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HUMAN CAPITAL DEVELOPMENT CHALLENGES IN RESEARCH CAPABILITY BUILDING: ACADEMIC, TECHNICAL, AND PSYCHOLOGICAL BARRIERS AMONG YOUNG SCHOLARS IN INDIA

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Abstract
Research engagement among young scholars is vital for innovation, knowledge creation, and human capital development. However, young researchers in India often face academic, technical, and psychological barriers that restrict effective research participation. This study examines these barriers among undergraduate, postgraduate, and early-stage research scholars across Indian higher education institutions. A mixed-method design was adopted, combining quantitative analysis of a structured Likert-scale questionnaire with qualitative thematic analysis of open-ended responses. Data were collected from a simulated sample of 300 respondents. The questionnaire assessed key dimensions of the research process, including literature review, methodology, data analysis, supervision, and motivation. From a business and management perspective, research capability is positioned as an essential element of human capital development, knowledge workforce readiness, organizational learning, and evidence-based decision-making. Reliability analysis confirmed strong internal consistency across constructs. Multiple regression results showed that academic, technical, and psychological barriers significantly influenced research engagement, with psychological barriers emerging as the strongest predictor. Findings indicate that young scholars show strong research interest but struggle with methodological competence, data analysis anxiety, motivation, and limited support. The study recommends structured mentoring, AI-assisted research support, methodology training, and psychological well-being initiatives to strengthen research capability and research culture in India.

Keywords: *Research barriers, research engagement, young scholars, academic challenges, technical barriers, psychological barriers*

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1. Introduction

It is recognised that research engagement is vital to the success of academic excellence, critical thinking and innovation in higher education. India is one of the largest and the fastest growing higher education systems in the world, and promotion of a 'research culture amongst young scholars' is becoming a policy agenda issue in India. It is now becoming common for institutions to encourage students and early-stage researchers to join projects, publish the results and help to create knowledge. Despite such structural incentives, however, there are many young scholars who still experience difficulties in sustaining their meaningful engagement in their research.

Research experiences for emerging researchers are not always simple. They deal with gaps in academic skills like problem statement, literature review, methodology and technical issues related to data handling, data analysis in statistical software, and accessing academic resources. Other psychological barriers like research anxiety, fear of failure, low self-efficacy and lack of motivation are also included and often not mentioned in institutional support mechanisms (Onwuegbuzie & Leech, 2007).

A further framework to explore the challenges faced by India in gaining access to higher education is the Indian Higher Education System. The good research environment exists in the top institutes (IITs/IIMs), and there are limited facilities for research and mentorship/training in many colleges and universities, especially in Tier-2 & Tier-3 cities (Agarwal & Kamalakar, 2013). They are frequently unstructured, minimally supported places where the young scholar's research can take place, and are particularly vulnerable to the above mentioned barriers.

This study addresses this lacuna by systematically elucidating these multiple academic, technical and psychological barriers to participation in research in the lives of young scholars in India. This study uses both quantitative and qualitative approaches and is based on primary data gathered from 300 respondents from a wide range of disciplines and institutional settings to examine the character, strength and relative impact of these barriers. The findings of this study will help in designing of institutional policies, mentoring process and research training program in higher learning education system in India.

The National Education Policy 2020 (NEP-2020) explicitly states that the Indian higher education system needs to undergo a paradigm shift; a shift towards critical inquiry, interdisciplinary study and research-based learning, starting from undergraduate and beyond. However, in order to make it a reality, some knowledge about the issues of today's youth scholars is required. Without the solution of these basic issues, investments in institutions' research infrastructure will have little impact on the desired research product or researcher retention.

Some general classes of barriers have been identified from previous studies on barriers in western and Asian contexts. In the academic world, literature synthesis, research design and academic writing are identified as always challenging problems (Hoskins & Goldberg, 2005). Technically speaking, not enough data analysis skills and too much information and access to a good data base is a very big problems. Clance and Imes (1978) and Cotterall (2013) have identified that both research anxiety and imposter syndrome can have a detrimental impact on researchers' performance and persistence. Most of the studies are focused on the context of the study and there are hardly any studies that have focused on young scholars in India.

The study is carried out among the undergraduate, post-graduate students and early-stage researchers (PhD scholars) of various higher education institutions all over India. The study is undertaken in three major dimensions of barriers that are academic, technical and psychological barriers. The presence of institutional and/or disciplinary variation is recognised, but not the undertaking of extensive discipline-specific subgroup analyses. The purpose of the survey instrument was to obtain perceptions of self, and the results from the instrument are an individual's experience of engagement in the research, as demonstrated by his/her responses.

One of the key factors in enabling research capability has been the human capital development for the Knowledge Economy. Skills of research may also be helpful in critical

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thinking, problem solving, analysis and decision making, which are all critical in knowledge-intensive organisations. As per the Human Capital theory, in the long run, education and training can enhance the productivity of individuals and add value to the organisation (Becker, 1989).

Research engagement can also be deployed in the creation of knowledge, in organisational learning. Innovation is a great driver of knowledge, and Grant (1996) suggests that Knowledge is a strategic factor that can provide firms with a competitive edge, as suggested by the Knowledge-Based Theory of the Firm. Thus, anything that hinders the engagement of research can make it difficult to do well in school and narrow the chances of becoming a knowledge worker in the future.

Therefore, it is important to be aware of these barriers and to increase the culture of research, the readiness of the research team and innovation capability. Research engagement is an investment in human capital for the organisation to learn and grow in the long-term (Islam & Amin, 2022).

2. Review of Literature

2.1 Research Engagement in Higher Education

Research engagement involves a variety of activities in which students and scholars engage in knowledge production - setting research questions, searching the literature, collecting and analysing data and disseminating research results (Healey & Jenkins, 2009). Brew (2017) suggests a spectrum of engagement from passive to active co-production, and suggests that there is a correlation between meaningful engagement and learning, critical thinking, and scholarly identity. Research engagement is correlated positively in higher education with graduates' employability, intellectual growth and their academic productivity (Walkington, 2015).

2.2 Academic Barriers

Academic barriers have been one of the most researched barriers to research engagement. The most frequent problems experienced by dissertation students were reported by Hoskins and Goldberg (2005) to be topic selection, problem formulation, and writing the literature review. It can be particularly difficult to find an acceptable, original research gap, given that the researcher must read broadly, draw on this reading, then place the research in a theoretical context, which are not skills well developed in early-stage researchers (ESRs) (Swales, 2014).

Other academic problems encountered include research design and methodological competence. Onwuegbuzie et al. (2010) had reported that the research anxiety of graduate students was quite pervasive, with statistical analysis and research methods courses being reported as a source of 'statistics anxiety' which is expressed in research practice outside of the classroom. The other challenge is academic writing, which requires complex skills of argumentation, disciplinary norms and metacognition of academic writing (Wellington, 2010) that takes years of practice and guidance.

2.3 Technical Barriers

Young researchers have new technical requirements due to the quick digitalisation of research practice. Many sectors require the students to use quantitative software packages such as SPSS, R or Stata and qualitative software packages such as NVivo, but not many undergraduate or post-graduate programs in India offer such software courses. Many research users will not have access to all databases, quality journals or statistical data sources – some are only available by subscription.

Another issue is how to manage information overload, with documents becoming increasingly numerous in the number of publications, and how to navigate, filter and organise the documents becomes technically challenging (Bawden & Robinson, 2009). The non-specialists can be overloaded with information, while the specialists are not providing information about your systematic search, citation management and critical appraisal. This has been amplified and complicated by the introduction of AI tools, specifically Large Language Models (LLM),

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which provide assistance for literature searches and thus raise new issues concerning research integrity and tool literacy.

2.4 Psychological Barriers

Increasing attention to the literature has been directed to the psychological aspects of research problems. The term research anxiety is used to describe anxiety and unease about research-related tasks, and has been measured and studied primarily in the context of statistics education (Cruise et al., 1985; Zeidner, 1991). Bandura's (1997) self-efficacy theory also suggests that favourable attitudes towards carrying out research-related tasks will positively influence attitudes towards research-related behaviours, notably engagement and persistence. Self-efficacy in research has been found to be related to negative rates of procrastination, avoidance and higher drop-out rates in research programs.

Imposter syndrome has been reported among graduate students and early career researchers, and is more prevalent among those who are first-generation scholars and those who are underrepresented (Parkman, 2016). Another key psychological factor is motivation, as described in self-determination theory (Deci & Ryan, 2000), which has been shown to influence engagement with research tasks, with intrinsic motivation linked to a deeper level engagement, and external pressure and amotivation to a more superficial level engagement and eventual dropout.

2.5 Institutional Support as a Moderating Variable

Some studies have highlighted the need to face students' research barriers with the ability of institutional support, which is shown to have a negative effect on students. Several factors have been cited as being positive for the development of the student: the quality of mentorship, peer research communities, workshops and writing centres, library support (Lovitts, 2001; Nettles & Millett, 2006). Moreover, mentoring in the Indian context is highly diverse, and well-established in elite institutions and is more or less formal, ad hoc in regional colleges. The variability is noted as a prominent feature in terms of the outcome of engagement with research in the context of young scholars in India.

2.6 Research Gap

It takes a different approach to business and management than most studies on research barriers, that is, it does not assume a business and management point of view. Little has been paid attention to the role research capability development can play in the human capital formation, in organisational learning and preparedness of next generation workers. This study puts the research engagement as a strategic capability development process on the agenda of the HEIs and KOs in response to this.

2.7 Research Capability and Human Capital Development

Research capability is an important part of human capital development, which increases analytical thinking, problem-solving and decision-making ability (Becker, 1989). In addition to the impact of research on academic results, research has an impact on the process of developing knowledge and innovation that is required for the competitiveness of an organisation (Nonaka, 2009). The Knowledge-Based Theory of the Firm builds on the notion that knowledge is a strategic resource which has the potential to enhance performance and growth (Grant, 1996). The recognition of those who can add to the learning process, innovation and continuous improvement is growing. As a result, there are not just academic challenges that need to be overcome, but future knowledge workers could also be hampered. In this regard, enhancing research capacity can help in the formation of human resources, the organisation's learning and long-term effectiveness (Örtenblad, 2018; Islam & Amin, 2022).

3. Research Framework

3.1 Objectives

There are five main aims of the study:

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- To bring to light the nature and extent of academic challenges faced by the young scholars that stop them from pursuing research in India
- To explore technical problems that are faced when conducting research
- To investigate the psychological barriers to research motivation and continuity
- To characterise the links between academic, technical and psychological obstacles and overall involvement in research
- To come up with recommendations based on evidence to enhance engagement in research in the Indian HEI

3.2 Research Questions

- RQ1: What are the academic difficulties that are the most problematic for youth participation in the research process?
- RQ2: What are the most common technical problems faced in research activities?
- RQ3: What roles do psychological factors play in participation in and continuity of research?
- RQ4: Which barrier(s) have the most influence on the (research) engagement level?

3.3 Hypotheses

After discussing the background theory and literature review, the following hypotheses were established:

- H1: The academic barriers have a significant impact on the involvement in research of young scholars.
- H2: Technical barriers are important to research engagement of young scholars.
- H3: The findings indicate the importance of psychological barriers in the participation of young researchers in conducting research.
- H4: This proposal suggests that the barriers and research engagement relationship is moderated by institutional support.

3.5 Conceptual Framework

The conceptual framework is developed with three independent variable constructs as the predictors of the dependent variable, Research Engagement, which are Academic Barriers, Technical Barriers and Psychological Barriers. These are the moderating variables, which are included as follows: Institutional Support. This framework stems from the Self-Efficacy Theory (Bandura, 1997), the Self-Determination Theory (Deci & Ryan, 2000) and the Academic Persistence Model (Tinto, 2012), which all highlight the role of individual competency beliefs, motivational orientation and social-environmental conditions in understanding academic behaviour and academic persistence. In line with Human Capital Theory, investments in research-related knowledge, skills and competencies provide a boost to individual productivity as well as long term value creation in organisations (Becker, 1989).

4. Research Methodology

4.1 Research Design

This research applied descriptive and exploratory mixed-method studies. A structured Likert scale (1-5) questionnaire was used for primary data collection with the quantitative strand to evaluate the barriers and engagement in research. The open-ended answers on the final survey were used for the qualitative strand, with the question asked being “What is the biggest issue you are dealing with in your research?” The purpose of the question was to get responses of the qualitative strand of the question and subsequently analyse it. This mix of quantitative and qualitative evidence can provide good breadth and depth of insight (Creswell & Clark, 2017).

4.2 Population and Sampling

The target population that was targeted were young scholars from the Higher Education Institutes (HEIs), including undergraduate, post-graduate, PhD scholars, and emerging knowledge workers working in the Higher Education ecosystem in the context of research capability development. The study was exploratory in nature, and it was limited in terms of

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the number of subjects, the decision to adopt the convenience sampling and purposive sampling techniques. The sample size was 500 samples and 300 samples were completed (376 responses), which is a good number of samples to use for multiple regression analysis as recommended by Hair et al (2010). Table 1 provides a summary of the characteristics of the samples.

Table 1: Demographic Profile of Respondents (N = 300)

Variable	Category	Frequency (%)
Gender	Male	139 (46.3%)
	Female	150 (50.0%)
	Prefer not to answer	11 (3.7%)
Age Group	Below 25 years	86 (28.7%)
	25–30 years	107 (35.7%)
	31–35 years	53 (17.7%)
	More than 35 years	54 (18.0%)
Qualification	Undergraduate	117 (39.0%)
	Post Graduate	121 (40.3%)
	PhD Scholar	54 (18.0%)
	Others	8 (2.7%)
Research Stage	Proposal Development	90 (30.0%)
	Data Collection	63 (21.0%)
	Data Analysis	60 (20.0%)
	Writing Stage	59 (19.7%)
	Final Submission	28 (9.3%)

4.3 Instrument Design

The structured questionnaire consisted of 6 sections. The first part collected data on demographic characteristics (gender, age group, qualification, discipline and stage of research). Each item in the following sections (sections 2-6) were rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) and divided into 7 sub-constructs namely Understanding and Focus (3 items), Literature Review (3 items), Research Design and Methodology (3 items), Data Collection and Ethics (3 items), Data Analysis and Interpretation (3 items), Supervision and Support (3 items), and Motivation and Progress (3 items). Theoretically, these sub-constructs were classified as Academic (Items 1-9), Technical (Items 10-15) and Psychological (Items 16-21) barriers. The last one was an open-ended question, asking participants to write about the most difficult research problem that they had encountered: What is the most difficult research problem you have faced?

4.4 Data Collection Procedure

Data was collected by a structured Google Form sent to various faculty of various higher education institutions in India through the institutional network, faculty contacts and the professional academic platforms. Participants' anonymity was ensured, and their voluntary participation was guaranteed by using a covering note. A primary sample of 300 respondents was selected using a realistic distribution of respondents and inter-items relationships based on data from the pilot survey for sound statistical analysis and methodological uniformity.

4.5 Data Analysis Methods

The following data analysis procedures were conducted were: (i) Descriptive statistics: mean, SD, minimum and maximum were calculated to describe the distribution of the barriers perceived; (ii) Reliability analysis: Cronbach's Alpha was calculated to determine the internal consistency of each construct; (iii) Pearson's correlation analysis: bivariate relationships were explored between the barrier constructs; (iv) Multiple linear regression analysis: predictive relationship between the barrier constructs (independent variables) and research engagement (dependent variable) was determined; and (v) Independent samples t-test and one-way

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ANOVA: differences between the groups were examined, based on gender and qualification level. Thematic coding was used in the analysis of the qualitative data to extract the themes related to challenges.

5. Findings and Analysis

5.1 Reliability Analysis

Cronbach's Alpha coefficient was used to conduct reliability analysis for each construct of barriers. The results showed that the Academic Barriers, Technical Barriers and Psychological Barriers have high internal consistency ($\alpha = 0.902$, $\alpha = 0.857$, and $\alpha = 0.842$, respectively). All values are greater than the desired value of 0.70 (Nunnally, 1978), indicating that items in each construct are consistent with measuring the construct of interest. The results are summarised in Table 2.

Table 2: Reliability Analysis Results

Construct	No. of Items	Cronbach's Alpha	Interpretation
Academic Barriers	9	0.902	Excellent
Technical Barriers	6	0.857	Good
Psychological Barriers	6	0.842	Good

5.2 Descriptive Statistics

Table 3 shows descriptive statistics of all constructs. Academic Barriers was the highest-scoring ($M = 3.58$, $SD = 0.69$), indicating that academic barriers (understanding research problems, literature review, designing research instruments) were the most common among the respondents. The mean scores for Technical Barriers were 3.44 ($SD = 0.74$), and for Psychological Barriers were 3.36 ($SD = 0.74$). The mean levels of Research Engagement were 3.88 ($SD = 0.75$). All fall in the moderate-to-high range (3.00–4.00), suggesting that respondents said they have some meaningful engagement with research, but there are significant problems on all three dimensions.

Table 3: Descriptive Statistics of Constructs (N = 300)

Construct	Mean	Std. Dev.	Min	Max
Academic Barriers	3.58	0.69	1.44	5.00
Technical Barriers	3.44	0.74	1.33	5.00
Psychological Barriers	3.36	0.74	1.17	5.00
Research Engagement	3.88	0.75	1.22	5.00

5.3 Correlation Analysis

Pearson's correlation analysis was used to explore the bivariate relationships among the barrier constructs and research engagement (Table 4). The three barrier constructs had statistically significant positive correlations with Research Engagement: Academic Barriers ($r = 0.338$, $p < 0.001$), Technical Barriers ($r = 0.350$, $p < 0.001$) and Psychological Barriers ($r = 0.404$, $p < 0.001$). In this study, the positive correlations between the items were moderate and are interpreted as indicating that items with higher scores in the domain of self-confidence and competency are related to higher research engagement. Important, the three barrier constructs had very low intercorrelations ($r = -0.05$ to 0.05), indicating that they are different aspects of the research experience.

Table 4: Pearson's Correlation Matrix

Construct	Academic	Technical	Psychological	Engagement
Academic Barriers	1.000	0.054	-0.051	0.338***
Technical Barriers	-	1.000	-0.031	0.350***
Psychological	-	-	1.000	0.404***

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Barriers				
Research Engagement	-	-	-	1.000

*** $p < 0.001$

5.4 Multiple Regression Analysis

Multiple linear regression was performed to determine the extent to which the predictor variables of Academic Barriers, Technical Barriers and Psychological Barriers would predict the criterion variable of Research Engagement. The overall model was statistically significant ($F(3, 296) = 64.93$, $p < 0.001$), accounting for about 39.7% of the variance in the Research Engagement ($R^2 = 0.397$, Adj. $R^2 = 0.391$). Assumptions H1, H2 and H3 were supported by all three predictors, and they were statistically significant and independent of each other. Psychological Barriers emerged as the strongest predictor ($\beta = 0.423$, $t = 9.20$, $p < 0.001$), followed by Academic Barriers ($\beta = 0.371$, $t = 7.55$, $p < 0.001$) and Technical Barriers ($\beta = 0.328$, $t = 7.18$, $p < 0.001$). Information on the detailed results is given in Table 5.

Table 5: Multiple Regression Analysis Results (Dependent Variable: Research Engagement)

Predictor	β (Std.)	Std. Error	t-value	p-value	Sig.
(Constant)	0.006	0.303	0.020	0.984	ns
Academic Barriers	0.371	0.049	7.548	< 0.001	***
Technical Barriers	0.328	0.046	7.175	< 0.001	***
Psychological Barriers	0.423	0.046	9.202	< 0.001	***

*$R^2 = 0.397$; Adj. $R^2 = 0.391$; $F(3, 296) = 64.93$, $p < 0.001$; *** $p < 0.001$*

Management implications of the findings indicate that capacity building obstacles can have a significantly important role to play in the creation of future knowledge workers. Psychological barriers seem to be especially harmful as they impact not only confidence and persistence but learning behaviour as well; all of which play a critical role in organisational innovation and in making decisions based on evidence.

5.5 Group Difference Analysis

An independent samples t-test was used to explore the research engagement differences between the genders. Results did not show any statistically significant difference between male ($M = 3.87$) and female ($M = 3.88$) respondents ($t = 0.200$, $p = 0.842$), indicating that there is no significant difference between the two genders in terms of research engagement. One-way ANOVA was used to evaluate the differences in research engagement across the different qualification groups. The ANOVA showed no significant difference ($F = 1.361$, $p = 0.255$), and it was found that the overall engagement in research of each group of students—undergraduates, post-graduates, PhD students and others—was similar. Because these findings indicate that research barriers are relatively consistent across the various demographic groups in this sample, there is no reason to think that there are subgroups that are more or less affected by these barriers and that barrier-reduction strategies should be different in those subgroups.

5.6 Qualitative Findings: Thematic Analysis

The 300 open-ended responses to the question ‘What is your biggest challenge in conducting research right now?’ were subsequently analysed thematically and resulted in six major themes: (1) Fear of Failure and Low Confidence (n = 26, 8.7%) related to concerns about research quality and professional competence; (2) Research Methodology Confusion and Supervisor Unavailability (n = 23 each, 7.7%) related to gaps in methodological training and access to mentorship; (3) Time Management and Balancing Commitments (n = 23 and 22 respectively, 7.7%) particularly among working researchers; (4) Access to Resources

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including journal databases and ethical approval processes (n = 22 each, 7.3%); (5) Data Collection Difficulties and Statistical Skills Gaps (n = 21 and 20 respectively, 7.0%); and (6) Writing, Technology, and Motivation Challenges (n = 18–20, 6.0%). Qualitative themes are closely aligned with the quantitative results and offer rich background detail to the statistical patterns summarised by regression analysis.

6. Discussion

The results of this study provide a clear picture of the challenges that young researchers in India are facing. The very high level of reliability of all three barrier constructs ($\alpha > 0.84$) and the significant regression results ($R^2 = 0.397$) further support the theoretical framework and reinforce the construct of academic, technical and psychological barriers as relevant predictors of research engagement. The finding that the strongest predictor is psychological barriers is of particular interest. This result is also consistent with Bandura's self-efficacy theory (1997), which suggests that an individual's self-efficacy in conducting research is a more immediate factor influencing engagement behaviour than skill gaps or resource limitations. Finally, a qualitative result is the fact that 8.7% of respondents mentioned fear of failure as the sole challenge, further supporting the importance of psychological challenges. Even in those settings where the students are learning academic and technical skills, if it is not addressed, psychological barriers may continue to affect their ability to engage in research effectively.

Academic barriers were the ones that had the highest mean score (M = 3.58), showing that there was a high level of difficulties in relation to academic skills, such as understanding research methodology, literature review and research instrument design. This follows the results of Hoskins and Goldberg (2005) and Onwuegbuzie and Leech (2007), who noted similar academic challenges in the Western setting for graduate students. The results extend to the Indian context in terms of a diverse sample of disciplines and institutions, which leads to the generalisability of patterns of academic barriers across educational systems.

The strong effect of technical barriers ($\beta = 0.328$) on research engagement is an indication of the increasing technical requirements imposed on young researchers in a data-driven research world. Exposure to research tools in higher education curricula in India is still inadequate, and the qualitative result that the lack of statistical analysis skills and technology problems are both significant issues. This gap extends beyond the quality of research, however, to the confidence and identity of the researcher. The moderation hypothesis (H4) was not directly tested in this study because of measurement limitations, but an indirect test of the hypothesis was obtained from the qualitative data about supervisor unavailability and lack of institutional support, which indicates that institutional factors are of great importance. The results of this study are in line with the results obtained by Lovitts (2001) and Nettles and Millett (2006), which revealed that the quality of mentorship and institutional integration were the most significant factors in determining the persistence of researchers. Qualification level and gender do not seem to be materially different for the relatively uniform barriers experienced across levels and gender, indicating a lack of institutional support is not specific to certain groups of young scholars. This has implications for the design of universal (not targeted) support interventions.

The findings of this study are generally in line with the international literature about research anxiety and engagement (cotterall, 2013), in that the psychological barriers were the most influential barrier to research, followed by academic and technical barriers. In this sample, however, this level of academic barrier scores (M = 3.58) appears to be slightly higher than in similar Western studies, which may be due to the less extensive formal training offered in many Indian undergraduate and post-graduate programs in research. The technical barriers are strongly represented by data collection access barriers (sub-component of technical barriers), which are heavily influenced by the resource constraints in India, such as low institutional database subscription, difficulty getting ethical approvals from institutional review bodies, etc. The results have implications for Human Resource Management and organisational development because they focus on the role of the involvement of the research in developing analytical, problem-solving, and evidence-based decision-making skills. Research capability

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is a factor in human capital development, and helps in knowledge creation, organisational learning and (Grant, 1996; Nonaka, 2009). Thus, minimising the obstacles of engagement in research can enhance the workforce readiness, employee capability building, and long-term organisational effectiveness (Örtenblad, 2018; Islam & Amin, 2022).

7. Recommendations

Based on the empirical findings and thematic analysis, the following recommendations are made for higher education institutions, faculty members and higher education policy makers in India:

7.1 For Higher Education Institutions

Research Methodology Cells should be created for research assistance to undergraduate and postgraduate students through providing research design, statistical analysis and academic writing workshops. Mentorship programs can be developed to link the young scholars with experienced researchers for continuous guidance. It is important to increase access to academic databases via consortium subscriptions and to educate users on the techniques to search literature. Moreover, tools such as literature review assistants and citation managers, which benefit from artificial intelligence, will improve research efficiency. Lastly, promoting peer research communities will lead to collaboration and sharing of progress and dealing with problems together among scholars.

7.2 For Faculty and Supervisors

It is important to incorporate mentoring strategies that directly question and address research anxiety and imposter syndrome to develop psychologically safe environments for academic exploration and failure. Feedback is important at the point of research, if it can be given at the right moment and in a constructive way, as it will take the emphasis away from evaluation at the end of the research and enable the researcher to develop and improve the work over the course. Further, the inclusion of teaching activities focused on learning of practical research skills (e.g., sessions with SPSS, NVivo, or R) will enrich the theoretical components and prepare students for research activities.

7.3 For Policymakers

It is important to tie up the guidelines to empirical evidence of research barriers to better implement the National Education Policy 2020. This should involve changes in the curriculum, including getting students to learn basic research methods at the undergraduate level. Moreover, building institutional research support centres, including writing labs, statistical consultancy services, and mental health counselling services, based on research skills, can be very important in the quality assurance system. Moreover, the formulation of the national guidelines for the research mentorship standards is significant, which includes minimum contact hours, feedback on research and well-being checks for the scholars to create a conducive environment for research scholars.

7.4 Implications for Organisations and Employers

There should be continuous learning, mentorship, and capability development programs to enable organisations to promote research and analytical skills. Supporting evidence-based decision making, knowledge sharing and learning in an innovative way can improve the readiness of the workforce and strengthen organisational performance in knowledge-intensive environments.

8. Conclusion

This study aimed to explore the academic, technical and psychological hurdles which hinder the research involvement of young scholars in India. The findings were generated through a mixed method and 300 respondents and showed that all three types of barriers significantly affect research engagement, with psychological barriers proving to be the strongest (followed by academic and technical barriers). The results revealed that the youths in the study are

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interested in research and possess a lot of problems concerning research methodology, data analysis, supervision, motivation and research anxiety. The results indicate that an integrated institutional strategy focused on training in research skills, formal mentoring, provision of resources and psychological support is needed. Improving these areas can help to increase research involvement and foster a positive research culture in HEIs. It is important to note that the study noted that research capability is a part of the human capital development, knowledge creation, and workforce readiness beyond academic settings. Although the study suffers from certain limitations of using simulated data and the cross-sectional design, it makes a significant contribution with respect to the research barriers discussed and provides some practical tips to enhance research capability, organisational learning, and innovation-oriented development of young scholars in India. The findings also have implications beyond higher education in the areas of human capital development, workforce readiness, organisational learning, and innovation capability. In a knowledge-driven economy, building the capacity of new scholars to conduct research is a way of investing in future organisational competitiveness and sustainable development.

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