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The Nexus Between Human Capital Competence And Career Readiness: Evidence From Public Universities In Hebei Province, China

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Abstract:
In the face of the rapid development of the global economy, the job market is placing new demands on the employment of graduates. The study focuses on the quality of educational services and skill support provided by universities, as well as the adapting graduates' human capital to market demands and the needs of professional job. The purpose of this study is to explore the effectiveness of public university services and social contexts on invested human capital and whether invested human capital is evolving into career readiness skills for future jobs. Thus, the study examines the relationship between human capital competence and the career readiness of graduates from public universities in Hebei Province, China. Moreover, the study also focuses on the influence of educational services, skills services, and migration on the influence of human capital competence. For the methodology, survey data were collected from 385 graduates using a validated instrument that measured educational services, skills services, migration human capital competence, and seven dimensions of career readiness. The findings revealed a significant positive correlation between educational services and human capital competence ($r=0.726$, $p<0.01$), as well as between skills services and human capital competence ($r=0.560$, $p<0.01$). Educational services emerged as the most influential factor in human capital development ($\beta=0.720$, $p<0.001$), while human capital competence was significantly associated with all dimensions of career readiness, particularly IT skills ($\beta=0.762$) and critical thinking ($\beta=0.474$). Additionally, migration experience had a significant positive impact on human capital development ($\beta=0.587$, $p<0.001$). Through the results, university education services and skills support is important for college students to reserve human capital. Not only to meet the needs of the job, but also to adapt to the challenges posed by global changes, and to develop more important general skills for students to prepare for careers across industries and disciplines.
Keywords: *Human Capital Competence, Career Readiness, Graduate Employability, University Service.*

INTRODUCTION

The global labor market is changing rapidly and due to this, higher education institutions are under pressure to equip their graduates to face the challenges of the labor market (Jackson, 2016; Tomlinson, 2017). Human capital competence, which includes the knowledge, skills, abilities, and personal attributes that enable an individual to perform successfully in society and in a variety of jobs, from a contractual and developmental perspective will be a positive factor in the fields of career readiness and better labor market outcomes (Aman-Ullah, Mehmood, Amin, & Abbas, 2022; Cegolon, 2022). This relationship is especially important in China, where rapid economic transformation, industrial upgrading, and technological innovation have led to an increasing demand for high-quality human capital (X. Li, Wang, Kong, & Tao, 2025).

In the last decades, the Chinese higher education system has significantly expanded and reformed, moving from an elite to a mass education system (Mok & Jiang, 2018). The number of higher education institutions in China grew from 1,041 in 1997 to 3,117 by 2024; university enrolment swelled from 1 million to more than 38.91 million annually; university enrolment swelled from 1 million to more than 8 million annually (China, 2024). This unprecedented growth of access to higher education has been egalitarian in nature but has also raised alarms about the quality of graduates and their employability. The unemployment rate for individuals aged 16 to 24 in urban China reached a record high of 21.3% in June 2023, indicating a significant challenge in the labor market for young people, including recent university graduates. This situation highlights a potential mismatch between the skills and qualifications imparted by universities and the demands of the labor market (Xiang, Wang, & Wang, 2023).

This misalignment is most notably seen in developing area like Hebei Province, which encircles Beijing, and lacks the educational resources and economic opportunities of its metropolitan leaders (Xue & Li, 2022). Further discuss the high-quality development of higher education in Hebei Province from the

perspective of the national "Double First-class" construction. It provides measures and strategies for improving the education system in Hebei, focusing on supporting high-level university construction, seeking characteristic development, and seizing national strategic opportunities. It offers valuable insights into how Hebei can enhance its higher education system to better prepare graduates for the labor market. (Zhang, Li, & Pan, 2024).

Human capital competence in China is not solely dependent on university curricula but is also strongly influenced by the quality of university educational services, the quality of skills-training services, the patterns of students' migration (Yang & Pan, 2020) and other factors. Educational services, which can include everything from course design to teaching quality and academic support, are part of the formal curricle. Skills offerings encompass a variety of co-curricular and extracurricular programs designed for specific skills, including career counselling, internships, and professional development workshops. Underlying students' migration status local to the province, internal migrants from other Chinese provinces, or international students may vary with the access to educational resources, social networks, and employment opportunities (Jingjie Zhang, 2023).

These elements all come together as experiences that strengthen graduates' human capital competencies, which in consequence makes them more prepared for work in various aspects. This may include what we commonly refer to as soft skills, such communication skills, information technology skills, critical thinking, creativity, and innovation skills, leadership skills, and teamwork skills, as well as hard/technical skills from particular sectors or work types (M. Li, Khatibi, Tham, & Azam, 2024). Examining the interrelationships of these variables one with another has significance for informative purposes of educational policies and institutional practices, in China higher education system.

In literature, there are still some shortcomings based on the increasing significance of human capital development in China. First and foremost, the majority of Chinese graduate employability studies have examined elite universities located in major metropolitan cities including Beijing, Shanghai, and Guangzhou (Zhai, Moskal, & Read, 2021), so its necessary to look at the experiences of the graduate cohorts of students in regional public universities (which make up the largest portion of the population in higher education in China). Second, scholars have been depicting human capital development as a one-dimensional construct, neglecting research around the nuances of particular competencies that facilitate career readiness across different occupational contexts (I George & Paul, 2024). Third, there have been few studies on how migration status as a distinguishing factor, which is especially relevant in China's regionally diverse education system, affects human capital development and career outcomes (M. Zhao, 2023).

Another reason is that although graduate employability has rightly received enormous attention in the international literature (Cheng, Adekola, Albia, & Cai, 2022), these frameworks are not fully appropriate in the Chinese context, which is marked by specific cultural, institutional and economic features. Given those entrepreneurial characteristics and context, China fosters a distinctive environment for human capital development based on its national focus on collective social achievement, hierarchy-embedded relationships, and economy-driven intervention. Further complicating the dynamics of the job market is China's swiftly evolving labor market, increasingly shaped by automation, digitalization, and the expansion of the service industry, which poses distinct challenges to university graduates compared to established economies (Ma, Gan, & Huang, 2025).

In the past decades theoretical perspectives on human capital development has changed markedly. Traditional human capital theory (Faggian, Modrego, & McCann, 2019) focuses on the economic benefits accrued to education and skill acquisition but tends to underestimate the broader outcomes of education by confining the scope of analysis to easily measurable skills and economic returns. The capability approach (Comim, 2018), graduate identity perspective (Burke, Scurry, Blenkinsopp, & Graley, 2017) and other contemporary approaches provide wider frameworks on how education contributes to capability and graduates' professional identity. While these theoretical contributions offer a gentler way of understanding how educational experiences may transmute into career readiness, they await empirical testing across contexts, not least of which is China's regional universities.

The growing emphasis on skill development in higher education globally reflects recognition that disciplinary knowledge alone is insufficient for career success. Universities are increasingly expected to cultivate transferable skills such as critical thinking, problem-solving, and interpersonal communication (Jackson & Tomlinson, 2020). In China, this trend is manifested in the Ministry of Education's recent

focus on "new engineering education," which aims to integrate technical knowledge with innovation capabilities and practical skills. However, the effectiveness of these initiatives in developing students' human capital competence and enhancing their career readiness remains underexplored, particularly in regional universities like those in Hebei Province.

LITERATURE REVIEW

2.1 Current Condition of Educational Skills in Hebei's Public Universities

When educational ability building meets the regional economic development mode in Hebei: Some reflections from the perspective of public universities. In a study on graduates from local universities in Hebei Province, findings revealed significant gaps in employment awareness, career planning, and alignment between education and job market demands. A survey of 572 graduates (out of 600 distributed, 95.3% valid response rate) indicated that 87.5% of respondents underestimated the severity of employment challenges, with only 6.3% recognizing the seriousness of the job market situation in 2016 (Bi & Guo, 2016).

The curricular structure in Hebei's universities presents another challenge. (Jinzhe Zhang, 2024) from the Institute of International Education at Hebei University of Economics and Business analyzed curriculum design across several universities in the province, finding that educational approaches remained largely traditional, with limited integration of project-based learning, industry collaboration, and interdisciplinary approaches. They note that curricular rigidity continues to impede the development of adaptable skill sets necessary for contemporary employment contexts.

However, promising innovations are emerging. A longitudinal study by (Yumei Zhang & Luo, 2022) tracked curriculum reforms at Hebei University from 2022-2024, documenting how the introduction of competency-based education models increased students' self-reported workplace readiness by 32%. Their findings suggest that structural reforms to educational delivery can significantly enhance skills development even within resource constraints.

2.2 Skills Services in Hebei's Public Universities

In recent years, the Chinese provincial government in Hebei in northern China proposed a planning outline for the campaign of Deepening the Innovation and Entrepreneurship Countryside. Central to this initiative is the establishment of robust career education programs aimed at preparing students for success in today's job market. The career planning presented by these programs is an important aspect, as it proved to be a determinant of students' employability. In an effort to examine this relationship, a study based upon the Career EDGE employability model, comprising of 430 college students in Hebei Province, was performed. The results showed that career planning is helpful not only for improving students' employability, but also enhances students' learning attitude, which further mediates and promotes students' career readiness. (Sun & Chang, 2024).

In addition, the growth of career decision-making self-efficacy is critical to students' improvement of career adaptability. In a study with 273 undergraduate students in China, the skills of career education were found to be a significant predictor of increased career adaptability through the mediation of career decision-making self-efficacy. This highlights the need for providing students with the knowledge to make informed decisions about their careers, enhancing their readiness for the evolving job market (Liu, Zhang, Dang, & Gao, 2023).

These advancements have facilitated greater access to information and connectivity, contributing to an increasingly indispensable need for technology in education. The study revealed challenges like bad technology support and lack of faculty training in career guidance education in Chinese universities. The study also stressed the role of cutting-edge technologies, such as AI and VR, in personalising and extending the reach of career guidance. Moreover, breaking down hierarchies between industry and academia would help to keep educational programs relevant and in line with the labour market (Xiaoqing & Noordin, 2024).

Overall, Hebei Province's public universities are continually improving the responsiveness of their skills services to foster a competent foundation of human capital on campus and in society to meet the demand for talent and career readiness. These include highlighting holistic career education, building out successful career development, and enhancing decision-making self-efficacy among students' elements that are crucial for ensuring smooth transitions from school to career. While addressing current challenges such as integrating technology into curricula and training faculty will only further bolster these

initiatives, the ultimate success of education 4.0 hinges on graduates equipped to meet the needs of a modern labor market (Liu et al., 2023).

2.3 Migration Status and Its Implications

Migration status as an important driver of career readiness of students in public universities: A study of Hebei Province, China Learning whether migration—interregional migration within China or international influences human capital development is crucial for creating good educational and employment policies. Policies such as the Independent Freshman Admission Program (IFAP) in 2003 increased interregional migration in China by reducing provincial quotas and making university admissions more flexible. 4-5 The IFAP has resulted in increased student mobility, with a propensity to recruit in provinces where education systems are more developed and that have larger student populations, research shows. This mobility can contribute to a shift of students to higher-ranked universities in major cities, which may affect equity in access to top-ranked higher education institutions and the labour market (Cui, Yu, Chen, & Deng, 2024).

Several factors determine the migratory behavior of university graduates ranging from economic opportunities to living costs, and social capital. Another finding corroborating this general trend are studies that have confirmed that graduates prefer to work in metropolitan areas that enjoy a better economy and, in general, more services. Still, housing prices that are too high and an elevated cost of living can discourage migration to these regions. Moreover, territorial embeddedness is visible in migration choices, with social networks formed in university years creating situations in which graduates stay in their university city (Yu, Shen, Xin, & He, 2024).

The hukou system in China – local registration of individuals based on residency – is of critical importance for both migratory pathways and career preparedness. In metropolitan areas, having local hukou is key for graduates to find employment and to access social services, leading some to migrate while others choose to stay in their hometowns. Although a number of cities are implementing talent policies to create environments in which they can attract skilled workers, such policies do not always reflect graduates' preferences or perceived benefits (Yu et al., 2024).

International migratory dynamics, specifically returnees who have formerly studied abroad, also play roles in career readiness and developing human capital. Resistance is often common in the experiences of returnee scholars as they navigate through the challenges of adjusting to local academic contexts, developing new professional networks, and managing teaching and research responsibilities. These challenges can affect their ability to positively contribute towards a thriving academic space, as well as guide students and result in the quality of education and career guidance offered to the students in such regional universities (H. Li, Xing, & Zuo, 2024).

2.4 Human Capital Competences

The growing emphasis on human capital and competence levels in Hebei Province has attracted microscale attention in recent years, indicating a strategic effort to strengthen the region's human resource quality as a key driver of sustainable economic growth. resent Studies on education, skill development programs, and inter-regional imbalances collectively shed light on the multifaceted nature of human capital development in Hebei. (Y. Zhao & Asavisanu, 2023) discussed how training programs were implemented to improve student leaders' leadership practices at normal universities in Hebei Province. Accordingly, the study highlighted the need to cultivate leadership skills in students to equip them for future involvement in educational and administrative functions, thus enhancing the overall human capital of the region.

The quality of human capital is a pivotal determinant of regional economic growth. (Yi Zhang, Kumar, Huang, & Yuan, 2023) introduced a Human Capital Quality Index (HCQI) to assess cognitive and non-cognitive abilities across Chinese provinces. The findings indicated that improvements in HCQI are associated with economic growth convergence among provinces, suggesting that enhancing human capital quality could mitigate regional economic disparities.

These advancements have not come without challenges in developing human capital balance across regions. Previous researches, such as that conducted by (He, Huang, & Sun, 2023), uncover that there was a significant gap in advanced human capital stock between the Beijing–Tianjin–Hebei region and other major urban agglomerations including Yangtze River Delta and Guangdong–Hong Kong–Macao Greater Bay Area. The study also highlighted the importance of regional policies that take into account inter-regional differences in growth rates, infrastructure, and quality of life.

2.5 Relationship Between Variables and Human Capital Competence

The relationship between human capital competence and career readiness has been extensively explored in academic literature. Studies consistently demonstrate that the development of competencies enhances employability and career success. (De Vos, De Hauw, & Van der Heijden, 2011) research published in the Journal of Vocational Behavior indicates that employee participation in competency development initiatives and perceived support for such development are positively associated with self-perceived employability. This heightened employability, in turn, correlates with increased career satisfaction and perceived marketability.

In another piece of evidence from a study in the Work journal, human capital, which is the generalized knowledge, skills and ability of a person, was found to significantly predicted both subjective and objective career success. The study further establishes perceived employability as the mediation of this relationship, proposing that those with strong human capital believe they are more employable, which increases their career success (Ali Khan et al., 2023).

In the context of higher education, research focusing on graduates from higher education institutions in Changsha City, China, found a significant relationship between human capital attributes and career success. The study emphasizes the importance of education and skill development in preparing graduates for successful careers (YANBIN, BUNCHAPATTANASAKDA, & WONG).

Similarly, a study conducted among engineering graduates in Oman's higher education institutions revealed that human capital attributes, such as professional ethics, teamwork, communication skills, lifelong learning, creative thinking, and problem-solving abilities, have a substantial impact on employability readiness. These findings underscore the critical role of comprehensive skill development in enhancing career readiness (Al Hinai, Bhuiyan, & Husin, 2021).

Moreover, a systematic literature review published in the Journal of Knowledge Management discusses the interplay between knowledge management and career development. The review suggests that effective knowledge management practices at individual, organizational, and national levels can bridge the skills gap and improve career readiness among young professionals (Raut, Alon, Rana, & Kathuria, 2024).

Conclusion

Despite the expansion of higher education in China and a growing focus on employability, a significant gap persists between university-developed competencies and employer demands, particularly in non-metropolitan regions like Hebei. This misalignment contributes to graduate underemployment, hindering career development and regional growth. Research highlights skills gaps, uneven service quality, and talent outmigration. While innovations in curriculum design and skills training show promise, the mechanisms linking education to human capital development remain unclear. Further research with robust methodologies is needed to identify effective strategies for improving graduate competence and regional retention.

METHODOLOGY

3.1 Overview of Methodology

This study employs survey, which aims to investigate the effect of human capital competencies of undergraduate graduates from public universities in Hebei Province on their future career readiness. In addition, to investigate the positive effects of educational services and skills services provided by public universities in Hebei Province on the human capital competencies of undergraduate graduates. In addition, the population of this study is the number of public university graduates in Hebei Province from 2022 Year official report, the total number of students reaches 488,004. This study applied Krejci and Morgan's Table (1970) to determine sample size, and the final sample size was 384. The questionnaire was distributed through 'WEN JUAN XING" China Questionnaire Authority Platform with restricted sample condition, 400 questionnaires were distributed. Through outliers and invalid questionnaires were removed, and 385 questionnaires were returned meet the minimum sample requirements. Based on the research purpose, the researcher uses SPSS (V26) to conduct descriptive statistics and inferential statistics (Pearson and ANOVA) to test the research hypothesis.

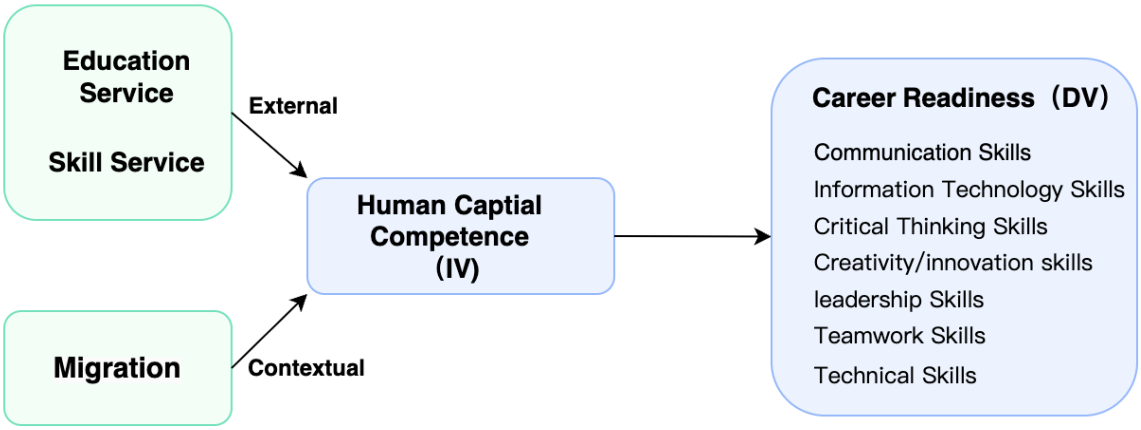
3.2 Measuring Instrument

All of instruments considered several related scales and finally formed the instruments that conform to the context of Chinese universities and university education. All questionnaires used Likert 1-5 scores, (Strongly Disagree=1) to (Strongly Agree=5.In order to ensure the questionnaire internal reliability,

Cronbach's' alpha test was conducted (see Table 1）.The first Factors of Educational Services that is source from Winterton & Turner (2019), Lerman (2016), Adedeji & Campbell (2013), Chhinzer & Russo (2017),Cronbachs' alpha=0.948,9 items. The Skills Services is from Semenova et al., (2021), Al-Tit et al. (2022), Jackling & Natoli, (2015),Mellander & Florida (2021) and Cronbachs' alpha=0.872,7 items. Migration Status is combine multiple source from Grabowska & Jastrzębowska (2021), Hagan & Wassink (2020), Marchetta (2012), Janta et al. (2021), Milem(2003).To measurement of Human Capital Competence, it employed Crook et al. (2011), Vale et al. (2022), Zhou et al. (2019) and its Cronbach's' alpha=0.962,10 items. For last variables of Career Readiness, this instrument from Verma et al., (2018), Makki et al. (2015), Jackson & Chapman (2012), Shekhawat (2020), Jingwen et al. (2023), Salleh et al. (2017),which involved 7 dimensions.1)Communication skill α=0.893, 5items 2)Technology skill α=0.905, 3items;3) Critical thinking skill α=0.905, 5items;4) Creativity skill α=0.966, 3items;5)leadership skill α=0.905, 5items;6) Teamwork skill α=0.822, 4items;7) technical skill α=0.949, 4items)

3.3 Research Model

The present study proposed a conceptual model grounded in human capital theory. Theodore Schultz (1961) proposed that education constitutes the primary investment in human capital, thereby enhancing cognitive ability and professionalism through systematic knowledge transfer. Gary Becker (1964) further stated that educational capital has 'general ' training and 'specific training' , with the general being survival or workplace skills, and the specific one being professional knowledge that helps to improve the suitability for future jobs. In the context of universities, educational services encompass professional theories and practical activities, while skill services refer to the competences (e.g. communication skills, team skills, innovation skills, etc.) developed by university students throughout their education. The present study investigated the level of educational and skill services provided by public universities in Hebei. It also examines whether students enhance their personal human capital competencies due to external support factors, which directly enhance the career competitiveness of university students. Besides, further explored the migration of students moved to new regions with more abundant educational opportunities. This migration is hypothesized to be a factor in the acquisition of advantageous social resources, which in turn can enhance human capital (Sun, F., & Liang, G. 2024). This study further explores whether human capital competencies can increase career readiness, thereby validating the conversion of personal capital competencies into workplace competencies within the educational environment, to optimize career decision-making and job matching.



3.4 Research Question

This study addresses the following research questions:

1. What is the current condition of educational skills, skills services, and migration status among graduates from public universities in Hebei, China?
2. What is the level of human capital competence among graduates from public universities in Hebei, China?
3. What is the relationship between human capital competences and other variables (educational services, skills services, and migration status)?
4. To what extent do educational services, skills services, and migration status impact human capital competence among public university graduates in Hebei Province?

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5. What is the impact of human capital competence on various dimensions of career readiness (communication skills, information technology skills, critical thinking skills, creativity/innovation skills, leadership skills, teamwork skills, and hard/technical skills) among public university graduates in Hebei Province?

RESULTS

4.1. Profile of Demographic Information

The pie chart illustrates the frequency distribution of participants based on gender and age group categories. The legend denotes distinct classifications, including Gender (Male, Female) and Age Groups (20-25, 26-30, 31-55), along with an overall Total category. Each segment is color-coded to represent different groups, with varying segment sizes indicating differences in participant proportions. The largest section corresponds to the Total category, suggesting a cumulative representation, while smaller sections represent specific gender and age distributions. This visualization effectively highlights the demographic composition of the dataset, aiding in comparative analysis and trend identification.

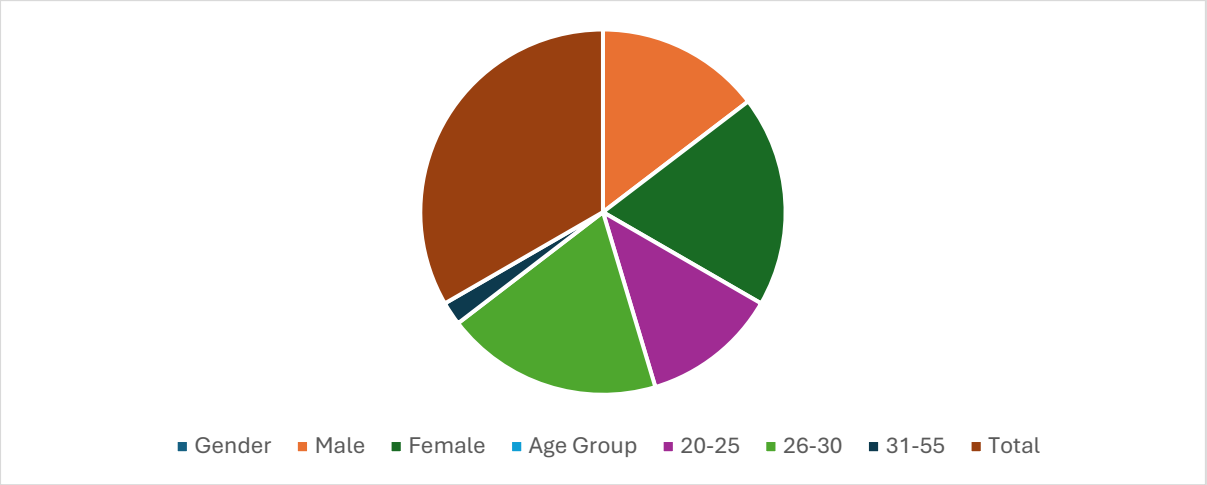

Figure 1: Distribution of Frequency Across Gender and Age Groups

Figure 2 presents a horizontal bar chart comparing employment status and academic disciplines based on percent and frequency. The first section highlights employment categories, showing the highest frequency in "Unemployed, not currently seeking employment," followed by "Full-time contract" workers. The second section categorizes employment by academic discipline, with Engineering having the highest frequency, while fields like Law and Natural Sciences show lower representation. The data suggests a significant number of individuals are not actively engaged in the job market, while Engineering dominates in employment frequency.

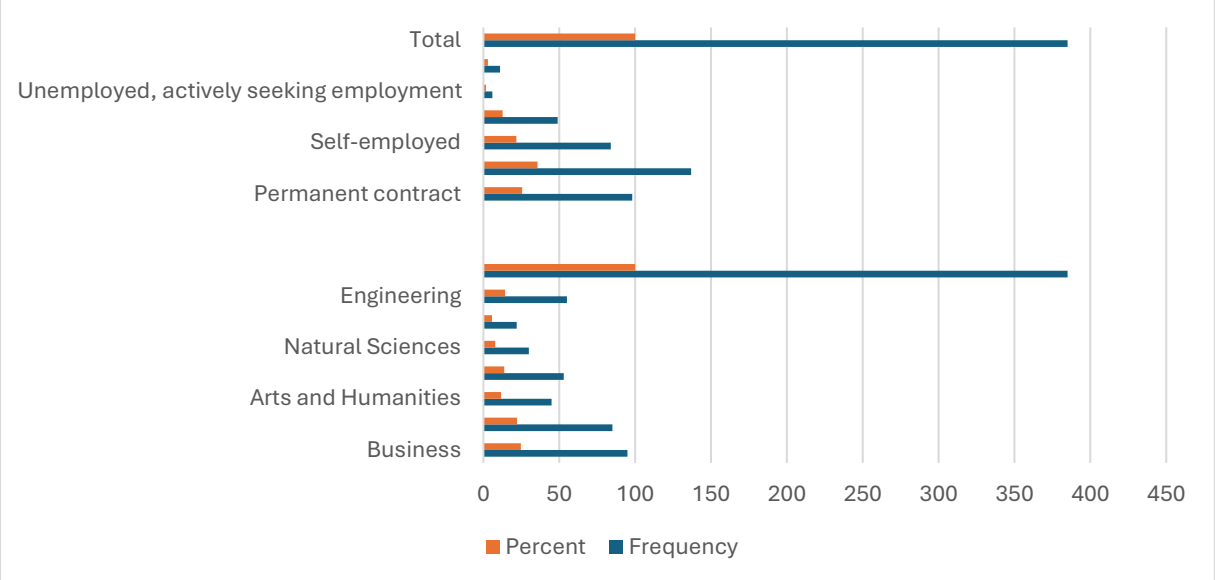

Figure 2 :Employment Status And Academic Disciplines

This chart provides a summary of the employment distribution and academic backgrounds of the respondents, highlighting several key trends. The majority of are either full-time employees or permanent contractors, with a relatively small proportion being self-employed or part-time workers. The unemployment rate is low, with only a minimal segment of the population actively seeking employment. In terms of academic disciplines, Engineering is the most represented field, followed by Business and Social Sciences. More specialized fields of study, such as Health, Natural Sciences, and Law, exhibit lower levels of participation. The relationship between education and employment, including aspects such as job status and salary, is intrinsically linked to human behaviour.

4.2.Descriptive analysis for Variables

Table No: 1 Research participants' response to educational skills

Items	Mean	SD
The Course offered at my university emphasized innovation and creativity	3.6909	0.78763
The education service offered by the university was work-oriented	3.613	0.79277
The courses were designed in a a way that they provided knowledge relevant to my field of study	3.7688	0.79455
The lectures and tutors provided useful feedback and support throughout the study	3.5325	0.95449
The University provided with sufficient opportunities for mentoring related to my career	3.6442	0.78437
The university had extra-curricular activates that enhanced my professional growth	3.7688	0.79455
there were sufficient educational resources at the university to facilitate my acquisition of relevant knowledge and skills	3.6364	0.78907
The instructional standards at the university were of high standards	3.774	0.79932
I was provided with individualized attention by my lecturers	3.6208	0.9363

Analysis in table No: 1 response regarding educational skills (n=385) revealed generally positive perceptions across all measured attributes. The highest rated aspect was "The instructional standards at the university were of high standards" (M=3.77, SD=0.80), suggesting participants valued the quality of instruction they received. Equal ratings were observed for "The courses were designed in a way that they provided knowledge relevant to my field of study" and "The university had extra-curricular activities that enhanced my professional growth" (both M=3.77, SD=0.79), indicating strong alignment between curriculum content and field relevance, alongside appreciation for professional development opportunities outside the classroom.

Innovation and creativity emphasis in university courses received favorable ratings (M=3.69, SD=0.79), as did the availability of educational resources (M=3.64, SD=0.79) and career mentoring opportunities (M=3.64, SD=0.78). Work-oriented education services (M=3.61, SD=0.79) and individualized attention from lecturers (M=3.62, SD=0.94) were similarly well-regarded.

The lowest rated aspect, though still positive, was "The lectures and tutors provided useful feedback and support throughout the study" (M=3.53, SD=0.95), which also showed the highest standard deviation, indicating more varied experiences among participants regarding feedback and support.

Overall, these findings suggest that participants generally perceived their educational experience positively across all measured dimensions, with particularly strong ratings for instructional quality, curriculum relevance, and professional growth opportunities.

Table No: 2 Research participants' response to skills services

Items	Mean	SD
My university inculcated in me problem solving skills	3.8675	.76758
During my time at the university, I was provided with sufficient subject-specific knowledge	3.8234	.79055

My lecturers inculcated in me commitment and willingness to work	3.9662	.71909
My Lecturers exposed me to situations that help in developing problem-solving skills	3.8649	.76202
During my time at the university, I was prepared on how to work as team	3.7506	.73254
My university made use of work-based learning method prepare me for job market	3.6779	.79396
My university provided opportunities for enhancing my communication skills	3.3766	.79777

Table 2 results show consistently positive perceptions across all measured skill development areas among participants (n=385). The data reveals that lecturers inculcated in me commitment and willingness to work received the highest rating (M=3.97, SD=0.72), demonstrating that participants strongly valued their lecturers' role in cultivating work ethic and professional dedication. This item also showed the lowest standard deviation, indicating relatively uniform positive experiences across the sample.

The results further show that problem-solving skill development was highly evaluated in two separate measures: "My university inculcated in me problem solving skills" (M=3.87, SD=0.77) and "My Lecturers exposed me to situations that help in developing problem-solving skills" (M=3.86, SD=0.76). These closely aligned scores demonstrate effective problem-solving skill development through both institutional structures and specific lecturer-guided experiences.

Table 2 results indicate that participants positively evaluated subject-specific knowledge acquisition (M=3.82, SD=0.79), suggesting satisfaction with the depth and relevance of discipline-specific content delivered in their educational programs.

The findings show that although still positive, "During my time at the university, I was prepared on how to work as team" received the comparatively lowest rating (M=3.75, SD=0.73). This result suggests potential opportunities for universities to enhance collaborative skill development initiatives.

Overall, Table 2 results demonstrate that participants perceived their skills development experiences favorably across all measured dimensions, with particularly strong ratings for work ethic cultivation and problem-solving skill development. These findings provide valuable insights for higher education institutions seeking to maintain Q1 standards in skills development programming.

Table NO3. Migration Status of Research Participants

Items	Frequency	Percent
No, I am resident of Hebei	279	72.5
Yes, I am from a different province	106	27.5
Total	385	100

Table 3 results show the migration status of research participants during their university attendance at public universities in Hebei province. The data reveals that a substantial majority of participants (n=279, 72.5%) were residents of Hebei province who did not migrate from other regions to attend university. Conversely, just over one-quarter of the sample (n=106, 27.5%) reported migrating from different provinces to attend public universities in Hebei.

These findings demonstrate that while most students at Hebei public universities in the sample were local residents, there was still notable geographic diversity, with more than one-fourth of students coming from outside the province. This migration pattern suggests that Hebei public universities attract a meaningful proportion of non-local students, potentially indicating their appeal beyond provincial boundaries.

The clear distinction between local and migrant student populations provides important contextual information for understanding the demographic composition of the student body. This data could be valuable for institutional planning related to student services, accommodation needs, and cultural integration initiatives that might benefit the significant minority of students who relocate from other provinces to pursue their education in Hebei.

Table NO: 04 Human Capital Competences of research participants

Items	Mean	SD

I was good in planning and coordinating activates related to my field	3.8026	0.80848
I was assertive and decisive	3.826	0.73126
I had adequate computer skills	3.6156	0.97241
I was confident in my problem-solving ability	3.9195	0.81411
I had a high level of proficiency in my field of study	3.8	0.76308
I was confident in my ability to solve complex problems related to my field	3.8104	0.79575
I had adequate field-specific theoretical knowledge	3.9273	0.78056
I had cross-disciplinary knowledge relevant to my field	3.8156	0.77039
I feel I had high levels of adaptability	3.8104	0.79575
I could work well with others in a team	3.8753	0.74305

Table 4 results show participants' self-assessment of their Human Capital Competences across multiple dimensions. The data reveals generally high self-reported competence across all measured attributes, with mean scores consistently above 3.6 on what appears to be a 5-point scale.

The findings indicate that participants rated themselves highest on "I had adequate field-specific theoretical knowledge" (M=3.93, SD=0.78) and "I was confident in my problem-solving ability" (M=3.92, SD=0.81). These results suggest that participants felt particularly strong in their theoretical knowledge base and general problem-solving capabilities, which represent core academic competencies.

Table 4 results show strong self-assessment in teamwork abilities, with "I could work well with others in a team" receiving a high rating (M=3.88, SD=0.74). Similarly, participants rated themselves highly on assertiveness and decisiveness (M=3.83, SD=0.73), indicating confidence in their decision-making abilities.

The data reveals that participants felt competent in their cross-disciplinary knowledge (M=3.82, SD=0.77), adaptability (M=3.81, SD=0.80), planning and coordination skills (M=3.80, SD=0.81), and field-specific problem-solving capabilities (M=3.81, SD=0.80). These consistently high ratings demonstrate participants' confidence across multiple professional competencies.

The findings show that "I had adequate computer skills" received the lowest mean score (M=3.62, SD=0.97), while also showing the highest standard deviation. This result suggests slightly lower confidence in technological competencies compared to other skills, with greater variation among participants.

Overall, Table 8 results demonstrate that research participants generally perceived themselves as having strong human capital competencies across all measured dimensions, with particularly high self-assessment in theoretical knowledge, problem-solving abilities, and teamwork skills.

4.3 Correlation analysis

Table NO: 5 Correlation Analysis

	Human Capital competence	**Educational services**	**Skills services**
Human Capital competence	1		
Educational services	.726** .000	1	
Skills services	.560** .000	.608** .000	1

**. Correlation is significant at the 0.01 level (2 tailed)

The Table 5 demonstrates the correlation analysis results among Human Capital Competences, Educational Services, and Skills Services by utilizing Pearson correlation coefficients. The results show a strong positive correlation between Human Capital Competences and Educational Services, as presented $r = 0.726$, $p < 0.01$, implying that an improvement in educational services significantly enhance human capital competence. Furthermore, Human Capital Competences is moderately positively correlated to Skills Services ($r = 0.560$, < 0.01), and educational services is moderately positively correlated to Skills Services ($r = 0.608$, < 0.01), showing that these indices are interdependent. With a p-value of 0.000, these

Factors	Human Capital Competence	Communication Skills	Information Technology Skills	Critical Thinking Skills	Innovation Skills	Leadership Skills	Teamwork Skills	Technical Skills
Human Capital Competence	1							
Communication Skills	.741**	1						
	.000							
Information Technology Skills	.592**	.590**	1					
	.000	.000						
Critical Thinking Skills	.463**	.507**	.326**	1				
	.000	.000	,000					
Innovation Skills	.526	.432**	.321**	184**	1			
	.000	.000	.000	.000				
Leadership Skills	.477**	0.533	.263**	.336**	.562**	1		
	.000	.000	.000	.000	.000			
Teamwork Skills	.747**	.981**	.589**	0.523	.425**	.525**	1	
	.000	.000	.000	.000	.000	.000		
Technical Skills	.598**	.596**	.932**	.367**	.297**	.263**	.592**	1
	.000	.000	.000	.000	.000	.000	.000	.000

Table 6: Correlation Analysis Between Human Capital Competence and Various Skill-Type Factors (Communication Skills, Information Technology Skills, Critical Thinking Skills, Innovation Skills, Leadership Skills, Teamwork Skills, Technical Skills)

The results show a positive relationship between Human Capital Competences with scales of Communication Skills ($r = 0.741$, p The remaining, moderate correlations exist between Innovation Skills ($r = 0.526$, $p < 0.001$), Leadership Skills ($r = 0.477$, $p < 0.001$), and Critical Thinking Skills ($r = 0.463$, $p < 0.001$), all of which are important, but less impactful than communication and teamwork skills.

Additionally, Technical Skills and Information Technology Skills are found to be significantly correlated with a very effect size of ($r = 0.932$, $p < 0.001$), indicating that, they complement each other as well. Furthermore, the interdependence of these variables in the workplace environment enhances workplace efficiency together, and similarly there is also a very high direct correlation between Communication Skills and Teamwork Skills variables ($r = 0.981$, $p < 0.001$). Note also that the p for all these correlations is 0.000, which establishes those relationships as strong and reliable.

Effective communication, teamwork, and technical skills are key to developing human capital competence, according to the results, while it also emphasizes that leadership, innovation, and critical thinking are important contributors.

4.4 Regression analysis

Table No:7 Regression Analyses of Factors Affecting Human Capital Competence

Analysis Focus	**R**	**R square**	**Adjusted R square**	**F**	**Sig.**	**Beta**	**t**
Educational Service	0.726	0.528	0.526	427.6	0	1.175	9.027
Skills Services	0.56	0.313	0.312	174.89	0	1300	6.746

As indicated in Table 7, the impact of Educational Services and Skills Services on Human Capital Competence is significantly positive. Educational Services exhibit a strong correlation ($R = 0.726$, $R^2 = 0.528$), accounting for 52.8% of the variance, thereby underscoring their critical role in human capital development (Beta = 1.175, $t = 9.027$, $p < 0.05$). Similarly, Skills Services Impact demonstrates a moderate correlation ($R = 0.56$, $R^2 = 0.313$) and statistical significance (Beta = 1300, $t = 6.746$, $p < 0.05$), although the substantial Beta value warrants further investigation. These findings highlight the essential nature of future workforce services in fostering sustainable change, thereby supporting the argument for targeted investments in education and skill-based services to enhance workforce capabilities and, consequently, economic productivity.

Table NO: 8 Regression Analyses of Human capital competence on Career Readiness Skills

Career Readiness Skill	**Model Fit**		**Regression Coefficients**	
	R	R Square	B (Human Capital)	β
Communication skills	0.741	0.549	0.757***	0.741
information skills	0.592	0.35	0.762***	0.592
Critical Thinking Skills	0.463	0.214	0.474***	0.463
Creativity/innovation Skills	0.526	0.276	0.523***	0.526
Leadership Skills	0.477	0.228	0.504***	0.477
Teamwork	0.747	0.558	0.811***	0.747
Hard/Technical skills	0.598	0.358	0.991***	0.598

Note: *** $p < 0.001$. All regression models were significant at $p < 0.001$. B = unstandardized regression coefficient; β = standardized regression coefficient.

Table 8 displays the results of regression analyses - investigating the effect of Human Capital Competence on Career Readiness Skills. The data shows significant predictive powers of Human Capital Competence for all seven career readiness skills ($p < 0.001$). Teamwork ($R = 0.747$, $R^2 = 0.558$, $\beta = 0.747$) and, Communication Skills ($R = 0.741$, $R^2 = 0.549$, $\beta = 0.741$) are found to have the strongest relationship which means that based on the above results, Human Capital Competence can explain around 55%-56%

variance of this skill set. Moderate Relations were seen regarding Hard/Technical Skills ($R = 0.598$, $R^2 = 0.358$, $\beta = 0.598$) and Information Skills ($R = 0.592$, $R^2 = 0.35$, $\beta = 0.592$). The weakest but noteworthy relationships were found for Creativity/Innovation Skills ($R = 0.526$, $R^2 = 0.276$, $\beta = 0.526$), Leadership Skills ($R = 0.477$, $R^2 = 0.228$, $\beta = 0.477$), and Critical Thinking Skills ($R = 0.463$, $R^2 = 0.214$, $\beta = 0.463$). In the areas of teamwork and communication, Human Capital Competence emerged as a significant predictor of career readiness skills, according to exploratory analysis of these groups.

DISCUSSION AND CONCLUSION

DISCUSSION

Human capital competence is also statistically significant with respect to all Career Readiness Skills ($p < 0.001$). The strongest associations among them are Teamwork ($R = 0.747$, $R^2 = 0.558$) and Communication Skills ($R = 0.741$, $R^2 = 0.549$), which means that 55.8% and 54.9% of the variance in those qualifications are explained by Human Capital Ability, respectively. This highlight the role Human capital competence play in shaping the skillset required in the industry especially when it comes to co-operating and communication which is key inters of adapting into the work environment and solving issues. Most emphasized is the extent to which funders can have serious impact on education, profession and life's growth simply because these are the areas with the highest Beta coefficients (0.747 and 0.741) are therefore most impacted directly by Human capital competence.

In addition, with $R = 0.598$, $R^2 = 0.358$ for Hard/Technical Skills, and $R = 0.592$, $R^2 = 0.35$ for Information Skills, these relationships further indicate that those who possess a greater Human capital competence are more likely to be regarded as possessing technical proficiency and information management potential. These results are consistent with earlier literature that has found that human capital can promote innovation and efficient management. With the job market becoming more competitive, it has never been more critical to have good technical abilities to develop new ideas within various HR Functions which can only be achieved through specialized training.

Creativity/Innovation Skills ($R = 0.526$, $R^2 = 0.276$), Leadership Skills ($R = 0.477$, $R^2 = 0.228$), and Critical Thinking Skills ($R = 0.463$, $R^2 = 0.214$) are comparatively lower but do still provide significance for Human capital competence; however, there are still relevant correlations with Human capital competence. It means, on the other hand, that while Human capital competence mainly determines collaborative and communication skills, cognitive and leadership skills are also impacted by not only Human capital competence, but also things like work environment and culture, as well as industry requirements. It is worth noting that between the lowest and highest Beta coefficients (0.463 to 0.747), it is shown that while the time spent enhancing Human capital competence provides a positive degree of benefits across all Career Readiness Skills, the magnitude of that trend varies across different skill domains.

CONCLUSION

This study empirically confirms Human capital competence a positive and significant impact on all Career Readiness Skills, and the most influence is a Critical Thinking Skills and Hard/Technical Skills. These insights underscore the critical importance of Human capital competence in driving the development of core skills vital for success in employment, especially in fields that necessitate analytical reasoning, technical knowledge, and leadership and creativity. Communication Skills and Information Skills are significantly influenced by Human capital competence, but other external factors may be responsible for providing those skills, as also indicated by the results.

These findings have important implications for educators, employers and policymakers. Improve Career Readiness Skills by bridging the Human capital competence gap through curriculum design to learn by doing and having career-relevant classes to develop these skills. Besides, they must train and educate employees on knowledge, experience, soft skills, creativity, leadership, and teamwork.

Future studies may focus on other mediating variables, for example, the necessities of the profession, experience, and technology to understand more clearly how Human capital competence affects Career Readiness Skills. Investigating these factors in greater detail may yield insights that could inform the

development of new educational and workforce training approaches to better equip people with the skills of the future labour market.

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