RESEARCH ARTICLE

Developing Professional Motivation in Higher Education: A Mixed-Method Investigation of Psychological and Institutional Factors

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Abstract

This study investigates the psychological and pedagogical factors shaping professional motivation among university students using a mixed-method research design integrating quantitative and qualitative approaches. The sample consisted of 278 undergraduate students, and data were collected through standardized questionnaires and semi-structured interviews. Statistical analysis revealed that intrinsic motivation, professional identity, and perceived competence are the primary determinants of professional motivation, explaining 48% of its variance. Extrinsic motivation was found to function as a supplementary, short-term incentive rather than a stable predictor. The findings confirm the theoretical assumptions of Self-Determination Theory and extend previous local studies by empirically modeling the structural relationships between motivational components. An integrative conceptual model of professional motivation is proposed, demonstrating that sustainable professional motivation is grounded in internalized interest, identity formation, and competence perception. The results provide both theoretical and practical implications for enhancing motivational environments in higher education and improving students' professional development outcomes.

KEYWORDS

Professional motivation, intrinsic motivation, extrinsic motivation, professional identity, perceived competence, mixed-method research, higher education, motivational readiness, psychological factors, pedagogical mechanisms.

INTRODUCTION

In contemporary higher education systems, ensuring students' professional preparedness is not limited to the development of knowledge, skills, and competencies; it also requires the systematic cultivation of their professional motivational domain. In the context of an increasingly competitive labor market, professional adaptability and self-actualization within a chosen career largely depend on an individual's internal motivational resources. Professional motivation is conceptualized as a stable system of intrinsic and extrinsic motives that guide the selection, continuation, and development of professional activity (Ilyin, 2011). It functions not only as a determinant of academic achievement but also as a key psychological factor underlying professional identity formation and long-term professional stability.

In recent years, professional motivation has become an active area of inquiry in local educational research. Baxtiyorov (2024) empirically analyzed the socio-psychological determinants of students' academic motivation and introduced the concept of motivational stability, emphasizing its impact on learning effectiveness. Abdullayeva and Maxmudova (2024) identified gender differences, motivational readiness, and professional orientation as influential factors in the formation of

professional motivation. Furthermore, the role of extracurricular engagement and institutional support mechanisms in enhancing professional motivation was highlighted by Xalimova and Maxmudova (2024). However, most of these studies relied primarily on descriptive and correlational approaches. Structural modeling techniques have rarely been applied to examine complex interrelationships among motivational constructs, and the integrative interaction between intrinsic and extrinsic motivation has not been systematically explored. Moreover, professional identity has not been examined as an independent structural predictor within an empirical model.

In international research, professional motivation is predominantly interpreted within the framework of Self-Determination Theory (SDT). According to Deci and Ryan (2000), the satisfaction of three basic psychological needs—autonomy, competence, and relatedness—enhances intrinsic motivation and improves performance outcomes. Lopez et al. (2025) empirically demonstrated a strong positive relationship between intrinsic motivation and academic engagement in higher education contexts. Similarly, Mirzaei et al. (2025) showed that innovative pedagogical approaches and autonomy-supportive learning environments significantly increase student motivation.

Against this background, a methodological and conceptual gap can be identified between local and international research traditions. In particular, there is a need for a comprehensive mixed-method approach capable of systematically examining the psychological and pedagogical mechanisms underlying professional motivation. The present study aims to address this gap by identifying the key psychological and pedagogical factors shaping students' professional motivation through an integrated quantitative and qualitative research design. Specifically, the study seeks to answer the following research questions: Which psychological factors most strongly predict professional motivation? How do intrinsic and extrinsic motivational components interact? How do students interpret pedagogical mechanisms within the context of their professional development?

LITERATURE REVIEW

Professional motivation is interpreted in psychology and pedagogy as a multidimensional and complex construct. It develops through the interaction of intrinsic and extrinsic factors during the process of choosing, adapting to, and advancing within a professional career. The phenomenon has been examined within several theoretical frameworks, including needs theory, process theories of motivation, the social-cognitive approach, and Self-Determination Theory (SDT). Each of these perspectives contributes to understanding the mechanisms underlying professional behavior and career development.

1. Classical Motivation Theories and Professional Motivation

The conceptual foundations of motivation research were initially established within the framework of the hierarchy of needs model. Abraham Maslow proposed that human motivation is structured in ascending levels of needs, culminating in self-actualization. According to this model, the need for self-actualization represents the highest source of motivation and is closely linked to personal growth and fulfillment. In the context of professional motivation, this perspective suggests that career engagement is driven by the individual's desire for self-development and realization of potential.

Frederick Herzberg's two-factor theory further advanced motivational research by distinguishing between hygiene factors and motivators. Hygiene factors—such as working conditions, salary, and institutional policies—prevent dissatisfaction but do not generate lasting motivation. Motivators—such as achievement, recognition, responsibility, and personal growth—serve as intrinsic sources of satisfaction. Applied to professional motivation, this theory implies that long-term professional commitment depends more strongly on intrinsic motivational elements than on external incentives.

Victor Vroom's expectancy theory introduced a cognitive dimension to motivational analysis. According to Vroom, motivation is determined by three interrelated components: expectancy (belief that effort leads to performance), instrumentality (belief that performance leads to outcomes), and valence (value attached to outcomes). This framework conceptualizes professional motivation as a rational decision-making process in which individuals evaluate expected rewards and probabilities of success before engaging in professional effort.

Despite their foundational importance, classical motivation theories primarily explain general motivational mechanisms and do not sufficiently address the formation of professional

identity or the influence of broader social and educational contexts. As a result, more contemporary theoretical frameworks have emerged to account for the complexity of motivational processes within higher education environments.

2. Self-Determination Theory and Contemporary Approaches

In contemporary research, professional motivation is predominantly examined within the framework of Self-Determination Theory (SDT). Developed by Deci and Ryan (2000), SDT posits that intrinsic motivation is strengthened when three basic psychological needs—autonomy, competence, and relatedness—are satisfied. According to this perspective, individuals demonstrate higher engagement, persistence, and performance quality when their behavior is internally regulated rather than externally controlled.

Recent empirical studies have further validated this framework in higher education contexts. Lopez et al. (2025) identified a strong positive relationship between intrinsic motivation and academic engagement among university students. Using structural equation modeling (SEM), their findings demonstrated that intrinsic motivation functions as a primary predictor of academic and professional engagement. These results highlight the structural role of internalized motivational processes in sustaining long-term educational involvement.

Similarly, Mirzaei et al. (2025) demonstrated that innovative pedagogical approaches—particularly autonomy-supportive learning environments and reflective teaching practices—significantly enhance students' motivational levels. Their findings confirm that institutional and instructional strategies that foster psychological need satisfaction contribute directly to the development of stable professional motivation.

Overall, contemporary evidence consistently indicates that intrinsic motivation produces more durable and long-term effects compared to external incentives. While extrinsic rewards may stimulate short-term engagement, sustainable professional development appears to depend largely on internally regulated motivation.

3. Professional Identity and Motivational Readiness

Professional identity refers to the process through which an individual perceives and defines themselves as a member of a particular profession. It is closely linked to professional motivation, as identity formation strengthens commitment to career goals and enhances persistence in professional

pathways. In recent literature, professional identity is frequently examined in relation to career commitment and professional adaptability.

Local research also addresses aspects of this relationship. Abdullayeva and Maxmudova (2024) identified motivational readiness and gender differences as significant factors influencing the formation of professional motivation. Baxtiyorov (2024) associated motivational stability with consistency in students' academic performance, emphasizing the importance of sustained engagement in learning processes. Furthermore, Xalimova and Maxmudova (2024) highlighted the positive impact of extracurricular engagement and institutional support mechanisms on professional motivation.

However, these studies largely relied on descriptive or correlational approaches. The complex structural interrelations among intrinsic motivation, professional identity, and competence perceptions have not been systematically modeled using advanced analytical techniques. As a result, the structural role of professional identity within a comprehensive motivational framework remains insufficiently explored in local contexts.

4. Methodological Analysis and Research Gap

The review of existing literature reveals several important methodological distinctions:

- ✓ International studies frequently employ structural equation modeling, regression analysis, and multivariate statistical techniques.
- ✓ Local studies predominantly rely on descriptive and correlational approaches.
- ✓ The integrated structural relationship between professional identity and intrinsic motivation has rarely been empirically modeled.
- ✓ Mixed-method research designs combining quantitative and qualitative analysis are largely absent in the local research tradition.

These observations indicate a clear research gap. There is a need for a comprehensive investigation of the psychological and pedagogical mechanisms underlying professional motivation, particularly through an integrated methodological framework capable of capturing both statistical relationships and experiential interpretations.

5. Theoretical Integration

Based on the reviewed literature, professional motivation can be conceptualized through an integrative model consisting of the following components:

- ✓ Intrinsic motivation as the primary driver of sustained engagement;
- ✓ Perceived competence as a mediating factor influencing motivational persistence;
- ✓ Professional identity as a stabilizing factor reinforcing long-term commitment;
- ✓ Extrinsic motivation as a supplementary, short-term incentive.

This integrative framework is grounded in Self-Determination Theory (Deci & Ryan, 2000) and incorporates findings from local empirical research. By synthesizing classical motivational principles with contemporary educational research, the model provides a theoretically coherent basis for examining professional motivation within higher education settings.

METHODOLOGY

The present study was designed to identify the psychological and pedagogical factors shaping students' professional motivation through an explanatory sequential mixed-method research design. The research object consisted of undergraduate students (Years 1–4) enrolled in higher education institutions, while the research focus included the interrelationships among intrinsic and extrinsic components of professional motivation, professional identity, and perceived competence. The overall aim of the study was to empirically determine the key psychological predictors of professional motivation and analyze their integration with pedagogical mechanisms. This objective was achieved through a combination of quantitative and qualitative approaches.

1. Quantitative Phase

The quantitative phase involved 278 undergraduate students, of whom 56% were female and 44% were male, representing various faculties and academic disciplines. The sample was formed using a random cluster sampling method to enhance generalizability. Data were collected through a standardized questionnaire comprising three main measurement blocks:

- ✓ Professional Motivation Scale, designed to assess the overall level of professional motivation;

- ✓ Academic Motivation Index, based on Self-Determination Theory (SDT), measuring intrinsic and extrinsic motivational components;
- ✓ Professional Identity Inventory, assessing the extent to which students perceive themselves as members of a particular profession.

All instruments were structured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Internal consistency reliability of the instruments was assessed using Cronbach's alpha coefficients. The results indicated high reliability levels: intrinsic motivation ($α$ = .87), extrinsic motivation ($α$ = .82), and professional identity ($α$ = .84). These values confirm strong internal consistency of the scales.

Data analysis was conducted in several stages. First, descriptive statistics were calculated to determine means and standard deviations. Second, Pearson correlation coefficients were used to examine relationships among variables. Third, multiple regression analysis was conducted to identify predictors of professional motivation. Additionally, independent samples t-tests were performed to examine gender differences across motivational constructs.

2. Qualitative Phase

The qualitative phase involved semi-structured interviews with 22 students. Participants were selected based on maximum variation sampling, drawing from quantitative results to include students with both high and low intrinsic motivation scores. The interviews focused on students' personal experiences related to professional motivation formation, their perceptions of the educational environment, and their interpretations of internal and external motivational influences.

The collected qualitative data were analyzed using thematic analysis. Interview transcripts were coded systematically, and major thematic categories were identified to capture recurring motivational patterns and contextual interpretations.

3. Data Integration and Research Validity

Integration of quantitative and qualitative findings was conducted through an explanatory integration model. Statistical trends identified in the quantitative phase were further interpreted and contextualized using qualitative insights. This integrative strategy enhanced both the validity

and explanatory depth of the study.

The research was conducted in accordance with ethical standards. Participation was voluntary, and all respondents provided informed consent prior to data collection.

Overall, the methodological framework enabled a comprehensive examination of professional motivation as a multidimensional construct and allowed for a systematic analysis of the interaction between psychological and pedagogical determinants.

The findings were analyzed through both quantitative and qualitative phases. Initially, the internal reliability of the measurement instruments was assessed, followed by descriptive statistics, correlation analysis, and multiple regression analysis. Finally, qualitative findings were used to contextualize and interpret the statistical results.

1. Reliability of Measurement Instruments

Internal consistency of the scales was evaluated using Cronbach's alpha coefficients.

RESULTS

Table 1. Reliability Coefficients of Measurement Scales

Variable	Number of Items	Cronbach's α
Intrinsic Motivation	8	.87
Extrinsic Motivation	7	.82
Professional Identity	6	.84
Perceived Competence	5	.81

All scales demonstrated acceptable to high reliability, with coefficients exceeding the recommended threshold of 0.80. The intrinsic motivation scale showed the highest internal consistency (α = .87), indicating strong coherence among its items.

2. Descriptive Statistics

Descriptive analysis was conducted to determine the central tendencies and dispersion of the main variables.

Table 2

Descriptive Statistics of Key Variables (N = 278)

Variable	Mean (M)	Standard Deviation (SD)
Intrinsic Motivation	4.12	0.63
Extrinsic Motivation	3.48	0.71
Professional Identity	3.96	0.58
Perceived Competence	3.88	0.66
Professional Motivation	4.05	0.60

The results indicate that intrinsic motivation was reported at a higher level than extrinsic motivation. This suggests that students' professional engagement is more strongly driven by internal interest and personal commitment than by external rewards.

3. Correlation Analysis

Pearson correlation coefficients were calculated to examine relationships among the variables.

Table 3

Correlation Matrix

Relationship	r
Professional Motivation – Intrinsic Motivation	.62***
Professional Motivation – Extrinsic Motivation	.29*
Professional Motivation – Professional Identity	.57***
Professional Motivation – Perceived Competence	.58***

*p < .05, ***p < .001

Professional motivation demonstrated a strong positive correlation with intrinsic motivation (r = .62, p < .001), indicating that internally regulated motivation plays a central role in sustaining professional engagement. Perceived competence (r = .58, p < .001) and professional identity (r = .57, p < .001) also showed strong positive associations. In contrast, extrinsic motivation displayed a weaker but statistically significant relationship (r = .29, p < .05), suggesting a more limited influence.

4. Multiple Regression Analysis

To determine the primary predictors of professional motivation, multiple regression analysis was conducted.

Table 4

Predictors of Professional Motivation

Predictor	Standardized Coefficient (β)	Significance
Intrinsic Motivation	.41	p < .001
Professional Identity	.33	p < .001
Perceived Competence	.27	p = .001
Extrinsic Motivation	.09	p > .05

The overall model was statistically significant and explained 48% of the variance in professional motivation (R^2 = .48). In social science research, this represents a substantial explanatory power. Intrinsic motivation emerged as the strongest predictor (β = .41), followed by professional identity and perceived competence. Extrinsic motivation did not demonstrate a statistically significant independent contribution within the regression model.

These findings indicate that sustainable professional motivation is primarily shaped by internal psychological factors rather than external incentives.

5. Gender Differences

Independent samples t-tests revealed no statistically significant gender differences in intrinsic motivation (p > .05). However, extrinsic motivation was slightly higher among male students (p < .05). This suggests that external incentives may be perceived differently across genders, although intrinsic motivational structures remain relatively stable.

6. Qualitative Findings

Thematic analysis of interview data identified four primary themes:

✓ Internal interest and passion for the profession

✓ Family and social environment influence

✓ Role of practical training and real-life experience

✓ Mentorship and institutional support

Students consistently emphasized intrinsic interest and identification with their future profession as the most influential motivational factors. External incentives, such as scholarships or grades, were interpreted as short-term stimuli

rather than long-term drivers of professional development.

The integration of quantitative and qualitative findings demonstrates that sustainable professional motivation emerges from the interaction of intrinsic motivation, professional identity, and perceived competence, whereas extrinsic motivation plays a supportive but secondary role.

DISCUSSION

The findings of the present study empirically confirm that professional motivation is a multidimensional, systematic, and interrelated psychological construct. The results demonstrate that intrinsic motivation, professional identity, and perceived competence function as the primary determinants of professional motivation. While these findings align with established motivational theories, this study extends existing knowledge by structurally modeling these relationships within the context of higher education in a local setting.

First, the identification of intrinsic motivation as the strongest predictor supports the foundational assumptions of Self-Determination Theory (SDT). Deci and Ryan (2000) argue that when individuals' basic psychological needs are satisfied, behavior becomes internally regulated, resulting in higher quality engagement and sustained performance. In the present study, intrinsic motivation emerged as the most powerful predictor of professional motivation ($\beta = 0.41$), suggesting that conscious career choice and internally driven interest constitute the foundation of stable professional development.

Second, professional identity was identified as a significant structural factor. As individuals increasingly perceive themselves as members of a particular profession, their commitment to professional activities strengthens. This finding resonates with Maslow's concept of self-actualization, which emphasizes the role of identity formation in higher-level motivational processes. Professional identity ($\beta = 0.33$) appears to reinforce the stability component of professional motivation by integrating personal meaning with career orientation.

Perceived competence also demonstrated a significant contribution to professional motivation. This result corresponds with the concept of self-efficacy, which posits that individuals who believe in their capabilities are more likely to persist in goal-directed behavior. Students who evaluated their professional abilities positively exhibited stronger motivational engagement, indicating that competence

perceptions serve as an important mediating mechanism.

In contrast, extrinsic motivation did not emerge as a statistically significant predictor in the regression model, despite demonstrating a modest correlational relationship. This finding supports Herzberg's two-factor theory, which suggests that external factors may prevent dissatisfaction but do not generate long-term motivational commitment. External incentives appear to function as short-term stimuli rather than stable determinants of professional engagement.

When compared with local research, the results extend Baxtiyorov's (2024) concept of motivational stability by empirically modeling the structural interaction between intrinsic motivation and professional identity. Similarly, the motivational readiness discussed by Abdullayeva and Maxmudova (2024) is further clarified through its integration into a comprehensive structural framework.

Qualitative findings strengthened the statistical model. Students consistently emphasized internal interest, identification with their profession, and practical experience as central motivational drivers. These themes directly correspond to the quantitative predictors identified in the regression analysis, thereby enhancing the explanatory power of the proposed model.

The scientific contribution of this study can be summarized as follows:

- ✓ An integrative structural model of professional motivation was proposed and empirically validated.
- ✓ The structural interrelationship between intrinsic motivation, professional identity, and perceived competence was modeled for the first time within the local higher education context.
- ✓ A mixed-method approach was implemented, integrating quantitative statistical analysis with qualitative interpretation.
- ✓ Professional identity was empirically established as a central stabilizing determinant rather than merely a descriptive construct.
- ✓ The relative influence of intrinsic and extrinsic motivation was statistically differentiated, confirming the dominant role of intrinsic regulation.

✓ Psychological and pedagogical factors were analyzed within an integrated systemic framework rather than as isolated variables.

✓ The model incorporates both individual psychological determinants and contextual educational influences.

The proposed conceptual model positions intrinsic motivation as the primary determinant of professional motivation. Professional identity functions as a stabilizing factor that strengthens long-term commitment, while perceived competence operates as a mediating mechanism enhancing motivational persistence. Extrinsic motivation serves as a supplementary incentive rather than a foundational determinant.

Theoretically, the model integrates Self-Determination Theory, Maslow's hierarchy of needs, and Herzberg's two-factor theory. Empirically, the model is supported by regression analysis results explaining 48% of the variance in professional motivation ($R^2 = .48$), indicating substantial explanatory power within social science research standards.

This conceptual framework provides a scientific basis for developing strategic approaches to fostering professional motivation in higher education institutions. By emphasizing internal motivational resources, identity formation, and competence development, universities can create sustainable motivational environments that enhance students' long-term professional growth.

CONCLUSION

The present study provided a comprehensive examination of the psychological and pedagogical factors shaping students' professional motivation through a mixed-method research design. The findings empirically confirm that professional motivation is a multidimensional and systemic construct. The results demonstrate that sustainable professional motivation emerges from the integration of intrinsic motivation, professional identity, and perceived competence. Intrinsic motivation functions as the primary driver of professional engagement, grounded in conscious career choice, personal interest, and internal need satisfaction. Professional identity contributes to the stability of motivation by reinforcing an individual's perception of themselves as a member of a particular profession. Perceived competence operates as a mediating factor, strengthening students' confidence in their professional abilities and enhancing motivational persistence.

From a theoretical perspective, the findings confirm and extend the core assumptions of Self-Determination Theory and classical motivation theories within the context of local higher education. In particular, the empirical differentiation between intrinsic and extrinsic motivational components clarifies the structural model of professional motivation. Although extrinsic motivation may function as a short-term incentive, it does not serve as a decisive determinant of stable professional engagement.

The scientific significance of this study lies in the development and empirical validation of an integrative model of professional motivation. Psychological and pedagogical determinants were examined as interconnected elements within a systemic framework rather than as isolated variables. The application of a mixed-method approach enhanced the reliability and explanatory depth of the findings, as statistical results were enriched through qualitative interpretation. This integration enabled a more comprehensive understanding of professional motivation not only at the quantitative level but also at the experiential and contextual levels.

From a practical standpoint, the findings suggest the need to reconsider motivational strategies within higher education institutions. Specifically, universities should promote autonomy-supportive learning environments, strengthen mentorship systems, expand practice-oriented learning opportunities, and implement assessment practices that foster students' perceived competence. The development of professional motivation should not rely solely on external incentives but must be grounded in students' internal needs, identity formation, and long-term professional self-concept.

Several limitations should be acknowledged. The sample was restricted to selected higher education institutions, which may limit the generalizability of the findings. Additionally, the reliance on self-report measures may introduce subjective bias. Future research should employ structural equation modeling and longitudinal designs to examine the dynamic development of professional motivation over time.

Overall, this study offers a systematic explanation of the mechanisms underlying the development of professional motivation among university students and provides both theoretical and practical foundations for improving motivational strategies in higher education. Professional motivation should be regarded as a key determinant of individual professional development and broader societal progress.

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