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Micro-Credential Preferences of Self-Directed Learners on Risk Analysis

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Abstract

Stakeholder analysis from employers, learners, and educational and training institutions is traditionally utilised for developing micro-credential designs and frameworks. However, there is a need to put emphasis on the course topic preferences and willingness to pay for micro-credentials of adult learners as customers. In addition, targeting survey respondents may not be purposive if adult learners are already not engaged and uninterested in self-directed lifelong learning. In this study, webinar registration and massive open online course feedback surveys were used to determine the course topics and registration fees for a potential micro-credential on risk analysis. A total of 2,842 survey respondents were involved in the study, which came from 486 webinar attendees and 2,351 massive open online course completers. Findings show that only 20% of all respondents are interested in enrolling in a paid micro-credential. In addition, 30% of all respondents have a neutral perspective on their willingness to pay for a micro-credential. The implication of the study indicates that the price range of micro-credentials greatly influences the interest of adult learners. Despite having a large portion of graduates of tertiary education who could pursue graduate studies, the interest in paid micro-credentials remains low. The study implies that the value proposition of micro-credentials being able to be credited to a formal degree program might not be sellable or understood by most adult learners.

Keywords: life-long learning, market analysis, massive open online course, micro-credential, risk analysis, self-directed learners

1. Introduction

Higher education has been reported to fall short in bridging the gap between degree programs and practical skills needed by the labour market (Gauthier, 2020). In industry practice, employers value experience, internship, and demonstrated skills over completion of degree programs (Fuller et al., 2022). Thus, the development of innovative educational programs that adopt lifelong learning and a student-centred approach can complement traditional higher education courses (Carr et al., 2020). In response, universities have increased offerings of alternative credentials that align with the human capital needs of the labour market (Alasmari & Alzahrani, 2024). Micro-credentials (MCs) are a flexible pathway for a small volume of learning that addresses the skills gap of the professional workforce and documents learning achievements of adult learners (Fisher & Leder, 2022; Bideau & Kearns, 2022; Tamoliune et al., 2023). In simple terms, MCs are short online courses that address evolving skills requirements of the rapidly changing industry landscape (Wheelahan & Moodie, 2021).

In other words, the MCs are courses; that can be combined to be credited as academic units in a degree program (AACSB, 2021), collectively representing an educational innovation that provides a flexible and responsive curriculum design tailored to the needs of the labour market (Cook, 2021). The MCs can also be designed to be a personalised, flexible learning pathway for upskilling and reskilling (Hunt et al., 2020), whereby industries expect them to bridge the gaps in the 21st-century skills of the labour market (Qazi et al., 2023). Therefore, the findings of the study contribute additional factors to the learner experience framework for MC developed by Venaruzzo and Diaz (2025). Their framework focused on the learning experiences of potential career progression, employment experience, and developed skills that motivate learners to engage with MCs. In this study, additional motivational factors on willingness to pay and selected course topics were shown to affect the interest of self-directed learners in taking up MCs.

2. Literature Review

2.1. MCs from Open Universities

MCs are inherently well-suited to open and distance learning (ODL) institutions, as they leverage learning management systems to facilitate asynchronous, self-directed course delivery (Khalil, 2021). Survey studies indicated that adult learners shared overlapping preferences regarding the features of MCs among adult learners for course delivery in ODL institutions: online learning, self-paced courses, and modular content (Raghavan et al., 2025). Currently, the instructional models employed by open universities are already learner-centred, meeting the needs of adult learners from diverse backgrounds (Kara et al., 2019). Furthermore, both MCs and ODL target adult learners as primary receivers of course delivery, reinforcing their compatibility with each other.

A study by Chandler and Perryman (2023) found that the MCs offered by an open university contributed to the development of knowledge and skills, while also fostering changes in learners' perspectives on the subject matter, career aspirations, and confidence to pursue further studies. Building on this, recent research has begun to explore the integration of AI in the delivery of MCs within ODL environments (Harizan & Ally, 2025; Durak & Cankaya, 2025), signalling continued innovation in personalised and flexible learning. However, as residential universities have increasingly adopted online learning since the COVID-19 pandemic, distance education is no longer a distinctive feature of open universities (Lyu, 2023), suggesting that the competitive edge of ODL institutions may lie in how effectively they leverage MCs and emerging technologies to meet the evolving needs of adult learners.

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That said, MCs present a strategic opportunity for open universities to innovate and differentiate their educational offerings in an increasingly competitive digital learning landscape. However, effective design of MC requires the identification of specific skills and the development of competency-based learning that can support the career development of adult learners. To achieve this, open universities must strengthen their partnerships with external stakeholders for impactful design, promotion, implementation, and evaluation of MCs.

2.2. MC Delivery

Over the past decades, digital credentialing with massive open online courses (MOOCs) and open educational resources has been widely utilised for cost-effective adult learning (Woods & Woods, 2021). Initially, MCs only emerged as an extension of digital credentialing due to their limitation in establishing a formal linkage with courses offered by higher education institutions. In recent years, various designs and frameworks have been proposed for MCs. For example, the European MC framework has nine components: (1) quality, (2) transparency, (3) relevance, (4) learning pathways, (5) validity of assessment, (6) portability, recognition, (7) learner-centred approach, (8) authenticity, and (9) information and guidance (Bideau & Kearns, 2022). The learner-centred approach in this framework is defined as the course design for learning outcomes encompassing innovative, transversal, and job-oriented skills (Wächter, 2004; De Rosa et al., 2024) – reporting a continuous interaction between higher education and external stakeholders for the updating of learning outcomes of MCs (De Rosa et al., 2024).

However, despite the benefits of MCs, their integration into degree programs remains a challenge (Boud & Jorre de St Jorre, 2021; Ha et al., 2024). MC delivery is beyond traditional academic processes and mechanisms in higher education, which may result in inconsistencies in competency-based assessments (Selvaratnam & Sankey, 2021). Considerations on institutional policies and curriculum revisions need to be taken into account to bridge MCs and degree programs (Clausen, 2022; Tamoliune et al., 2023). For example, there is a possibility of a mismatch between the topics in the courses offered in the degree program and the MC demanded by the labour market. Although MC can be designed based on a market study, crediting to a degree program requires aligned learning outcomes, compelling a thorough assessment and evaluation. Furthermore, the lack of a standard of MC has resulted in definitional ambiguity from various stakeholders (Oliver, 2019). As such, an education and training provider of MC is only considered mature upon possessing the necessary technical infrastructure, a credentialing system, and a delivery platform (Selvaratnam et al., 2024). Ultimately, a common MC framework is crucial in the successful incorporation of both educational innovation and quality learner experience (Venaruzzo & Diaz, 2025).

2.3. Preferences for MC

While there is growing literature linking the co-development of MCs between the learners and designers (De Rosa et al., 2024; Cheong et al., 2025), perspectives from learners remain generally absent in the discourse (Reynoldson, 2023). The design and structure of MCs need to incorporate learning objectives and outcomes based on learner preferences and skills demands by the job market (Ahsan et al., 2023). One of the identified enablers of micro-credentials is the self-directed and proactive nature of the learners (Ha et al., 2024). Student-centred approach incorporates the interest and motivation of learners, which enhances their willingness and engagement as consumers of new educational programs (Tomlinson, 2016; Starkey, 2017). Moreover, personalised flexible learning allows learners to manage their professional development on top of their daily life demands (Reynoldson, 2023). Other than that, cultural backgrounds were also identified as an additional role in

shaping learners' interest in engaging with a course (Miao et al., 2023), which can also influence their preferred MC topics.

2.4. Willingness to Pay for MC

MCs have been deemed to be a cost-effective solution for lifelong learning, achievement tracking, and professional development (Copenhaver & Pritchard, 2017; Santandreu Calonge et al., 2019). In a neoliberal perspective, adult learners are classified as independent consumers of MCs and a supply of upskilled and reskilled workforce for the labour market (Reynoldson, 2023). The high costs of undergraduate education have prompted adult learners to explore online education as an affordable option for professional development (Lokey-Vega et al., 2024). However, one of the recent identified challenges of micro-credentials is the unaffordable prices, besides low awareness and diverse backgrounds of learners (Ha et al., 2024). In addition, financial aid funds of MCs have been a missing component that is highly present in traditional academic programs (Specht-Boardman, 2022). The perceived value of the MC depends on the quality standards and assurance it observes (Reynoldson, 2023). Since the learners are accountable for the costs of registration of MCs, their willingness to pay should be factored into the course design. Subsequently, structural equation modelling indicated that the willingness to pay learners is a mediating variable for their engagement with MCs (Tee et al., 2023), whereby learners are willing to pay more if they perceive that the MC can improve their employability and provide better career opportunities.

2.5. MCs on Project Management

Project management is widely used in various industries that require projects to finish on time, within budget allocation, and with high-quality outputs. Despite its relevance, there is a lack of education and training in project management (Xu et al., 2020). One study focused on the MC design for project management (Surono, 2023), but was primarily directed towards integrating the national qualifications framework, job descriptions, and certifications. Another study by Magpili et al. (2024) reviewed the various MCs on project management offered by different institutions; however, this study highlighted the current usage and availability rather than the prospective application. Thus, this study investigated the perspectives of webinar participants and MOOC completers on risk analysis for project management.

2.6. Research Gap and Research Objectives

Upon reviewing the literature, it is evident that factors such as current delivery modes, learner preferences, and willingness to pay are critical considerations in the development of effective MCs. Adopting an appropriate design framework is therefore essential. The learning experience framework proposed by Venaruzzo and Diaz (2025), which emphasises career progression, employment experience, and skill development, offers valuable insights into what motivates learner engagement with MCs. However, this framework does not fully align with learners' preferred course topics, highlighting a gap that warrants further investigation to inform more learner-centred course development.

In response to this gap, this study examined two key design factors—learner interest and course preference—from the perspectives of webinar participants and MOOC completers in risk analysis. The interests of these self-directed online learners supported purposive sampling and strengthened the relevance of the findings to potential MC enrolees. Specifically, the study explores differences in perspectives of webinar attendees and MOOC completers regarding their interest in MCs and preferences for course design. It also investigates how sectoral backgrounds may influence these preferences. The findings of this

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study may serve as a foundation for more targeted MC promotion and awareness strategies, particularly among self-directed learners who frequently participate in webinars and MOOCs.

The study investigates the preferences of self-directed learners for the design of micro-credentials in risk analysis. Specifically, this study seeks to answer the following research questions:

i. What is the willingness to pay for MCs among self-directed learners?

ii. What are the preferred MC course topics on risk analysis for self-directed learners?

This study may contribute additional factors to the learner experience framework for MC developed by Venaruzzo and Diaz (2025), which focused on the learning experiences of potential career progression, employment experience, and developed skills that motivate learners to engage with MCs.

3. Research Method

This study investigated the perspectives of webinar participants and MOOC completers on risk analysis for project management. Risk analysis was chosen to investigate learner preferences on MCs due to its interest from multiple sectors in the academe, government, and industry. The diversity of learners in risk analysis provides a comprehensive assessment of learner preferences.

3.1. Survey Respondents

The survey respondents of the study involved two groups: 416 webinar attendees and 2,351 MOOC completers on risk analysis for project management. The MOOC completers comprise 32.3% of the enrolled 7,265 learners. There was a total of 2,842 survey respondents in the study. The half-day webinar and 4-week MOOC were organised by the University of the Philippines Open University (UPOU). The webinar was hosted on Zoom and was live via Facebook and Zoom. The MOOC was delivered in the Massive Open Distance eLearning (MODeL) platform of UPOU. The interest of the learners of this study in self-directed online learning through their participation improves the purposive sampling of potential enrollees of the MC on risk analysis for project management.

3.2. Survey Instrument

The online surveys formed part of the registration form and course feedback for the webinar attendees and MOOC completers, respectively. The survey is composed of three parts: (a) demographic profile (e.g., sex, age, and sector), (b) preferred type of informal online courses (e.g., MOOC and MC), and proposed course topics on risk analysis for project management. The survey was formatted into three types: multiple choice, checklists for multiple options, and a five-point Likert scale. The completion of a consent form was required for the respondents before proceeding with the survey form. The identities of the respondents were kept anonymous, while the personal information of the respondents was secured and kept confidential. The purpose of the study was indicated in the consent form of the survey instrument.

3.3. Data Collection

The webinar surveys were distributed online to the attendees two weeks before the event for registration. On the other hand, the feedback survey for the MOOC was included at the

last of the course modules. A month was provided to complete the feedback survey on the course site. Completion of both survey forms was optional and not a requirement for participation in the webinar and awarding of the MOOC certificate.

3.4. Data Analysis

Descriptive statistics were employed to analyse the data sets from webinar registrations and MOOC feedback surveys. Percentage distributions were calculated for the demographic profile of the survey respondents. Mean and standard deviation were computed for the Likert data. A descriptive analysis was also performed on the combined population of the webinar attendees and MOOC completers. Welch's T-test was used to determine the significant difference between the two groups in the study.

4. Findings and Discussion

4.1. Profile of Survey Respondents

There is a total of 2,842 survey respondents, with a composition of 456 webinar participants and 2,351 MOOC completers on risk analysis for project management. The demographic profiles of the webinar participants and MOOC completers are presented in Tables 1 and 2, respectively. The sectoral distribution of the respondents is enumerated in Table 3. Almost all respondents are adult learners, and the majority are employed. The webinar participants are mostly academic faculty (41.7%) and R&D personnel (31.6%). On the other hand, half of the MOOC completers come from diverse backgrounds, where the majority belong to the government service (24%) and industry (24%). The combined population of webinar participants and MOOC completers gives an almost equal distribution of more than 500 survey respondents for the academe, government, and industry, with around 25% cohort representation each. From the respondent profile, the employment backgrounds in the study are diverse, which provides a sufficient representation of adult learners.

Table 1.

Demographic Profile of Webinar Attendees (*N* = 456)

Category	Subcategories	Frequency (*f*)	Percentage (%)
Sex	Male	204	41.9
	Female	280	57.6
	No data	2	0.4
Age (Years)	17 and below	2	0.4
	18-34	231	47.5
	35-50	196	40.3
	51-70	57	11.7
Profession	Academic Faculty	203	41.8
	R&D Personnel	144	31.6
	Others	109	23.9
Attendance	Zoom	271	71.9
	Facebook Live	79	21.0
	YouTube Live	21	5.6
	In person	6	1.6

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Table 2.

Demographic Profile of MOOC Completers (N = 2,351)

Category	Subcategories	Frequency (*f*)	Percentage (%)
Sex	Male	1,111	47.3
	Female	1,234	52.5
Age (Years)	18-25	679	28.9
	26-45	1,456	61.9
	46-60	206	8.7
	Above 60	10	0.4
Education	Secondary	181	7.6
	Undergraduate	1,404	59.7
	Post-graduate	766	32.6

Table 3.

Sector of The Online Learning Participants on Risk Analysis for Project Management

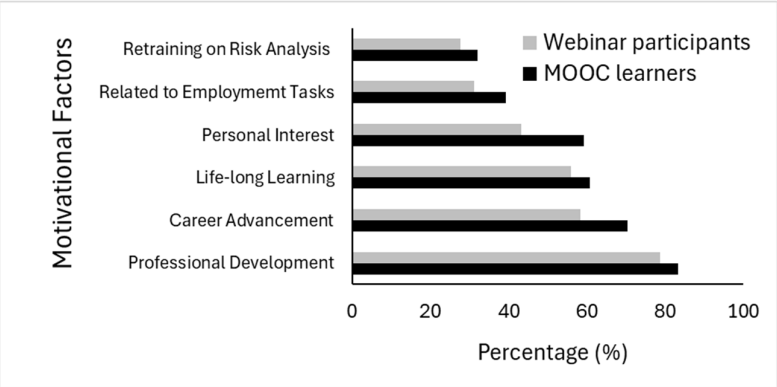
Sector	Webinar Participants (*N* = 486)		MOOC Learners (*N* = 2,351)		Total (*N* = 2,842)	
	Frequency (*f*)	Percentage (%)	*f*	%	*f*	%
R&D	62	12.8	79	3.4	141	6.0
Academe	282	58.0	277	11.8	559	23.7
Government	36	7.4	562	23.9	598	25.4
Industry	15	3.1	564	23.9	579	24.6
Others	4	0.8	414	17.6	418	17.7
Unemployed	2	0.4	460	19.5	462	19.6
No data	85	17.5	0	0.0	85	3.6

4.2. Learner Preference for Digital Credentialing

Motivations for online learning might be similar for various demographics of adult learners. Despite the difference in modality of online learning participated by the adult learners (i.e., webinar and MOOC), a similar trend was observed in both intrinsic and extrinsic motivations for online course uptake, as shown in Figure 1. Professional development is the most common motivational factor that the respondents selected for pursuing online learning. This type of individual development is a combination of intrinsic motivation related to lifelong learning and extrinsic motivation for career advancement, which are the succeeding motivational factors identified.

Figure 1.

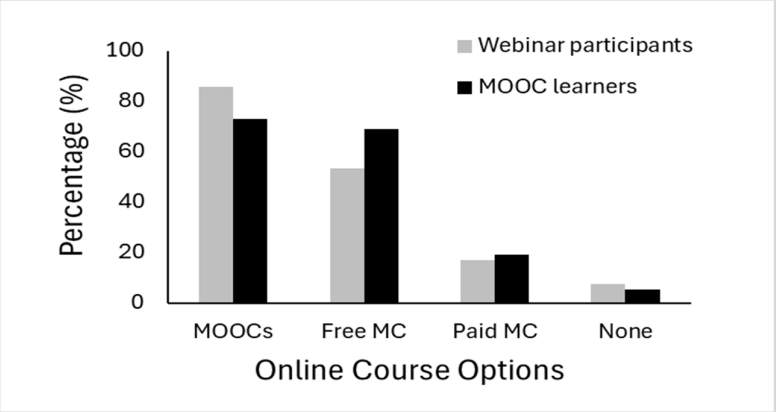
Motivation of Participants for Online Learning



There is also a general trend for the preferred modality of online learning for both cohorts (see Figure 2). More than 70% of respondents selected MOOCs as the primary preference for online learning. There is a slight variation in preference for free micro-credentials for both cohorts. For MOOC completers, a similar percentage of close to 70% was observed for MOOC (73.2%) and free MC (68.9%). On the other hand, preference for free MC dropped to 54% for webinar participants. The preference for an MC with a registration fee significantly dropped to only close to 20% for both cohorts. Lastly, close to 10% of the respondents do not prefer any other online learning modalities. Meanwhile, a total of 533 out of 2,842 respondents (18.6%) have indicated their interest in paying to enrol in an MC on risk analysis for project management.

Figure 2.

Learner Preference for Online Courses on Risk Analysis



The study probes further into the interest of the respondents in their willingness to pay for MC on risk analysis. A combined 12.6% of all respondents are not willing to pay for MC, while 22.7% would pay for MC. Similar to the previous results, close to 20% of all respondents (643 individuals) are highly willing to pay for the enrolment of MC in risk analysis for project management. On the other hand, around 30% of all respondents may lack awareness and/or need more information on course details to potentially be interested in MCs. Regardless of the modality of the online learning that was participated in by the respondents, the mean values of the Likert scale were in the range of 2.51-3.50, which has a verbal interpretation of neutral (see Table 3). This might indicate that the overall respondents

cannot decide on their willingness to pay for MC on risk analysis. For the price range of the MC registration fee, there is a gradual decline in the preference for increasing registration fees of MC (see Figure 3). Close to half of the respondents are willing to pay less than PhP1,000 for a 4-week MC on risk analysis, while only close to 5% are willing to pay PhP4,000 to PhP5,000 for the same MC. From the Welch T-test, there is no significant difference in the willingness to pay for MC between webinar participants and MOOC completers with a p-value > 0.05 (see Table 4). The results show that the price range of MC greatly influences the interest of overall adult learners.

Table 3.

Level of Willingness of Learners to Pay for Micro-Credentials on Risk Analysis

Likert Scale	Webinar Participants (*N* = 486)		MOOC Completers (*N* = 2,351)		Total (*N* = 2,837)	
	f	%	*f*	%	*f*	%
Not willing	77	15.8	280	11.9	357	12.6
Slightly willing	74	15.2	325	13.8	399	14.1
Neutral	144	29.6	740	31.5	884	31.2
Moderately willing	79	16.3	475	20.2	554	19.5
Highly willing	112	23	531	22.6	643	22.7

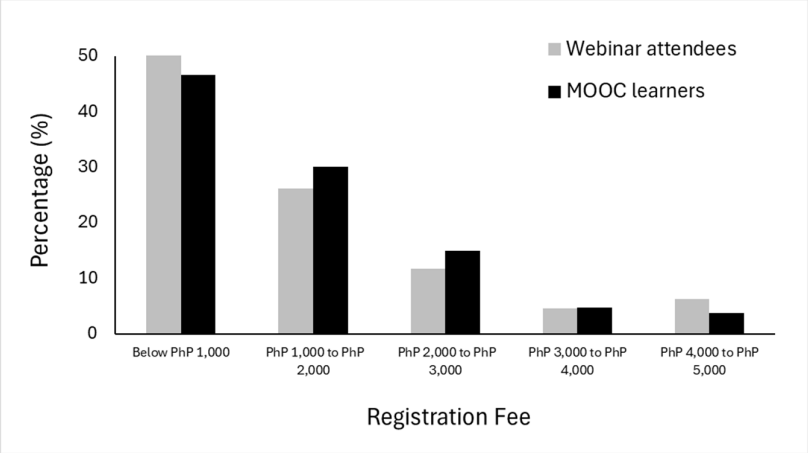
Table 4.

Welch T-Test on The Willingness of Learners to Pay for Micro-Credentials on Risk Analysis

Groups	Sample Size	Mean	SD	D	t-statistic	p-value
Webinar participants	486	3.17	1.36	0.082	-1.492	0.1362
MOOC completers	2,351	3.28	1.28			

Figure 3.

Preference of Registration Fees for Micro-Credential on Risk Analysis



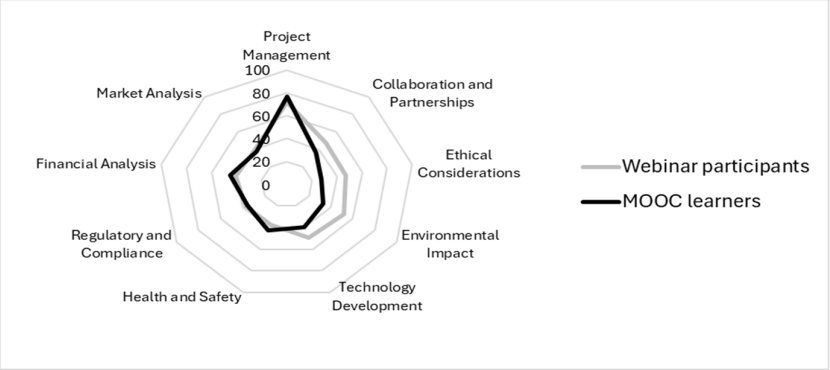
4.3. Learners' Preference for Course Topics

The application of risk analysis in project management is the commonly preferred course topic for an online course by both webinar participants and MOOC learners. More than 70%

of both cohorts selected project management as the primary course topic they were interested in (see Figure 4). Although there are general trends observed in MC preferences between webinar participants and MOOC learners, differences observed in course topics are relevant to their employment backgrounds. Since webinar participants mainly come from the academic and R&D sector, it can be observed that close to 50% selected risk analysis applied to collaboration and partnerships (47.7%), ethical considerations (46.7%), environmental impact (51.6%), and technology development (49.6%). On the other hand, these course topics fell below 40% for MOOC learners who are mostly from the government and industry. This difference is presented as an area between dark and grey contours in the web diagram in Figure 4.

Figure 4.

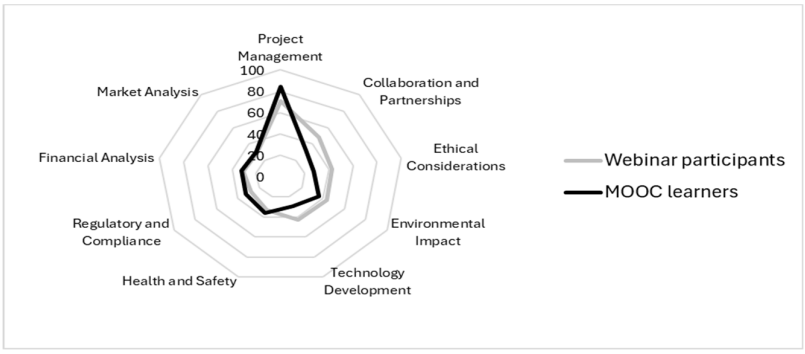
Preferences of Participants on Course Topics in Risk Analysis



The application of risk analysis in project management is commonly utilised by both webinar participants and MOOC learners in their workplace. More than 70% of both cohorts selected project management as the primary application of risk analysis in their employment (see Figure 5). Diverse sectoral backgrounds of the respondents surface specific contexts where risk analysis is applied in the workplace. Similar to the results of the course topics of interest in Figure 4, webinar participants perceived that risk analysis is applied to collaboration and partnerships (48.6%), ethical considerations (42.6%), environmental impact (43.2%), and technology development (43%) (see Figure 5).

Figure 5.

Actual Utilisation of Course Topics in the Workplace



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5. Conclusion

The findings of the study contribute additional factors to the learner experience framework for MC developed by Venaruzzo and Diaz (2025). Their framework focused on the learning experiences of potential career progression, employment experience, and developed skills that motivate learners to engage with MCs. In this study, additional motivational factors on willingness to pay and selected course topics were shown to affect the interest of self-directed learners to take up MCs. The study demonstrates the utilisation of different sources of targeted surveys for adult learners for MC uptake. Findings show that the diversity of adult learners is limited with the webinar in comparison with the MOOCs, which have comprehensive representation from all sectors of society. However, sectoral affiliation has been shown not to influence the motivational factors for online learning, preference for online courses, interest, and willingness to pay for MC of adult learners. Differences between webinar attendees and MOOC completers are only exhibited in preferred course topics on risk analysis. Risk analysis applied to project management was commonly preferred, while academic faculty and R&D personnel additionally preferred course topics on collaboration and partnerships, ethical considerations, environmental impact, and technology development. In terms of MC uptake, the results indicate that only 20% of respondents expressed interest in enrolling in an MC as part of a formal degree program. Furthermore, despite having a large portion of graduates of tertiary education who might pursue graduate studies, the interest in paid MCs remains low. Thus, it can be deduced that the value proposition of MCs being able to be credited to a formal degree program might not be sellable or understood by most adult learners. The study may be used as a basis for targeted MC promotion and awareness campaigns by focusing on self-directed online learners who constantly engage with webinars and MOOCs.

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