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# BRIDGING DISCIPLINARY DIVIDES: ANALYZING MICRO CREDENTIAL UPTAKE IN HIGHER EDUCATION

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## Abstract
The study is an attempt to understand the awareness level of the students about the concept of micro-credentials, their perception about these nano-degrees and motivating factor for enrolment into such courses. The study also attempts to learn if the discipline of study has any significance in the choice of these nano-degrees. The data was collected with the help of a questionnaire administered through google form. Responses from 150 students through convenient sampling from a prominent arts and science college in Kozhikode city of Kerala was collected and analyzed. Descriptive statistics like mean and standard deviation were used to analyze data. The study explores the relationship between academic discipline and choice of different skill courses- technical, creative, business and personal development, using cross tabulation and Chi-square test. The findings show that there is low awareness level about the potential of this concept. Enhancement of skill with flexibility of time and pace is are significant factors with regard to perception. The motivating factor is also equally spread among all the factors arguably due to low awareness level. Students still consider traditional degrees as a path to employability. Also, the academic discipline has significant influence in the choice of courses when it comes to technical and business-skill courses while creative and personal development courses are sought by all category of learners. The study extends few suggestions as a step to integrate, micro-credentials, a versatile tool to drive the impetus of nurturing skilled, employable candidates for the workforce.

**Key words:** Micro-credentials, nano degrees, digital badges, higher education,

## I. Introduction
The Digital revolution has significantly transformed the education landscape and job market necessitating the 21st century skill sets especially with the advent of fourth industrial revolution (4IR) and 4 IR technologies. As the labor market is transforming, there is pressing need for Higher Education Institutions (HEIs) to equip the students with employable skills. The universities and the governments across the world have recognized the need to reformulate the approach to upskill the young minds. The COVID 19 pandemic catalyzed the tectonic shift in the education sector. From under graduates, post graduates, professionals, unemployed youth, to school students are hopping on the trend of learning new skills and gaining certifications to equip themselves for better opportunities. The ease of access, digital proliferation, customized learning, has resulted in burgeoning this demand. This has been possible through Micro-credentials, an umbrella term for nano degrees, digital badges, micro-masters, and certificates, the emerging buzzword in the field of education (Chakroun, B., & Keevy, J., 2018).

### I.1. Towards Micro-credential
Macro-credentials encompass category of qualifications comprising degrees, diplomas, certificates and licenses granted by accredited, recognized, regulated educational institutions certifying knowledge in subject matter, skills and technical proficiency achieved over a stipulated number of years for chosen stream of course (Oliver, B., 2022). Although graduates are the choice of the employers when compared to non-graduates, in recent times, the degrees no longer assure employability. With increasing roll-out of graduates year after year, the competition has tightened attributing to declining employment outcomes

(Boud, D., & Jorre de St Jorre, T., 2021). Micro-credentials represent a paradigm shift in the approach to higher education and employability outcomes.

The history dates back to the term digital badge introduced by Mozilla foundation in 2011 (Gibson et.al, 2015). With Massive Open Online courses (MOOCs) and certification provided by various institutions to train their staff gaining momentum, these bit-sized credentials caught the attention of not just young minds seeking to upskill but also the Higher education institutions, employers, and the government who are now major stakeholders in this fast- evolving concept.

Micro-credential as a concept continues to lack a definition that is broadly accepted. These are courses that target specific set of learning objectives, narrow area of study and completed in a shorter time span. Various entities providing these courses include private institutions, commercial organizations, community organizations, traditional educational institutions (Oliver, B., 2022).

**I.2. Contributions and Concerns**

The rising unemployment numbers may be attributed to the fact that the educated youth do not have the skills to deliver. Degrees certifies generalized skill rather than specific skill set required by the employer (Murgatrotd, Stephen.,2022). Although, employees with post-graduate and graduate have stronger sense of identity at workplace compared to those who don't, affordability, time, poor employment outcomes along with structural changes in labor market where increasing number of employers seek specific skill to degree certificates has resulted in boom of skill specific nano degrees. Harvard Business Review estimated creation of over 1.4 million jobs over a period of next 5 years which will require no degrees. Platform like Coursera has nearly 113 million registered learners over 190 countries (M. Mutawa, A.2023).

**1.2.1 Shaping the Educational sphere.**

- Flexibility - Micro credentials are flexible allowing learners to learn at their own pace, accommodating present commitments. Mode of learning is flexible as well. It offers online, offline and hybrid mode of learning.
- Relevance - They enable the learners meet the demand for employment specific skills through targeted course design and learning.
- Cost-effectiveness and choice – Affordability is a huge bonus to the learners compared to conventional degrees along with choice, be it technical or non-technical skills
- Recognition – Increasingly, the employers are recognizing the competencies, provided there is a tangible proof of skills and knowledge gained.

**1.2.2 Concerns of the stakeholders**

- Standardization – With staggering influx of providers, to ensure quality and consistency can be a challenge.
- Credential transparency – A clear information regarding the skills validated in a course and the criteria to evaluate with necessary evidence is essential.
- Credential portability and stacking – There should be a system in place to port the credentials, transfer the credits from one institution to other. Stacking these micro-credentials along with macro-credentials also needs to be devised to reap the benefits of skill up-dation and employability.
- Threat to traditional degrees – The Higher educational institutions perceive these short-courses to threaten the demand for traditional degrees thereby questioning its relevance in future.
- Lack of framework – It is important to have a framework that integrates the various stake-holders to ensure there is clarity in the functioning of these micro-credentials in the larger context of education system and labor market.

 

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### 1.3. Micro-Credential - Frameworks

Addressing the concerns, various nations have been working towards a framework. The EU MOOC Consortium (EMC) a partnership of European University MOOC providers, have aligned with the National Qualification Framework of European countries to form a digital learning portfolio called "Europass" to stack their MC credits (European Commission, 2020). The New Zealand Qualifications Authority (NZQA) on the other hand clearly defines MC, credit limit, the learning outcomes expected and evidence of its demand in the labor market. There are also guidelines for registration of the MC providers (Fisher, R. M., & Leder, H.,2022, Cowie, N., & Sakui, K. 2022). While in Malayasia, the degree courses are unbundled into short term courses and provided as MC courses. Although there is no common framework in United States, states may develop their own guiding principles with the help of grants (Cowie, N., & Sakui, K. 2022). In Canada, ARUCC, an Association of Registrars of Universities and Colleges has partnered with Digitary, a digital credential provider platform. Similarly, Italy has Cineca, non-profit consortium of 70 Italian Universities (Brown, M., Nic Giolla Mhichíl, M., Beirne, E., & Mac Lochlainn, C. 2021).

### 1.4. The Landscape in India

The Indian education system is undergoing substantial changes as well. The implementation of National Educational Policy (NEP), 2020, has ushered in wave of transformation fostering holistic development ensuring quality education across the land. Emphasis includes early childhood, school education, higher education, vocational education, teacher training, digital education and equity and inclusion. Aligning with NEP is the National Credit Framework which includes National School Education Qualification Framework (NSEQF), National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NQSF) (Jagadesh.K.M, 2024). SWAYAM – Study Webs of Active -learning for Young Aspiring Minds, an initiative by the Ministry of Education providing over 6000 odd courses for leaners from grade 9 to post-graduation and other professional courses is the world's largest free e-learning portal with 11 million registrations. The UGC and AICTE regulations allow about 40% credit from over 5000 credit-based courses (All India Council for Technical Education, 2024). Establishment of Academic bank of Credits for students to stack and port their earned credits will open up opportunities in various universities and colleges and most importantly connect them with job offers from potential employers.

With all these efforts in place, it is vital to understand if the young learners of India are aware of the potential of Micro-credentials. How do they perceive this nano-degrees as well as their motivation to take up these courses.

## II. Review of literature

**Cowie, N., & Sakui, K. (2022)**. The study titled "Micro-credentials: Surveying the landscape" focuses on understanding what micro-credential is and the courses that defines micro-credentials also the key challenges faced questioning the validity of micro-credentials in terms of cost, duration, assessment, stacking and portability. The study also attempts to describe micro-credential frameworks in countries like EU, New Zealand, Malayasia, and United States. While EU introduced common credential system, New Zealand and Malaysia's framework works on upskilling students to meet the needs of the industry and United states framework supports private collaboration. In Japan, MC is not as popular but has the required structural and qualified professionals. The author, however, criticizes the neo-liberal ideology which is promoting MC as a commodity with lot of practical problems pending to be resolved and need for increased awareness among students.

**Maina, M. F., Guàrdia Ortiz, L., Mancini, F., & Martinez Melo, M. (2022).** In this study titled "A micro-credentialing methodology for improved recognition of HE employability skills" evaluates the Employability Skills Micro-Credentialing Methodology (ESMC) under the EPICA H2020 project focusing on the academic realm, specifically examining the methodology's potential to promote curriculum innovation for employability skills, consequently bolstering employment prospects for students, lecturers, and employers' perspective. The methodology employs e-Portfolios to assess and recognize the skills through micro-credentialing. The findings include lecturers integrating e-portfolio strategies and pedagogy integrating outcome – based assessment. Students have heightened awareness of their skills and gain confidence when given formal recognition. The employers also view e-Portfolios and university endorsed badges to facilitate transparent recognition process.

**Wheelahan, L., & Moodie, G. (2022).** The article titled "Gig qualifications for the gig economy: micro-credentials and the 'hungry mile'.", views micro-credentials are of micro value, as opposed to macro-credentials, focusing only on employability by unbundling university curriculum and catering to employers' skill requirements thereby discipline the Higher education institutions which otherwise was blamed for outdated curriculum and lack of preparing the students with skills required to gain employment. Privatization of education is also highlighted in this article as well as the possibility of education narrowing largely to only equip for employment and lose the purpose of education from a larger social and moral context of human values.

**Brown, M., Nic Giolla Mhichíl, M., Beirne, E., & Mac Lochlainn, C. (2021).** The authors in this article "The Global micro-credential landscape. Charting a new credential ecology for lifelong learning" highlights the following key points giving a global perspective of micro-credentialing. The author points out how there is lack of consensus regarding definition or framework for micro-credentialing. However, the governments and organizations have been extending support but are disconnected in this effort. Trust, recognition and quality are considered key factors. Also, there is lack of clarity on how these credentials can be stacked to macro-credentials. Further, there is need to understand if these courses actually fill the skill gap.

**Yilik, M. A. (2021).** The study designed as phenomenological study involving university students focuses on their perspective about micro-credentials, facilitating factors and barriers of micro-credentials. The study highlights the factors of employability and accessibility for choosing micro-credentials. Rather than as an alternative path, students enroll in these courses to broaden their career opportunities. Lack of recognition for such courses when compared to data science or engineering fields also lack of social interaction is considered a hindering factor in students taking up such courses. The study also highlights an important aspect of personality trait such as being extroverted, conscientious, and entrepreneurial as essential for any student to display interest to enroll in micro-credentials.

**Lemoine, P. A., & Richardson, M. D. (2015).** The article titled "Micro-credentials, nano degrees, and digital badges: New credentials for global higher education" throws light on the changing scenario of global higher education. The author highlights how knowledge is now about effectively managing information for economic gain. With profound changes happening in the labor market, digital learning such as digital badges, nano degrees, and micro-credentialling characterized by integration of communication technology are gaining momentum globally, serving to acknowledge and monitor user achievements in a digitally connected world where recognition of accomplishments is crucial.

## III. Research Questions

There is extensive research work being carried out on this evolving concept of Micro-credentials along the lines of its impact on current higher education, the providers, recognition by the employers, to establish a common framework to integrate the main stakeholders, the learners. Higher Education institutions, employers and the government so as to ensure quality and consistency. Equally crucial is to understand

 

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the general awareness, perception about micro-degree, motivating factors for enrollment and influence of academic discipline in choosing a nano-degree. The following are the questions posed in this study -

1. What is the general level of awareness about micro-degrees among graduate students?
2. How do students perceive micro-credentials and what factors motivate them to enroll in these courses?
3. Does the academic discipline affect the students' choice of courses?

**III.1 Research Design**

The study aims to understand the general awareness, perception about micro-credentials and motivating factors to choose these nano degrees among STEM and NON-STEM- discipline students. A questionnaire was prepared including questions pertaining to perception, motivating factors for the participants. Content validity of the questionnaire was established through expert opinion. The study focused on students from a college offering both arts and science courses within the city limits of Kozhikode, Kerala. The questionnaire was administered on a total of 150 students of which 110 students responded.

**III.2. Data collection method**

First hand data was collected with the help of questionnaire administered through google forms. A brief description of the purpose of the study was provided to the respondents. The items in the questionnaire included demographic details, age, gender and academic discipline (STEM or NON-STEM), awareness of nano-degrees and with regard to platforms for enrollment, kind of courses generally opted for, their perception about micro-degrees and factors that motivate to take up these courses. Subsequently an analysis of responses was conducted to learn if academic stream impacts the choice of course to enroll. To ensure reliability and validity of the research instrument, a pilot study was conducted. It involved a sample of 25 participants representing the target population. Under expert guidance, the questionnaire was refined to enhance the effectiveness of data collection. The statistical method of calculating Cronbach's alpha was used to ensure internal consistency and reliability of the instrument. Descriptive statistics like mean and standard deviation were used to analyze data. Results of frequency count and percentage method has been graphically depicted. The study explores the relationship between academic discipline and choice of different skill courses – technical, creative, business and personal development, using cross tabulation and Chi-square test.

**III.3. Findings and Interpretation of Data**

The data collected for the study included a total 150 respondents from a prominent arts and science college in Kozhikode city of Kerala.

The demographic details are as follows: Out of 150 respondents, 110 valid responses were received. Out of this 79.1% are female and 20.9% are male. The mean age is 20.4.

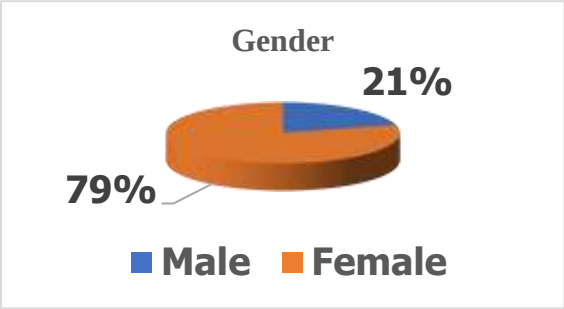


Chart-1

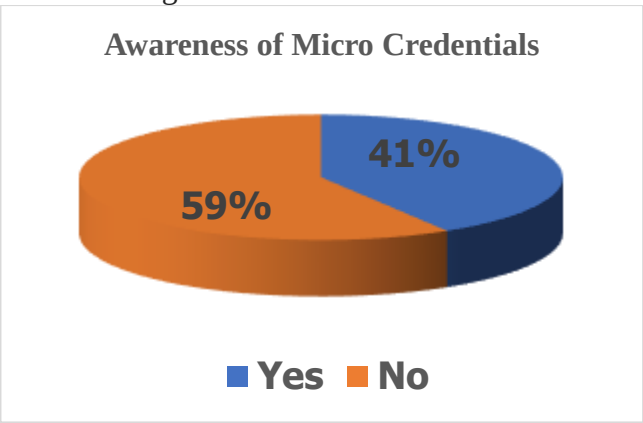


Chart - 2

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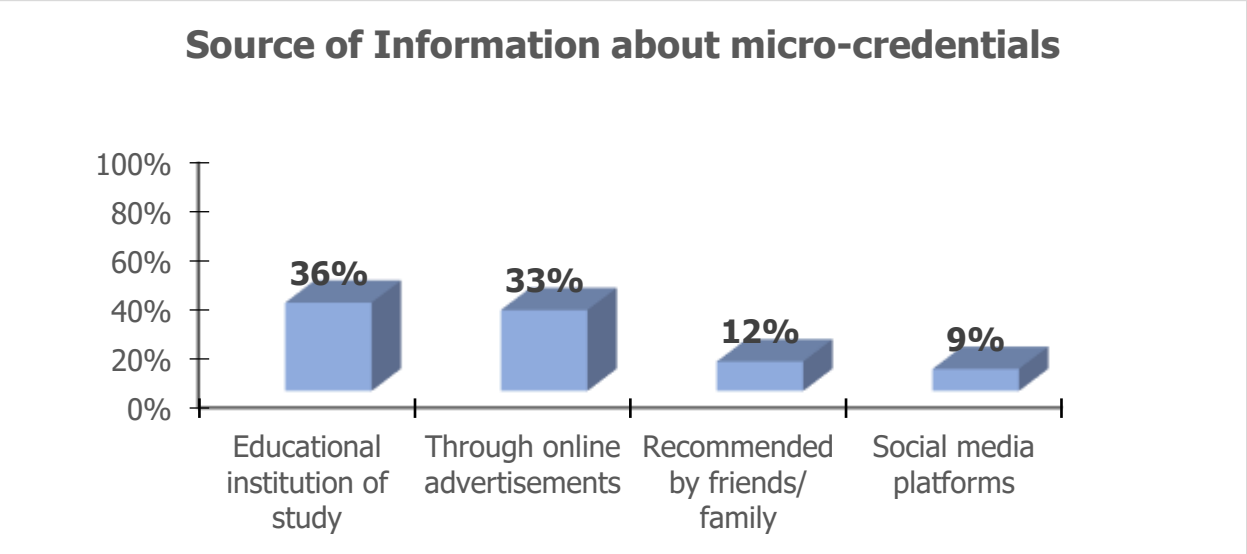
Regarding academic discipline 73.6% of the respondents are from non-STEM fields such as English, commerce, arts and humanities while 26.4% from STEM fields. The participation of the non-STEM students has been more in this study.

The data analyzed reveals that the awareness of the concept of micro-credentials is relatively low, with only 41.3% having heard of them before the participation of the study. For those aware, the primary source of information as depicted in Chart -3, are educational institutions (35.8%), online advertisements (32.85%), with other sources including friends and family (11.9%) and social media platforms (9.0%), while other sources like webinar, online platforms and workshops were insignificant

Chart – 3 - Source of Information about micro-credentials




Among those aware, a significant proportion of respondents have either enrolled or completed short-term courses indicating a strong engagement with this trending concept. The platforms most known to them include SWAYAM with 27.5% and NPTEL at 24.2%, NSDC (National Skill Development corporation) at 14.3% while private entities like edX, Coursera, Udemy, FutureLearn, UpGrad etc at less than 2%.

Table – 1 -**Reliability of constructs**

| Constructs | Cronbach's Alpha | No. of items |
|---|---|---|
| Students' perception of micro-credentials | 0.977 | 11 |
| Motivating factors to pursue micro-credentials | 0.962 | 17 |

As depicted in the Table-1, Cronbach's Alpha value is a little over 0.92 and hence holds good internal consistency, thus allows further analysis.

**Perception about Micro-credentials**.

The study investigates the perception of micro-credentials among students enrolled in both STEM and Non-STEM courses. Questions listed in Table: 2 are asked on a five-point Likert-scale based questions ranging from "Strongly Agree" to "Strongly disagree". "Strongly Agree" and "Agree" were combined as one positive response similarly "Strongly disagree" and "Disagree" were combined as one negative response for analysis. "Neutral" was maintained as it is.

Table 2- Perception of learners about Micro-credentials.

| S.No | Variables | Valid Percent Strongly Disagree +Disagree | Valid percent Neutral | Valid percent Strongly Agree +Agree | Mean | Standard deviation |
|---|---|---|---|---|---|---|
| 1 | Provide practical skills and knowledge | 21.1 | 35.8 | 43.1 | 3.3 | 1.2 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | Valued and respected by employers | 17.2 | 40.4 | 42.4 | 3.3 | 1.1 |
| 3 | Increases professional reputation | 18.6 | 32.4 | 49.0 | 3.4 | 1.2 |
| 4 | Equip learners with specialized skills | 18.6 | 31.4 | 50 | 3.4 | 1.2 |
| 5 | Higher in demand than traditional degrees | 17.5 | 36.9 | 45.6 | 3.3 | 1.2 |
| 6 | Worthwhile investment of time and resource | 18.8 | 32.7 | 48.5 | 3.4 | 1.2 |
| 7 | Flexibility in learning schedule and pace | 19.6 | 32.4 | 48.0 | 3.3 | 1.2 |
| 8 | Aligns with career goals and aspirations of the learner | 16.7 | 35.3 | 48.0 | 3.3 | 1,1 |
| 9 | More opportunities for career advancement | 18.6 | 32.4 | 49.0 | 3.3 | 1.3 |
| 10 | Accessible to wide range of learners | 21.2 | 34.3 | 44.4 | 3.3 | 1.2 |
| 11 | Offer up-to-date and relevant content | 17.3 | 42.3 | 40.4 | 3.2 | 1.1 |

The above Table -2 is analyzed considering the fact that the awareness level of the concept of micro-credentials is only 59% as indicated in the Chart – 2. The analysis also strongly reflects this. While a significant portion of the respondents believe that micro-credentials provide practical skills and knowledge, low awareness level may be attributed to the mixed response. A 42.4% of students perceive that the employers value these micro-credentials. A moderate mean and low standard deviation indicate that there is lot of uncertainty and lack of information in the public domain about the employer's view on micro-credentials.

Nearly half of the students agree that micro-credentials enhance professional reputation but variability suggest differing levels of conviction among students. Equally, a 50% of students confirm that micro-credentials equip them with specialized skills. Also, the mean still indicates that there is room for stronger agreement with increase in awareness level of this concept. A significant number, almost 45.6%, indicate these short-term courses will be of higher demand than the traditional degrees.

It is also considered to be a worthwhile investment of time and resource by 48% while the remaining are likely weighing the pros and cons of these courses which may be due to lack of access to information and guidance about its role and significance. The benefits of flexibility in learning schedule and pace are also not a well-recognized factor with only 48% agreeing that micro-credentials are flexible.

**Factors motivating the uptake of micro-credentials**

The study also attempted to understand the factors motivating the uptake of micro-credentials. The questions listed in Table-3 below, based on a five-point Likert-scale, ranging from "Very important" to "Not important at all". "Very important" and "Important" were combined as one positive response similarly "Not important at all" and "Not important" were combined as one negative response for analysis. Neutral was maintained as it is.

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Table – 3 Factors motivating the uptake of micro-credentials

| Factors | Not Important at all | Neutral | Very important | Mean | Standard deviation |
|---|---|---|---|---|---|
| Enhancing my skills. | 2.8 | 12.3 | 84.9 | 1.71 | .792 |
| Flexibility to learn at my own pace and convenience. | 1.0 | 20.4 | 78.6 | 1.85 | .772 |
| Easy access to course materials. | 4.9 | 24.5 | 70.6 | 1.99 | .895 |
| Lower cost compared to other options. | 3.9 | 28.2 | 68.0 | 2.03 | .912 |
| Requiring less commitment compared to full-time courses. | 4.0 | 33.7 | 62.4 | 2.16 | .857 |
| Having a degree certificate alone may not be sufficient for securing a job. | 5.0 | 25.7 | 69.3 | 2.10 | .843 |
| Increased likelihood of finding employment. | 3.9 | 25.2 | 70.9 | 2.05 | .867 |
| Traditional university education is often more theoretical and outdated, lacking practical relevance. | 5.0 | 39.0 | 56.0 | 2.30 | .835 |
| Full-time courses may not always provide quality education. | 7.9 | 37.6 | 54.5 | 2.33 | .929 |
| Personal interest in the course topic. | 3.0 | 24.0 | 73.0 | 1.96 | .840 |
| Seeking recognition and certification. | 3.1 | 24.5 | 72.4 | 1.91 | .874 |
| Opportunity for networking with industry professionals. | 6.1 | 22.4 | 71.4 | 2.04 | .884 |
| Availability of practical hands-on experience. | 4.0 | 24.0 | 72.0 | 1.92 | .895 |
| Flexibility in choosing course duration and schedule. | 4.0 | 24.8 | 71.3 | 1.98 | .872 |
| Opportunity to work on real-world projects. | 5.0 | 24.8 | 70.3 | 2.01 | .889 |
| Ability to customize course content based on personal interests or career goals. | 5.0 | 26.7 | 68.3 | 1.90 | .870 |
| Recognition of prior learning or work experience. | 4.0 | 21.0 | 75.0 | 2.00 | .885 |

Analysis of the above table-3 indicates that among students enhancing one's skill is the most critical factor to take up micro-credentials with 84.9%. With 0.792 as standard deviation, there is a very strong consensus among the value of micro-credentials in skill development. There is a majority 78.6% agreeing to the flexibility to learn at own pace and convenience a drawing factor in choosing short-term course. Factors

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such as easy access to course materials at 70.6%, lower cost compared to other options at 68% and requiring less commitment compared to full-time course underscore the practical appeal of such courses among students.

The data also reflects a growing concern among 69.3% respondents about employability with just traditional degrees and 70.9% believe these nano degrees provide increased likelihood of finding a job. The data also highlights that with relatively 39% remaining neutral on the statement that traditional university education lacks practical relevance and is outdated suggest a divided opinion with only 56% finding it very important factor to consider taking up these courses. The possibility of personalizing the course content and access to choice of topic of study as factors of very importance with 73% and 68.3% indicates that students are motivated to tailor their learning experiences.

Significant motivators at 71% and 70.3% is the opportunity to network and work on real-world projects with mean scores around 2.01 suggesting that students consider the nano-degrees not just educational tools but career-building possibilities. The uniformity in standard deviation indicates a relatively consistent perception about the motivating factors across the respondent pool.

**Analysis of the relationship between academic disciplines and micro-credential uptake in Higher Education**

To explore the relationship between academic disciplines and the uptake of various micro-credential courses among higher education students, the following are the questions posed and hypotheses formulated

a) Does academic discipline have any relationship while choosing a technical skill course?
   $H_0$: There is no relationship between Academic disciplines & the choice of a technical skill course
   $H_1$: There is a relationship between Academic disciplines & the choice of a technical skill course

b) Does Academic disciplines have any relationship while choosing a Creative Skill Course?
   $H_0$: There is no relationship between Academic disciplines & the choice of a creative skill course
   $H_1$: There is a relationship between Academic disciplines & the choice of a creative skill course

c) Does Academic disciplines have any relationship while choosing a Business Skill course?
   $H_0$: There is no relationship between Academic disciplines & the choice of a business skill course
   $H_1$: There is a relationship between Academic disciplines & the choice of a business skill course

d) Does Academic disciplines have any relationship while choosing a Personal Development Course?
   $H_0$: There is no relationship between Academic disciplines & the choice of a Personal Development course
   $H_1$: There is a relationship between Academic disciplines & the choice of a Personal Development course

The study employed Cross-Tabulation and Chi Square tests to analyze the data collected from 110 students across science, mathematics and arts disciplines. The aim was to determine whether the choice of micro-credential categorized as technical, creative, business, and personal development, varied significantly based on students' academic backgrounds.

Table 4 – Significance of academic discipline and category of course enrolled.

| Micro-credential courses | $\chi^2$ value | df | p-value | Relationship |
|---|---|---|---|---|
| Technical skill courses | 4.123 | 1 | 0.042 | Significant |

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| | | | | |
|---|---|---|---|---|
| Creative skill courses | 0.171 | 1 | 0.680 | Not significant |
| Business skill courses | 3.906 | 1 | 0.048 | Significant |
| Personal development skill courses | 1.926 | 1 | 0.165 | Not Significant |

a) Technical skill courses: The Chi-Square test for technical skill courses yielded a statistically significant result. The findings $\chi^2$ (1, N=110) = 4.123, p = 0.042 suggests that there is a significant relationship between a student's academic discipline and their choice to enroll in technical skill courses. Specifically, students from science, and mathematics disciplines are more likely to choose technical skill courses compared to students from arts, commerce, and humanities disciplines.

b) Creative skill courses: The analysis of creative skill courses showed no significant relationship between academic discipline and course choice. The result $\chi^2$ (1, N=110) = 0.171, p = 0.680 indicates students across various academic disciplines are equally likely to enroll in creative skill courses, suggesting that these courses appeal broadly, regardless of academic background.

c) Business Skill Courses: A significant relationship was found for business skill courses, $\chi^2$ (1, N=110) = 3.906, p = 0.048. This result implies that students' academic disciplines influence their choice to pursue business-related micro-credentials. In particular, students from arts, commerce, and humanities disciplines are more inclined to select business skill courses compared to their peers from science background.

d) Personal Development Courses: The Chi-Square test for personal development courses did not indicate a significant relationship $\chi^2$ (1, N=110) = 1.926, p = 0.165, suggesting that personal development courses are equally popular across different academic disciplines. This finding highlights the universal appeal of personal development as a valuable skill set for students across various fields of study.

**IV Major Findings of the study**

1. The concept of micro-credentials is still in its nascent stage definitely holding great growth potentials in the future.
2. At present these courses are opted by the students with limited knowledge about its potential and choice.
3. The mixed response with regard to the factors of perception about the concept of micro-credentials is also indicative of low awareness level about the possibilities of these nano-degrees for future career prospects.
4. Among the factors motivating the uptake of micro-credentials, it is understood that students' awareness about this modality is restricted to as an opportunity to learn a skill of their choice. Traditional degrees continue to be indispensable to their career prospects.
5. Academic discipline has significant influence when opting technical or business - related courses while creative and personal development courses are opted by students of all streams

**V. Suggestions**

1. The higher educational institutions may focus on increased collaboration with the employers at various stages to understand the requirements of the labor market so as to guide the students when choosing their nano-degrees

2. The Educational institutions may center their focus on certain specialized domain and prepare a framework to guide students opt micro-degrees along with traditional degrees and stack their credits to increase their employability in their domain.
3. Collaboration with various private platforms offering micro-degrees will help in customizing the required nano-degrees for the institution focusing on the domain of their choice. It can be integrated with the regular course options for strengthening the outcome
4. This will also help in increased flexibility, paced to suit their regular classes, cost effectiveness and above all more informed choice of course resulting in desired employability outcome.
5. Orientation during the start of the academic session about the potential of micro-credentials, accessible government and private platforms and general guidelines or pointers to help them navigate through vast available resources will prepare the students well ahead.
6. Resourceful staff or mentors or a department in every higher education institution can be vested with the responsibility of collaborating, monitoring at desired intervals, evaluating the progress and outcome of students opting such courses to do necessary course correction and effectively ensure maximum results.
7. The institution may also ensure that these nano-degrees not only focuses on employability but also ensure a balanced mix of courses that delivers values, ethics and personal enrichment which contributes positively to the society at large.

## VI. Conclusion

According to AISHE 2019-20 survey report, India reportedly has 1043 universities, 42342 colleges and 11779 stand-alone institutions listed on AISHE web portal. Total enrolment in the higher education is around 38.5 million students with a gross enrollment ratio in higher education being 27.1. According to the report from Centre for Monitoring Indian Economy Pvt. Ltd., unemployment rate is at 9.2 % as of June 2024. To create a talent pool to be absorbed by the industries, the responsibility has to be equally shared by the Government as well as higher educational institutions associating with edtech and industrial partners. The concept of micro-credentials is a highly potent tool which if rightly employed will help curate a workforce of desire. India being a young nation, its future will be decided by the swift groundwork embracing the changes implemented at schools and colleges and supporting initiatives taken to mold the generation's education system so as to gain niche over such other aspiring nations. Time is of essence and it is imperative for the students and educational institutions to keep pace with changing time for sustainability and to meet the challenges of future.

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