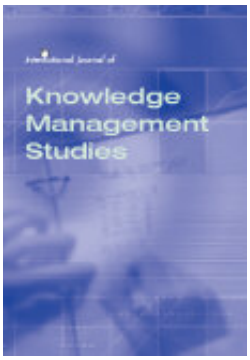

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Empirical study of knowledge management and student empowerment for employability

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Empirical study of knowledge management and student empowerment for employability

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Abstract: This article explains the association between knowledge management (KM) and student empowerment (SE) in education strategy to address the issues in the current education system for sustainable higher studies. It seeks to identify the correlation between KM and student employability (SEP) in today's education system. This empirical study is created on a survey conducted among 130 respondents. A research model based on the hypothetical associations between various dimensions of KM like knowledge creation (KC), knowledge transfer (KT), knowledge storage (KS), knowledge sharing (KSH), knowledge extraction (KE), and dimensions of knowledge application (KAP). It was found that this industry is unwilling to invest time in training freshers. This study explores KM aspects for education enhancement and studies ways to improve students' employability in higher education. It provides a guideline and noble relational theory to present a more practical approach for designing courses and training sessions at higher education institutions (HEIs).

Keywords: knowledge management; KM; higher education; student empowerment; SE; students' employability; SEP; information technology; IT; higher education institutions; HEIs.

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1 Introduction

Knowledge can be seen as a key resource in the information age. Today, the importance and know-how of KM are an organisational imperative. Organisations are unlikely to

continue functioning as business units without understanding the knowledge-generation processes. Successful 21st-century organisations, business houses, and corporate giants should focus on creating sustainable values and ethics (Allal-Chérif et al., 2023; Wang and Xu, 2018). Traditionally, KM is a widely accepted approach applied in diverse sectors including management, business, information technology and higher educational institutions. Digital transformation tools contribute over the long-term to the value creation process, particularly by illustrating the connections between innovation and sustainability (Di Vaio et al., 2021). KM is a key resource for the success of any organisation and provides information, opinions, values, and insights (Quarchioni et al., 2022). KM has become a key performance factor in universities. There is a lot of literature on KM that applies to employee empowerment, human resource empowerment, etc. In universities, there are studies on employee empowerment and organisational culture (Hasani, 2016; Omerzel et al., 2011). The crucial knowledge areas that are pertinent to employment are identified through knowledge management (KM) for employability study. This encompasses both technical and non-technical abilities, as well as an understanding of particular industries and transferable talents. Higher education institutions (HEIs) can create specialised learning and development programs to meet the unique needs of their employees and improve their employability by recognising these knowledge domains. It examines many strategies that can assist knowledge production, sharing, and application, including communities of practice, mentoring programs, learning platforms, and knowledge repositories. HEIs can give individuals the resources and instruments they need to improve their employability by using the educational system. However, a focused study on the empowerment of students through KM is still awaited. This research is an attempt to analyse the association between KM and student empowerment (SE) that will lead to sustainable higher education. Additionally, the impact of SE on their employability is needed to be examined. The following objectives are devised to examine the association between KM and SE and subsequently, the impact of SE on their employability:

RQ1 What is the association between KM dimensions and SE?

RQ2 What is the relationship between SE and SEP?

RQ3 What are the KM research implications and future research directions?

To ensure the sustainability of higher education, this study aims to investigate the connections between KM aspects, SE, and its effects on employability. The scope of this study relates to the dimensions of KM and the empowerment of students at universities. It focuses on the fact that our education system empowers students and prepares them for their future. The independent variables in this study encompass KM dimensions and knowledge creation (KC), knowledge transfer (KT), knowledge storage (KS), knowledge sharing (KSH), knowledge extraction (KE), and knowledge application (KAP). The dependent variables include dimensions of SE that include employability, research skills, meaningfulness, competence, autonomy and accountability, effectiveness, trust, foresightedness, loyalty, entrepreneurship and ethical behaviour development. Additionally, the effects of empowerment on the employability of students are analysed.

There are studies on KM impact on student performance concerning Indian HEI but they have not related it to employment requirements (Dos Santos et al., 2023). This study focuses on the impact of KM on students' empowerment and employability concerning Indian HEI. The study applies the mathematical and statistical approach to describe the

relationship between KM parameters and employability based on them. This makes the study more useful for understanding the need and application-based studies for better employability. This paper is organised into seven sections. Section 1 focuses on the introduction. Section 2 gives a brief overview of previous work in KM. Section 3 describes the research methodology and model developed in this work. Section 4 contains the results and analysis. Section 5 presents the implications of the research work and, Section 6 provides conclusions. Section 7 presents the research directions for future work.

2 Literature review

2.1 Concept of KM

In the past, authors defined knowledge in different ways. Knowledge is not only contained in documents or repositories in organisations but is also embedded in organisational routines, processes, norms and practices (Nakash et al., 2022). In KM approaches, two forms of knowledge are widely discussed: explicit and implicit knowledge. Explicit knowledge is seen as formal knowledge that is stored, expressed and circulated in codifiable forms such as records, libraries and databases manuals and computer files (Blanco-Mesa et al., 2023; Becerra-Fernandez and Sabherwal, 2001). Implicit knowledge is viewed as very personal knowledge that is embedded in learning. It can also be demonstrated and transmitted through observation. Zebal et al. (2019) note the need for a process to convert tacit knowledge into explicit knowledge. Klein (2008) notes that subjective insights and tacit knowledge are difficult to transfer, communicate, or share between individuals. KM is a process that consists of a number of strategies and practices. These strategies are used by organisations to identify, create, display, distribute, and enable adoption of insights and experiences. KM enables the best decisions to be made by providing the right knowledge to the right people at the right time. Knowledge along with experience and expertise must be formalised, applied, distributed and shared in order to convert knowledge into organisational assets (Durst and Zieba, 2019). KM offers various advantages in universities. One of the most important benefits is that valuable information can be shared across organisational hierarchies.

2.2 KM and institutions of higher education

KM is often used by universities for improving the quality of HEIs and educational skills of students (García-Fernández, 2015; Gibbs et al., 2017). Hasani (2016) conducted a study to analyse the impact of KM and employee empowerment concerning higher education in Iran. The statistical population consists of employees from universities in the provinces of Kurdistan, Kermanshah and Hamadan in Iran. He collected sample data from 341 people using random sampling and Morgan's table. The independent variables in his study consisted of variables from the KM dimension, which included KC, acquisition, KS, exchange and application. The study used dependent variables such as employee empowerment characteristics of competence, autonomy, trust, effectiveness, and meaningfulness. He applied descriptive and inferential statistics and used Pearson's correlation, the Freidman ranking test, and stepwise correlation to analyse the data. The

author found a significant connection between KM dimensions and employee empowerment.

Omerzel et al. (2011) carried out a similar study to analyse KM dimensions on the organisational culture in universities. They conducted the research by selecting faculty members from two public universities in the social sciences field and applying two criteria. The number of students enrolled in the university was the first criterion, and the extent to which information and communication technology were used for university teaching and learning was the second. The key finding was that they were unable to uncover any conclusive links between KM processes and certain corporate cultures. Rachelle et al. (2004) found in their study that KM was theoretically accepted by most organisations, but it still has to be put into practice. The authors suggested a rewarding culture in HEIs that enables KM as a significant tool in promotion policies and job security. The benefits of KM to research processes, administrative services, strategic planning, student and alumni services, and curriculum development processes are discussed to improve education quality (Pascoe et al., 2020). Knowledge is created through research and dissemination takes place through teaching. KM dimensions can impact universities by combining work and education. KM can help students match their talents with the right job requirements. KM can promote experience-based learning. KM principles promote learning for all members (students, researchers and professors) in a learning organisation (Bruggeman et al., 2021). Instead of inventing a whole new paradigm, these activities should be recognised and used as a basis for further development. In today's knowledge-based society, faculty members and HEIs should recognise, respond, and adapt to their changing roles. The faculties are required to provide training to HEI students based on IoT implementation and sustainability for future job possesses as artificial intelligence is taking over repetitive and uncreative jobs (Abdulzahra et al., 2021).

Namwar and Rastgoo (2008) suggested the use of weblogs in higher education. Weblogs can help professors track their students' learning processes. Students can learn from each other and professors can assess their learning progress, problems they face, the areas they have difficulty understanding and the pace of learning in the class. Weblogs can improve the learning process by improving engagement with courses and additional material and group work. They could encourage effective evaluations and identify problems that can be improved and surpassed. In addition, they offer a proposal for benchmarking in the context of university e-governance. The benchmarking tool proposed by them for e-governance can help universities find the necessity of reforms. Worasinchai and Bechina (2006) suggested developing a generic knowledge-based framework for universities and colleges. They presented an innovative KM framework for universities. The authors examined the transfer of knowledge between universities and students. Giesbers et al. (2007) proposed the creation of an ontology to improve the knowledge of teachers and students at universities. KM principles promote learning for all members (students, researchers and professors) in a learning organisation (Bruggeman et al., 2021). Instead of inventing a whole new paradigm, these activities should be recognised and used as a basis for further development.

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2.3 Empowerment and institutions of higher education

Managers, in many organisations, are unable to exploit the full potential of their employees. Hence empowerment was introduced to solve this problem, which has now become an active area about human resource management (Thomas and Velthouse, 1990). In many organisations, executives are unable to exploit the full potential of their employees. Thomas and Velthouse (1990) presented empowerment as an intrinsic task of the reason that comprises four dimensions: effect, self-determination, competence and sense perception. Empowerment was defined by Spreitzer (1995) as a management technique on which the constructs of KM are based. Employees may lack psychological experience related to empowerment. The emphasis on the cognitive operation of the division of authority can lead to an inadequate conception of empowerment and its theoretical justification. These definitions have been used by researchers for workplace redesign and inherent task inspiration (Thomas and Velthouse, 1990). An empowered organisation aids the employees in increasing the efficiency and productivity of the organisation. In their study, Spreitzer and Mishra (1999) found that trust is an addition to four important dimensions of ability. These dimensions were:

1 Meaningfulness: meaningfulness encompasses a person's professional goals and interests.

2 Competence: competence refers to the capability of a person to perform professional task.

3 Autonomy: autonomy is the individual's belief in the choice for leading the package of actions.

4 Effectiveness: effectiveness is the extent of the ultimate result of an administrative, functional, and strategic occupation that can be influenced by the individual.

5 Trust: the fact that a person is believed to be taken seriously by the owners or management and his advice has weightage in the decision-making of the organisation will be referred to as trust.

In addition, various other factors were identified that improve the empowerment of people in different sectors. One of these factors includes a dynamic organisational

structure that allows team activities, which foster and strengthen empowerment (Matthews et al., 2003). Another factor is trust between employees and their supervisors, which leads to a greater sense of self-determination (Owens, 2001). Rewards and motivation are also factors in empowering employees (McMillan et al., 1995). In a study by Blase and Blase (1997) they found that in schools with shared governance, the sense of self-determination between teachers had a significant impact on supporting the school administration.

2.4 KM and empowerment

This section examines the application of KM and empowerment in the different sectors. Melhem (2004) examined that communication skills, knowledge and trust can strongly strengthen employees. The study by Feliciano (2007) showed that empowerment factors like transparency, reliability and adaptability can make KM more effective and can motivate knowledge workers to interact more closely with their knowledge base. Ma et al. (2008) conducted a study in a Chinese context. They observed that explicit knowledge promotes KSH and trust. They discovered that in project teams, tacit knowledge is responsible for building barriers to information exchange. They also discovered that personnel in project teams who share their knowledge are not influenced by fairness, leadership style, or empowerment.

Ozbebek and Kilicarslan (2011) surveyed the KSH behaviour of skilled employees. They found that empowerment correlates positively with the KSH behaviour of employees. They also concluded that skilled workers are more interested in KSH. Modern business skills require the use of technologies like IoT, data management, wireless networking, and data analytics for employment in 21st-century industries (Abdulzahra and Al-Qurabat, 2022; Al-Qurabat et al., 2021; Saeedi et al., 2022). Grinsven and Visser (2011) in their study concluded that empowerment affects second-order learning positively and first-order learning negatively. Their study revealed that conversion of knowledge is positive for first-order learning and negative for second-order learning. Fotovat et al. (2012) concluded that KM and empowerment play an effective role in value formation in industrial markets. Ahmadi et al. (2012) found in their study that there is a connection between employee empowerment and KM practices in social security organisations. They found that theoretical models from Spitzer's point of view cannot be confirmed by using structural equation models in their work. Badah (2012) conducted a survey and found that there is a relationship between the level of empowerment of employees and the KM process and it is statistically significant. Boroujerdi and Hasani (2013) carried out a study on the relationship between KM and employee empowerment. Haghighi et al. (2014) found a positive connection between the strengthening of human resources and the processes of KM in their work. In addition, they found relationships between strengthening human resources and acquiring, sharing and applying knowledge.

2.5 Recent research studies on HEIs and KM

The following research articles on HEI and KM for students' employability were recently published:

1 Dos Santos et al. (2023). This study introduces a framework called higher education courses employability (HECE) to address employability from the standpoint of HEIs. The framework can assist decision-makers in HEIs in making decisions based on data related to employability. The framework makes it possible to reduce the alleged discrepancy between the theory taught in HEIs and the labour market demands in Brazil. HECE is applicable in many Brazilian locations, showing that it can be used in various predicaments. This study provides tools to facilitate the implementation of the framework by HEIs. The evaluators reported the innovative nature of the approach of this research.

2 Healy (2023). This paper presents a curriculum vision for an integrated pedagogy of careers and employability learning based on teaching principles that can guide efforts to provide students with high-quality, equitable, and inspiring careers and employability learning.

3 Cheng et al. (2022). This study examines important stakeholders' viewpoints on employability in HEIs. The significance of job readiness for graduates and who is responsible for it is interpreted in the study from the viewpoints of four important stakeholders: HEIs, scholars, government agencies, and companies.

4 Abuaddous et al. (2018). The impact of KM on organisational performance is highlighted in the study. In order to preserve an organisation's competitive advantage, the article discusses how KM is a way of sharing, capturing, and using existing information.

5 Durst et al. (2022). It discusses the trends and future of KM in SMEs is the main goal of the study. This article reviews the top rising developments in the domain of KM for SMEs, including the use of machine learning in enterprise search for personalised search tools, the growth of AI in information mining and discovery, and the rise of technologies for seamless interaction and teamwork.

6 Suleman et al. (2021). This study looks into the obstacles and enablers to companies' involvement with universities. Interviews with a group of employers (n = 19) in Portugal's Northern area were used to get the data. It investigates how companies are involved in local skill issues and can provide a potential solution. According to empirical data, the majority of cooperation activities are passive since businesses primarily use HEIs as a recruiting route. The most frequently mentioned obstacles are variations in organisational goals and cultures.

7 Wang and Wu (2021). This article discusses the use of information technology-based KM to address the COVID-19 challenge. It examines how the COVID-19 situation may be addressed through KM based on information technology and digitalisation. It also provides information regarding the adoption of virtual methodologies for HEIs.

8 Bennett et al. (2020). This research describes a design-centric method for enhancing employability that was used in a blended educational setting. At an Australian university, the study included 52 final-year speech pathology students, their professor, the principal investigator, and a career practitioner. Using a reputable online self-reflection service, students first generated unique employability profiles. The online application generated a customised report and provided students with

access to resources for employability and academic achievement. This helped to understand the effectiveness of blended learning in HEIs.

9 Römgens et al. (2019). In order to clarify the idea of employability, this study combines studies on employability in HEIs and the workplace. This article's interdisciplinary approach to job prospects combines findings from studies on higher education and job learning. The authors conclude that employability models from these many areas can complement one another.

10 Fahimirad et al. (2019). The purpose of this study is to present a thorough assessment of the literature on the subject of employability skills or generic skills in curriculum design, integration, and evaluation in Malaysian higher education. The problem and difficulties of integrating general skills or competencies for employment in the context of HEIs are addressed in this study. The research gap on the absence of generic skill integration in Malaysia's HEIs is then brought to light, and earlier studies that looked at the integration and evaluation of generic skills in Malaysian universities are evaluated.

The findings showed that several institutions in Malaysia tried to include general skills in their curricula to boost employability. However, there is uncertainty around how general abilities are evaluated. Literature is available on KM that applies to employee empowerment and human resource empowerment. A study based on KM dimensions is needed to investigate and improve education quality while considering the employment factor. It is necessary to conduct research using KM dimensions to look into and enhance educational quality while taking employment into account. The distance between academia and industry will be narrowed, teaching and learning processes will be improved, continuous learning will be made possible, and educational programs will be able to undergo continual development. HEIs can improve employability outcomes and guarantee that alumni have the knowledge and skills necessary to thrive in the job market by incorporating KM practices into the educational system.

3 Research methodology

3.1 Research model and hypothesis

The proposed research model is based on speculative relationships between several factors that are anticipated in this investigation. Dimensions of KM in this research study are:

1 KC

2 KT

3 KS

4 KSH

5 KE

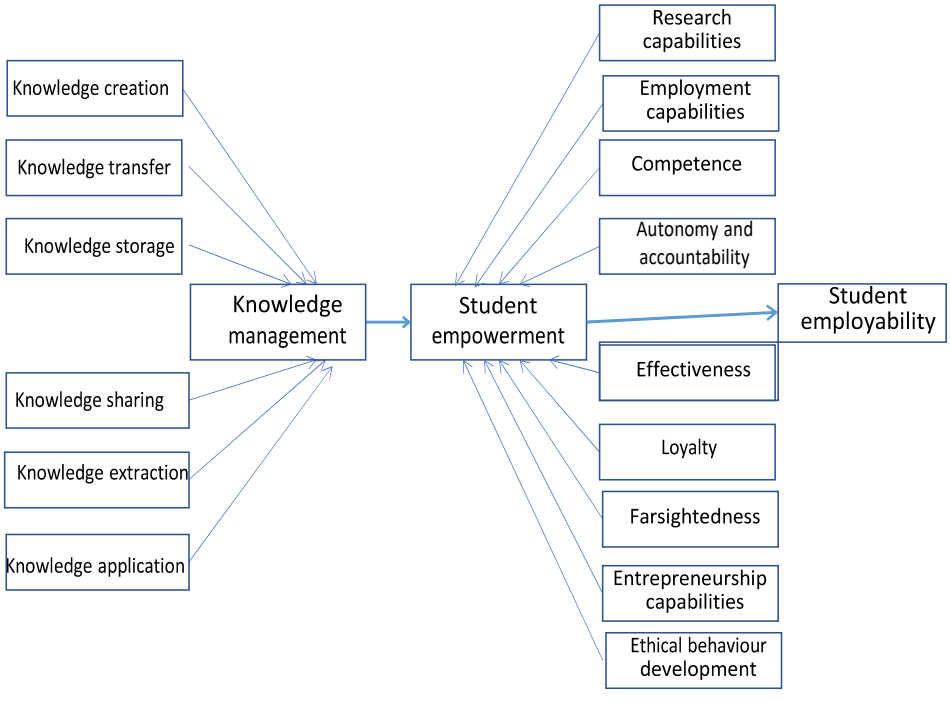
6 KAP.

Students empowerment has dimensions of

1 employability capabilities
2 competence
3 foresightedness
4 autonomy and accountability
5 effectiveness
6 entrepreneurship capabilities
7 research capabilities
8 developing ethical behaviour
9 loyalty.

The employability dimensions were taken as characteristics that emerged as the impact of the KM dimensions on SE. Figure 1 show the research model used in this study.

Figure 1 Model for KM and SEP for student employability (see online version for colours)



These entities were used to design our research model. The proposed hypothesis is:

H1 There is a signification association between KM dimensions and SE.

H2 There is a signification association between SE and SEP.

H3 There is a significant mediation effect between KM and SE.

3.2 Questionnaire development

A questionnaire was designed for the present study after reviewing available research articles on KM dimensions and empowerment. Academicians and students in higher education were interviewed to get an idea of what they perceived as attributes of empowerment and employability in relation to KM dimensions. Questions from six dimensions of KM, i.e., (KC, KT, KS, KSH, KE and KAP) were asked for this survey.

Questions in the students' empowerment included nine dimensions of empowerment, i.e., research capacity, employability, competence, autonomy and accountability, effectiveness, loyalty, foresightedness, entrepreneurial skills and ethical behaviour development. For the employability of the students, we have taken 2–3 questions from each KM dimension, i.e., KC, KT, KS, KSH, KE and KAP. Standard questionnaires were used to measure the variables. The reference includes KM questionnaire adapted by Chen and Huang (2007), Massa and Testa (2009) and Omerzel et al. (2011).

The sample questionnaire is attached in Appendix. The questionnaire consists of two sections. Section one collects the respondent's general information like university name, gender, age, education, and stream. Questions on KM dimensions, empowerment and employability are included in section two. The questionnaire is drawn up in the style of a five-point Likert scale; totally agree, agree, cannot say/do not know, disagree, totally disagree. Table 1 indicates the importance assigned to each value in the question. The number of questions (variables) related to each KM dimension (KC, transfer, storage, exchange and extraction), empowerment and employability are given in Table 2.

Table 1 Five-point Likert-scale as a measurement scale

Value	*Meaning assigned*
5	Strongly agree
4	Agree
3	Do not know/cannot say
2	Disagree
1	Strongly disagree

Table 2 Number of questions (items) (variables) of each KM dimension, empowerment and employability

Dimension	*Factors*	*No. of items (variables)*
KM	KC	9
	KT	7
	KS	6
	KSH	5
	KE	6
	KAP	8
Empowerment	Empowerment	9
Employability	Employability	17

3.3 Data collection

Data is collected from undergraduate and postgraduate students from two educational institutes in Haryana, India using a survey method. One is a private university and the second is a centrally funded institute. The variables used to collect data are string and interval scale type. The variables used to measure the demographic profile of the respondents are of the string type. To measure the KM dimensions, empowerment and employability values, the variables are measured on an interval scale. To collect the data, we created a questionnaire with Google forms, which was sent to the respondents by email. The email was sent to nearly 500 respondents to fill out the questionnaire. We received a total of 130 responses (sample size of 130) from respondents, 95 were from the first-tier university and 35 from the second-tier institute.

3.4 Techniques for analysis

The above-collected data is analysed with the statistical software tool SPSS 20.0. Different tests are performed with SPSS on the data collected from 130 respondents. Reliability of scale, i.e., internal consistency is checked by calculating Cronbach's alpha. The value of Cronbach's alpha specifies the degree to which items (elements) are homogeneous and correlated within a scale (Badri et al., 1995). The reliability and validity analysis are performed with exploratory factor analysis (EFA) by calculating the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. The sample can be represented as a set of concise descriptive coefficients that sum up a specific data set. Measures of central tendency and measures of dispersion are employed to describe the data set. The measures of central tendency calculated in this study are means, while the measures of variability included the standard deviation and the variance. We also calculated the measures of skewness and kurtosis to describe and analyse the data. Pearson's correlation coefficient is used to measure the relationship between two variables. It is used as a measure to find the correlation between the variables in each group of KM dimensions, i.e., KC, KT, KS, KSH, KE and KAP. It is also used to find the correlation between the variables of the KM dimension and the variables of empowerment and employability.

4 Results and analysis

This section introduces the analysis of data and results from the questionnaire-based survey. The data collected by the students is analysed with the statistical software tool SPSS 20.0. The aim of this study is to examine and explore the relationships between the dimensions of KM, including KC, KT, KS, KSH, KE and KAP, as well as empowerment and employability.

4.1 Sample descriptive data

Descriptive information about the study of gender, age and education of the respondents is shown in Table 3. Based on gender, 73.80% of respondents are male and 26.2% of respondents are female. In terms of age, 29.2% of the respondents are under 20 years old,

70% of the respondents are between 20 and 25 years old and 0.8% of the respondents are older than 30 years. All the students who participated in this survey belong to the engineering domain. Based on the streams, 93.1% of the respondents are from the computer stream, 2.3% of the respondents are from the electronic stream, and 4.6% of the respondents are from the mechanical stream.

Table 3 Profile of the respondents

Category	*Variables*	*Frequency*	*Percent*	*Valid percent*	*Cumulative percentage*
Gender	Female	34	26.2	26.2	26.2
	Male	96	73.8	73.8	100.0
	Total	130	100.0	100.0	
Age	> 30	1	0.8	0.8	0.8
	20 < 25	91	70.0	70.0	70.8
	< 20	38	29.2	29.2	100.0
	Total	130	100.0	100.0	
Education type	Engineering	130	100.0	100.0	100.0
Streams/ branches in type of education	Computers	120	93.1	93.1	93.1
	Electronics	3	2.3	2.3	95.4
	Mechanical	6	4.6	4.6	100.0
	Total	130	100.0	100.0	

4.2 Reliability of data

Cronbach's alpha test is used to measure the reliability of collected data (Vaske et al., 2017). All alpha values exceed 0.7. The Cronbach's alpha values pertaining to KM (KC, KT, KS, KSH, KE and KAP) variables are in the range of 0.770 to 0.867. The Cronbach's alpha values of empowerment and employability variables are in the range of 0.913 to 0.954.

The reliability and validity analysis are carried out using EFA by computing the KMO measure of sampling adequacy. The KMO values for KM dimensions, empowerment and employability variables are in the range of 0.759 to 0.941.

4.3 Correlation analysis

To measure the correlation, we employed Pearson's correlation coefficient. Pearson's coefficients indicate a moderate positive correlation among a set of variables pertaining to (KC, KT, KS, KSH, KE and KAP) Pearson's correlation indicates a positive relation between empowerment variables; and moderate positive relation between KM dimensions and empowerment variables; employability variables; and empowerment and employability variables (Velásquez et al., 2021).

4.4 Regression analysis

In order to analyse the link between independent and dependent variables, multiple linear regression analysis is used. In this study, we used stepwise regression which includes only those independent variables which affect the dependent variables.

Table 4 Regression models for empowerment variables

Model	*R*	*R Square*	*Adjusted R Square*	*Std. error estimate*	*Durbin-Watson*	*Predictors*	*Dependent variable*
1	0.586	0.343	0.333	0.796	2.000	(Constant), e6, f6	g1
2	0.670h	0.448	0.422	0.710	1.944	(Constant), e1, f8, b3, a2, d1, d3	g2
3	0.689	0.475	0.445	0.714	1.881	(Constant), e6, d4, f2, b3, f3, f1, c5	g3
4	0.573e	0.328	0.301	0.714	1.781	(Constant), e6, d4, b6, e1, c5	g4
5	0.506	0.256	0.244	0.822	1.713	(Constant), f8, d4	g5
6	0.636f	0.405	0.376	0.776	2.048	(Constant), e6, f8, d1, c3, e1, e3	g6
7	0.412	0.170	0.163	0.896	1.977	(Constant), e6	g7
8	0.575	0.331	0.310	0.783	2.078	(Constant), f8, f1, d4, c2	g8
9	0.545	0.297	0.275	0.843	1.865	(Constant), e1, d1, c6, f1	g9

4.4.1 Regression analysis for empowerment variables

Multiple linear regression is applied to examine the relationship between a dependent variable and several predictors. The dependent variables are the empowerment variables, i.e., variables g1–g9. The predictors or independent variables are variables pertaining to KM dimensions that include KC variables a1–a9, knowledge transfer (KT) variables b1–b7, KS variables c1–c6, KSH variables d1–d5, KE variables e1–e6 and KAP variables f1–f8. For each empowerment variable, model having KM dimension variables as predictors and applied stepwise regression is constructed. Stepwise regression chooses the best predictor variables from the available options. The Durbin-Watson statistic, a test for autocorrelation in the residuals from a statistical regression analysis, was also calculated. A significance level (α) of 0.05 is considered in this study. Multiple linear regression analysis examines the manner in which independent and dependent variables relate to one another. Only independent factors that have an impact on the dependent variables are included in this study using stepwise regression. An outcome variable and many predictors have been studied using this multivariate statistical technique. It is possible to express the generic equation for multiple linear regression as:

$$y = \beta 0 + \beta 1 * X_1 + \beta 2 * X_3 + \beta 3 * X_3 + \ldots\ldots\ldots\ldots + \beta k * X_k + \varepsilon$$

y the value of the dependent variable

$\beta 0$ regression constant

$\beta 1$ partial regression coefficient for the independent variable 1

$\beta 2$ partial regression coefficient for the independent variable 2

$\beta 3$ partial regression coefficient for the independent variable 3

βk partial regression coefficient for the independent variable $\underline{k}^{th}$

ε the error term.

Table 4 provides the regression models for empowerment variables g1–g9. Table 5 provides regression models – ANOVA for empowerment variables g1–g9. Table 6 provides regression model coefficients (Beta estimators) for empowerment variables g1–g9.

Table 5 Regression models – ANOVA for empowerment variables

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
1	Regression	42.030	2	21.015	33.166	0.000
	Residual	80.470	127	0.634		
	Total	122.500	129			
2	Regression	50.447	6	8.408	16.668	0.000
	Residual	62.045	123	0.504		
	Total	112.492	129			
3	Regression	56.178	7	8.025	15.759	0.000
	Residual	62.130	122	0.509		
	Total	118.308	129			
4	Regression	30.949	5	6.190	12.130	0.000
	Residual	63.274	124	0.510		
	Total	94.223	129			
5	Regression	29.517	2	14.759	21.826	0.000
	Residual	85.875	127	0.676		
	Total	115.392	129			
6	Regression	50.411	6	8.402	13.948	0.000
	Residual	74.089	123	0.602		
	Total	124.500	129			
7	Regression	21.051	1	21.051	26.204	0.000
	Residual	102.826	128	0.803		
	Total	123.877	129			
8	Regression	37.896	4	9.474	15.466	0.000
	Residual	76.573	125	0.613		
	Total	114.469	129			
9	Regression	37.587	4	9.397	13.215	0.000
	Residual	88.882	125	0.711		
	Total	126.469	129			

Table 6 Regression models – coefficients (beta estimators) for empowerment variable

Model	*Predictors*	*Unstandardised coefficients and standardised coefficients*			*t*	*Sig.*
		B	*Std. error*	*Beta*		
1	(Constant)	0.914	0.325		2.811	0.006
	e6	0.370	0.075	0.375	4.961	0.000
	f6	0.382	0.083	0.349	4.610	0.000
2	(Constant)	0.519	0.351		1.478	0.142
	e1	0.265	0.096	0.248	2.747	0.007
	f8	0.302	0.073	0.305	4.149	0.000
	b3	0.174	0.075	0.183	2.324	0.022
	a2	–0.236	0.074	–0.252	–3.205	0.002
	d3	0.190	0.082	0.189	2.306	0.023
	d1	0.167	0.084	0.158	1.992	0.049
3	(Constant)	1.145	0.317		3.614	0.000
	e6	0.406	0.073	0.419	5.582	0.000
	d4	0.225	0.087	0.217	2.577	0.011
	f2	–0.514	0.101	–0.511	–5.086	0.000
	b3	0.209	0.077	0.213	2.691	0.008
	f3	0.240	0.091	0.241	2.654	0.009
	f1	0.247	0.088	0.256	2.795	0.006
	c5	–0.187	0.075	–0.205	–2.482	0.014
4	(Constant)	2.054	0.324		6.341	0.000
	e6	0.237	0.071	0.275	3.326	0.001
	d4	0.261	0.082	0.282	3.187	0.002
	b6	–0.241	0.079	–0.269	–3.060	0.003
	e1	0.300	0.099	0.307	3.038	0.003
	c5	–0.162	0.073	–0.199	–2.227	0.028
5	(Constant)	1.345	0.349		3.847	0.000
	f8	0.401	0.079	0.399	5.072	0.000
	d4	0.237	0.081	0.232	2.945	0.004
6	(Constant)	1.074	0.380		2.827	0.005
	e6	0.239	0.097	0.240	2.475	0.015
	f8	0.293	0.094	0.280	3.115	0.002
	d1	0.212	0.087	0.191	2.444	0.016
	c3	–0.271	0.091	–0.247	–2.979	0.003
	e1	0.370	0.109	0.329	3.388	0.001
	e3	–0.173	0.082	–0.186	–2.111	0.037
7	(Constant)	1.909	0.307		6.209	0.000
	e6	0.409	0.080	0.412	5.119	0.000

Table 6 Regression models – coefficients (beta estimators) for empowerment variable (continued)

Model	*Predictors*	*Unstandardised coefficients and standardised coefficients*			*t*	*Sig.*
		B	*Std. error*	*Beta*		
8	(Constant)	1.156	0.359		3.223	0.002
	f8	0.377	0.078	0.377	4.842	0.000
	f1	0.245	0.080	0.258	3.068	0.003
	d4	0.256	0.092	0.251	2.770	0.006
	c2	–0.195	0.086	–0.193	–2.257	0.026
9	(Constant)	1.312	0.372		3.526	0.001
	e1	0.376	0.105	0.332	3.567	0.001
	d1	0.288	0.093	0.257	3.114	0.002
	c6	–0.253	0.087	–0.251	–2.913	0.004
	f1	0.199	0.090	0.200	2.218	0.028

Table 7 Regression models for employability variables

Model	*R*	*R Square*	*Adjusted R Square*	*Std. error of the estimate*	*Durbin-Watson*	*Predictors*	*Dependent variable*
10	0.712	0.507	0.495	0.702	1.945	(Constant), g9, g3, g5	h1
11	0.560	0.314	0.303	0.804	1.885	(Constant), g1, g3	h2
12	0.476	0.227	0.215	0.794	2.294	(Constant), g1, g8	h3
13	0.534	0.285	0.273	0.746	2.258	(Constant), g8, g2	h4
14	0.503	0.253	0.241	0.923	2.255	(Constant), g9, g4	h5
15	0.597	0.356	0.341	0.820	2.023	(Constant), g7, g1, g8	h6
16	0.517	0.268	0.250	0.824	2.248	(Constant), g2, g4, g8	h7
17	0.497	0.247	0.229	0.832	1.996	(Constant), g8, g3, g1	h8
18	0.436	0.190	0.178	0.879	2.298	(Constant), g5, g2	h9
19	0.514	0.264	0.253	0.860	1.951	(Constant), g2, g8	h10
20	0.447	0.200	0.188	0.811	2.437	(Constant), g2, g9	h11
21	0.536	0.287	0.270	0.769	1.906	(Constant), g3, g1, g9	h12
22	0.571	0.326	0.310	0.711	2.004	(Constant), g9, g3, g8	h13

Table 7 Regression models for employability variables (continued)

Model	*R*	*R Square*	*Adjusted R Square*	*Std. error of the estimate*	*Durbin-Watson*	*Predictors*	*Dependent variable*
23	0.538	0.289	0.278	0.887	2.321	(Constant), g7, g2	h14
24	0.558	0.312	0.301	0.789	1.930	(Constant), g4, g2	h15
25	0.621	0.386	0.376	0.833	2.000	(Constant), g7, g2	h16
26	0.530	0.281	0.270	0.772	2.169	(Constant), g2, g7	h17
27	0.500	0.250	0.238	0.832	2.161	(Constant), g2, g7	h18
28	0.460	0.212	0.199	0.734	1.941	(Constant), g5, g7	h19

Table 8 Regression models – ANOVA for employability variables

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
10	Regression	63.682	3	21.227	43.133	0.000
	Residual	62.010	126	0.492		
	Total	125.692	129			
11	Regression	37.586	2	18.793	29.066	0.000
	Residual	82.114	127	0.647		
	Total	119.700	129			
12	Regression	23.492	2	11.746	18.627	0.000
	Residual	80.085	127	0.631		
	Total	103.577	129			
13	Regression	28.164	2	14.082	25.271	0.000
	Residual	70.767	127	0.557		
	Total	98.931	129			
14	Regression	36.644	2	18.322	21.490	0.000
	Residual	108.279	127	0.853		
	Total	144.923	129			
15	Regression	46.881	3	15.627	23.248	0.000
	Residual	84.696	126	0.672		
	Total	131.577	129			
16	Regression	31.312	3	10.437	15.360	0.000
	Residual	85.619	126	0.680		
	Total	116.931	129			
17	Regression	28.530	3	9.510	13.748	0.000
	Residual	87.162	126	0.692		
	Total	115.692	129			

Table 8 Regression models – ANOVA for employability variables (continued)

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
18	Regression	23.103	2	11.552	14.940	0.000
	Residual	98.197	127	0.773		
	Total	121.300	129			
19	Regression	33.734	2	16.867	22.829	0.000
	Residual	93.835	127	0.739		
	Total	127.569	129			
20	Regression	20.911	2	10.455	15.891	0.000
	Residual	83.559	127	0.658		
	Total	104.469	129			
21	Regression	30.025	3	10.008	16.933	0.000
	Residual	74.475	126	0.591		
	Total	104.500	129			
22	Regression	30.768	3	10.256	20.286	0.000
	Residual	63.702	126	0.506		
	Total	94.469	129			
23	Regression	40.611	2	20.306	25.809	0.000
	Residual	99.919	127	0.787		
	Total	140.531	129			
24	Regression	35.765	2	17.883	28.747	0.000
	Residual	79.004	127	0.622		
	Total	114.769	129			
25	Regression	55.382	2	27.691	39.875	0.000
	Residual	88.194	127	0.694		
	Total	143.577	129			
26	Regression	29.637	2	14.818	24.842	0.000
	Residual	75.756	127	0.597		
	Total	105.392	129			
27	Regression	29.334	2	14.667	21.182	0.000
	Residual	87.935	127	0.692		
	Total	117.269	129			
28	Regression	18.381	2	9.190	17.036	0.000
	Residual	68.512	127	0.539		
	Total	86.892	129			

4.4.2 Regression analysis for employability variables

Multiple linear regressions is applied to examine the relationship between a dependent variable and several predictors. The dependent variables are the employability variables h1–h19. The predictors or independent variables are empowerment variables g1–g9. For each employability variable, we constructed a model having empowerment variables as

predictors and applied stepwise regression. Table 7 provides the regression models for employability variables h1–h19. Table 8 provides regression models – ANOVA for employability variables h1–h19. Table 9 provides regression model coefficients (Beta estimators) for employability variables h1–h19.

Table 9 Regression models – coefficients (beta estimators) for employability variables

Model	*Predictors*	*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Sig.*
		B	*Std. error*	*Beta*		
10	(Constant)	0.648	0.280		2.318	0.022
	g9	0.391	0.072	0.392	5.420	0.000
	g3	0.299	0.081	0.290	3.702	0.000
	g5	0.202	0.083	0.193	2.438	0.016
11	(Constant)	1.659	0.308		5.388	0.000
	g1	0.420	0.081	0.425	5.171	0.000
	g3	0.222	0.083	0.221	2.688	0.008
12	(Constant)	1.901	0.311		6.111	0.000
	g1	0.308	0.079	0.335	3.879	0.000
	g8	0.214	0.082	0.225	2.608	0.010
13	(Constant)	1.788	0.295		6.068	0.000
	g8	0.328	0.079	0.353	4.154	0.000
	g2	0.252	0.080	0.268	3.162	0.002
14	(Constant)	1.530	0.369		4.149	0.000
	g9	0.340	0.090	0.318	3.769	0.000
	g4	0.347	0.105	0.280	3.321	0.001
15	(Constant)	1.083	0.329		3.295	0.001
	g7	0.266	0.096	0.258	2.783	0.006
	g1	0.284	0.088	0.275	3.219	0.002
	g8	0.210	0.094	0.196	2.239	0.027
16	(Constant)	1.475	0.354		4.168	0.000
	g2	0.215	0.096	0.211	2.236	0.027
	g4	0.246	0.103	0.221	2.381	0.019
	g8	0.212	0.090	0.210	2.351	0.020
17	(Constant)	1.508	0.348		4.328	0.000
	g8	0.264	0.089	0.262	2.968	0.004
	g3	0.184	0.088	0.186	2.075	0.040
	g1	0.178	0.088	0.183	2.014	0.046
18	(Constant)	1.896	0.339		5.592	0.000
	g5	0.260	0.100	0.253	2.609	0.010
	g2	0.248	0.101	0.239	2.462	0.015

Table 9 Regression models – coefficients (beta estimators) for employability variables (continued)

Model	*Predictors*	*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Sig.*
		B	*Std. error*	*Beta*		
19	(Constant)	1.607	0.339		4.735	0.000
	g2	0.401	0.092	0.376	4.373	0.000
	g8	0.228	0.091	0.216	2.513	0.013
20	(Constant)	2.065	0.301		6.851	0.000
	g2	0.281	0.089	0.291	3.169	0.002
	g9	0.203	0.084	0.223	2.425	0.017
21	(Constant)	1.377	0.306		4.505	0.000
	g3	0.244	0.082	0.260	2.971	0.004
	g1	0.200	0.084	0.216	2.386	0.019
	g9	0.176	0.082	0.194	2.157	0.033
22	(Constant)	1.319	0.287		4.603	0.000
	g9	0.187	0.081	0.216	2.299	0.023
	g3	0.229	0.074	0.256	3.097	0.002
	g8	0.216	0.084	0.238	2.576	0.011
23	(Constant)	1.361	0.333		4.088	0.000
	g7	0.423	0.095	0.397	4.475	0.000
	g2	0.231	0.099	0.207	2.326	0.022
24	(Constant)	1.264	0.318		3.972	0.000
	g4	0.353	0.095	0.320	3.696	0.000
	g2	0.323	0.087	0.320	3.695	0.000
25	(Constant)	1.028	0.313		3.287	0.001
	g7	0.407	0.089	0.378	4.578	0.000
	g2	0.373	0.093	0.330	3.995	0.000
26	(Constant)	1.805	0.290		6.227	0.000
	g2	0.335	0.086	0.346	3.872	0.000
	g7	0.237	0.082	0.257	2.878	0.005
27	(Constant)	1.908	0.312		6.108	0.000
	g2	0.316	0.093	0.309	3.390	0.001
	g7	0.253	0.089	0.261	2.857	0.005
28	(Constant)	2.355	0.274		8.605	0.000
	g5	0.249	0.084	0.286	2.951	0.004
	g7	0.192	0.081	0.229	2.364	0.020

Tables 4 to 9 are utilised to formulate equations for each of the 28 models. The equations generated after the formulation of the multiple regressions are as follows:

- Model 1: g1 = 0.914 + 0.370e6 + 0.382f6.
- Model 2: g2 = 0.519 + 0.265e1 + 0.302f8 + 0.174b3 – 0.236a2 + 0.190d3 + 0.167d1.

- Model 3: g3 = 1.145 + 0.406e6 + 0.225d4 – 0.514f2 + 0.209b3 + 0.240f3 + 0.247f1 – 0.187c5.
- Model 4: g4 = 2.054 + 0.237e6 + 0.261d4 – 0.241b6 + 0.300e1 – 0.162c5.
- Model 5: g5 = 1.345 + 0.401f8 + 0.237d4.
- Model 6: g6 = 1.074 + 0.239e6 + 0.293f8 + 0.212d1 – 0.271c3 + 0.370e1– 0.173e3.
- Model 7: g7 = 1.909 + 0.409e6.
- Model 8: g8 = 1.156 + 0.377f8 + 0.245f1 + 0.256d4 – 0.195c2.
- Model 9: g9 = 1.312 + 0.376e1 + 0.288d1 – 0.253c6 + 0.199f1.
- Model 10: h1 = 0.648 + 0.391g9 + 0.299g3 + 0.202g5.
- Model 11: h2 = 1.659 + 0.42g1 + 0.222g3.
- Model 12: h3 = 1.901 + 0.308g1 + 0.214g8
- Model 13: h4 = 1.788 + 0.328g8 + 0.252g2.
- Model 14: h5 = 1.530 + 0.340g9 + 0.347g4.
- Model 15: h6 = 1.083 + 0.266g7 + 0.284g1 + 0.210g8.
- Model 16: h7 = 1.475 + 0.215g2 + 0.246g4 + 0.212g8
- Model 17: h8 = 1.508 + 0.264g8 + 0.184g3 + 0.178g1
- Model 18: h9 = 1.896 + 0.26g5 + 0.248g2.
- Model 19: h10 = 1.607 + 0.401g2 + 0.228g8
- Model 20: h11 = 2.065 + 0.281g2 + 0.203g9.
- Model 21: h12 = 1.377 + 0.244g3 + 0.2g1 + 0.176g9.
- Model 22: h13 = 1.319 + 0.187g9 + 0.229g3 + 0.216g8.
- Model 23: h14 = 1.361 + 0.423g7 + 0.231g2.
- Model 24: h15 = 1.264 + 0.353g4 + 0.323g2.
- Model 25: h16 = 1.028 + 0.407g7 + 0.373g2.
- Model 26: h17 = 1.805 + 0.335g2 + 0.237g7.
- Model 27: h18 = 1.908 + 0.316g2 + 0.253g7.
- Model 28: h19 = 2.355 + 0.249g5 + 0.192g7.

5 Research implications

Research implications observed from this analysis are discussed in this section. KC, knowledge competency, student foresightedness, student autonomy, student loyalty, learning effectiveness, research skills and student autonomy are expressed in model 1,

model 2, model 3, model 4, model 9, model 10, model 23 and model 24 respectively. Practice schools and internships in the industry can make students fit for the industry, as they are exposed to real problems and can find solutions to industry problems. Therefore, universities should focus on encouraging student participation in research activities, practical training and projects to improve their foresightedness, autonomy, and effectiveness, which will affect their employability. Models 5–8 and model 11 focus on innovative methods, entrepreneur skills, research projects and developing ethical behaviour respectively. The use of practical schools and industrial internships as one of the components of measuring student learning ability has an impact on the development of student ethical behaviour. The use of practice schools and industrial internships is one of the components for measuring the learning ability of students will develop seriousness towards practical schools and industrial internships and thereby improve their ethical behavioural development. Students' practical knowledge will be expanded by working on real and challenging problems. They will be exposed to work using innovative and practical strategies that affect their research and employability skills positively.

Model 12–model 22 presents a skills-centric approach for students. It covers KM dimensions like student ethics, behaviour, accountability, research curiosity, interdisciplinarity, research capability, study practices, organisational development methods, story making and critical thinking. HEIs should focus on an effective system of teaching and mentoring for students in order to increase student loyalty, autonomy and accountability, which affects their employability. Universities should focus on actively supporting student participation in multidisciplinary and interdisciplinary research projects in order to improve students' competence, autonomy, accountability and ethical behavioural development, which affects their employability. The process of recording critical incidents in the life of institutions so that students' loyalty, foresightedness and ethical behaviour development are enhanced, will impact their employability. Model 25–model 28 covers focus on student research initiatives and its need in educational institutions. Universities should focus on successfully applying best practices in the educational process to improve students' competencies and research skills, which has an impact on their employability. The successful application of good practice in research projects in order to improve students' competencies and research skills has an impact on their employability.

6 Conclusions

The dimensions of KM (KC, KT, KS, KSH, KE and KAP) have a significant impact on SE. Students' empowerment significantly impacts students' employability. HEIs should use and promote practice schools and industrial internships for knowledge acquisition and experience-based learning. They should use practice schools and industrial internships as one of the components of measuring student learning ability. HEIs should successfully apply best practices in the educational process. They should have an effective teaching and mentoring system in place. They should regularly involve well-known practitioners in the educational process. They should invite world-renowned academics and industry experts to give guest lectures. HEIs should actively support student participation in multidisciplinary and interdisciplinary research projects. HEIs are intended to encourage student participation in research activities and research projects. Hence, they should take presentations and viva voce from students and archive the

content after completing of projects. HEIs should successfully use the available intellectual potential of students. These institutes should have a process for sharing and collecting information and should use their own experiences from the past to successfully resolve new challenges. HEIs must have a process for recording critical incidents in the life of institutions. HEI should have a process for understanding how its competitors manage knowledge.

The study is restricted to the Indian context because all of the respondents are from Indian HEIs, giving it a unique perspective on the employability of a country's workforce. By carrying out a more comprehensive survey, it may further provide a standard way to comprehend the issue of employability skills at the worldwide level. As a result, this turns out to be one of the study's limitations. The study time and scope might be extended in order to comprehend the level of employment security and joy in today's professional and technical positions. In conclusion, research on KM for employability strives to promote individual employability, enhance organisational performance, and meet the difficulties of a changing labour market. In order to support people and organisations in maximising employability outcomes, it offers insights into successful information sharing identifying crucial knowledge areas, creating KM systems, and making policy suggestions.

7 Future work

This work can be expanded in several directions. A possible extension of this work can be to examine comparative analyses of the dimensions of KM, SE and employability between government-funded and private institutions. Various factors affect the empowerment and employability of students from different institutions. Another extension can be to further investigate comparative analysis between technical and non-technical higher educational institutions, as there would be different factors affecting students' empowerment and employability in these institutions. Techniques like structural equation modelling (SEM) and neural networking can be employed for detailed analysis and further studies.

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Appendix

Questionnaire

Survey for KM and perceived students' empowerment in higher educational institutions

General information

University/institute/organisation.....

Gender	Male		Female	
Age	Less than 20	20 < 25	25 < 30	> 30
Education	Engineering – Computers	Electronics	Mechanical	Civil
	Management – BBA	BCom	MBA	Others

Assessment

1 Please tick in one column pertaining to every point

2 The points 5 being the highest and 1 being the lowest.

3 5 – strongly agree, 4 – agree, 3 – can't say (don't know), 2 – disagree, 1 – strongly disagree

1 Knowledge creation

		5	*4*	*3*	*2*	*1*
a1	My higher educational institution (HEI) actively supports cooperation with other HEIs on joint projects					
a2	My higher educational institution (HEI) constantly benchmarks itself with the best HEI's from its field.					
a3	My higher educational institution regularly includes well-known practitioners in its educational process					
a4	My higher educational institution has well developed research activities.					
a5	My higher educational institution has a well-developed cooperation with companies and other organisations on joint R&D projects.					
a6	My higher educational institution encourages student involvement in research activities.					
a7	My higher educational institution encourages creation of its own R&D centres and institutes by its employees.					
a8	My higher educational institution invites world-known academicians and industry experts to give guest lectures.					
a9	My higher educational institution actively promotes practice schools/internships in industry for students for experiential learning					

2 Knowledge transfer

		5	4	3	2	1
b1	My higher educational institution has an efficient system of teaching and mentoring students					
b2	My higher educational institution enables students to become aware of different research topics					
b3	My higher educational institution actively supports participation in multidisciplinary and interdisciplinary research projects.					
b4	My higher educational institution encourages debate on the main concepts and terminology from research and educational fields.					
b5	My higher educational institution regularly organises presentations and debates on research achievements of students.					
b6	My higher educational institution regularly organises internal educational workshops on current research areas.					
b7	My higher educational institution has an efficient computer based system to support collaboration between students.					

3 Knowledge storage

		5	4	3	2	1
c1	My higher educational institution regularly stores knowledge (has an archive) on the content and implementation of the educational processes (peer reviewed)					
c2	My higher educational institution regularly stores knowledge (has an archive) on the content and implementation of research projects					
c3	My higher educational institution has a well-structured documentation of faculty members' competencies and achievements.					
c4	My higher educational institution always conduct presentation and viva voce of students projects and stores the contents (creates an archive) after the end of their projects					
c5	My higher educational institution has an archive of most important lectures and researches as examples of best practices					
c6	My higher educational institution has a well-developed and known organisational identity.					

4 Knowledge sharing

		5	4	3	2	1
d1	My higher educational institution has a process for sharing and collecting information					
d2	My higher educational institution has storytelling and learning histories processes in place					
d3	My higher educational institution has a process for recording critical incidents in the life of the organisation					
d4	My higher educational institution has a process for understanding how its competitors manage knowledge					
d5	My higher educational institution has systems in place to allow everybody to find out what they need to know					

5 Knowledge extraction

		5	*4*	*3*	*2*	*1*
e1	My higher educational institution recognises the sources of its new knowledge					
e2	My higher educational institution has identified those people known to be 'experts' in their field and shares that information with faculty members and students					
e3	My higher educational institution can turn new knowledge into products and services that add value to faculty members and students					
e4	My higher educational institution educates its members about in-text citation					
e5	My higher educational institution employs software usage for knowledge extraction					
e6	My Higher educational institution employs practice schools and internships in industry for knowledge extraction					

6 Knowledge application

		5	*4*	*3*	*2*	*1*
f1	My higher educational institution successfully applies best practices in the educational process					
f2	My Higher educational institution successfully applies best practices in research projects					
f3	My higher educational institution successfully applies its own past experience for solving new challenges					
f4	My higher educational institution successfully applies disposable knowledge for development of new curricula					
f5	My higher educational institution successfully applies disposable knowledge for development of new research projects					
f6	My higher educational institution successfully makes use of disposable intellectual potential					
f7	My higher educational institution successfully applies disposable knowledge for marketing of its research and educational potential					
f8	My higher educational institution employs practice schools and industrial internships as one of the component for measuring students' learnability					

7 Perceived students' empowerment

		5	*4*	*3*	*2*	*1*
g1	Knowledge management dimensions impact employment capabilities of students					
g2	Knowledge management dimensions impact students competence					
g3	Knowledge management dimensions impact students foresightedness					
g4	Knowledge management dimensions impact autonomy and accountability of students					
g5	Knowledge management dimensions impact students effectiveness					
g6	Knowledge management dimensions impact entrepreneurship capabilities of students					
g7	Knowledge management dimensions impact research capabilities of students					
g8	Knowledge management dimensions impact students in developing ethical behaviour					
g9	Knowledge management dimensions impact students loyalty					

8 Students' employability

		5	*4*	*3*	*2*	*1*
h1	Do you agree that encouraging students involvement in research activities impacts students employability					
h2	Do you agree that actively promoting practice schools and internships in industry for students for experiential learning impacts their employability					
h3	Do you agree that inviting world-known academicians and Industry Experts to give guest lectures impacts students' employability					
h4	Do you agree that regularly including well-known practitioners in educational process impacts students employability					
h5	Do you agree that having an efficient system of teaching and mentoring students impacts their employability					
h6	Do you agree that regularly organising internal educational workshops on current research areas impacts students employability					
h7	Do you agree that actively supporting participation in multidisciplinary and interdisciplinary research projects impacts students employability					
h8	Do you agree that conducting presentations and viva voce of students and storing the contents (creating an archive) after the end of their projects impacts their employability					
h9	Do you agree that having an archive of most important lectures and researches as examples of best practices impacts students employability					
h10	Do you agree that having a well-developed and known organisational identity impacts students employability					
h11	Do you agree that having a process for sharing and collecting					

	information by higher educational institution impacts students employability
h12	Do you agree that having a process of storytelling and learning histories processes in place by higher educational institution impacts students employability
h13	Do you agree that having a process for recording critical incidents in the life of Higher Educational Institution impacts students employability
h14	Do you agree that turning new knowledge into products and services by higher educational institution that adds value to faculty members and students impact students employability
h15	Do you agree that recognising the sources of its new knowledge by higher educational institutions impacts students employability
h16	Do you agree that employing practice schools and industrial internships for knowledge extraction impacts students employability
h17	Do you agree that successful application of best practices in the educational process impacts students employability
h18	Do you agree that successful application of best practices in research projects impacts students employability
h19	Do you agree that employing practice schools and industrial internships as one of the component for measuring students' learnability impacts their employability