 \\ 1.408972402 & 1.479656556 & 1.094354712 & 1.285430276 & 1.215536991 \\ 1.258655014 & 1.511353398 & 1.201750962 & 1.11985603 & 1.192097194 \\ 1.244805039 & 1.365481524 & 1.188325148 & 1.224362506 & 0.978178545 \end{bmatrix}$$

Matrix 7. Final Total Relation Matrix

academic staff in Saudi Arabia. Negative differences highlight criteria primarily affected by other academic factors, while positive differences indicate criteria that more significantly influence career trajectories. Understanding these processes can yield important information for the implementation of strategic interventions and policies designed to promote career advancement and empowerment in the academic sector of Saudi Arabia.

Table 1 illustrates that there is a negative difference between the two criteria ("Career Goal Progress" and "Professional Ability Development"). In light of this, it can be deduced that these criteria have a more significant influence on an outcome than on a significant element. This particular framework suggests that the professional pathways of academic staff in Saudi Arabia are greatly impacted by their progress toward goals and their growth of professional abilities. The other components that make up the five criteria can have these criteria serve as outputs or consequences of their actions. This means that improvements in these areas are likely to occur as a result of changes in the aspects of the academic environment or organizational practices related to "Promotion Speed," "Remuneration Growth," and "Mentoring."

On the other hand, the presence of a positive difference indicates that the criterion has a bigger influence as a cause than it does as an effect. Criteria such as "Promotion Speed," "Remuneration Growth," and "Mentoring" can have a considerable impact on the career paths of academic employees in Saudi Arabia. These criteria directly influence their prospects for promotion and professional growth. The identification of positive differences reveals the criteria that influence changes in many elements of academic career paths, indicating specific areas where interventions or initiatives should be focused to improve career advancement and job fulfillment among academic personnel.

The concluding phase of DEMATEL involves the development of an interaction diagram. The research must establish a threshold value (α) using Equation 6. It is essential to identify major linkages among components within the system. The threshold value distinguishes between strong and weak interactions, enhancing the clarity of the interaction diagram. The threshold value (α) differentiates between significant and insignificant links. The

Table 1
The complete relation status among the criteria

Criteria	r_i	c_j.	$r_i + c_j$.	$r_i - c_j$.	Identity
CG	6.029830967	6.284889682	12.31472	-0.25506	Effect
PA	6.56400228	7.104442596	13.66844	-0.54044	Effect
PS	6.483950937	5.958767277	12.44272	0.525184	Cause
RG	6.283712597	6.248349727	12.53206	0.035363	Cause
MM	6.001152763	5.766200262	11.76735	0.234953	Cause

threshold value derived from Equation 6 is "1.268074839" (Table 2). The highlighted values exceed the threshold. Criteria with connection strengths exceeding the threshold value exhibit significant interactions, while those with connection strengths below the threshold are regarded as having minimal interactions.

The interaction diagram in Figure 2 clearly illustrates with an arrow that "Professional ability development" has a significant influence on career goal achievement, promotion speed, and compensation growth but not on mentorship. That is why there is no link between them. Improving professional skills and capacities is vital for strengthening different areas of academic employee career trajectories in Saudi Arabia. This shows that the development of professional talents has a significant influence.

Just like the growth of "Professional ability development," "Promotion speed," or the pace of promotion has a major impact on every other criterion except for mentorship. Consequently, a connection exists between them through arrow linkages (Figure 2). Therefore, the rate at which one gets promoted greatly influences the advancement of career goals, the development of professional abilities, and the salary increase. This suggests that the rate at which academic careers progress in Saudi Arabia affects several aspects of academic employees' career paths significantly.

Table 2
The criteria values for the interaction diagram

Criteria	CG	PA	PS	RG	MM
CG	1.071296896	**1.425612233**	**1.194119623**	1.206670095	1.13213212
PA	**1.301160331**	**1.322338885**	**1.280216832**	**1.412030821**	1.248255411
PS	**1.408972402**	**1.479656556**	1.094354712	**1.285430276**	1.215536991
RG	1.258655014	**1.511353398**	1.201750962	1.11985603	1.192097194
MM	1.244805039	**1.365481524**	1.188325148	1.224362506	0.978178545

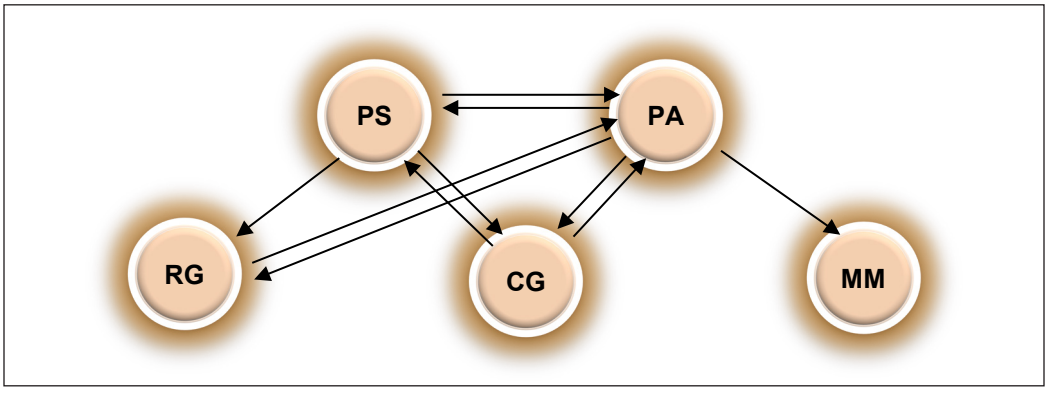

Figure 2. The impactful and non-impactful links

Remuneration growth has a major impact on the development of professional skills. Therefore, it is the sole factor that directly contributes to this development. This implies that enhancements in wage and compensation packages have a key role in fostering the professional growth and progression of academic professionals in Saudi Arabia. Nevertheless, the salary increase does not substantially impact the progress of career goals, mentorship, or the pace of promotion.

Mentoring plays a crucial role in developing professional abilities, which is why it only results in a single connection. This suggests that mentoring programs have a substantial impact on nurturing the professional advancement and progress of academic professionals in Saudi Arabia. Nevertheless, mentoring has no substantial impact on advancing career goals, the pace of promotion, or the salary rise.

DISCUSSION

This study focuses on decision-making and aims to uncover the major elements that influence the career paths of academic employees in Saudi Arabia, taking into account their strategic empowerment. According to Weng (2018), the measurement of career growth within organizations can be categorized into four primary components: Career Goal Progress (CG), Professional Ability Development (PA), Promotion Speed (PS), and Remuneration Growth (RG). However, the present study has delineated an additional dimension of career growth direction as "mentoring." This is supported by research indicating that mentoring can moderate the association between proactive career orientation and career adaptability. Specifically, the positive relationship is more pronounced for individuals who receive a greater amount of mentoring in comparison to those who receive less mentoring (Chang et al., 2023).

Ensuring the inclusion of these crucial variables provided an opportunity to ascertain the causal relationship and its impact on decision-making processes, leading to a significant outcome. In a similar vein, the analysis of the impact of CCT in this study focuses on the necessity of perceiving career development as a gradual process of developing an individual's occupational trajectory. At the core of this endeavor lies the utilization of personal experiences, interests, and values throughout one's professional trajectory and its consequential effects. The importance of constructing meaning and establishing identity in making professional decisions is highlighted as an integral component of the concept of professional Choice Theory (CCT; Yates, 2020).

The central and principal finding of the study has revealed that "Professional ability development," "Promotion speed," or the timing of promotion has a major impact on every other criterion, except for mentorship. This finding is supported by the study that revealed that the current organization creates an environment that supports employees in reaching their career objectives by acquiring new knowledge, skills, and abilities, reinforcing employee achievements

through promotions, and also exploring the trend of increasing compensation as well as mentoring (Dhankhar & Singh, 2023). That means the two criteria are within the factors empowering Saudi Arabia's academic employees' career trajectories. Academic decision-makers in human resource management (HRM) have the capacity to comprehend the strategies that can influence the career trajectories of their employees, specifically in relation to professional skill enhancement, promotion speed, and the timing of promotions. That is in the realm of HRM; decision-makers at universities can now understand the schemes that would have an effect on the career paths of their employees. These schemes include promotion speed or the timing of promotions, as well as professional ability development.

The CCT also supports the outcome of this research for career exploration and building one's identity (Leung, 2022). When an individual's capabilities, skills, and competencies are systematically improved to reach excellence (Dhankhar & Singh, 2023; Weng, 2018), this is where excellence is achieved. For this reason, the finding is connected to the existing CCT, to which the study contributes. It was established that a study conducted by Alshammari (2023), shows the impact of career development at the University of Hail, Saudi Arabia, for which job requirements on professionals are the key aspect that has the potential for career path improvement; it was established that during this study, the findings of this study were compared with the findings of previous studies to highlight the significance of the results in advancing the theoretical understanding. This study does not directly connect to that; nonetheless, it highlights that the strategies of human resource management (HRM) on professional growth, regardless of the source, are the most important factor in career advancement.

This current study is compared with the work of Alharthey et al. (2022), which highlights work engagement, coworker connections, and a supportive work environment as the characteristics that influence employee satisfaction and retention in the educational sector in Saudi Arabia. It was discovered in this study that to preserve the knowledge of the career path, it is possible that HRM should determine the pace of professional skill development and promotion. This finding is an extension of the previous study. In the sense that the previous study included the components of employee satisfaction and retention, the current study has identified that retention is a career path and that promotion speed, once advancing professionally, is a clear career path or trajectory that Saudi Arabia's universities' HRM should understand.

The insights on how the universities in Saudi Arabia could apply the findings and to better create career progression for the academic employees lie with the fact that the academic employers at Saudi Arabia's universities should signify and understand that the rate at which an employee advances in their career is influenced by the strategies that the HRM department applies. It is necessary for individuals to prioritize

continual learning, improving performance, and creating a strong foundation of skills and experience to ensure long-term success in their professional pursuits. Although the temptation of quick development in one's career may be appealing, it is imperative that individuals prioritize these things.

CONCLUSION

This research was conducted to unveil the key factors shaping Saudi Arabia's strategically empowered academic employee career trajectories. This is motivated by the lack of studies that provide insight into the crucial aspects that influence the development of strategically empowered career paths among academic employees in Saudi Arabia. That is why the DEMATEL technique was utilized to identify and examine the connections between important factors, offering a vital understanding of the dynamics of career advancement in the academic environment of Saudi Arabia. The finding of the study demonstrates that elements such as the enhancement of "professional skills" and "the timing of promotion" are crucial in promoting strategic empowerment among academic staff. These characteristics enhance individual career progression and have wider ramifications for organizational prosperity and sectoral expansion. Furthermore, the impact of salary increases and guidance highlights the significance of encouraging organizational settings and efficient human resource strategies in promoting career advancement and contentment in the workplace. The research thoroughly analyses the connections between important factors and provides practical suggestions for improving strategic empowerment in the academic sector in Saudi Arabia. The recommendations include introducing focused professional development initiatives, encouraging clear and meritocratic promotion procedures, and providing sufficient support and guidance for academic faculty. This research adds to the existing body of knowledge on academic career development and strategic management by offering empirical insights into the factors that influence career paths in the specific context of Saudi Arabia.

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