



RESEARCHER IN THE MAKING: DISCIPLINE-SPECIFIC RESEARCH READINESS AND CAREER INTENTIONS

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Abstract

Fostering students' preparedness to undertake research, especially as a career pursuit, is a strategic priority in higher education, yet given global instability, its development remains precarious. This study examined comparatively Student Research Engagement Readiness (SRER) among Ukrainian humanities and sciences university students, and how it translated into career intentions. A sequential explanatory mixed-methods design was employed with 255 final-year undergraduate and graduate students. Quantitative data were collected using the validated SRER scale and analyzed through independent samples t-tests, chi-square tests, simple linear regression, and mediation modeling. The data were further triangulated with a reflexive thematic analysis of students' accounts of research-related barriers and proposed institutional improvements.

Results revealed discipline-dependent readiness profiles, where humanities students self-reported higher motivation and fewer barriers, while research self-efficacy and behavioral involvement showed stronger cross-disciplinary consistency. A readiness stratification effect was observed, with science students underrepresented in the highest readiness category. SRER was a positive predictor of research career intentions, explaining a sizeable proportion of variance in students' aspirations. Moreover, self-efficacy mediated the link between barriers and career intentions, where fewer difficulties predicted higher self-efficacy, which in turn led to stronger career aspirations. In terms of institutional improvement, qualitative findings underscored the salience of communication, instructional support, incentives, mentoring, and infrastructure. Overall, research career aspirations emerge from the interplay between cognitive resources, disciplinary environments, and institutional affordances. Bolstering students' self-beliefs appears pivotal in pre-empting the detrimental effects of barriers and fostering research career intentions.

Keywords: research career intentions, student research engagement readiness, higher education

Introduction

Promoting students' preparedness and willingness to undertake and apply academic research is envisioned as a cross-national mission of higher education (Healey & Jenkins, 2022).

Student research engagement is ubiquitously implemented as a strategic means for honing higher-order thinking skills, disciplinary expertise, and a professional scholarly persona (Choi et al., 2021; MacDonald et al., 2024). It comes as no surprise, given the impact of research involvement on students' enhanced academic performance, critical reasoning, and sustained career motivation (Crowe & Brakke, 2019; Parker, 2018).

That said, the effectiveness of embedding research within curricula inherently hinges on how ready students feel cognitively, affectively, and practically to participate. Conceptualized as Student Research Engagement Readiness (SRER), this state of preparedness is a combinatorial construct comprising research-related knowledge, motivational orientation, volitional commitment, and affective positioning toward academic activity (Lőrincz & Csernicsko, 2026). Being more than a skill-based quality, SRER may come under the influence of personal, instructional, and institutional factors.

Evidence suggests that many students encounter impediments that may weaken sustained involvement in research, including inadequate methodological training, limited mentoring, restricted access to resources, and diminished perceptions of research as professionally relevant (Adebisi, 2022; Davis et al., 2020). In educational systems undergoing rapid transformations, especially those confounded by war-induced disruptions, such as in Ukraine, the like challenges become markedly pronounced.

In Ukraine, research is a mandatory curriculum component at all degree levels, culminating in yearly term papers and a final thesis. However, simply placing research in the curriculum does not translate into meaningful engagement or research competence gains (Malachowski et al., 2024). Over the recent years, Ukrainian higher education has seen substantial changes spurred by the Bologna process, curricular modernization, and an emphasis on strengthening research capacity. One of the overarching aims of these reforms is to enhance students' participation in academic inquiry. Nevertheless, under conditions of limited funding, displacement, and institutional instability, research opportunities remain fragile. Existing scholarship suggests that Ukrainian students generally display high educational commitment while simultaneously facing institutional and logistical barriers to research participation (Lőrincz & Povidaichyk, 2026). Despite these insights, discipline-specific exploration and theoretically grounded explanatory models remain scarce.

Against this backdrop, the present study foregrounds the SRER framework as its conceptual anchor. Pertinent literature spells out research preparedness as a constellation of research self-efficacy, motivation, behavioral involvement, and perceived barriers (Lőrincz & Csernicsko, 2026). Concomitantly, they constitute the core of SRER, encompassing students' confidence in their research capacity, their motivational orientation toward inquiry, the extent and intensity of participation in research-related activities, and their perceptions of institutional or psychological constraints. Among these, research self-efficacy has been frequently associated with research engagement. Students confident in their ability to design, implement studies, analyze data, and disseminate findings efficiently are more inclined to initiate research, persevere through setbacks, and seek academic opportunities (Miao et al., 2025). Likewise, both intrinsic and extrinsic motivation to engage in and with research also shapes students' cognitive engagement and willingness to invest more time and effort in research endeavors (Maddens, 2023). Behavioral involvement operationalizes the enacted dimension of SRER, reflecting students' actual participation in research-related activities. Conversely, perceived barriers may attenuate research involvement efforts even among otherwise capable and motivated students (Quintero et al., 2025).

Notably, research engagement is disparately distributed across disciplinary milieus. Research in STEM fields, typically laboratory-based, highly structured, and requiring more technical competence, tenably increases methodological anxiety and exposes students to resource bottlenecks. Humanities research, on the contrary, is often more individually driven

and variable in style, instilling interpretative reasoning and scholarly writing (Healey et al., 2023; Toven-Lindsey et al., 2023). Such distinctions may engender differentiated SRER profiles across fields, potentially overshadowing student effort and long-term academic aspirations. Even so, empirical investigation of discipline-specific configurations of SRER remains overlooked.

A concomitant conceptual lens for understanding how research readiness translates into career intentions is provided by Social Cognitive Career Theory (SCCT) (Lent et al., 1994; Lent & Brown, 2019). It postulates that professional maturation is a socially constructed process where agency is exercised through self-beliefs and goals, yet environmental factors can bolster or undermine personal direction. SCCT, thus, underscores the relationship between personal input (self-efficacy, outcome expectations) and contextual affordances (support and obstacles) in eventually shaping professional identity. In the context of the present study, the SRER categories serve as forerunners to career choices in that self-efficacy and motivation (inculcating outcome expectations) are foundational precursors of intentions to take up research as a profession (Duong et al., 2024).

Grounded in SRER and SCCT, the present mixed-methods study examined the relationship between students' readiness to engage in research and their career intentions, and whether SRER varied by academic field. It further explored how perceived barriers and research self-efficacy were linked to students' professional goals. To this end, the following research questions were formulated:

RQ1: Do students in the humanities and sciences differ in research engagement readiness, and to what extent?

RQ2: Are higher levels of SRER associated with stronger research-related career intentions?

RQ3: How are perceived barriers associated with students' intentions to undertake research as a career?

RQ4: What barriers to research engagement do students self-report, and what improvements do they propose?

Research Methodology

Design

To elucidate how students' readiness to undertake research impacted research career intentions among humanities and sciences students in Ukraine, a sequential explanatory mixed methods design was employed (Creswell & Plano Clark, 2023), combining quantitative and qualitative data analysis. The study was grounded in the SRER framework and Social Cognitive Career Theory (Brown & Lent, 2023), where the former enabled the examination of students' research self-efficacy, motivation, involvement, and perceived barriers, while the latter provided a basis for interpreting how these factors may shape career-related intentions. The selection of this design was prompted by the need for quantitative testing of disciplinary differences, predictive associations, and mediation effects, followed by a qualitative phase looking into students' perceptions of confounding factors for research engagement. Thus, the study complemented statistical insights with contextual interpretation of students' research participation and career intentions, enabling triangulation of findings.

Participants

A convenience sample of 255 university students was aggregated mainly from four universities located in western and central Ukraine. For regression-based measurements, it exceeds commonly recommended minimum requirements. Although probability sampling was

not feasible owing to the ongoing instability affecting Ukraine, the sample size was deemed adequate for the planned statistical analyses. To ensure the respondents had relevant academic experience to evaluate research opportunities, only final-year undergraduate and graduate students were invited. Demographically, the cohort included 154 students from the humanities (predominantly English language and literature) and 101 students from quantitatively oriented disciplines (primarily mathematics and information technologies). Therefore, the findings should be interpreted with caution, as the sciences group does not represent the full range of STEM disciplines. The study adhered to ethical research standards by guaranteeing voluntary participation, confidentiality, and anonymity of responses (BERA, 2018).

Instrument

Research engagement was measured utilizing the SRER scale, which has undergone a rigorous validation process (Lőrincz & Csernicsko, 2026). Essentially, it is a flexible multidimensional instrument designed to assess how ready students are to undertake research. The previous validation supported a four-factor structure. Psychometric evaluation of the tool through exploratory (EFA) and confirmatory factor analysis (CFA) confirmed its theoretical and empirical rigor. The final 27-item CFA model showed acceptable fit ($\chi^2(246) = 720, p < .001, \chi^2/df = 2.93, CFI = .902, TLI = .886, RMSEA = .077, 90\% CI [.071, .083]$). The reliability of the tool's four subscales was verified through Cronbach's alpha, yielding coefficients ranging from .83 to .93, proving its high internal consistency.

The SRER encompasses 27 items across four dimensions: (1) Research Self-Efficacy (9 items) – perceived confidence in completing research tasks, (2) Research Motivation (5 items) – interest and value of research for development and career, (3) Barriers to Research Engagement (8 items) – challenges associated with research, such as lack of time, competence, resources, or anxiety, and (4) Research Participation (5 items) – frequency and intensity of participation in research activities. Additionally, research-related career intentions were assessed on a subscale, capturing students' aspirations to pursue research-oriented careers and their perceived value (item 1 – I intend to continue participating in research after graduation; item 2 – I intend to pursue a career that involves conducting research; item 3 – I am likely to further study in a research-related field). Items enquired about students' likelihood of engaging in research after graduation and research-intensive employment. Cronbach's alpha coefficient for the given scale was .89. The original instrument was developed in English, subsequently translated into Ukrainian using a forward-back translation process by two bilingual experts in the fields of English linguistics and mathematics to ensure equivalence.

To complement quantitative insights collected through the SRER, participants were invited to respond to an open-ended question, eliciting their subjective understanding of barriers, institutional shortcomings, and potential solutions.

Data Collection and Analysis

Quantitative data collected via the SRER tool and career intentions subscale were analyzed utilizing SPSS (Version 23). Before the primary analysis commenced, the dataset was screened for univariate normality by calculating skewness and kurtosis values. Because all items fell within the acceptable ranges ± 3 and ± 8 , a decision was made to use parametric tests. In line with RQ 1, independent samples t-tests were run to compare students in the humanities and sciences based on the four SRER dimensions. Next, a chi-square test of independence estimated the association between academic field and categorized readiness levels, with Cramer's V indicating the effect size. To address RQ2, a simple linear regression analysis examined whether SRER predicted research-related career intentions. To explore the psychological

aspects of career choice outlined in RQ3, a mediation analysis was performed using PROCESS macro v4.2 (Model 4) (Hayes, 2022). Perceived barriers were entered as the predictor (X), career intention as the outcome variable (Y), and research self-efficacy as the mediator (M). Bootstrapping with 5000 samples was used to generate 95% percentile confidence intervals.

Qualitative responses were analyzed by two authors following the six-phase reflexive thematic analysis developed by Braun and Clarke (2022). Commencing with a familiarization phase, the responses written in Ukrainian and English were read and re-read to observe recurring patterns of meaning. During the coding phase, labels were assigned by the researchers independently to data pointing to barriers diverting students from research and proposed improvements. To enhance the credibility of coding, the researchers compared the codes, resolving discrepancies through discussion and refinement of the coding scheme. The initial codes were then merged into broader themes, which were subsequently reviewed and defined as five core categories (e.g., information dissemination, instructional support).

Prompted by the study's sequential explanatory mixed methods design, qualitative and quantitative findings were integrated at the interpretation stage, enabling more in-depth explanation of statistical patterns, especially disciplinary divergences, and offered student-centered directions of institutional reform. Consequently, qualitative data enriched the mediation model, showcasing what exerts influence on students' research participation and further involvement after graduation.

Data collection was administered via Google Forms, mainly in the presence of researchers who helped students clarify items to avoid misinterpretation during the 2025-2026 academic year.

Research Results

An independent samples t-test output (Table 1) documents the results of comparison of the four SRER dimensions between students in the humanities and sciences.

Table 1

Descriptive Statistics and Independent Samples T-Tests by Academic Field

Variable	Group	<i>M</i>	<i>SD</i>	<i>SE</i>	Levene <i>F</i>	Levene <i>p</i>	<i>t</i>	<i>df</i>	<i>p</i>
Self-efficacy	Humanities	3.68	0.79	.06	0.10	.75	-1.57	253	.117
	Sciences	3.84	0.81	.08					
Motivation	Humanities	3.71	0.92	.07	6.24	.01	2.10	227.95	.037
	Sciences	3.48	0.76	.08					
Participation	Humanities	3.54	0.84	.07	0.12	.73	-0.19	253	.851
	Sciences	3.56	0.88	.09					
Barriers*	Humanities	3.08	0.88	.07	9.50	.001	6.41	239.25	.0001
	Sciences	2.48	0.62	.06					

Note: Barriers were reverse-coded, i.e., higher scores indicate lower perceived barriers.

The findings revealed significant disciplinary divergences in research motivation and barriers. Specifically, the humanities cohort reported higher levels of research motivation ($M = 3.71$, $SD = 0.92$) than their counterparts in the sciences ($M = 3.48$, $SD = 0.76$), $t(227.95) = 2.1$, $p = .037$ (equal variances not assumed). However, the size of the difference was small (Cohen's $d = .27$). Furthermore, perceived barriers also diverged to a significant extent. Humanities students reported higher reverse-coded barrier scores ($M = 3.08$, $SD = 0.88$) than sciences students (M

$= 2.48$, $SD = 0.62$), $t(239.26) = 6.41$, $p < .001$, with medium-to-large difference (Cohen's $d = .76$). Consequently, the former group perceived fewer obstacles potentially deterring them from research than the group in science-related fields. Contrastingly, differences between the groups in research self-efficacy, $t(253) = -1.57$, $p = .117$, Cohen's $d = -.20$, and research participation, $t(253) = -0.19$, $p = .85$, Cohen's $d = -.02$ did not reach statistical significance. Thus, while the two respondent groups had comparable levels of confidence and participation extent, their understanding of constraints to undertake research and affective aspects varied by discipline.

Next, a Chi-square test of independence was performed to examine preparedness of the student body and evaluate the association between discipline and the four categorized levels of research readiness (Tables 2, 3).

Table 2
Distribution of SRER Levels by Academic Field

Academic Field	Low	Moderate	Good	Excellent
Humanities	4.3	48.8	32.3	14.6
Sciences	5.5	51.6	40.7	2.2
Total	4.7	49.8	35.3	10.2

Overall SRER scores were classified based on the criterion-referenced ranges established in the previous validation study (Lőrincz & Csernicsko, 2026). After reverse-coding of the barriers dimension, the overall score was calculated as the average of the four dimension means. Participants were then grouped into four readiness levels: low = 1.00 - 2.49, moderate = 2.50 - 3.49, good = 3.50 - 4.19, and excellent = 4.20 - 5.00.

Table 3
Chi-Square Test of Association between Academic Field and SRER Level

Test	Value	df	p
Pearson χ^2	10.32	3	.02
Likelihood ratio	12.62	3	.01
Cramer's V	.20	—	.02

As seen, the relationship was statistically significant ($\chi^2(3) = 10.32$, $p = .02$). The effect size (Cramer's $V = .20$) indicated a small to moderate association. Importantly, a noticeable difference was obtained for the "excellent" level of readiness. While 14.6 % of the humanities cohort achieved the excellent level, a mere 2.2 % of science students did so. Even so, both participant groups were heavily concentrated in the moderate readiness category, accounting for 48.8 % of humanities and 51.6 % of sciences students. The findings may suggest that, despite an existing baseline potential for all fields, students in the hard subjects may encounter more barriers preventing them from reaching the highest levels of autonomous research.

A linear regression analysis was conducted to examine whether SRER was associated with participants' intentions to commit themselves to careers in research. For this, the SRER score was adjusted by excluding the item from the original scale related to career intentions to avoid overlap between the predictor and outcome variable.

Table 4
Linear Regression Predicting Career Intentions from SRER

Predictor	M	SD	B	SE	β	<i>t</i>	<i>p</i>	95% CI LL	95% CI UL
Constant	3.48	0.63	.041	.29	—	0.141	.888	-.530	.612
SRER			.993	.082	.606	12.11	< .001	.832	1.155

Model fit: $R = .606$, $R^2 = .367$, Adjusted $R^2 = .364$, $F(1, 253) = 146.67$, $p < .001$.

The analysis yielded a strong positive association between SRER and career intentions ($r = .606$, $p < .001$), indicating that students who felt more ready for research were more inclined to pursue respective careers. A linear regression analysis confirmed that SRER was a significant positive predictor of career intentions ($B = .993$, $SE = .082$, $\beta = .606$, $t(253) = 12.110$, $p < .001$, 95% CI [.832, 1.155]). The model accounted for 36.7% of the variance in career intentions ($R^2 = .367$, $F(1, 253) = 146.67$, $p < .001$).

To explore the relationship between perceptions of barriers and career intentions with self-efficacy as a mediating factor, a mediation analysis was run using the PROCESS macro (Model 4) (Hayes, 2022).

Table 5
Mediation Analysis Predicting Career Intentions

Outcome / Predictor	B	SE	t	p	95% CI LL	95% CI UL	β
Outcome: Self-efficacy							
Constant	3.146	.180	17.443	< .001	2.791	3.501	—
Barriers (reverse-coded)	.196	.058	3.376	< .001	.082	.311	.208
<i>Model fit: R = .208, R² = .043, F(1, 252) = 11.398, p < .001</i>							
Outcome: Career intentions (direct effect + mediator)							
Constant	1.190	.315	3.774	< .001	.569	1.811	—
Barriers (reverse-coded)	.107	.070	1.530	.127	-.031	.245	.089
Self-efficacy	.533	.074	7.187	< .001	.387	.679	.416
<i>Model fit: R = .443, R² = .196, F(2, 251) = 30.613, p < .001</i>							
Total effect model: Career intentions regressed on barriers							
Constant	2.867	.233	12.322	< .001	2.408	3.325	—
Barriers (reverse-coded)	.212	.075	2.822	.005	.064	.359	.175
<i>Model fit: R = .175, R² = .031, F(1, 252) = 7.965, p = .005</i>							
Effect	B / Effect	SE / BootSE	t	p	95% CI LL	95% CI UL	Standardized effect
Total effect (c)	.212	.075	2.822	.005	.064	.359	.175
Direct effect (c')	.107	.070	1.530	.127	-.031	.245	.089
Indirect effect (a × b) via self-efficacy	.105	.041	—	—	.029	.187	.087

Note. Number of bootstrap samples for percentile bootstrap confidence intervals: 5000.

CI= confidence interval; β= standardized coefficient.

As shown in Table 5, lower barrier levels were positively associated with research self-efficacy (Path a: $B = .196$, $SE = .058$, $t = 3.376$, $p < .001$). The data confirmed that students who perceived fewer barriers tended to report higher levels of research self-efficacy. The total effect of barriers on students' intentions to pursue careers in research was also statistically significant ($B = .212$, $SE = .075$, $t(252) = 2.882$, $p = .005$). Hence, fewer obstacles were generally associated with higher research aspirations. When barriers and self-efficacy were entered into the model predicting career intentions, self-efficacy emerged as their positive predictor (Path b: $B = .533$, $SE = .074$, $t(251) = 7.187$, $p < .001$), putting it in line with SCCT that positions confidence as a principal interpreter of career choice. Meanwhile, the inclusion of the self-efficacy category in the model made the direct effect of perceived barriers on career intentions non-significant (path c': $B = .107$, $SE = .07$, $t(251) = 1.53$, $p = .127$). The overall model accounted for approximately 19.6 % of the variance in career intentions, $R^2 = .196$, $F(2, 251) = 30.613$, $p < .001$. Importantly, the indirect effect of reverse-coded barriers on career intentions through self-efficacy was statistically significant, $ab = .105$, $BootSE = .041$, 95% bootstrap CI [.029,

.187]. The standardized indirect effect was .087, 95% bootstrap CI [.024, .155]. Therefore, the mediation analysis supported an indirect association in which fewer perceived barriers led to stronger research-related career aspirations.

Perceived Barriers and Suggested Improvements

To understand student-led proposals for enhancing research engagement, the quantitative analysis was further complemented by a qualitative phase. In all, 183 participants responded to the open-ended question, corresponding to a response rate of 71.8 %. Comments ranged from one to four sentences in length. The provided responses revealed five core themes characterizing a bottom-up direction for institutional reform: (1) information dissemination, (2) instructional support, (3) financial and academic incentives, (4) mentoring support, and (5) infrastructural enhancement.

A prominent theme voiced by participants concerned the insufficient dissemination of information about student research opportunities, including conferences, competitions, and publication possibilities. Many of them appeared unaware of available research-related activities, posing a major barrier to engagement, as illustrated below:

“Inform students about the upcoming research opportunities; also, students need help with publication of research papers.” (S3)

“Inform more online and offline about available competitions and conferences, so that students know what they are and can participate” (S11).

Furthermore, several respondents noted communication gaps, mentioning that students frequently learned about upcoming events incidentally rather than regularly.

Insufficient formal instruction in research skills also emerged as a salient theme, with a number of students calling for mandatory courses in research methods at the BA level, academic writing instruction, and structured guidance through research. Students expressed the need for “formal courses on conducting research” (S50), “more training in different research methods” (S10), and “seminars on academic writing and preparation of academic papers” (S42). Similarly, participants emphasized the need to integrate research components into the curriculum, believing that coursework with embedded research activities could normalize research involvement and reduce stress associated with independent projects.

Featuring prominently among the barriers was the lack of financial and academic incentives. To address it, respondents suggested implementing additional academic credits or grade-based incentives for extra-curricular research, scholarships, small grants, and formal recognition of research achievements, e.g.,

“Providing small grants or scholarships to students who participate in research projects would incentivize them.” (S12)

“Offering the possibility for students to enroll in subjects and exempting them from the necessity to take an exam based on successful research results can be a powerful research motivator.” (S159)

Mentorship was reported as a cross-disciplinary priority. Participants consistently pointed to the need for accessible and supportive supervisors who could guide them through the research process:

e.g., “Pairing students with faculty mentors who actively conduct research could provide guidance and support.” (S72)

“Scientific supervisors should be more closely involved in working with students.” (S28).

Respondents reported mentorship to be essential for building competence and confidence, indicating that insufficient quality supervision was a psychological and organizational barrier to research participation.

Critically, science students articulated the presence of resource bottlenecks, reprising findings of the quantitative analysis that yielded low “excellent” readiness scores. The overriding concern expressed by students was the lack of access to “modern equipment, laboratories, databases, and academic literature” (S44), indispensable for research. Finally, establishing “specialized platforms for exchanging ideas” (S146) signaled the need for fostering a collaborative research culture.

Discussion

This mixed-methods study identified the association between SRER and career intentions, as well as disciplinary hallmarks of readiness to pursue research among students in humanities and sciences in Ukrainian higher education. Anchored in quantitative analysis using the validated SRER tool followed by qualitative reflexive thematic analysis, the study offered empirical and theoretical insights into the cognitive, motivational, and structural factors, forerunning early research commitment. The obtained results extend existing scholarship on research engagement (Healey et al., 2023; Miao et al., 2025), providing context-bound evidence from the Ukrainian higher education system currently grappling with geopolitical pressures, while simultaneously implementing reforms (Lörincz & Komar, 2023).

Concerning RQ1, the findings revealed statistically significant disciplinary differences in research motivation and barriers, as well as comparable levels of self-efficacy and participation in research-related activities, irrespective of the major. As a corollary, students’ affective engagement and construal of constraints were heavily stratified based on the academic field. The higher motivation exhibited by humanities students may be attributable to deeper curricular implementation of writing, especially in the case of English majors, inquiry-based learning, and research projects, in line with “students as researchers” pedagogy (Healey et al., 2023). Contrastingly, despite comparable confidence levels, the sciences cohort reported greater infrastructural impediments, as shown by both quantitative and qualitative data, which naturally require access to laboratories, equipment, or other resources, reiterating concerns raised in previous studies (Adebisi, 2022; Healey et al., 2023).

The chi-square analysis documented a significant association between academic field and SRER levels. Notably, while both groups clustered predominantly within the moderate readiness levels, humanities students were markedly overrepresented in the “excellent” category. The paucity of science students at the highest level of preparedness may also be the corollary of limited research access or competition for resources. As previously noticed, sustained exposure to and involvement with research are essential for advanced engagement levels (Healey et al., 2023; Toven-Lindsey et al., 2023; Lörincz et al., 2025). Unfortunately, in Ukraine, where research opportunities may be sparse outside elite institutions, students in laboratory-intensive fields may experience impediments to cultivating research readiness (UNESCO, 2024).

Regarding RQ2, the findings yielded compelling evidence that research readiness was linked to their plans to pursue careers in research. Specifically, SRER emerged as a positive predictor of career intentions, explaining a substantial proportion of variance in participants’ willingness to commit themselves to research ($R^2 = .37$). The association strength ($\beta = .61$) suggests that readiness for research is more than a background characteristic, but a key determinant of career orientation toward research.

Notably, the mediation analysis (RQ3) provided support for the role of self-efficacy in shaping research career intentions and mediating the relationship between barriers and professional plans, aligning broadly with SCCT (Lent & Brown, 2019). Its findings lent support to the view that self-efficacy is a powerful psychological construct, potentially mediating constraints and career-related decision-making (Gray et al., 2021; Wang et al., 2025). Specifically, fewer perceived barriers were associated with changes in self-efficacy, which in

turn strongly influenced decisions to undertake research professionally. Importantly, once self-efficacy was included in the model, the direct effect of barriers on career intentions became non-significant. Therefore, external obstacles (e.g., resource paucity) may not directly lower aspirations of would-be researchers. For Ukrainian students, beliefs in one's capabilities may act as an important psychological factor: in the case of healthy self-efficacy, students may be more likely to persist in their goals even in the face of deprivation. This result resonates with recent meta-analyses where domain-specific self-efficacy emerged as a stronger predictor of career persistence than academic grades and research persistence (Wang et al., 2025). From a theoretical perspective, it extends SCCT by demonstrating that readiness components, particularly self-efficacy, serve as precursors of research career commitment.

With respect to RQ4, the qualitative data furnished in-depth contextualization of the recurrent quantitative patterns, illuminating the lived experiences underlying students' readiness profiles. The emerging five themes, namely information dissemination, instructional support, financial and academic incentives, mentoring quality, and infrastructural resources, closely mirror systematic barriers to research engagement and were, therefore, anticipated (Malachowski et al., 2024).

First, persistent communication gaps arose between institutions and students, particularly regarding research opportunities, such as conferences, grants, and publication options. A similar situation where fragmented communication undermined student engagement could be observed in the post-pandemic period (Zohrabi & Zwickl, 2023). Second, a heightened need for instruction in research methods and academic writing further corroborated the expediency of early curricular embedding in research preparation (Buffalari et al., 2020). Third, financial and academic incentives were espoused by students as a motivational lever. Analogous scholarship documented benefits associated with research, such as micro-grants, scholarships, increased participation, and persistence (Berlanga & Corti, 2025), while in financially precarious contexts, as in Ukraine, such incentives may disproportionately boost extrinsic motivation. Fourth, expectedly, mentorship quality reappeared as a cross-disciplinary precept determining research engagement, much in line with available publications where supportive supervision and rapport were closely associated with confidence growth, persistence, and academic identity development (Kapranov & Semenov, 2025). Interestingly, Ukrainian students valued relational and affective support and not merely technical guidance. Finally, science students acutely felt infrastructural constraints, documenting material inequities. However, adequate engagement of STEM majors in research hinges on accessibility to laboratory equipment, supplies, and collaborative research platforms.

Based on the obtained findings, several practical implications can be mapped out. Although Ukrainian universities institutionalize research training, predominantly already at an early undergraduate stage, the concerns expressed by the participants point to its inadequacies in terms of instructional opportunities and quality mentorship. Next, contiguous with the call for information dissemination, universities could implement centralized digital platforms to keep students abreast of upcoming research events and opportunities. Also, financial incentives could encourage students to participate in research by increasing access and motivation. Finally, a critical exigency identified within the responses necessitates further investments in research infrastructure, especially in science fields.

Though insightful, the study is not without limitations. While the SRER model proved robust, the confinement of inquiry to the Ukrainian context may have affected generalizability of its findings. Additionally, the cross-sectional design of the study restricts causal inference of its results. Future research could, therefore, adopt a longitudinal design to trace readiness development along academic stages and also to examine how individual readiness depends on institutional variables, such as mentoring models, research intensity, or funding allocations.

Conclusions and implications

The ambit of the study was to determine whether students were genuinely ready to undertake research across discipline-specific pathways and how such readiness may translate into intentions to pursue research careers. By combining SRER with SCCT, along with quantitative and qualitative evidence, the study evinced that student research was not only a product of psychological factors but also of disciplinary and institutional characteristics. The comparison between students in the humanities and sciences fields documented that readiness was experienced differently. Although levels of research self-efficacy and participation were comparable, students diverged in motivation and perceptions of barriers to a noticeable extent, showing that discipline primed students' relation to and construal of research.

Given that SRER substantially predicted career intentions, the findings suggest that students who felt prepared for research were more likely to envisage research as part of their future careers. Promisingly, research self-efficacy was positively associated with research career intentions. Structural obstacles could not directly suppress aspirations to undertake research professionally. Rather, the influence of difficulties operated through respondents' confidence in their research capabilities. Consequently, catering to students' self-efficacy may sustain their resilience and ambition even in the face of crisis. Readiness, therefore, can be viewed as more than an outcome of effective institutional intervention, but a psychological buffer that could mediate the relationship between external conditions and agency.

The qualitative insights further reinforced that curricular embedding per se was insufficient to cultivate research commitment. Students also voiced the need for systematic training, meaningful mentoring, transparent communication, financial incentives, and adequate research infrastructure, picturing an ecosystem where readiness could mature.

Ultimately, the question stands broader than whether students are ready to undertake research, but whether universities have the capacity to nurture that readiness in an equitable and ongoing way. It gains relevance in higher education contexts, where research is formally present in curricula but students' opportunities to develop as researchers hinge on disciplinary resources and institutional support. By considering the role of cognitions, motivation, institutional affordances, and disciplinary culture, this study situates research engagement as a developmental process that must be purposefully supported if higher education is to prepare the next generation of academics.

Declaration of Interest

The authors declare no competing interests.

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