UNBOXING MICRO-CREDENTIALS FOR ODL UNIVERSITIES: COMPETENCY DEVELOPMENT FOR HUMAN CAPITAL

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ABSTRACT

The rising prominence of micro-credentials started during the COVID-19 pandemic, where online resources offered competency-building opportunities for the work-from-home (WFH) human capital. During this pandemic, traditional universities faced total halt to face-to-face lectures, but ways paved for open and distance learning (ODL) universities to showcase their prowess in higher education by successfully continuing to offer programmes digitally. Lesson learnt from the lockdown, higher education institutions (HEIs) have begun implementing online programmes, including micro-credentials. This paper investigates the role of micro-credentials in competency development and employment opportunities and the trends and challenges in offering micro-credentials. This study employed a triangulation approach for data collection from the workforce, universities, employers and statutory bodies. The findings indicated that the workforce desired more options to upgrade and upskill themselves, opting for shorter durations and lower fees. Employers surveyed, prefer employees with high-value skills and competencies. The findings also indicated that conventional HEIs have started to actively engage in short-term programmes for adult learners via ODL too. The implication of these findings indicates that ODL universities implementing micro-credentials must consider the acceptance and stackability of micro-credentials from different HEIs, with clear validation metrics, and allow transferability among ODL institutions in different countries, through AAOU as an international consortium.

Keywords: Micro-credentials, competency development, human capital, open and distance learning, ODL.

INTRODUCTION

Increasing cost of higher education for both learners and education providers, accelerated labour market changes, rapid skills obsolescence, growing pressure for more flexible learning opportunities and ultimatum for global experiences, has generated the expansion of alternative credentials for the workforce. One form of alternative credentials that is gaining increasing recognition is the micro-credential, that not only increases employment opportunities but also enhances skills and competencies to confront the new world. Recent reviews indicate that government agencies, higher education institutions (HEIs), statutory bodies, corporate sector and the workforce seem drawn into micro-credentials, particularly after the COVID-19 pandemic.

Malaysian Qualifications Agency (MQA) (2020) defines micro-credential as "digital certification of assessed knowledge, skills and competencies in a specific area or field which can be a component of an accredited programme or stand-alone courses supporting the professional, technical, academic and personal development of the learners". One of the most common definition being cited in recent times would be that of Prof. Beverley Oliver who says "a micro-credential is a certification of assessed learning that is additional, alternate, complementary to or a formal component of a formal qualification" (Oliver, 2019). These definitions, though broad, highlights that micro-credentials are additional forms of (short-term) certification, that can complement existing educational provisions provided by formal programmes, or may be taken as alternatives to facilitate the competency development of the learner. This can be further attested by the definition given by the European Commission (2022, p. 10) that "a micro-credential is a proof of the learning outcomes that a learner has acquired following a short learning experience".

LITERATURE REVIEW

Through a collaboration between the Malaysian Ministry of Human Resources and Ministry of Higher Education, the Human Resource Development Corporation Micro-credential Initiative was launched in Malaysia in April 2022. These first ever comprehensive industry-based micro-credential courses are to assist Malaysians across all backgrounds to obtain stackable certifications through short-term learning to facilitate their competency development. These certifications or credentials will enable learners to acquire officially recognised qualifications through personalised learning pathways. Currently, the Human Resource Development Corporation (HRD Corp) is aimed at encouraging employers to provide learning and development opportunities for their employees and shoulders the responsibility to drive Malaysia's talent development. HRD Corp has initiated the HRD Corp Micro-credential Initiative which holds the largest repository of courses in Malaysia, with 10,000 courses across 24 skill areas. It is aimed to create 50,000 micro-credential training places for Malaysians by the end of 2022 and over 3 million micro-credential training places is to be added within the next five years. To support this initiative, MQA, which launched the "Guidelines on Micro-credentials" in March 2019, provides the Higher Education Institutions (HEIs) and other stakeholders in Malaysia with information on the principles and guidelines to good practices (GGP) in the implementation of micro-credentials. This has led many HEIs, including Open University Malaysia (OUM), to offer micro-credentials.

Talent Corporation Malaysia Limited (TalentCorp), is another key agency in complementing the capacity-building ecosystem in Malaysia. Established under the Prime Minister's Department in 2011, it is a national agency driving Malaysia's talents toward becoming a dynamic talent hub. TalentCorp collaborates with public and private sectors, industry leaders, and professionals to bridge the talent supply-demand gaps across various sectors.

In a world that is demanding a greater level of flexibility, micro-credential courses are more accessible to a broader range of people in a short time. Micro-credentials fulfil the urgent need for upskilling and retraining, by not replacing the current methods of conventional education, but rather offer an option to those interested in earning a formal qualification through a flexible education system. It is noticeable that national and international initiatives on policy documentations to stimulate global higher education policies on micro-credentials have continued to be produced. These include UNESCO's Global Convention on Recognition and the Council's Recommendation on Micro-Credentials for Lifelong Learning and Employability, published by the European Commission in 2022. The Organisation for Economic Co-operation and Development (OECD) too, in 2023, has published a perspective paper drawing on evidences to form some views on the impact of micro-credential initiatives and policies. In a nutshell, micro-credentials are found to have macro values to assist in upskilling for employability and therefore will encourage meaningful participation from the workforce as it provides for both life-long and life-wide forms of learning.

Brown, M., Mhichil, M., Beirne, E. and Lochlainn, C. (2021) developed the chart in Figure 1 to map out the emerging credentials landscape differentiating the bundled from unbundled credentials and credit-bearing from non-credit bearing. Brown et al. (2021, p. 235) consider micro-credentials as a way of meeting the projected growth in demand for higher education worldwide.
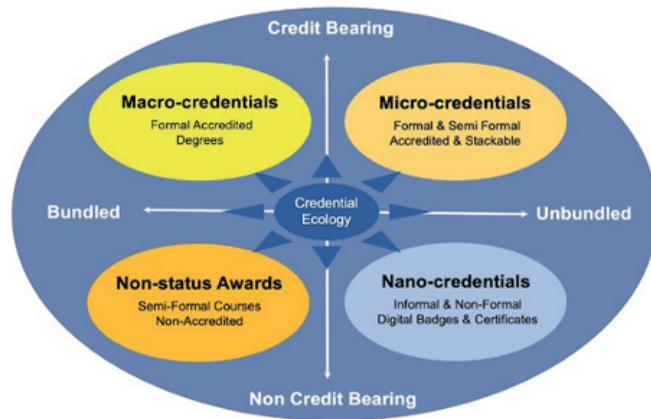
Figure 1. The New Credential Ecology

Source: (Brown et al, 2021, licensed under a Creative Commons Attribution 4.0 International License)

Figure 1 depicts four credential quadrants across two axes:

- The x-axis differentiates between bundled and unbundled credentials.
- The y-axis distinguishes between credit-bearing and non-credit-bearing credentials.

On one end of the y-axis, conventional macro-credentials and credit-granting micro-credentials are situated, earned through formal and semi-formal learning. The x-axis illustrates the extent to which credentials and corresponding study units are packaged together by the awarding body or institution, as opposed to scenarios where learners exercise significant discretion in assembling their individual learning packages. According to this classification, micro-credentials are distinguished from traditional macro-credentials, non-status awards like short courses, and nano-credentials such as digital badges or certificates, as they are unbundled, credit-granting, and stackable credentials. However, the boundaries between quadrants in this credential map are not always as distinct in practice. For example, a learner could possess a non-credit-bearing badge in project management, but this badge can be evaluated as 'recognition of prior learning' (RPL) or 'accreditation of prior learning' (APEL) by a HEI or incorporated into a professional portfolio, which subsequently contributes to a credit-bearing micro-credential course, making the micro-credentials suitable for HEIs entry requirement as well as credit transfers.

Many individuals actively pursue educational credentials for future job opportunities or to enhance their existing employment prospects. As shown in Figure 2, there are several types of educational credentials, all of which are closely tied to employability.
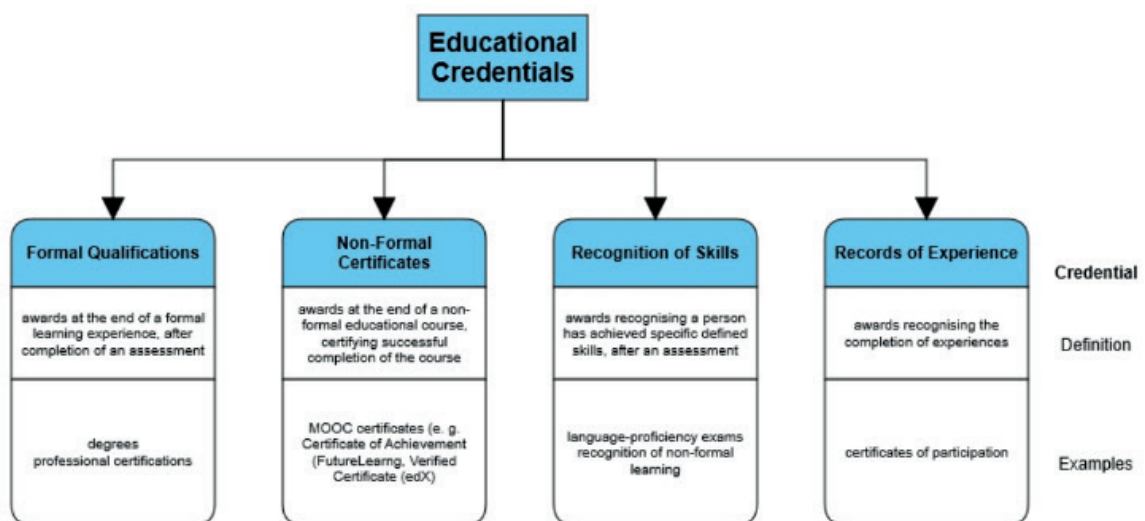

Figure 2. Types of educational credentials (Source: Camilleri and Rampelt, 2018, p. 7

Currently, employability has emerged as an area of concern, a trend that is expected to persist for the foreseeable future. To counteract this, suitable credentialing is seen as a potential solution to address certain skill shortages (Calonge et al., 2019). For example, it is mentioned that Malaysia is not experiencing a labour shortage (William, 2022). The country has around 2.4 million underemployed individuals, both in terms of skills and time, and another 642,000 people who are unemployed. This equates to approximately three million Malaysians ready for employment! So, does the problem lie in the lack of specific talents that the job market demands? Why aren't their degrees and diplomas fully addressing their employment needs? Is it possible that they are lacking in a particular knowledge or skills that consequently do not meet industry expectations? The challenge goes beyond simply finding individuals willing to work; they also need to possess the skills that are aligned with their prospective roles within the organisation. Robert Half Talent Solutions' research in 2022 suggests that 95% of executives find it somewhat or extremely difficult to locate employees with the required skills and talents. This enduring stalemate is commonly referred to as the "skills gap". In this context, micro-credential programmes could play a crucial role in bridging this skills gap.

Figure 3. Potential vs. Reality: 97% of Malaysians Show Interest in Learning, Yet Only 36% Have Access to Training Opportunities.

Source: www.randstad.com.my/hr-trends/employer-brand/2022-malaysia-rebr-download/

According to Figure 3, the majority of Malaysian employers do not prioritise learning and development, despite a high level of interest among Malaysians. Various reasons could account for this. Micro-credential programmes, offering concise, targeted learning and development experiences, could bridge this gap, fitting conveniently into the schedules of employees at any career stage.

Consequently, economic, health and geo-political uncertainties have created divergent outcomes for labour markets globally in 2023. It is mentioned that low- and lower-middle-income countries continue to see higher unemployment than before the COVID-19 pandemic. The labour market outcomes are also worrisome, as workers with only basic education and women are facing lower employment. At the same time, wages are declining as a result of ongoing cost-of-living crisis, and changing worker expectations are becoming more prominent issues globally (World Economic Forum, 2023).

OBJECTIVES OF THE STUDY

The objectives of the study are given below:

1. To explore the role of micro-credentials in facilitating competency development for human capital and employment; and
2. To investigate the current trends and challenges in developing and implementing micro-credentials in Malaysia

METHOD

This study explored the potential of micro-credentials in facilitating competency development among the workforce as well as investigated the current trends and challenges in developing and implementing micro-credentials. The study used triangulation approach to determine the present experiences and future expectations of a sample from the workforce, universities, employers as well as statutory bodies governing talent acquisition among the working population in various industries. This study involved literature reviews, interviews with industry professionals and workforce surveys to address the research objectives.

All standard research method processes and practices were observed including obtaining permission, using third-party individuals between the researcher and respondents to collect responses, seeking voluntary participation and ensuring research ethics are not compromised during the distribution and collection of the questionnaires.

There were two (2) stages using quantitative and qualitative approaches to obtain data from respondents as explained below.

- *Stage 1: Sourcing from the workforce using questionnaire on the role of micro-credential courses offered locally, factors contributing to take-ups*

  The first stage, which is quantitative in nature, deals with the identification of the key variables that influence the micro-credential course offerings locally and factors contributing to take-ups. A questionnaire was developed by using adapted survey instrument comprising closed-ended and open-ended questions. It was divided into three main sections: a demographic profile in the first section and the factors contributing to take-ups for micro-credential programmes in the second section. The third section consisted of open-ended questions that sought information from the respondents as to what the challenges are and how they believe the micro-credential courses should be deployed. The authors employed purposeful sampling, which involves selecting participants who possess specific characteristics or traits relevant to the study.

- *Stage 2: Sourcing from the Focus Group Discussion (FGD) sessions with Head of Departments of selected Malaysian universities, HRD Corp and TalentCorp on the trends of offerings micro-credential courses and challenges in developing, as well as implementing micro-credentials*

  This stage is qualitative in nature and begins with Focus Group Discussion sessions. Data was collected from the seven (7) Focus Group Discussion sessions, each consisting of 3-5 participants. As mentioned above, the members of the Focus Group Discussion sessions comprised of deans, deputy deans, academics and senior managers from HRD Corp and TalentCorp. During the Focus Group Discussion sessions, interviews were recorded with the consent of the participants but the identity of the participants were withheld.

Table 1 outlines the means that were used to achieve the research objectives.

Table 1. Means used to achieve the research objectives

RESEARCH OBJECTIVES	INSTRUMENTS	DATA SOURCES
To explore the role of micro-credentials in facilitating competency development for human capital and employment	Survey	Local Workforce
To investigate the current trends and challenges in developing and implementing micro-credentials in Malaysia	Focus Group Discussion	Selected Malaysian Universities HRD Corp TalentCorp

The validity and reliability of all questions is ensured as they were taken from established questionnaires that have been tested and re-tested. Quantitative data collected from the survey was analysed using SPSS by using various statistical tests. The focus group discussion was analysed through thematic constructs.

FINDINGS

The survey that garnered responses from 1,464 employed adults (against the targeted 2,000) across various sectors. The data on respondents reveals that 17.2% possess a high school certificate, 25.8% have a bachelor's degree, 32.3% hold a diploma, and 9.9% have obtained a master's degree, with the remaining individuals having other, lower qualifications. Regarding age, 22% of respondents fall within the 26-30 year age range, followed by 18.4% in the 21-25 range, and 16.9% in the 31-35 range, with smaller percentages for other age ranges. Employment-wise, the majority of respondents (51%) work in the private sector, with 27% in the public sector, 10% employed by others, and the rest are self-employed. The other details of the respondents are illustrated in Figures 4 to 7.
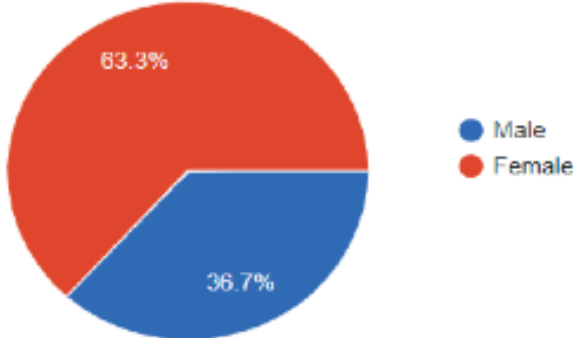
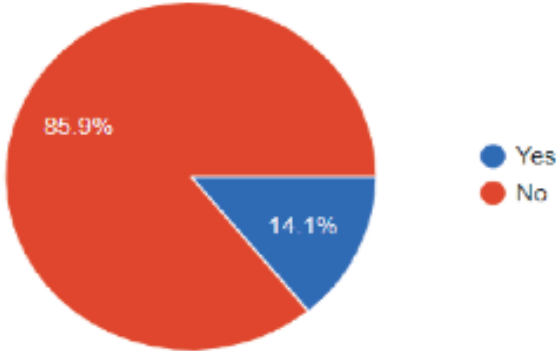**Figure 4.** The percentage of the gender of the respondents

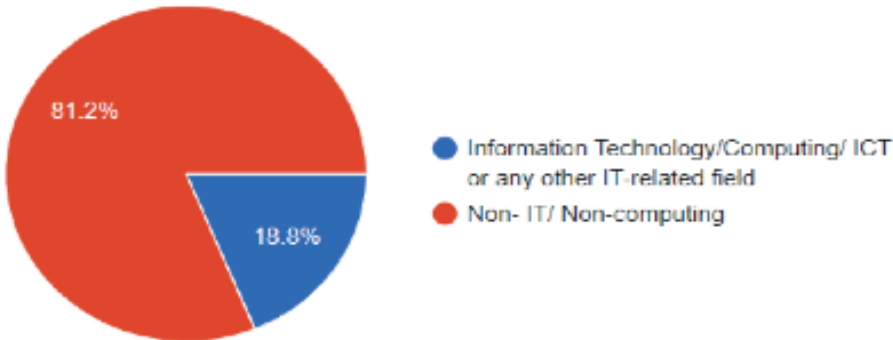**Figure 5.** Exposure to the micro-credential courses

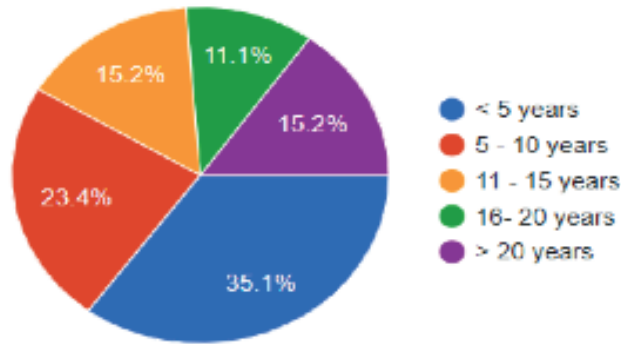**Figure 6.** Professional background of the respondents

Figure 7. Numbers of the years in workforce

Surveyed respondents agreed that micro-credentials offer broader opportunities for upskilling, allowing both employers and employees to engage with learning experiences that can better equip their organisations for the future. This concept, known as a 'learning organisation' in human capital development, encourages individuals to continuously improve themselves for the benefit of the organisations they serve. Micro-credentials are poised to enhance employee engagement and foster a culture of lifelong learning, thereby supporting the organisations they are part of.

Role of Micro-credential in Facilitating Competency Development for Human Capital and Employment

Respondents were prompted to prioritize their reasons for selecting micro-credential courses, ranking them from the most to the least significant. The analysis revealed that the three main factors motivating enrollment in micro-credential courses, according to survey findings, are career development, the enhancement of knowledge or skills, and personal interest, as illustrated in Figure 8.
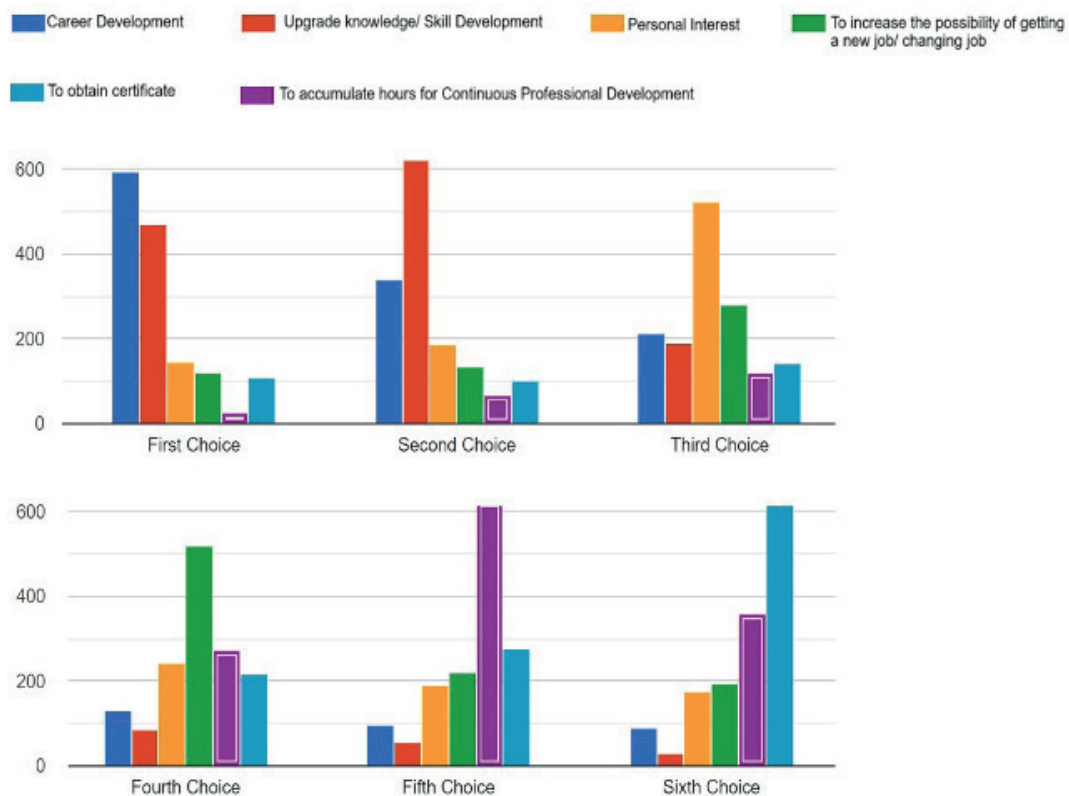

Figure 8. The motivations or factors that influenced respondent's decision to pursue a micro-credential course

These motivations echoed global trends and demonstrated a clear alignment with the worldwide responses (Figure 9).
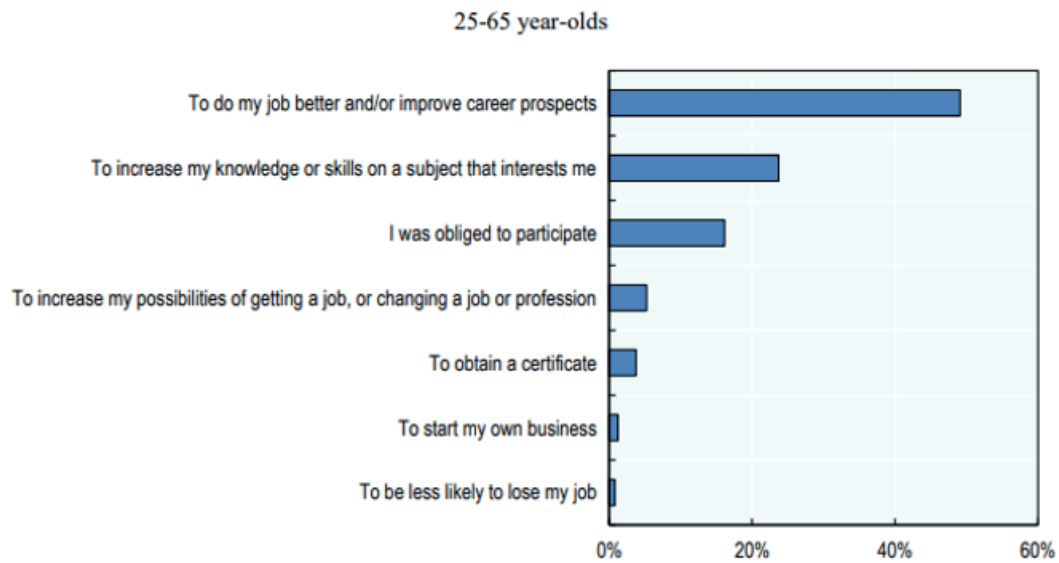
25-65 year-olds

Figure 9. Reasons for participating in non-formal education and training in OECD countries and economies (2012, 2015 and 2018)

Source: OECD [2019], Survey of Adult Skills [PIAAC], www.oecd.org/skills/piaac/

Further insights from the survey of 1,464 respondents revealed that many of them consider micro-credential courses as a significant factor in enhancing their employability or career prospects (Figure 10).
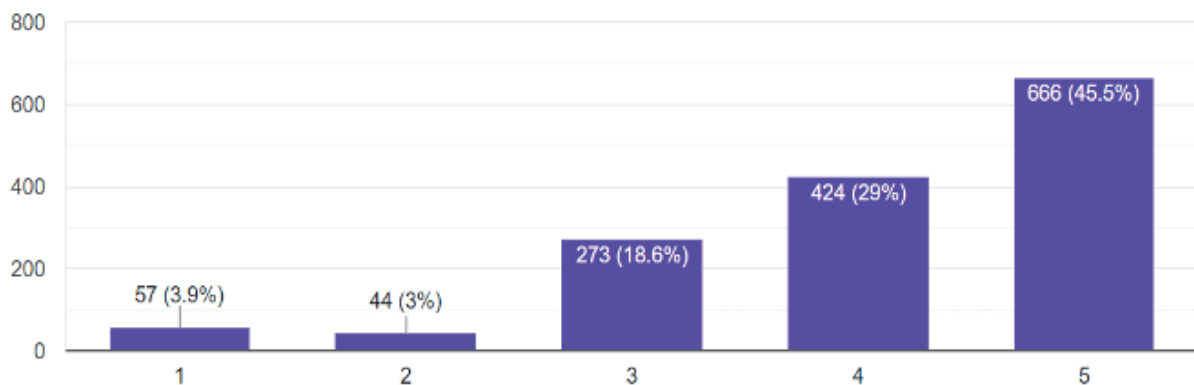
Figure 10. Respondents' feedback on whether micro-credential course can enhance their employability or career prospects (Likert Scale: 1 [strongly disagree] – 5 [strongly agree])

The reputation and credibility of micro-credential courses and their providers stood out as pivotal considerations for these respondents when contemplating enrolment in such programmes (Figure 11).
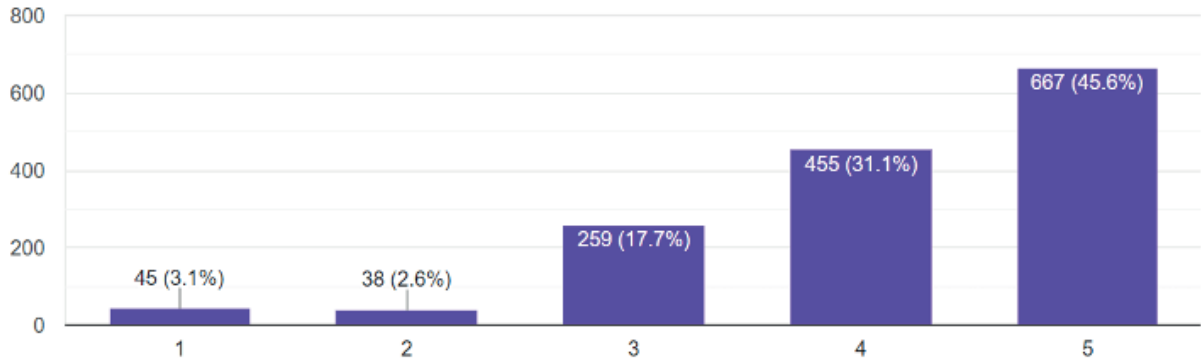
Figure 11. Respondents' feedback on whether the recognition and credibility of micro-credential courses and their providers is important for them when considering enrolling in such a course (Likert Scale: [1 strongly disagree] – 5 [strongly agree])

Respondents pointed out the crucial role employers should play in facilitating the uptake of micro-credential courses among their workforce as indicated in Figure 12. They outlined key employer responsibilities such as offering career development opportunities tied to micro-credentials, providing financial incentives for course completion, and allowing dedicated time-off for pursuing these educational initiatives. Additionally, the survey participants stressed the importance of the accessibility of micro-credential courses in influencing their decision to enrol. They particularly emphasized the value of features like online learning, self-paced courses, and modular content, indicating that these factors make such courses highly suitable for working professionals balancing work commitments and continuous learning aspirations.

Figure 12. Respondents' feedback on the role employers should play in supporting and promoting the uptake of micro-credential courses (Note: only the top three responses are given)

Thus, employee objectives for earning a micro-credential appear motivated predominantly by internal progression and the enhancement of skills and knowledge for their current role. Less emphasis was placed on micro-credentials as a means of furthering formal education or in seeking a new role. Furthermore, when asked what they might do with a micro-credential, only 31% said they would look into using it as a pathway to a larger qualification. Similarly, employers saw micro-credentials to recognise and reward personal growth and progression among the workforce, rather than quantify existing skills or increase competitiveness. Connecting micro-credentials with strategic competence and continuing professional development was notable in its absence by employer respondents. Additionally, the survey participants stressed the importance of the accessibility to micro-credential courses in influencing their decision to enroll. They particularly emphasized the value of features like:

- online learning
- self-paced courses
- modular content

All of above indicate that these factors make micro-credential courses highly suitable for working professionals balancing work commitments and continuous learning aspirations.

Thus, employee objectives for earning a micro-credential appear motivated predominantly by internal progression and the enhancement of skills and knowledge for their current role. Less emphasis was placed on micro-credentials as a means of furthering formal education or in seeking a new role.

The workforce surveyed highlighted that micro-credentials are very effective as they help in developing professional skills and academic knowledge in a shorter time, and is able to facilitate human capacity development through four (4) areas: upskilling, reskilling, lifelong learning and supporting formal education for school leavers as highlighted by Abd Karim (2021) (Figure 13).
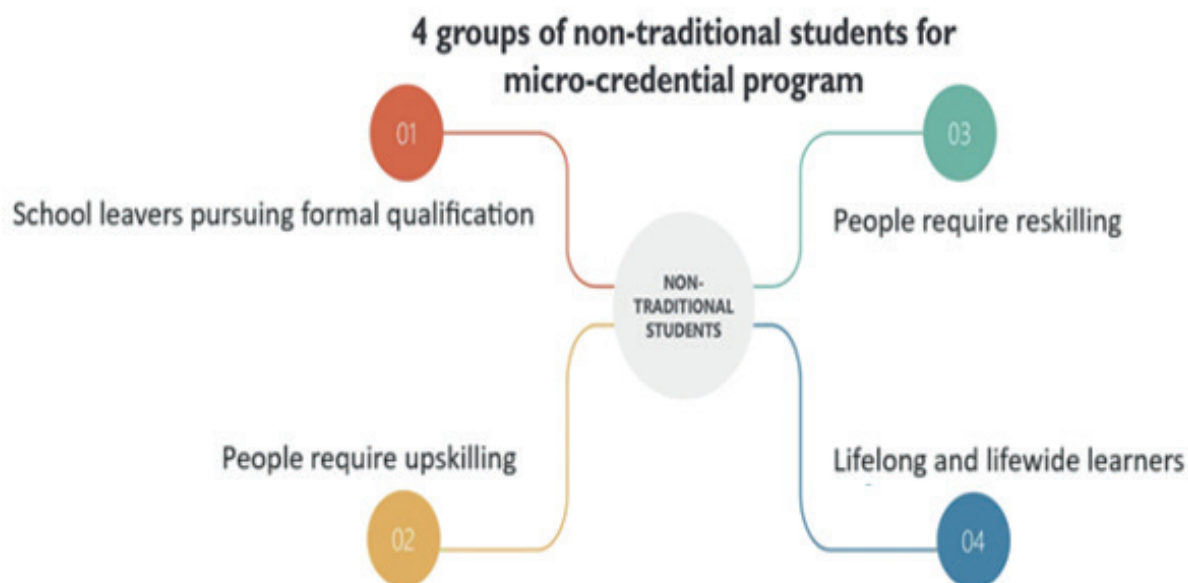

Figure 13. Micro-credential roles in supporting and complementing human capital development
(modified from Abd Karim, 2021)

Micro-credential courses serve as a key asset in human capital development by promoting upskilling and reskilling among the workforce, thereby enhancing their competencies and skills. Moreover, their flexibility facilitates lifelong and life-wide learning, supporting continuous knowledge acquisition among employees. Findings indicate that micro-credential courses play a crucial role in complementing the capacity-building ecosystem. These courses offer targeted skill development opportunities and allow individuals to enhance their knowledge and competencies in specific areas. Local universities were found to offer a range of micro-credential courses, catering to diverse professional needs.

This supports the findings by Varadarajan, S., Koh, J., & Daniel, B. (2023) who presented a systematic review of literature on micro-credentials. Van der Hijden and Martin's work in 2023 also presents similar conclusions, offering insights into the worldwide evolution of micro-credentials. Their study particularly emphasizes the relevance of these developments in developing and emerging countries which brings us to the next findings in our study.

Current Trends and Challenges in Developing and Implementing Micro-credential in Malaysia

The findings from these focus group discussions at selected universities highlight that the micro-credential courses positively influence the participants' learning experiences and understanding of the subject matter.

The selected universities, as well as HRD Corp and TalentCorp view micro-credentials through various lenses, recognising their potential to foster lifelong learning, provide alternative education paths, expand access to education, and offer stackable credentials that enable progression in learning. Micro-credentials

are seen as a pivotal tool in the lifelong learning continuum. In the context of widening access to education, micro-credentials remove several barriers typically associated with traditional degree programmes, such as time, cost, and geographical constraints. They thereby, help reach out to marginalized groups, offering them an opportunity to gain recognised qualifications and enhance their career prospects. Additionally, the stackable nature of micro-credentials provides a stepping-stone for learners. Individuals can accumulate these credentials over time to achieve higher qualifications, making the process of higher education more manageable and less overwhelming.

The findings also indicated that micro-credential courses can be offered as online courses and further enhanced by open and distance learning (ODL) technology, as an alternative to widen their learning opportunities. Learning at their own pace, time and through their preferred methods, resulting in continuous learning for certification opportunities and make lifelong learning a reality for competency development for Malaysia's human capital. This supports the findings by Kumar, J., Richard, R., Osman, S., & Lowrence, K. (2022) through their quantitative analysis which indicated that learners valued the micro-credential in particular for its professional relevance as a facet of digital learning identity (p. 18). According to Kumar et al., their study highlighted the fact that self-motivation and efficacy might be required for learners taking micro-credentials. The authors indicated that the participants were comfortable and competent using technology for autonomous learning. This indicates that micro-credentials via ODL is an option to upgrade and upskill human capital and is a practical choice as working adults can choose to work and study at their own time and pace with maximum flexibility.

The study also explored practices and identified various factors contributing to the take-up and demand for micro-credential courses. Factors such as the need for career development and the quest for knowledge and relevance to job requirements emerged as key drivers of demand. Additionally, the research revealed a significant interest among working adults in pursuing micro-credentials, suggesting potential growth in this area for ODL institutions that mainly caters for working adults.

Due to its flexible and positive take-up factors, ODL universities can also encourage both local and international participants to enroll in the micro-credentials courses and enhance their employability in the global market. ODL universities can offer a wide range of micro-credentials to help local and international learners acquire the necessary skills and knowledge, to keep up with the rapidly evolving industry. Micro-credentials provide these learners with the opportunity to acquire in-demand skills quickly, making them valuable assets in the job market. These courses can be targeted at both beginners and experienced professionals looking to expand their skillset. In summary, these micro-credentials can be an effective way to stay competitive and relevant in their chosen field.

This study also highlighted challenges faced by Malaysian universities in developing and implementing micro-credential courses. These challenges, which can be extended to ODL universities, included:

    a. identifying suitable micro-credential courses for niche markets

    b. getting the right expertise

    c. recognition of the micro-credential courses by professional bodies and employers

    d. deciding on the correct assessment and evaluation for the micro-credential courses

    e. training for the educators

    f. management of the micro-credential learning management platforms

Addressing these challenges is crucial to ensure the successful implementation and sustainability of micro-credential courses in the Malaysian higher education landscape.

LIMITATION OF STUDY

Despite the valuable insights provided by this study, there are some limitations in terms of:

    a. *Scope of study:* Our focus has been on selected Malaysian universities, including Open University Malaysia and this may limit the generalizability of our findings to other ODL universities worldwide.

    b. *Challenge coverage:* The exploration of challenges faced by these selected Malaysian universities may not be exhaustive or fully representative.

DISCUSSIONS AND CONCLUSION

This study was undertaken to provide a contrasting perspective to the substantial amount of grey literature and digital content that frequently reiterates the alleged benefits of micro-credentials, often without a solid evidence base. Our aspiration, and indeed our expectation, was that this study would serve as a valuable tool reflecting the dynamic global trend of micro-credentials within universities.

There is also a need to tie micro-credentials more explicitly to Sustainable Development Goal 4 (SDG) on "relevant skills for decent work". By 2030, there is a need to substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship and specifically in SDG 4.4: "increase the number of people with relevant skills for financial success".

The findings also indicated that conventional colleges and universities worldwide have actively started to engage in conducting short-term programmes for adult learners via digital education. The implication of these findings indicates that ODL institutions implementing micro-credentials must consider the acceptance and stackability of credentials from different HEIs worldwide, with clear validation metrics.

Malaysia, through MQA, has taken many tangible steps to unleash the full potential of micro-credentials. In fact, MQA acknowledges the importance of recognising non-formal and informal learning. Many individuals acquire valuable skills outside of formal education settings. Micro-credentials offer a platform to validate and recognise these skills, improving visibility for such learning and subsequently enhancing individuals' employability and career prospects. By embracing the concept of micro-credentials, MQA is helping shape an education system that caters to the 21st century and beyond. To further accelerate micro-course courses, the Accreditation of Prior Experiential Learning for Micro-credentials (APEL-M) by the Malaysian Qualifications Agency (MQA) is an initiative designed to recognise and validate the knowledge, skills, and competencies obtained through various learning experiences for the award of qualifications under the Malaysian Qualifications Framework (MQF). This innovative approach focuses on "unbundled" or stand-alone micro-credentials, allowing individuals to gain recognition for small, specific skill sets or competencies. APEL-M offers a pathway for learners to acquire qualifications in a flexible, personalized manner that aligns with their unique learning journeys and professional development needs. It acknowledges the importance of both formal and informal learning, providing a robust system for recognizing a wide range of skills and competencies that are essential in the modern workforce. By doing so, APEL-M contributes to creating an inclusive, dynamic, and responsive education system that caters to the diverse needs of learners and the ever-evolving demands of the job market.

This study also provides valuable insights into the role of micro-credential courses in the capacity-building ecosystem for the workforce. It sheds light on the roles of micro-credential courses, factors driving demand, and employability prospects. The findings also highlighted the trends and challenges faced by Malaysian universities in developing and implementing micro-credential courses. The discussions and conclusions derived from this study can serve as a guide for universities and policymakers to develop and implement effective micro-credential courses that meet the needs of the human capital and support the professional development of individuals in this their chosen fields.

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