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MODEL SCARF AND TEACHER ENGAGEMENT IN MITIGATING MANAGEMENT PARADOXES IN HIGHER EDUCATION

Joanna KRZYŻAK[1], Jolanta WALAS-TRĘBACZ[2*]

[1] Uniwersytet Ekonomiczny, Kraków; krzyzakj@uek.krakow.pl, ORCID: 0000-0002-8230-3552
[2] Uniwersytet Ekonomiczny, Kraków; walasj@uek.krakow.pl, ORCID: 0000-0002-8266-8922
* Correspondence author

Purpose: The purpose of this article is to examine the impact of satisfying the five basic psychosocial needs defined in the SCARF model (Status, Certainty, Autonomy, Relatedness, Fairness) on the level of engagement of academic teachers in both teaching and research work. Additionally, the aim is to indicate how taking these needs into account can help mitigate key management paradoxes in higher education.
Design/methodology/approach: The study was conducted among 416 academic teachers from Polish universities. A proprietary questionnaire based on the SCARF model and the UWES scale for measuring work engagement were used. Data were analyzed using descriptive statistics methods, regression analysis, and thematic analysis of open-ended responses. The main research questions concern the relationship between the fulfillment of SCARF needs and the level of academic teachers' engagement, as well as their ability to cope with management paradoxes. Three hypotheses were formulated, the key one stating that satisfying SCARF needs positively influences engagement and facilitates balancing conflicting institutional expectations.
Findings: All five SCARF needs showed a statistically significant relationship with the level of engagement ($p < 0.05$), with the greatest impact observed for the needs of Relatedness and Status. Meeting these needs fosters higher engagement in both teaching and research activities among academic teachers. The qualitative analysis confirmed the quantitative findings, revealing real-life examples of how these mechanisms operate.
Practical implications: The results indicate that considering SCARF needs not only supports the individual motivation of academic teachers but also contributes to creating a more balanced work environment. Employing an approach that addresses the psychological needs of academic staff in management may provide an effective solution to management challenges in higher education, leading to increased organizational effectiveness and job satisfaction among teachers.
Originality/value: The article offers a new perspective in research on higher education management by combining the SCARF model with an analysis of organizational paradoxes. The findings have theoretical significance, highlighting the importance of psychosocial needs in academic work, as well as practical value by providing guidance for university leaders on building a supportive work environment and mitigating organizational tensions.
Keywords: SCARF model, work engagement, higher education, management paradoxes, academic autonomy.
Category of the paper: Research paper.

1. Introduction

Higher education operates in an environment characterized by increasing complexity and dynamism. Universities must simultaneously contend with the pressure to achieve scientific and teaching excellence, limitations resulting from available resources, and the necessity to implement innovations that respond to the needs of contemporary society (Cieciora, 2017; Liang, 2024). At the heart of these challenges lie fundamental management tensions, which affect both the functioning of institutions and the motivation and well-being of academic staff.

Striving to balance various, often conflicting, organizational priorities requires university authorities to make difficult decisions that respect the independence of academic teachers, promote collaboration, and guarantee measurable outcomes. Such an approach necessitates consideration of psychological factors that determine how academics engage with their work. In this context, the SCARF model, grounded in neuroscience, provides a perspective that enables a better understanding of the mechanisms influencing motivation and effectiveness in academic work.

The SCARF model defines five key needs that play a crucial role in professional environments such as higher education. Implementing principles derived from this model in university management can not only improve employee well-being but also impact their engagement, which manifests as energy, emotional involvement, and focus on task completion (Campbell et al., 2022). This approach offers a new perspective on the challenges of university management, enabling the mitigation of key tensions and the creation of more harmonious work environments.

The purpose of the article is to examine the impact of satisfying the five basic psychosocial needs defined in the SCARF model on the level of engagement of academic teachers in both teaching and research work. In addition, the aim is to indicate how taking these needs into account can help mitigate key management paradoxes in higher education. The article offers a new perspective in research on higher education management by combining the SCARF model with an analysis of organizational paradoxes. The findings have theoretical significance, highlighting the importance of psychosocial needs in academic work, as well as practical value by providing guidance for university leaders on building a supportive work environment and mitigating organizational tensions.

This article consists of five sections, an introduction, and a conclusion. The first section explains the theoretical foundations concerning the SCARF model, academic staff engagement, and management paradoxes. The second section presents the research methodology. The third section showcases the results of a survey conducted among academic teachers regarding the impact of satisfying the needs defined in the SCARF model on their engagement in research and teaching. These results indicate that taking these needs into account not only supports individual motivation but also contributes to the creation of a more balanced work environment.

The fourth section contains key findings and discussions. The article concludes with recommendations for university leadership and authorities to adopt a management approach that considers the psychological needs of academic teachers, enabling the creation of a work environment conducive to engagement and effective management of paradoxes present in the academic setting.

2. Theoretical background

2.1. SCARF model in the context of higher education

The SCARF model, developed by David Rock (Rock, 2008). The SCARF acronym stands for the five domains (needs): Status, Certainty, Autonomy, Relatedness, and Fairness (Rock, 2015). This model is a useful tool for analyzing human behavior in organizational contexts. It allows to identify psychosocial needs that determine how individuals function in social and professional relationships (Rock, 2008; Manjaly et al., 2024; Evans, 2025). In the academic environment, where interactions between teachers, students, and administration are especially important, taking these needs into account can significantly improve the working atmosphere, motivation, and effectiveness of academic staff (Rock, 2008).

Below, it was presented the key domains of the SCARF model.

Status, as the first need listed in the SCARF model, refers to the recognition of an individual within a community. In the context of universities and scientific institutions, status is manifested through the acknowledgment of academic achievements, such as scientific publications, grants obtained, awards received, or professional promotions. As Rock (2008) demonstrates, status is one of the key factors determining engagement and effectiveness in the workplace, and its absence can lead to demotivation, decreased identification with the institution, and reduced innovation (Dobele et al., 2014). Research conducted by Jordan et al. (2011) showed that the perception of social status in the workplace has a significant impact on employee engagement and productivity (Deng et al., 2019; Eka, Anik, 2020). Employees with higher perceived status exhibited greater job satisfaction and were more engaged and productive (Liu et al., 2021).

The next need is **certainty**, which in the academic environment comes down to clear communication from university authorities regarding institutional goals, expectations of academic staff, and career paths. As Musselin (2013) notes, non-transparent criteria for evaluating academic achievements, ambiguous requirements for promotion, and changing regulations in the higher education system can increase the sense of uncertainty and limit the long-term engagement of scholars (Kwiek, Antonowicz, 2015). Certainty in the academic environment is crucial for effective talent management, as it enables employees to better plan

their careers and take a strategic approach to scientific and teaching activities (Teichler, Höhle, 2013). Furthermore, research by Kezar (2018) suggests that academic institutions implementing transparent evaluation and promotion policies not only reduce stress levels among staff but also foster the development of an organizational culture based on mutual trust and cooperation. As a result, transparent institutional policies positively influence the quality of scholars' work and their readiness to take on new research and teaching challenges.

Autonomy, or the sense of freedom in decision-making, is particularly important for academic teachers who value independence in choosing research topics, scientific methodologies, and teaching methods (Gagne, Bhave, 2011; Prichard, Moore, 2016). When employees feel they have influence over their work and the ability to make choices and introduce changes in their positions (Hughes, Lewis, 2020), they are more creative (Sia, Appu, 2015), more likely to engage, and increase their effectiveness (Bindl, Parker, 2011). Autonomy supports innovation and the undertaking of scientific risks, which are essential for knowledge development (Orakci, 2025; CSEE-ETUCE, 2024; Woelert et al., 2020; Trevelyan, 2001). At the same time, limiting this freedom, for example through excessive regulation, can lead to frustration, decreased motivation, and reduced scientific potential (Woelert et al., 2020; Trevelyan, 2001; Bate, 2023).

An equally important need is **relatedness,** which in the academic context is manifested in collegial relationships and the sense of belonging to the academic community (Kurek, 2014). Building strong interpersonal ties and promoting interdisciplinary collaboration positively affect academic staff engagement and job satisfaction (McGrath et al., 2017) as well as interactions with the broader community and stakeholders (Orazbayeva et al., 2021). Scientific sources confirm that the sense of isolation, especially among young academics, can lead to burnout and reduced work engagement (Boone et al., 2022; Sabagh et al., 2018; Kelly et al., 2024).

The final element of the SCARF model is **fairness**, which refers to the perceived equity in the distribution of resources, duties, and opportunities. In higher education, where resources such as research funding, time for research, and access to training are often limited, fair allocation is crucial. Academic staff who feel treated unequally may experience frustration, which negatively affects their engagement and motivation (Dobele et al., 2014; Malhotra et al., 2020). In contrast, transparent and fair decision-making procedures strengthen trust in the institution and support better functioning of the entire academic community (Hnat et al., 2015; Rock, 2008; Evans, 2025; Crom-Jonson, 2025; Smith, 2024).

In summary, the SCARF model provides valuable guidance for management in the academic environment, pointing to the fundamental psychosocial needs whose fulfillment can significantly improve the well-being and engagement of academic staff. Each domain of the model plays a key role in shaping the employee experience in the workplace and their level of work engagement. Taking these needs into account in university management strategies can not only alleviate tensions resulting from key management paradoxes but also create a more

harmonious and productive work environment for academic teachers (Rock, 2008; Crom-Jonson, 2025).

2.2. Academic staff work engagement

Work engagement is one of the key factors determining the success of higher education institutions in fulfilling their educational and scientific missions. In the literature, it is defined as a positive, satisfying psychological state characterized by vigor, dedication, and full absorption in one's tasks (Schaufeli et al., 2002; Bakker, Demerouti, 2008; Evitha et al., 2021; Saks, Gruman, 2014). In the academic environment, this engagement plays a particularly important role, as academic staff simultaneously fulfill many functions-from teaching and research to administrative and social roles (Zając, 2012). Employees who are engaged in their work demonstrate higher levels of effectiveness, and their attitude translates into the success of both themselves and the entire institution (Bozeman, Gaughan, 2011; Fernandez, 2020; Khamzina et al., 2024).

One of the significant effects of academic staff engagement is its positive impact on student satisfaction and their learning outcomes (Morales et al., 2016). An engaged academic teacher conducts classes with greater enthusiasm, creating an atmosphere conducive to knowledge acquisition and involving students in active learning (Zhao, You, 2024). The use of active learning methods, such as team projects or simulations, requires additional engagement and resources from both lecturers and students. Research indicates that teachers who display strong engagement are more likely to employ innovative teaching methods tailored to students' individual needs. In this way, they contribute to improving the quality of the educational process, which directly translates into students' academic achievements (Xiong, Yuan, 2024). Engaged teachers also invite students to participate in research or co-author scientific articles, which supports or stimulates their motivation to develop research interests (Mägi, Beerkens, 2016; Kowalczuk-Walędziak, 2017).

Another important aspect is the relationship between engagement and research productivity and innovation (Cadez et al., 2017). Academic staff who are deeply engaged in their work show greater motivation to undertake new research challenges (Alhija, Majdob, 2017) and to seek innovative solutions (Ulla et al., 2017). Engagement fosters striving for high quality in research, which is reflected in the number of publications, obtaining research grants, and participation in interdisciplinary projects (Khan et al., 2018; Batool et al., 2021). Moreover, engaged academics are more open to collaboration and knowledge exchange with other researchers, which supports the development of innovative solutions in science and technology (Farooqi et al., 2019).

Work engagement is also a crucial factor supporting the resilience of academic teachers in the face of institutional challenges. Dynamic changes in higher education, such as legal reforms, financial constraints, or increased social expectations, can generate stress and lead to professional burnout (Schaufeli et al., 2009; Han et al., 2019). However, engaged employees are more likely to perceive these challenges as opportunities for growth rather than threats.

Their positive attitude and strong sense of purpose in their work allow them to cope more effectively with pressure and difficulties, as well as persist in pursuing their goals (Akcoltekin et al., 2017; Kundi et al., 2021).

In summary, work engagement in the academic environment is a fundamental element supporting the effectiveness of academic staff in teaching and research, as well as their ability to survive and adapt in changing institutional conditions (Hilliger et al., 2020). A high level of engagement benefits both individuals and entire institutions, contributing to the creation of an environment conducive to academic excellence and knowledge development (Caingcoy, 2020). In the context of this article, academic staff engagement is linked to the SCARF model, which illustrates how satisfying basic needs can strengthen this key attitude.

2.3. Theoretical approach to management paradoxes in higher education

Higher education, as a form of organization, presents numerous challenges for management scholars and practitioners, stemming from its specific character (Szromek, Wolniak, 2020; Maquidato, Bayani, 2024). The work of academic staff, which combines both teaching and research, requires consideration of the unique dynamics of relationships and organizational goals, making traditional management theories often insufficient in this context (Houston et al., 2006; Hu et al., 2016). One of the most significant management issues, widely discussed in the literature, is the presence of key paradoxes that define the contemporary university environment (Lewis, 2000; Leja, 2011; Smith, Lewis, 2011; Miron-Spektor et al., 2017; Lee, 2018; Doyle, Brady, 2018; Kallio et al., 2021).

This article adopts the terminology proposed by J.D. Ford and R.W. Backoff (1988, p. 89), which serves to analyze key paradoxes in university management. The authors define a paradox as "an object constructed by individuals when opposing tendencies are brought together as a result of reflection or interaction" (Mesjasz, 2016, p. 407).

Below, the key paradoxes in the work of academic staff that should be considered in university management are presented in a synthetic manner.

The first paradox concerns the tension between autonomy and accountability (Drennan et al., 2020). Due to the nature of their work, academics place great value on intellectual freedom and the ability to make independent decisions regarding research, as well as the choice and design of teaching methods and materials. However, in recent decades, there has been increasing pressure to deliver measurable outcomes, assessed by various performance indicators such as the number of publications, grants obtained, or student evaluations. Academics often have to adapt to funding priorities for their research topics, university policies, or societal expectations. Moreover, in teaching, they must also meet specific program objectives, accreditation standards, and administrative requirements. The literature emphasizes that while such an approach is necessary from a management perspective, it can reduce the motivation and creativity of academic staff if not properly balanced (Stroebe, 2020; Kayas, 2020; Schwab et al., 2023).

A second key tension is the difficulty in reconciling teaching requirements with expectations regarding research productivity. Universities, as both educational and research institutions, face the challenge of ensuring high-quality teaching while also contributing to knowledge development through research. Academic staff are thus forced to divide their time and resources between these two areas, often leading to conflicts of interest. In many academic institutions, promotions and employee evaluations are strongly dependent on research achievements, such as the number of publications or grants secured. This can marginalize the role of teaching and reduce engagement in the educational process. Furthermore, research is time-consuming and requires continuous commitment. Simultaneously conducting classes, preparing materials, and grading can result in work overload and a decline in the quality of both research and teaching. The literature highlights that prioritizing one of these functions without supporting the other can negatively affect the development of both individual employees and the institution as a whole (Leisyte et al., 2009; Spook, Raghoebar, 2022). A lack of adequate administrative or financial support may exacerbate the difficulty of balancing these two roles (Kahn, 2017).

Paradoxes in university management are particularly evident in the tension between striving for individual excellence and the necessity of teamwork (Macfarlane, 2017; Ofori, 2024). On the one hand, the academic system rewards individual achievements, such as publications in prestigious journals, individual research grants, or scientific awards, which enhance a scholar's position in the global knowledge network (Kezar, 2018). On the other hand, the growing complexity of research problems and the interdisciplinarity of modern science require effective collaboration in research and teaching teams (Finkelstein et al., 2016; Vangrieken et al., 2017). As Kezar (2018) points out, excessive emphasis on individual excellence can lead to competition rather than synergy, weakening the organizational culture of the university and reducing its capacity for innovation and adaptation. Conversely, a team-based approach, while promoting knowledge exchange and joint project development, can create difficulties in assessing individual contributions and blur responsibility for outcomes (Finkelstein et al., 2016). Balancing these two perspectives is one of the key challenges in contemporary higher education management.

Another important issue discussed in the literature is the relationship between stability and change in the university environment. Higher education institutions, with their deeply rooted intellectual traditions, often face the challenge of preserving their identity and values while responding to a dynamically changing environment (Denek, 2013; Karo, Drechsler, 2024). The literature emphasizes that effective university management requires simultaneously respecting traditional foundations and being open to adaptation to social, technological, and economic changes (Maassen, 2017; Hayter, Cahoy, 2018; Doyle, Brady, 2018; Klofsten et al., 2019). A lack of proper balance between these two aspects can result in both a loss of identity and difficulties in adapting to contemporary challenges.

Research on higher education management suggests that these paradoxes are not problems that can be fully resolved. Rather, they are a permanent feature of academic institutions, requiring appropriate management and balancing of conflicting interests. The literature review indicates the need for an integrated approach that considers both organizational aspects and the individual needs of academic staff (Bohunovsky et al., 2023). In this context, the SCARF model, based on neuroscience research, may serve as a valuable tool for managing these tensions, which will be discussed later in the article.

3. Methods

3.1. Purpose and assumptions of the study

The aim of this study is to analyze the impact of fulfilling the needs described in the SCARF model on the engagement of academic teachers in both teaching and research. In particular, the research focuses on identifying the relationship between the fulfillment of individual SCARF needs and the level of engagement in various aspects of academic activity.

The researchers aim to answer the following research questions:

1. Main question: How does the fulfillment of the basic psychosocial needs defined in the SCARF model affect the level of academic teachers' engagement in teaching and research?
2. Supporting questions:
   1) Which of the five SCARF needs have the strongest impact on academic teachers' engagement?
   2) How can fulfilling SCARF needs support academic teachers in coping with management paradoxes in higher education, such as autonomy vs. accountability, teaching vs. research, and individual excellence vs. collaboration?

Based on the available literature and the SCARF model, the following research hypotheses were formulated:

1. Main hypothesis (HM): The fulfillment of the basic psychosocial needs defined in the SCARF model significantly affects the level of academic teachers' engagement in teaching and research.
2. Supporting hypotheses:
   HS1: Individual SCARF needs differ in the strength of their impact on academic teachers' engagement, with relatedness and status being the most significant.
   HS2: Fulfilling SCARF needs facilitates academic teachers in coping with management paradoxes in higher education, such as autonomy vs. accountability, teaching vs. research, and individual excellence vs. collaboration.

The SCARF model provides a theoretical framework for analyzing human behavior in social and organizational environments. Moreover, the SCARF domains are measurable and can be empirically tested, which ensures methodological strength when designing teacher engagement instruments (Rock, 2008; Rock, Cox, 2012). In contrast to traditional psychosocial models, such as Maslow's hierarchy of needs or Herzberg's two-factor theory, the SCARF model is grounded in cognitive neuroscience, offering direct insight into social threats and rewards that shape behavior in complex institutional systems, such as higher education institutions. In higher education, where social interactions, professional autonomy, and hierarchical structures play a key role, the needs described in this model become particularly significant. Status, certainty, autonomy, relatedness, and fairness are fundamental factors influencing the motivation of academic teachers, their ability to cope with stress, and their work engagement (Li, Foung, 2019; Javadizadeh et al., 2022; Newman, Purnell, 2023; Gkintoni et al., 2023).

The analysis of studies shows that engagement in academic work contributes to greater student satisfaction, higher research innovation, and staff resilience in the face of institutional challenges (Hajdarpasic et al., 2015; Perkmann et al., 2020). At the same time, many studies point to the presence of paradoxes in university management, such as the tension between autonomy and accountability (Kallio et al., 2021), or the conflict between individual achievement and the need for teamwork (Koeslag-Kreunen et al., 2018). In this context, examining the relationship between the fulfillment of SCARF needs and work engagement is of both practical and theoretical importance.

A survey-based study conducted among academic teachers allows for an understanding of how the fulfillment of psychosocial needs affects key aspects of their work. The results may provide practical guidance for university authorities, enabling them to create a work environment conducive to engagement and effective management of the paradoxes present in the academic setting.

3.2. Research instrument and data collection procedure

The survey was chosen as the main research instrument due to its ability to efficiently collect data from a diverse group of respondents. This choice enabled the researchers to reach a wide range of academic teachers representing various higher education institutions, scientific disciplines, and professional roles, resulting in highly representative findings. The structure of the survey was designed to allow both quantitative and qualitative analysis of academic teachers' perceptions regarding their work engagement and the fulfillment of needs defined in the SCARF model.

The questionnaire was divided into three sections:

1. **Section A** concerned the measurement of need fulfillment according to the SCARF model. This section included 19 questions developed by the study authors based on a review of the literature on the SCARF model. The questions addressed the five key

psychosocial needs. The questions were closed-ended and rated on a 7-point Likert scale, where 1 meant "strongly disagree" and 7 "strongly agree". This scale enabled a quantitative assessment of the degree to which each need was fulfilled.

2. **Section B** focused on measuring work engagement. This section used the Utrecht Work Engagement Scale (UWES©), developed by W. Schaufeli and A. Bakker. The use of this tool was justified by its widespread use in research on work engagement and its confirmed reliability and validity (Schaufeli et al., 2006). The questionnaire consisted of 17 questions assessing engagement across three dimensions: vigor (energy and psychological resilience at work), dedication (identification with work, sense of purpose, and inspiration), and absorption (deep focus and complete immersion in duties) (Schaufeli, 2013; Kulikowski, 2017). As in Section A, responses were rated on a 7-point Likert scale, allowing for quantitative analysis of academic teachers' engagement levels.
3. **Section C** concerned demographic and professional data. This section gathered basic demographic information such as gender, age, academic degree, type of institution, and details regarding professional experience.

Combining SCARF-related questions with the UWES instrument allowed for a comprehensive examination of the relationship between psychosocial need fulfillment and the level of academic teachers' engagement in teaching and research activities.

The questionnaire included both closed and open-ended questions. Closed questions provided measurable indicators for statistical analysis, while open-ended questions enabled a deeper understanding of the mechanisms and reasons behind the fulfillment or lack thereof of individual SCARF needs and their impact on engagement.

The development and validation process for Section A of the questionnaire (19 SCARF-related questions) involved several stages:

1. Literature review. The question development began with an analysis of the scientific literature on the SCARF model, which enabled the identification of key constructs and variables to be included in the questionnaire.
2. Focus group study. A meeting was held with a group of academic teachers representing the study's target population. Participants assessed the clarity, relevance, and comprehensiveness of the questions, and their feedback was used to refine the questionnaire content.
3. Expert review. Several experts in psychology and research methodology evaluated the questionnaire for content accuracy, clarity of wording, and alignment with the SCARF model. Their comments were used to further refine the questions.
4. Pilot study and reliability testing. The revised questionnaire was tested on a pilot sample representative of the target population. The Cronbach's alpha coefficient calculated for Section A was 0.936, indicating high internal consistency and reliability of the instrument.

5. Data collection was conducted online (using the Computer Assisted Web Interview, CAWI, technique) via a secure platform, ensuring broad participation and representativeness of respondents. The survey was anonymous and confidential, which encouraged honest responses. The study was approved by the University Research Ethics Committee (KEBN/71/0044/D29/2023), confirming compliance with ethical standards.
6. The carefully developed and validated research instrument enabled a comprehensive examination of the relationship between SCARF need fulfillment and academic teachers' engagement. The mixed approach, combining closed and open-ended questions, provided both measurable statistical data and in-depth qualitative insights, allowing for a thorough analysis of the results.

3.3. Selection and characteristics of the research sample

The research sample consisted of 416 academic teachers employed at Polish higher education institutions, representing a variety of scientific disciplines, professional positions, and stages of academic careers. The vast majority of respondents were employed at public universities (94.2%), while a minority came from non-public institutions (5.8%). In terms of professional roles, research and teaching staff dominated (81.5%), reflecting the nature of most higher education institutions in Poland. A smaller group consisted of staff employed exclusively in teaching positions (17.8%), and an even smaller percentage held research-only positions (0.7%).

The sample was diverse in terms of demographic and professional characteristics, which increases the reliability and representativeness of the obtained results.

Below is the demographic structure of the sample according to various criteria:

1. Gender – women constituted 50.5% of the group, men 47.1%, and 2.4% of respondents did not disclose their gender.
2. Age – the most numerous age group was employees aged 41-50 (35.3%), followed by those aged 51-60 (28.4%). The smallest group was respondents under 29 years old (4.3%).
3. Work experience – the largest portion of respondents had 21-30 years of professional teaching experience (36.3%), while those with less than 5 years of experience constituted the smallest share (10.8%).
4. Professional structure of the sample: (1) position type – the largest group in the sample were assistant professors (48.3%), followed by associate professors (26.4%) and assistants (16.8%). Professors and lecturers were represented in smaller percentages (5.5% and 2.4%, respectively); (2) managerial roles – most respondents (84.9%) did not hold managerial positions, while 15.1% (63 individuals) held managerial roles in their institutions; (3) scientific disciplines – the sample was dominated by representatives of social sciences (78.1%), while the humanities, engineering, natural sciences, and exact sciences were represented to a lesser extent (a total of 11.9%).

The sampling was purposive, meaning that respondents were selected based on specific criteria related to the aim of the study. The survey was addressed to academic teachers via the rectors of higher education institutions in Poland. Official letters were sent to the rectors, requesting that they forward the survey to their staff. This made it possible to reach a wide group of teachers from various institutions, increasing the diversity and representativeness of the sample. The study was conducted between November 2023 and February 2024.

Although the study included a broad group of academic teachers, certain limitations may have influenced the final results:

a) due to purposive sampling, the sample is not fully random, which limits the possibility of generalizing the results to the entire population of academic teachers in Poland;
b) the high percentage of respondents from public institutions (94.2%) may have resulted in a less representative analysis of the perspectives of teachers from non-public institutions;
c) for younger respondents and teachers with shorter professional experience (e.g., less than 5 years), their low participation in the sample may limit the ability to fully understand their experiences and perspectives.

The analyzed research sample constituted a diverse and representative group of academic teachers, allowing for a comprehensive examination of the impact of SCARF need fulfillment on their work engagement. Although certain limitations related to sampling may affect the generalizability of the results, the purposive recruitment method and the demographic and professional diversity of respondents increase the reliability and practical value of the conducted analyses.

3.4. Methods of quantitative and qualitative data analysis

The selection of techniques and tools for data analysis was tailored to the nature of the research questions and the type of data collected, both quantitative and qualitative. The aim of the data analysis was to identify the relationships between the fulfillment of SCARF needs and academic teachers' work engagement, as well as to uncover patterns in the perception of management paradoxes in the academic environment.

Quantitative analysis was conducted on data obtained from the closed-ended questions in the survey. Preliminary data analysis was carried out using Microsoft Excel, which was used to organize the data, verify its accuracy, and perform basic statistical calculations such as means, standard deviations, and frequencies.

For more in-depth statistical analysis, the Statistica software package, version 13.3, was used. This analysis included regression analysis, which made it possible to determine which SCARF model variables have the greatest impact on academic teachers' engagement in teaching and research. The results of the regression analysis provided information on the relative importance of each SCARF need in predicting the level of engagement.

The use of this method made it possible to determine the relationship between the fulfillment of basic psychosocial needs and work engagement, while also providing statistical evidence supporting the formulated hypotheses.

In parallel, qualitative analysis was conducted on data obtained from the open-ended survey questions. Qualitative responses were subjected to thematic analysis, aimed at identifying recurring patterns and areas in the perception of management paradoxes by academic teachers.

The thematic analysis process included the following steps:

- data coding – all responses were coded to identify key themes and categories. Each response was analyzed for content related to the perception of the impact of SCARF need fulfillment,
- pattern identification – based on the coded data, dominant patterns were identified, such as the impact of autonomy on creativity in research work or the importance of fairness in building relationships in the academic environment,
- interpretation of results – conclusions were drawn regarding the mechanisms influencing the perception of management paradoxes and the ways in which the fulfillment of SCARF needs supports work engagement.

Qualitative analysis enabled an in-depth understanding of the reasons underlying the observed quantitative relationships. Open-ended responses provided detailed insights into how academic teachers perceive their work environment and how the fulfillment of their psychosocial needs may influence the resolution of key management paradoxes.

4. Results

4.1. Descriptive statistics of the studied variables

The analysis of the results was preceded by an assessment of descriptive statistics for six key variables related to the professional experiences of academic teachers: status, certainty, autonomy, relatedness, organizational fairness, and level of engagement. The aim of this stage was to determine the central tendencies, distribution of responses, and the degree of variability of each variable in the studied sample. Detailed numerical data are presented in Table 1. All variables were measured on a seven-point scale (0-6 or 1-7), and the sample size in each case was N = 416.

Table 1.
Descriptive statistics of the variables N = 416

Variable	M	Confidence -95.000%	Confidence 95.000%	Me	Min	Max	Q1	Q3	SD
Status	3.85	3.701972	4.004759	4	1	7	3	5	1.57
Certainty	4.41	4.275032	4.547084	5	1	7	3	5	1.41
Autonomy	5.30	5.177551	5.418603	5	1	7	5	6	1.25
Relatedness	5.23	5.115541	5.336382	5	1	7	5	6	1.15
Fairness	4.28	4.127948	4.424937	4	1	7	3	5	1.54
Engagement	4.02	3.918002	4.120460	4	0	6	3	5	1.05

Legend: M – mean, Me – median, Q1 – lower quartile, Q3 – upper quartile, SD – standard deviation.

Source: Own elaboration based on empirical research results.

The mean level of **Status** was assessed at M = 3.85 (SD = 1.57), with a median of 4 and quartile values Q1 = 3 and Q3 = 5. This indicates a moderate sense of status among the respondents, with a wide range of responses (min = 1, max = 7) and relatively high variability (SD = 1.57).

The variable **Certainty** obtained a mean value of M = 4.41 (SD = 1.41), with a median of 5. This means that respondents rate their sense of certainty in the professional environment as moderately high, although significant variability in responses was also observed here (range from 1 to 7).

Autonomy achieved the highest mean value among the analyzed variables (M = 5.30, SD = 1.25), suggesting that academic teachers largely perceive their work as autonomous. The median of 5 and the distribution of responses concentrated between Q1 = 5 and Q3 = 6 indicate a relatively consistent perception of this feature within the sample.

A similar mean level was recorded for the variable **Relatedness** (M = 5.23, SD = 1.15), which indicates a high evaluation of the quality of interpersonal relationships in the academic work environment. The low standard deviation suggests relatively little variation in assessments in this area.

For the variable **Fairness,** the mean was M = 4.28 (SD = 1.54), which may indicate a moderate sense of organizational fairness among respondents. The spread of responses, as in the case of status and certainty, was considerable.

The variable **Engagement** obtained a mean of M = 4.02 (SD = 1.05) and a median of 4. Although the minimum value was 0 and the maximum was 6, the distribution of responses is concentrated between Q1 = 3 and Q3 = 5, indicating a moderate level of engagement among the academic teachers surveyed, with relatively lower variability than in the case of status or fairness.

The values of the 95% confidence intervals indicate high precision of the mean estimates for each variable. These results serve as a starting point for further analyses of the relationships between the individual variables comprising the SCARF model and the level of academic teachers' engagement in teaching and research work.

4.2. The impact of SCARF needs on work engagement

The study showed that the fulfillment of needs described in the SCARF model has a significant impact on the level of academic teachers' engagement in teaching and research work. The results of the linear regression analysis, presented in Table 2, confirm that all five SCARF variables are statistically significantly related to the level of work engagement ($p < 0.05$).

Table 2.
Relationships between SCARF model needs and work engagement (simple linear regression model)

N = 416, p < 0, 000001

Variable	parameter (β)	R^2
Status	0.362438	0.13136097
Certainty	0.296982	0.08819818
Autonomy	0.263455	0.06940838
Relatedness	0.398851	0.15908186
Fairness	0.313851	0.09850214

Legend: p – statistical significance, β – simple regression coefficient.
R^2 – coefficient of determination.

Source: Own elaboration based on empirical research results.

The strongest predictor of work engagement was **Relatedness** ($\beta = 0.398851$, $R^2 = 0.1591$), indicating that a sense of belonging and support in the academic environment plays a fundamental role in motivating teachers. Strong relationships, both collegial and mentoring, foster the development of a supportive work environment, especially for younger academic and teaching staff at the beginning of their careers. Respondents indicated that collaboration within research teams and a sense of support from supervisors significantly affect their morale and willingness to take on new challenges. These results are consistent with previous studies highlighting the importance of interpersonal relationships in academic work (Van den Broeck et al., 2008; Owens et al., 2016; McGrath et al., 2017).

Status, defined as recognition for achievements, was the second strongest predictor of work engagement ($\beta = 0.362438$, $R^2 = 0.1314$). Respondents who felt that their contribution to the development of the institution was appreciated (e.g., through promotions, awards, or positive feedback) demonstrated higher motivation to engage in both teaching and research activities. In line with the findings of Deci and Ryan (2009), recognition and a sense of value in the workplace are integral to supporting motivation and engagement, emphasizing the importance of status as a psychological need (Deng et al., 2019). Conversely, a lack of recognition was identified as a factor lowering motivation and leading to professional frustration.

Certainty ($\beta = 0.296982$, $R^2 = 0.0882$) was the third significant factor influencing engagement. Higher education employees who had clarity regarding institutional goals, promotion rules, and role requirements reported a greater ability to focus on their tasks (Pan et al., 2015). The results indicate that a lack of communication from university administration can increase uncertainty and destabilize the motivation of research and teaching

staff. Other studies confirm that certainty reduces stress and anxiety, facilitating focus on productive tasks (Hirsh et al., 2012). By reducing ambiguity and supporting a predictable work environment, organizations can increase employee engagement (Hwang, Lee, 2015).

Autonomy ($\beta = 0.263455$, $R^2 = 0.0694$) was identified as a critical need, particularly in the context of research activity. Respondents emphasized the importance of academic freedom in choosing research topics, teaching methods, research team composition, and ways of carrying out their tasks. Autonomy enables the development of creativity, innovation, and risk-taking, which are especially important in academic work (Woelert et al., 2020). Limiting autonomy, for example through excessive administrative regulations, was identified as a significant barrier to engagement and effectiveness. Greater autonomy promotes a sense of personal engagement and responsibility for one's work, leading to intrinsic motivation (Tang et al., 2020; Itzchakov et al., 2022), satisfaction (Worth, Van den Brande, 2020), and encourages employees to take initiative (Lartey, 2021).

Fairness ($\beta = 0.313851$, $R^2 = 0.0985$) was also a significant predictor of engagement. Respondents who perceived the allocation of resources, workload distribution, and decision-making processes as fair reported higher morale and greater engagement in their professional duties. Conversely, a sense of unfairness in university management led to reduced job satisfaction and lower willingness to collaborate with others. According to the justice theory by Colquitt and other researchers (2001), the perception of fairness and equity is closely linked to employee attitudes and behaviors, including engagement (Blakely et al., 2005; Nojani et al., 2012).

The linear regression analysis confirmed that all SCARF needs have a significant impact on the level of work engagement, although their strength of influence varies. The variables **Relatedness** and **Status** had the greatest impact, playing a key role in creating a supportive work environment. The study's results suggest that fulfilling these needs is essential for building academic teachers' engagement, which in turn translates into better teaching and research outcomes and greater resilience to institutional challenges. These conclusions may serve university authorities as a basis for developing management strategies that promote the fulfillment of key psychosocial needs and support the development of an engaging organizational culture.

5. Conclusions

5.1. Key findings from the study

This study demonstrates that the fulfillment of basic psychosocial needs, in accordance with the SCARF model, can significantly enhance the motivation and professional activity of

academic staff (Daumiller et al., 2020). Meeting these needs requires a holistic approach aimed at cultivating an environment in which teachers feel valued, secure, empowered, integrated, and treated fairly. Such efforts are not only crucial for the well-being and satisfaction of academic teachers (Hesli, Lee, 2013; Szromek, Wolniak, 2020), but are also essential for fostering an academic environment conducive to innovation, collaboration, and excellence (Mgaiwa, 2023).

Main Hypothesis (HM): The fulfillment of the basic psychosocial needs defined in the SCARF model significantly influences the level of academic teachers' engagement in teaching and research work. Linear regression analysis confirmed that all SCARF needs have a significant impact on the level of engagement in teaching and research (see Table 1). The main hypothesis (MH) was positively confirmed.

Supporting Hypothesis (HS1): Individual SCARF needs differ in the strength of their impact on academic teachers' engagement, with relatedness and status being the most significant.

The study showed that the strength of the impact of individual SCARF needs on academic teachers' engagement varies (see Table 2). In particular, Relatedness and Recognition (Status) proved to be key for maintaining a high level of engagement in research and teaching duties. These results were further reinforced by qualitative analysis, which provided concrete examples confirming the importance of fulfilling these needs. Thus, supporting hypothesis HS1 was fully confirmed.

5.2. Management paradoxes from the perspective of academic teachers

Managing higher education institutions involves the necessity of balancing conflicting priorities and expectations, which often leads to the emergence of key paradoxes. Survey responses indicated that the principles of the SCARF model can play a significant role in resolving these tensions, enabling a more harmonious functioning of the academic environment. Three key paradoxes were identified as particularly important: autonomy vs. accountability, teaching vs. research, and individual excellence vs. collaboration.

The **Autonomy** and **Accountability Paradox** reflects the tension between the need for academic freedom and the necessity to hold teachers accountable for their performance. On one hand, academic teachers value the freedom to choose research topics, teaching methods, or ways of carrying out their tasks (Vangrieken et al., 2017; Woelert et al., 2020). On the other hand, institutions require them to adhere to performance indicators and institutional goals (Miri, 2014).

Survey responses indicate that autonomy and accountability can be effectively harmonized through the application of the **Autonomy** principle in the SCARF model. Allowing lecturers to set their own goals within the general guidelines of the institution increases both their sense of freedom and their willingness to take responsibility for their work outcomes. Such a balance fosters creativity and innovation, while also supporting the long-term goals of the university.

The Teaching vs. **Research Paradox** reflects the difficulty of reconciling the demands of teaching and research activities (Borg et al., 2014; Macfarlane, 2017). Modern universities expect excellence in both areas, yet limited time and financial resources often mean that one is achieved at the expense of the other (Smithers et al., 2022).

Applying the principles of the SCARF model, particularly **Status** and **Fairness**, helps to reduce this tension. Respondents emphasized that recognition of achievements in both teaching and research (e.g., through awards, promotions, or additional funding) motivates teachers to engage equally in both areas. The perception of fairness in the allocation of resources, such as time and budget, further strengthens the willingness to meet demands in both fields, creating a more balanced academic culture (Malhotra et al., 2020).

The Individual Excellence vs. **Collaboration Paradox** involves the need to balance the promotion of individual achievements (e.g., academic degrees, promotion-related works-monographs, individual grants, participation in international academic exchanges, roles as experts or reviewers, conference participation, editorial board membership) with building the collective success of research and teaching teams (e.g., joint research, projects, publications, organizing conferences or workshops, cooperation with business) (Macfarlane, 2017; Ofori, 2024).

According to the survey results, the principle of **Relatedness** plays a key role in resolving this paradox. Respondents indicated that building a sense of belonging through interdisciplinary research teams and opportunities for collaboration with other academic teachers fosters collective success while also enabling individual development. Creating support mechanisms, such as mentoring, also helps reduce the sense of competition and builds a more harmonious atmosphere in the academic environment.

Supporting Hypothesis (HS2): Fulfilling SCARF needs facilitates academic teachers in coping with management paradoxes in higher education, such as: autonomy vs. accountability, teaching vs. research, individual excellence vs. collaboration.

Paradoxes such as autonomy vs. accountability or teaching vs. research were present in respondents' answers, but the results show that they can be effectively managed by addressing SCARF needs. This model also prove useful in building a supportive work environment, which is crucial for balancing expectations in both teaching and research. Thus, supporting hypothesis (HS2) was positively verified.

Management paradoxes in higher education are an inherent element of university functioning, but the study results show that applying the principles of the SCARF model can significantly alleviate tensions arising from these contradictions. Autonomy, Status, Relatedness, and Fairness are key elements supporting the harmonization of seemingly conflicting goals, such as academic freedom and accountability, teaching and research excellence, as well as individual achievements and collaboration. Implementing these principles in university management practice can not only increase academic teachers'

engagement but also contribute to building a more supportive and effective organizational culture.

5.3. Satisfaction of SCARF needs and engagement – a qualitative perspective

In order to understand how the satisfaction of SCARF needs influences academic teachers' engagement in their research and teaching work, as well as how it alleviates tensions resulting from university management paradoxes, open-ended responses from the survey were analyzed. These responses made it possible to identify specific examples illustrating both positive and negative experiences of research and teaching staff related to the fulfillment or lack of fulfillment of their SCARF needs (see Table 3).

Table 3.
Selected examples illustrating research and teaching staff experiences in meeting SCARF needs

Needs	Description of academic staff experiences
1. Status	Academic teachers indicated that their engagement in teaching and research work increases when their achievements are recognized and appreciated. An example statement is: *Publishing in prestigious journals, participating in conferences, and receiving scientific awards contribute to the professional prestige of an academic teacher.* A high sense of status contributed to motivation to continue research and teaching work at a high level. However, many respondents pointed out that the lack of transparent promotion mechanisms and differences in salaries for the same positions caused frustration and lowered their morale.
2. Certainty	Respondents emphasized the importance of stable and clear work rules, especially in the context of career advancement. One academic teacher noted: *Unclear promotion criteria and changing regulations regarding employee evaluation cause uncertainty and discouragement.* The unmet need for certainty increased feelings of stress, which negatively affected the ability to focus on research and teaching work. On the other hand, stable working conditions, such as permanent contracts, were indicated as a factor that alleviates stress and enables greater engagement in duties.
3. Autonomy	Freedom in choosing research topics and ways of conducting classes was often highlighted as a key factor influencing the engagement of university staff. An example statement is: *The greater the autonomy in the workplace, the better the results, both individual and team.* A teacher performs their teaching and research duties best when they are not constantly monitored. A lack of autonomy, such as being assigned courses outside one's area of expertise or being forced to collaborate on unwanted projects, was a source of frustration and reduced engagement.
4. Relatedness	Constructive relationships with colleagues and students played a significant role in building a supportive work environment. It was noted in the responses that: *Collaboration, knowledge and experience sharing, and collegial support are essential for the professional and personal development of a teacher.* Strong relationships within research teams fostered the implementation of interdisciplinary projects and increased motivation for collaborative work. Conversely, distant relationships with supervisors, lack of institutional support, and growing competition within departments led to feelings of isolation and professional burnout.
5. Fairness	The perception of fairness in the allocation of resources and distribution of duties was crucial for the morale of the teachers surveyed. Among the numerous responses, one stood out: *The lack of transparency in assigning classes and roles within the department makes long-term engaged staff feel unappreciated, while new employees receive positions thanks to connections.* Satisfying the need for fairness-for example, through transparent rules for assigning duties and mechanisms for recognizing achievements-had a significant impact on the level of engagement among those employed in higher education.

Source: Own elaboration based on empirical research results.

Qualitative analysis showed that the fulfillment of SCARF needs has a significant impact on academic teachers' engagement in their research and teaching work. Examples of respondents' positive experiences indicated that recognition of achievements, clear work rules, autonomy, constructive relationships, and fairness in resource allocation foster increased motivation and professional effectiveness. Conversely, the lack of fulfillment of these needs led to decreased morale, increased stress, and a sense of unfairness, which can contribute to professional burnout and a decline in work quality in higher education.

6. Summary

6.1. Guidelines for higher education management staff

To effectively support academic staff engagement, leaders managing higher education institutions should focus on actions addressing the key needs outlined in the SCARF model. First and foremost, it is essential to develop transparent rules regarding promotion, task allocation, and employee evaluation, which will help reduce stress and increase the sense of stability at work. As examples have shown, unclear promotion criteria and fluctuating regulations are a frequent source of frustration and decreased engagement. Another important element is supporting autonomy by limiting micromanagement and ensuring academic freedom, which enables teachers to decide on research directions and methods of conducting classes (Woelert et al., 2020). Respondents emphasized that autonomy is a key factor supporting creativity and effectiveness (Tang et al., 2020).

The importance of relationships in the workplace should not be overlooked (Rock, Cox, 2012). Supporting collaboration through mentoring programs, interdisciplinary projects, and informal integration initiatives plays a significant role in building a supportive work environment. Strong relationships motivate and at the same time help to alleviate tensions arising from conflicts of interest between individual and team goals (McGrath et al., 2017). The status of academic teachers also requires special attention. It can be enhanced by recognizing both teaching and research achievements, through formal awards, grants, or promotions, as well as informal gestures of recognition, such as praise from supervisors, and administrative support in both spheres of academic activity.

In the context of ensuring certainty about future events and expectations, it is crucial to develop clear and easily accessible communication channels through which academic teachers can receive up-to-date information about changes in policies, administrative procedures, and institutional development. Such actions, ensuring transparency in decision-making processes, can significantly reduce the level of uncertainty (Pan et al., 2015). Certainty can be enhanced by open and transparent management practices, predictable and fair policies and

procedures, following through with promises and agreements, breaking down complex projects into smaller parts, and clear communication (Schmidt et al., 2014; Kezar, 2018). Open communication of goals, decisions, and strategic rationales helps build trust and better manage tensions.

Last but not least is ensuring fairness, especially in the distribution of resources, assignment of teaching duties, and allocation of administrative workloads. Respondents repeatedly pointed out that perceived unfairness is demotivating and leads to workplace conflict (Schmidt et al., 2014; Malhotra et al., 2020). Focusing on these elements will allow leaders to create an environment that supports the engagement and satisfaction of academic staff, thereby contributing to improved quality in both teaching and research (Smith, 2024). In this context, it is important to implement strategies oriented not only towards the university's success but also towards the broader common good and social justice.

The research results suggest that actions aimed at improving status, enabling greater autonomy, supporting positive social relationships, and ensuring fairness can collectively contribute to greater engagement among academic staff. This study has both practical and policy implications for university management. From a management perspective, these findings mean that higher education leaders need innovative, distinctive, and adaptive strategies, as well as desirable work environments that ensure teachers at all academic levels are satisfied with their work.

In addition to the actions previously indicated, in order to strengthen the engagement of academic staff, meet their needs, and mitigate the negative effects of existing paradoxes, leaders in higher education should attempt to implement the following exemplary solutions:

1. Integrated performance assessment models, utilizing, among others, Data Envelopment Analysis (DEA) to measure the relative efficiency of academic units based on multiple indicators (e.g., financial inputs, research outputs), benchmarking through inter-university comparisons to identify best practices and areas for improvement, or cyclical (e.g., five-year) evaluation plans with clearly defined KPIs, including regular data collection and reporting (Wildani et al., 2023; Abdullah, Ramlan, 2023; Luangpaiboon et al., 2024; Almeida et al., 2024);
2. Participatory management tools, such as organizing regular meetings (discussion forums, panels, feedback collection) with various stakeholder groups, establishing councils and committees with representatives from different stakeholder groups (joint decision-making on strategy, curricula, university policies), decentralized decision-making, participatory budgeting (deciding on the allocation of part of the financial resources to selected projects or initiatives), organizing leadership training in inclusive management, or introducing feedback platforms (e.g., regular surveys, discussion panels) to ensure continuous information flow between the academic community and university authorities (Da Silva et al., 2017; Makki et al., 2023; Vallon, 2024; Roza de França, 2025);

3. Institutional support and continuous improvement, for example by developing transparent evaluation procedures that involve staff in defining assessment criteria (e.g., co-creation workshops for indicators), providing adaptive mechanisms that allow for modifications to systems in response to the changing needs of the university (e.g., annual process reviews), or using quality frameworks (e.g., the Baldrige framework) to link performance assessment with long-term strategic goals (Da Silva et al., 2017; Makki et al., 2023; Vallon, 2024; Roza de França, 2025).

6.2. Proposed framework for balancing paradoxes by meeting needs

Management paradoxes, such as Autonomy vs. Accountability or Teaching vs. Research, are an inherent part of higher education functioning (Leja, 2013). In response to these challenges, there is a growing emphasis on the potential of the SCARF model (Rock, 2008) as a tool to support the mitigation of tensions arising from conflicting expectations placed on academic teachers. One of the key elements conducive to balancing paradoxes is flexibility, which allows academic teachers greater control over their responsibilities. This approach allows for effectively reconciling individual employees' goals with institutional requirements (Noorda, 2013). Equally important is transparency, which consists of establishing clear rules regarding evaluation, promotion, and task allocation. This reduces tensions related to perceptions of unequal treatment, ultimately fostering a more harmonious work environment (Ramirez-Cardona, Calderón-Hernández, 2024). Moreover, it is also important to involve teachers in creating transparent policies, codes of conduct, and procedures at the university, as this can improve their sense of control and acceptance of imposed standards (Day, 2023), as well as regularly discussing and updating them in dialogue with the entire academic community (EUA, 2025).

Managers should support academic self-governance initiatives but also maintain a balance between freedom and responsibility towards the community and the external environment (Noorda, 2013). It is also crucial to organize training sessions on time management, effective teaching, or grant acquisition, which can help academic teachers effectively combine research and teaching responsibilities (Uaciquete, Valcke, 2022).

It is essential for university managers to create a work environment in which both aspects of academic work are valued and supported, recognizing their interconnections and significance for the quality of education and scientific progress (Lewis, Smith, 2024). Furthermore, universities can introduce policies promoting a balance between research and teaching, such as recognizing teaching achievements in promotions or providing flexible work schedules (Khan, 2017). It is also necessary to introduce more flexibility than before in shaping the proportion between teaching and research activities for individual academic staff, as well as supporting academic staff in administrative tasks (e.g., grant applications-submission, accounting). It is also important to maintain transparent and fair reporting and evaluation systems for teaching and research activities (Atanaw et al., 2025), to make these outcomes public,

e.g., through financial statements and reports on the implementation of the university's development strategy (Raza, 2009; Pawłowska, 2021), and to develop and apply monitoring and evaluation mechanisms such as quality management systems, internal and external audits, and benchmarking with other universities.

Another important aspect is inclusiveness, which involves building the academic community through interdisciplinary collaboration, mentoring programs, integration initiatives, and sharing best practices in teaching and research (Li et al., 2023). Shaping an organizational culture based on academic values-conscientiousness, objectivity, independence, openness, and transparency (Pawłowska, 2021) – is also crucial. Such actions not only strengthen team relationships but also help alleviate tensions resulting from diverse individual and team goals.

Implementing the SCARF model into university management practice can bring long-term benefits for both teachers and the institution itself. Increasing academic staff engagement will translate into higher quality research and teaching, which in the long run will strengthen the university's position in the competitive higher education environment. However, achieving these benefits requires commitment from management, openness to change, and a willingness to listen and respond to the needs of academic teachers (Rasmussen, Andreasen, 2020).

A supportive, transparent, and inclusive work environment can become the foundation for building a sustainable future for universities (Alexander, Manolczew, 2020). In this way, higher education institutions will be better prepared to face the challenges of the modern world, while supporting the development of both individuals and entire academic teams (Algazo, Suraiya, 2024).

Paradoxes related to higher education management are unlikely to disappear, but they can be effectively mitigated by meeting the basic needs of academic teachers.

The SCARF model provides a useful framework which, although not an exhaustive theory, helps to better understand and manage interpersonal relationships as well as organizational tensions (Baby et al., 2024). However, attention is drawn to its limitations, especially in the cross-cultural context, where differences in the meaning of particular domains, such as autonomy or status, may affect the effectiveness of applied strategies (Carson, 2014). SCARF, as a model originating from an individualistic, Western paradigm, does not always correspond to the cultural conditions prevailing in Asian, African, or Eastern European countries, where different values and social hierarchies dominate.

Therefore, SCARF should be treated as a conceptual heuristic that can support management practice, but requires supplementation with theories that better account for the structural, political, and economic complexity of academic institutions. In future research, it is advisable to strive for integration of the SCARF model with organizational theories and to adapt methodologies to the cultural and institutional context. Only such an approach can ensure the validity and effectiveness of strategies applied in diverse higher education systems.

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