3rd International Conference on Social Sciences and Humanities Research
https://mijournals.com/index.php/Human_Studies/index

METHODOLOGICAL DESCRIPTION OF STUDYING THE PSYCHOLOGICAL MECHANISMS OF STUDENTS' PROFESSIONAL IDENTITY

https://doi.org/10.57033/mijournals-2026-3-0351

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Abstract. *The formation of professional identity is a central developmental task of the student years, yet the psychological mechanisms behind it remain unevenly operationalized in empirical research. This paper outlines a methodological framework for studying these mechanisms in university students. It justifies the theoretical foundations, the research design, the instruments and the analytic strategy needed to obtain valid and reproducible results, and it sets out in sequence the stages of data preparation, psychometric verification, group comparison, correlation, regression, the testing of mechanisms by structural equation modelling and mediation analysis, the thematic analysis of qualitative material and the integration of the two kinds of data.*

Keywords: *professional identity, psychological mechanisms, students, methodology, mixed-methods design, psychometric adaptation.*

INTRODUCTION

The framework proposed here rests upon Erikson's psychosocial theory (Erikson, 1968), upon Marcia's identity status paradigm (Marcia, 1966:551-558; Marcia, 1980:159-187) and upon the systemic-activity approach to professional self-determination. Professional identity is treated as a multidimensional construct with cognitive components (self-concept and professional knowledge), emotional and motivational components (commitment, satisfaction, professional values) and behavioural components (professional activity and reflection). Its mechanisms are understood as processes such as identification, self-reflection, social comparison and exploration, which mediate the link between educational experience and identity outcomes (Luyckx et al., 2008:58-82).

The purpose of the paper is to set out a design, a set of instruments and an analytic sequence by which these mechanisms may be studied in a manner that is both empirically grounded and reproducible.

MAIN PART

A mixed-methods, sequential explanatory design is proposed (Creswell & Plano Clark, 2018). The quantitative stage uses a cross-sectional survey, ideally complemented

by a longitudinal follow-up in order to capture the dynamics across the years of study; the qualitative stage uses semi-structured interviews in order to interpret the quantitative patterns. Stratified sampling by year of study, field of specialization and gender ensures the comparability of the groups, and the sample size is determined by an a priori power analysis (Cohen, 1988).

The study employs the following standardized measures. For professional identity it uses the Vocational Identity Scale, which assesses the clarity and the stability of vocational identity (Holland, Gottfredson & Power, 1980:1191-1200), together with A. A. Azbel's questionnaire of professional identity status, based upon Marcia's paradigm, in order to determine the level of formation of professional identity (Marcia, 1966:551-558). For identity status and developmental processes it uses the Extended Objective Measure of Ego Identity Status (Bennion & Adams, 1986:183-197) or the Dimensions of Identity Development Scale (Luyckx et al., 2008:58-82), which assess exploration, commitment and reconsideration. For self-reflection it uses the Self-Reflection and Insight Scale (Grant, Franklin & Langford, 2002:821-836) and A. V. Karpov's reflexivity questionnaire (Karpov, 2003:45-57). For professional motivation it uses K. Zamfir's method as modified by A. A. Rean, which distinguishes intrinsic and extrinsic motivation and positive and negative motives, together with the Work Extrinsic and Intrinsic Motivation Scale (Tremblay et al., 2009:213-226). For self-efficacy it uses the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995:35-37) and the short form of the Career Decision Self-Efficacy Scale (Betz, Klein & Taylor, 1996:47-57). A socio-demographic questionnaire records age, gender, year of study, field of specialization, mode of study, practical experience and the reasons for the choice of career.

Foreign-language instruments undergo translation, back-translation, expert evaluation of content validity and a pilot study with thirty to fifty participants (Brislin, 1970:185-216). Psychometric verification includes Cronbach's alpha (Cronbach, 1951:297-334) and McDonald's omega (McDonald, 1999), test-retest reliability at an interval of two to four weeks, exploratory factor analysis and confirmatory factor analysis, with the fit criteria CFI and TLI not below 0.90–0.95, RMSEA not above 0.08 and SRMR not above 0.08 (Hu & Bentler, 1999:1-55). Convergent and discriminant validity are assessed through correlations with theoretically close and theoretically distant constructs.

The analysis of the data proceeds in nine stages. The first is the preparation of the data: coding, screening for missing values by Little's test of missingness completely at random with multiple imputation where necessary (Little, 1988:1198-1202), the detection of outliers by the Mahalanobis distance, and the assessment of the normality of the distribution by skewness, kurtosis and the Shapiro-Wilk test. The second stage is descriptive statistics: means, standard deviations, frequencies and the distribution of the statuses of professional identity across the scales. The third stage is the psychometric analysis: the calculation of the indices of reliability and validity and the testing of measurement invariance across gender and year of study (Hu & Bentler, 1999:1-55).

The fourth stage consists of group comparisons: differences by year of study, by specialization and by gender are examined by the t-test or by one-way analysis of variance, and by the Mann-Whitney U and Kruskal-Wallis tests where normality is violated, with effect sizes and post hoc tests corrected by the Bonferroni procedure (Cohen, 1988). The fifth stage is correlation analysis: Pearson or Spearman correlations among professional identity, reflection, motivation and self-efficacy. The sixth stage is regression analysis: multiple linear regression with control of covariates, with multicollinearity checked by the variance inflation factor and with examination of the distribution of the residuals.

The seventh stage is the testing of the mechanisms themselves: structural equation modelling (Kline, 2016) and mediation analysis, for example of the path from reflection through self-efficacy to professional identity, with indirect effects estimated by bootstrapping with five thousand resamples and ninety-five per cent confidence intervals, and with moderation analysis by year of study or by gender where this is warranted (Hayes, 2018). The eighth stage is the qualitative analysis: the transcription of the semi-structured interviews and their thematic analysis following the six phases of familiarization, initial coding, the search for themes, their review, their definition and naming, and reporting (Braun & Clarke, 2006:77-101), with the reliability of the coding verified through inter-coder agreement between two independent coders. The ninth stage is the integration of the data: the qualitative findings are compared with the quantitative results by means of a joint display in order to interpret them (Creswell & Plano Clark, 2018). The statistical analyses are performed in SPSS, JASP or R, using the lavaan and psych packages, and in Mplus.

CONCLUSION

The proposed methodology enables a systematic and empirically grounded study of the mechanisms underlying students' professional identity and provides a basis for developing programmes of psychological support in higher education. Its distinguishing feature is that the measurement instruments, the criteria of psychometric verification and the analytic procedures are determined in advance and are mutually consistent, so that the mechanisms are not merely described but tested as explicit models whose results may be reproduced upon other samples.

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