

MODELLING 21ST CENTURY EMPLOYABILITY SKILLS SET FOR SCHOOL OF INFORMATION SCIENCE UiTM THROUGH KNOWLEDGE CAFÉ TECHNIQUE

NORYANA BINTI AHMAD KHUSAINI

UNIVERSITI PENDIDIKAN SULTAN IDRIS

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OF INFORMATION SCIENCE UiTM THROUGH KNOWLEDGE CAFÉ
TECHNIQUE

NORYANA BINTI AHMAD KHUSAINI

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Nurul Fadly Haidin
Fakulti Pengurusan dan Ekonomi
Universiti Pendidikan Sultan Idris
fadly@fpe.upsi.edu.my
013-5375587

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ABSTRACT

The future employability of Information Science graduates is uncertain. It is due to changing technology, volatility, and environmental development. The graduates' employability skills need to be strengthened from time to time. Thus, this study aims to identify the most desired employability skills of Information Science graduates in the future to ensure they are still relevant and meeting market demand. This study used qualitative methodology. Five-time Knowledge Café session was implemented to gather data from the interview session. There are 25 respondents have been involved in this study with a purposive sampling technique. For data analysis, grounded theory was applied. Atlas. ti Software has been used to analyse the data. Information Science Employability Skills Framework was developed to identify the most desired employability skills of Information Science graduates in the future. There are four categories, and one central category was created to represent the employability skills of Information Science graduates in the future. It includes core skills, soft skills, High-End TVET (HETVET), and charismatic. Meanwhile, for the central categories, Key Informatics was derived to represent the four categories. This study is the first in Malaysia to use a knowledge café to gather data from various stakeholders to identify the most sought-after employability skills. The School of Information Science can update its syllabuses according to the latest Information Science Employability Skills Framework, enhancing job opportunities for graduates. By aligning the curriculum with market demands, the school can improve education quality, meet employment needs, and boost graduates' professional recognition.



MEMODELKAN KEMAHIRAN KERJA ABAD KE-21 BAGI SEKOLAH SAINS MAKLUMAT UiTM MELALUI TEKNIK KAFE PENGETAHUAN

ABSTRAK

Kebolehpasaran graduan Pengurusan Sains Maklumat pada masa hadapan tidak dapat dipastikan. Ia disebabkan oleh perubahan teknologi, turun naik, dan pembangunan alam sekitar. Kemahiran kebolehpasaran graduan perlu diperkasakan dari semasa ke semasa. Justeru, kajian ini bertujuan untuk mengenal pasti kemahiran kebolehpasaran yang paling diingini oleh graduan Sains Maklumat pada masa hadapan bagi memastikan mereka masih relevan dan memenuhi permintaan pasaran. Kajian ini menggunakan metodologi kualitatif. Lima sesi Kafe Pengetahuan telah dilaksanakan untuk mengumpul data daripada sesi temu bual dengan menggunakan persampelan bertujuan. Seramai 25 orang responden terlibat dalam kajian ini. Perisian Atlas.ti telah digunakan untuk menganalisis data. Rangka Kerja Kemahiran Kebolehpasaran Sains Maklumat telah dibangunkan untuk mengenal pasti kemahiran kebolehpasaran yang paling diingini oleh graduan Sains Maklumat pada masa depan. Terdapat empat kategori, dan satu kategori pusat yang dibangunkan untuk mewakili kemahiran kebolehpasaran graduan Sains Maklumat pada masa hadapan. Ia termasuk empat kategori seperti kemahiran teras, kemahiran insaniah, Pendidikan Teknikal dan Vokasional Pendidikan Tinggi (HETVET), dan karisma. Manakala bagi kategori pusat, Informatik Utama diperoleh untuk mewakili empat kategori. Kajian ini adalah yang pertama di Malaysia dalam mengumpul data menggunakan Kafe Pengetahuan daripada pelbagai pihak berkepentingan untuk mengenal pasti kemahiran kebolehpasaran yang paling dikehendaki. Pusat Pengajian Sains Maklumat boleh mengemas kini silibusnya mengikut Kerangka Kemahiran Kebolehpasaran Sains Maklumat terkini, sekaligus meningkatkan peluang pekerjaan untuk graduan. Dengan menyelaraskan kurikulum dengan permintaan pasaran, Pusat Pengajian Sains Maklumat dapat meningkatkan kualiti pendidikan, memenuhi keperluan pekerjaan, dan meningkatkan pengiktirafan profesional graduan.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
ANP	Analytic Network Process
CLO	Course Learning Outcome
DSD	The Department of Skills Development
GLCs	Government Linked-Companies
HE	Higher Education
HEFCE	Higher Education Funding Council for England
HEIs	Higher Education institutions
HETVET	High-end TVET
ICT	Information and Communication Technology
IHLs	Institutions of Higher Learning
IID	Innovation, Invention, and Design
ILO	International Labor Organization
LIS	Library and Information Science
MBOT	Malaysia Board of Technology
MNCs	Multinational Corporation
MOE	Ministry of Education
MOE	Ministry of Education
MOHE	Ministry of Higher Education
MQA	Malaysian Qualifications Agency
NDTS	National Dual Training System
NGEB	National Graduate Employability Blueprint



NGOs	Non-Governmental Organizations
PENJANA	National Economic Recovery Plan
PLO	Program Learning Outcome
SL1M	1Malaysia Training Scheme
SMEs	Small and Medium-Sized Enterprises
SULAM	Service-Learning Malaysia Society
TVET	Technical and Vocational Education and Training
UiTM	Universiti Teknologi MARA
UNESCO	<i>United Nations Educational, Scientific and Cultural Organization.</i>
UX	User Experience
VET	Vocational Education and Training



LIST OF APPENDICES

- A Consent Form
- B Mapping RP. RO and Knowledge Cafe Questions



CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides an overview of the study's context, the problem statement, purpose, objectives, research question, operational definitions, significance, study constraints, and a concise recap.

1.2 Background of the study

Employability is a multifaceted notion that includes transferable, general, intellectual, interpersonal, industry-specific, and cognitive skills (Al Asefer & Zainal Abidin, 2021). Employability skills encompass abilities that empower individuals to secure, retain, and progress in employment. These skills encompass readiness for work, interpersonal abilities, aptitude in learning, critical thinking, and adaptability (Unesco-Unevoc, n.d.). The Unesco-Unevoc (n.d.) emphasizes it further, stating that “employability refers to the set of skills, abilities, and characteristics held by the individual that enables the



person to acquire and maintain a job.” It is often connected with graduates’ employability.

Graduate employability “refers to the status of all graduates working, continuing their studies, improving their skills, or waiting for job placement” (Mohd Amirul Rafiq & Shazrul Ariff, 2022). Moreover, graduate employability also refers to a graduate’s ability to master various technical or soft skills to position themselves in the desired field of employment with the employer’s perception that their presence can provide competition and add value to the organization’s progress (Ali et al., 2018).

The topic of graduate employability skills has been a longstanding concern. The issue at hand is a worldwide phenomenon that necessitates the earnest attention of numerous stakeholders and has been a policy priority in the Malaysian Plans due to various factors. The factors include overqualification, non-standard employment, higher employment rates, skill mismatch, low starting salaries, inadequate skills, and job hopping are among the employability issues that arose among the graduates of this country (Mohd Amirul Rafiq & Shazrul Ariff, 2022).

However, from year to year, the graduate’s employability rate shows an upward trend starting from the year 2020 at 84.4%, and it increased to 85.5% in the year 2021 and expanded to 4.7% growth contributing to 90.2% in the year 2022 (Ministry of Higher Education, 2023). In 2022, the sectors of engineering, manufacturing, and construction boasted the highest employment rates, with 92.7% or 72,611 graduates finding work. Following closely behind was the information and communication technology sector, with 91.9% or 19,192 graduates securing jobs. Additionally, other





fields with notable marketability included natural sciences, mathematics, and statistics (90.2% or 12,294 graduates), education (89.9% or 15,848 graduates), and business administration and legal (89.3% or 76,559 graduates) (Chung & Izzul, 2023).

In contrast, the unemployment rate among youths aged 15 to 24 years stayed steady at 11% in June 2023, with 312,400 youths unemployed compared to 313,000 previously. Meanwhile, for youths aged 15 to 30 years, the unemployment rate dropped slightly by 0.1 percentage points to reach 6.9%, with the number of unemployed youths at 446,800 compared to 448,600 previously (Malaysia's Unemployment Rate, 2023). It indicates that 9.8% of youth unemployment was among graduates.

To deepen the issue of employability among graduates, this study requires an exploration of the indispensable skills of graduate employability to help address the graduate employability issues that occur in this country. Therefore, this research aims to explore the range of employability competencies possessed by graduates enrolled in the Information Science Programme under the School of Information Science, UiTM Kedah Branch, for work readiness, strengthening employability skills as well as avoiding skill mismatch and unemployment.

School of Information Science, UiTM Kedah, offers an Information Science Program to graduate students to cater to them as information professionals in the Information Science field. Note that the faculty has been operating since the year 2001 and has produced many graduate students who are working in the library and other organizations as well.



According to statistics, the recent graduate employability index for Information Science programs at UiTM is 75.9%. The breakdown of the index is as follows: 69% employed, 24.1% are unemployed, 4.3% continuing their education, 1% upskilling, and 1.6% awaiting placement (Office of Industry, Community and Alumni Network (ICAN), 2024).

Based on the statistics above, it is indicated that the graduate employability for Information Science students still has room for improvement to minimize unemployment among Information Science students. Therefore this study aims to improve this index using a proposed model derived from this study.

1.3 Problem statement

The competencies of Malaysian graduates are a consistent concern for universities, industry partners, and other stakeholders. Previous studies have provided limited evidence of a set of competencies for graduates in the profession (Mani & Wan, 2024, p.109)

Therefore, employability studies among graduates in the Information Science field are important studies that impact curriculum development and enhance industry cooperation with stakeholders such as the Ministry of Higher Education (MOHE) and the Government of Malaysia. However, graduate employability studies are only conducted in general and focused on specific areas by some researchers.

Malik (2021) highlighted that “there is a lack of global study on employability in the library context”. Therefore, employability studies among information science graduates should be conducted to examine the skill sets needed today by industry to overcome the emergent employability problem of graduates in this country.

In more recent years, there have been increasing gaps between the number of graduates produced and the absorption capacity of labor demand. This leads to higher unemployment rates and underemployment, especially among young and newly graduated workforce (Dian Hikmah & Mohd Zaidi, 2017; Mohd Amirul Rafiq & Shazrul Ariff, 2022; ICAN, 2024).

Several factors contribute to the graduate employability problems, including “a mismatch between the skills and qualifications sought by employers than those possessed by graduates” (Diana, 2022; Muhammad Hisyam, 2022; Nor Azma, 2021; Nor Zamira & Siti Farah, 2019), inadequate skills (Khazanah Research Institute, 2018; Nor Zamira & Siti Farah, 2019; Azyani et al., 2019; Mohd Yusof, 2010), the attitude of a few university graduates too picky about jobs (Nor Azma, 2021). Due to these issues, several questions were raised on whether the curricula in higher education are apt to meet the rapidly changing labor market (Afterschool. my, 2021).

The mismatch between skills and qualifications among graduates will lead to overqualification, non-standard employment, and low starting salaries. It occurs when graduates work in skilled and low-paid sectors and are not equal to their qualifications. The reason might be that this low-paid sector has higher employment rates. Thus,

graduates still looking for a suitable job can venture into this field, even if the salary offered is low (Muhammad Hisyam, 2022; Diana, 2022).

However, incompatibility in the field of study and employment led to a decrease in the job satisfaction level, the amount of salary received as well as the issue of more frequent job hopping among graduates (Shujaat et al., 2009; Mohd Amirul Rafiq & Shazrul Ariff, 2022; Muhammad Hisyam, 2022).

Moreover, graduates produced today are less skilled in technical and soft skills (Nor Zamira & Siti Farah, 2019 & The Malaysian Times, 2016). Apart from that, “low proficiency in the English language (Mohd Shahidan, 2022; Diana, 2022; Siti Zaidah et al., 2019; Nisha and Rajasekaran, 2018; Jobstreet.com, 2015; The Star, 2010 & Institut Penyelidikan Tinggi Negara, 2003) and lack of soft skills (Mohd Amirul Rafiq & Shazrul Ariff, 2022; Mohd Shahidan, 2022 & UNESCO, 2006) which include communication, creativity, and critical thinking are some of the reasons for unemployed graduates (Diana, 2022; Hazlina, 2018). In addition, the graduates also seem to have insufficient industrial training, a lack of problem-solving abilities, frequent job changes, and a deficiency in self-confidence (Diana, 2022; The Star, 2010)

Prominent bodies like the International Labor Organization (ILO) have identified that the mismatch between skills and jobs occurs due to the education system and training providers not providing the labor with the skills required by the industry (Diana, 2022; Muhammad Hisyam, 2022).

Thus, the matter of youth unemployment in Malaysia necessitates serious attention, as it can potentially impact future generations and hinder human capital development within the country, given the evolving technology and volatility. The results of this research could aid in the creation of academic papers and enhance comprehension of the employability of graduates among graduates, educators, industry, and policymakers.

1.4 Purpose of the study

The main purpose of this study is to achieve the following goals:

- a. To identify the employability skill set of graduates in the Information Science field required by employers nowadays.
- b. To provide input on the employability studies in the field of Information Science to students, educators, industry, and policymakers.
- c. To contribute to the addition of literature in the employability studies among graduates in general and the field of Information Science specifically.
- d. To develop a comprehensive model for the employability skills of information professionals in Malaysia, specifically focusing on the demands of the 21st century.

1.5 Objectives of the study

This study was conducted based on the following Research Objectives (RO):

- a. To explore the employability skill set that has been transferred to students by curriculums at the university (RO1).
- b. To investigate the employability skills set obtained by students through a series of programs conducted by curriculums at the university (RO2).
- c. To examine the most desirable employability skills set required by employers in academic libraries in Malaysia (RO3).
- d. To develop a comprehensive model and framework for 21st-century Information Science Employability skills for Malaysia Information Professionals (RO4).

1.6 Research questions

This study was embarked by the following research questions (RQ):

- a. What are the employability skills set that has been transferred to students by curriculums at the university? (RQ1)
- b. What is the skill set obtained by students through a series of programs conducted by curriculums at the university? (RQ2)
- c. What are the most desirable employability skills set required by employers in academic libraries in Malaysia? (RQ3)
- d. How to develop a model and framework for 21st-century employability skills set through knowledge café technique? (RQ4)

1.7 Operational definition

(a) Employability skills

Individuals' capacity to secure and retain employment while flexibly adjusting to industry demands (Fatima, 2016). On the other hand, according to Mohd Yusof et al. (2015), it encompasses the abilities necessary to fulfill and prepare employees for their roles. In this research, employability skills denote fundamental competencies that enable graduates of information science programs to secure a place in employment according to the demands of the employer.

(b) Human capital

Human capital refers to the collective knowledge, abilities, and individual traits that enhance people's productivity. It encompasses formal education, including early childhood education, formal schooling, and adult training programs, as well as informal learning and practical experience gained through employment. Hence, investing in human capital involves nurturing these capacities through various educational and experiential avenues (OECD, 2023). Human capital encompasses the unique knowledge, abilities, competencies, capacities, and other attributes that contribute to the development of personal, societal, and economic prosperity (Murtin et al., 2022). Thus, in this study, human capital is the information science professionals who possess core skills (tacit and implicit) or knowledge, a set of soft skills, HETVET, and charismatic, as well as pursuing training for lifelong learning, personal development, and economic well-being.

(c) Core skills

The core skills needed for success in both personal and professional realms in the modern era encompass a range of non-technical competencies. These include interpersonal and emotional aptitude, cognitive abilities, self-awareness, basic digital literacy, and proficiency in environmentally sustainable practices. Consequently, these skills are applicable across various job sectors and levels, bridging the gap between entry-level positions and high-level careers. (International Labour Organization, 2021). Core skills are regarded as the crucial base for advancing education and training, and they also drive other beneficial changes in the curriculum and qualifications, like blending academic and vocational learning (Green, 1998). In this study, core skills refer to cognitive and metacognitive skills of subjects related to the Information Science Program.

(d) Soft skills

Soft skills refer to the individual characteristics, traits, and capabilities that enable employees and job applicants to collaborate efficiently with others (Visier.com, n.d.). A set of abstract personal characteristics, qualities, attributes, habits, and attitudes applicable across various professions (Unesco-Unevoc, n.d.). For this study, soft skills refer to graduates' attributes, personal qualities, and abilities obtained from the study environment and life experience.

(e) High-end TVET (HETVET)

HETVET, developed at UiTM, stands as a high-end TVET initiative aimed at propelling UiTM towards producing graduates who possess the expertise, practical abilities, and a strong foundation. There are three main pillars of the HETVET program at UiTM, including a) knowledge and cognitive skills, b) highly skilled, creative, and innovative, and c) performance-driven expectations that graduates should possess to develop high cognitive and functional work competencies (UiTM, 2023). It is also known as technical skills or hard skills. Note that hard skills refer to technical abilities that are useful for a specific organization's main business (Rao, 2013). For this study, HETVET is referred to as technical skills possessed by graduates taking information system subjects from the School of Information Science.

(f) Charismatic

“Charismatic refers to the people with powerful personalities that attract and fascinate other people” Vocabulary.com (n.d.). A person with unique qualities that draw, motivate, or captivate others (Merriam-Webster.com, n.d.). In this study, charismatic refers to the personal charismatic of Information Science Professionals that is developed through real-life experiences from early childhood until their stage of current life development. Charismatic is important to attract people to deal with the information science information professional in any situation with good manners. Correspondingly, it makes a personal impact on every service given to customers through charismatic information science professionals.

1.8 Significance of study

Most graduate employability studies in Malaysia in a publication entitled Employability in Malaysia: Selected Works in 2017 use various methodological methods of study, including quantitative, qualitative, and mixed methods, in studying graduates' employability in a specific field of discipline in Malaysia.

Past employability studies have produced their model of employability of graduates in their respective fields, for instance, in engineering, business studies, real estate programs, science and technology programs, and higher learning institution graduates in general. Thus, this study was undertaken to aid in the advancement of a model for graduate employability model among students of the UiTM Kedah Information Science program. Consequently, it can be used as a reference to stakeholders such as educators, industry, and legislators in this particular field.

Therefore, this study emphasizes the employability skill set of graduates, which is much needed by Information Science graduates nowadays, according to the needs of the industry. A model was developed, and it is called the Information Science Human Capital Employability Skills Set Model. It was successfully developed from the findings of an impactful study where four main skill sets are embedded in the components of this model, namely soft skills, core skills, HETVET, and charismatic.

In terms of the importance of identifying the indispensable set of graduates' employability among Information Science graduates, it is important to add value to the curriculum of Information Science Studies. This is so that the skill sets that employers need are included in the latest curriculum in an integrated manner. In addition, it also

contributes to the close collaboration between alumni, industry, and educators through a network of industry collaborations so that the curriculum is renewed and according to the current era.

Therefore, this study also adds to the current understanding and generates fresh insights into the employability skills of graduates among students of the Information Science program from UiTM Kedah. In addition, readers can also get new insight into using new methods of data gathering in qualitative research through the knowledge café technique. For the record, it is not the first time used in research. It has been used by Brijlall (2014) and Singh (2017) in their studies. However, this study is the first in Malaysia to use the knowledge café method in the data collection on graduates' employability study by a Ph.D. student. Thus, it contributes to a new method of data collection in research.

Apart from that, this study also significantly contributed to the publication of several information resources in both printed and non-printed publications. The printed publications include the implementation of the Manual of Knowledge Café at universities worldwide. All Malaysian universities can utilize this manual as a guideline to improve their student learning style to be suitable and in line with 21st-century learning using the knowledge café technique. Note that this manual is also suitable to enhance and improve students' soft skills. If implemented, the knowledge café will stimulate problem-solving, critical thinking, and communication skills among the participants. In addition to the manual as a printed publication, an Abstract and a Bibliography of Bibliographies related to Employability Studies among graduates were also published.

Meanwhile, the electronic version of the information resource produced is a knowledge portal for information science graduates' employability skills. It is significant as a smart repository for future research related to the employability skills of Information Science graduates in Malaysia.

1.9 Limitation of study

This research is restricted to a study of graduate employability among Information Science students at Universiti Teknologi MARA, Kedah. Meanwhile, the population is also limited and involves employers in academic libraries from various states, lecturers at the School of Information Science Studies, Alumni and Information Science students in UiTM Kedah to study the latest set of employability skills demanded by employers among the graduates of the Information Science in UiTM Kedah Branch. Other than that, this study contributed to and was limited to empirical research findings on developing the employability skills set model among Information Science graduates in the Information Science Field in UiTM Kedah.

This employability skills set model was developed through the document analysis of the literature review and small group discussion through Knowledge Café, along with the help of employability skills set interview questions. The employability skill questions were developed through content analysis and course information that is suitable to represent knowledge and practical skills subcategories. Besides that, this study also emphasized the soft skills, core skills (knowledge), HETVET (practical skills), as well as charismatic (personal qualities or Akhlaq) of Information Science graduates in UiTM Kedah.



1.10 Summary

In conclusion, this chapter provides an overview of the study by highlighting elements such as its background, the problem statement, its objectives and purpose, the research question, operational definitions, its significance, and any limitations.

