INTERNATIONAL JOURNAL OF LATEST TECHNOLOGY IN ENGINEERING, MANAGEMENT & APPLIED SCIENCE (IJLTEMAS)

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

A Study into The Analysis of The Discrepancy in Skills Among IT Professionals and Its Effect on Company Performance, With A Specific Focus on Info-Park, Kochi, Kerala.

Jishin George Oommen[1], Dr M Manimekalai[2]

[1] Research scholar, Srimad Andavan Arts and Science College, Affiliated to Bharathidasan University Tiruchirappalli

[2] Assistant professor, Srimad Andavan arts and Science College, Affiliated to Bharathidasan University Tiruchirappalli

DOI: https://doi.org/10.51583/IJLTEMAS.2025.1410000166

Abstract: In the present era of rapid technological transformation, technical proficiency and adaptive capabilities have become crucial determinants of organizational success. Despite widespread access to training resources, many firms continue to struggle with persistent talent shortages and widening skill gaps. These gaps impede employee performance, reduce organizational efficiency, and ultimately affect economic progress. In current era of technological growth, individuals who possess proficient technical skills can easily elevate themselves to higher positions within organisations, enterprises, and society. It is a widely accepted fact that despite having access to numerous resources, many firms are still grappling with the fundamental challenges posed by the talent gap. The presence of skill gap issues not only hampers the performance of employees and companies, but also has a detrimental effect on the economic growth. Every organisation has the responsibility to detect skill gaps among personnel and implement effective ways to address these fundamental challenges. The primary objective of the study was to evaluate the discrepancy in skills and establish the correlation between skills and performance of the personnel employed in IT companies situated at Infopark cochin. A sample of 50 IT companies was chosen from the Infopark for the study. The necessary data for the analysis were gathered from the HR managers of the individual IT organisations. A well-designed questionnaire was used as the method of data collection. The study was done by analysing the employees' diverse skill sets, identifying skill gaps, assessing their influence on employee performance, and examining the strategies implemented by firms to address these issues. A strong correlation has been shown between the fundamental challenges of the skills gap and the performance of firms.

Keywords: Skill set, Skill Gap, Employee performance, Skill gap problems, Remedial measures taken

I. Introduction

We all live in a time when cutting-edge technologies are everywhere, and they have been changing to help people live better lives. For people born after 2000, it's hard to imagine life without most of the technology we use today. These amazing new ideas not only took over the world, they also made their way into the minds of everyone living here. If we look at the areas that work with technology, we can see that IT is not just something that helps digital businesses, it is the business itself, and no one is against this. In this way, IT is an important part of our time. It is a fact that the success of any business rests on how well their employees do their jobs. Most likely, how well the employees do their jobs depends on the skills and knowledge they have. Besides that, the quality of the results depends on these skill sets, which change depending on the business situation.

The analysis of the skill gap among IT professionals and its impact on company performance reveals several significant findings. Firstly, skill gaps in IT and engineering industries can inhibit human performance, necessitating a well-developed set of professional skills, advanced technical expertise, and sufficient experience (Romo, 2013). Additionally, in IT management, the smallest skill gaps are found in using technological solutions efficiently, while larger gaps occur in areas like obtaining funds, emotional assessments, personnel decisions, synthetic thinking, and managing finances properly (Roszyk-Kowalska, Kraśniak, & Klimanek, 2022).

Competency gaps among IT professionals can negatively impact an organization's efficiency, effectiveness, and performance, making it crucial to address these gaps through training and development programs (Harahap & Wardhono, 2020). Peripheral ICT skills like browser skills, software selection, and computing networks also present significant skills gaps, requiring staff development and training in innovative firms (Hay, 2003). The skills gap has broader impacts on global economics, human capital development, and business performance, with potential long-term joblessness and income polarization (Thota, 2011). Furthermore, the CIO-CEO gap, influenced by factors like poor understanding of IT, lack of a clear vision, and poor relationship skills, hinders IT alignment with organizational goals and performance improvement (Krotov, 2015). There is also a perception gap between IT professionals and students regarding the importance of soft skills, which may hamper the availability of talent in the IT sector (Dubey, Paul, & Tewari, 2021). IT professionals need to manage multiple priorities, balance innovation with ROI, and master technology while preserving corporate IT infrastructure to close skill gaps and improve company performance (Rose, 2000). Continuing with the analysis, a competency-based curriculum can help narrow and even close the skills gap among IT professionals, potentially improving company performance. This approach emphasizes the development of specific competencies required in the IT sector (Mammi & Ithnin, 2012). Environmental factors such as social and cultural conditions, religion, technology, and economy also directly impact skills gaps in digital marketing, which is increasingly relevant for IT professionals (Ghotbifar, Marjani, & Ramazani, 2017).

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

Intensive training has been found to significantly improve employees' core competence, reducing specific gaps in safety issues and troubleshooting, leading to a 60% success rate in core competency (Al-Qadhi & Abdullah, 2021). Additionally, the 'culture gap' between IT professionals and business colleagues is a key factor in limiting the successful utilization of IT in companies (Grindley, 1992). This gap highlights the need for IT professionals to not only have technical skills but also to understand and integrate into the broader business culture.

Furthermore, while hard skills are critical, soft skills such as communication, problem-solving, interpersonal skills, motivation, and a positive attitude may be more in demand than specific hard skills in the IT industry (Schirf & Serapiglia, 2017). A training program that bridges the business skills gap for IT employees has been shown to improve their performance, highlighting the importance of business acumen in the IT sector (Gorman, 2011).

Moreover, despite employers seeking a variety of skill sets from new hires, the recruitment process often focuses on "hard skills" despite valuing well-rounded individuals with business knowledge and good "soft skills" (Gallivan, Truex, & Kvasny, 2002). Additionally, attaining top management support can be facilitated by the business and managerial knowledge and skills of IT/IS personnel and the business-oriented role of the IT/IS department (Stemberger, Manfreda, & Kovačič, 2011).

Skill gaps refer to the circumstance where workers lack the necessary competence to do a task at the desired level. In order for a firm to progress, it is crucial to thoroughly evaluate the talent gaps that exist. This examination of skill gaps yields significant insights about the challenges faced by employees. In order to allow the manager to focus on the essential abilities needed to improve employees' performance.

Despite the efforts of certain organisations to conduct orientations and training programmes, there remains a significant gap that hinders the progress of an organisation. Moreover, the disparity in skills might diminish a company's profits and negatively impact its long-term viability. Luftman, Kempaiah, and Nash (2006) identified crucial factors that facilitate the successful alignment of IT with business management, including: (a) IT comprehends the company's business environment, (b) IT and the business maintain a strong cooperation, (c) IT exhibits effective leadership, and (d) IT's strategies. Therefore, it is crucial for the business to identify, develop, and execute strategies that can improve and strengthen employee performance. Due to its potential to generate favourable changes within organisations compared to previous methods. Assessing the proficiency of experts and employees in performing their job is crucial for enhancing performance and attaining the company's objectives.

II. Review of Existing Literature

In a study conducted by Shrivarma (2019), the fundamental connection between skill and employee performance was identified. The study aimed to evaluate the skill gap and understand the correlation between skills and the performance of employees in the design sector. In his 2009 study titled 'Bridging the skill gap: regionally driven strategy for resolving the construction labour market crisis', D. Andrew Stephen identified several factors that may have contributed to the recent decline in skill development. This decline can be attributed primarily to the industrial growth that has occurred over the past two decades. In addition to impacting employees' performance, skill-related concerns can have a significant influence on economic policy and productivity performance. Bennel and McGuinness (2009) determined this by a comprehensive investigation on the subject of 'evaluating the influence of skill deficiencies on the productivity performance of high-tech companies in Northern Ireland'. The National Association of Manufacturers (2009) analysis unveiled that over 80% of industries encountered a dearth of competent and qualified labour. The report also noted that the current technologies and talents that were considered innovative will become outdated within a timeframe of three to five years. Therefore, it is imperative and also a difficult task for employees to stay current with the skills necessary to adapt to the ever-changing commercial and technology landscape. In a study titled "An investigation into skill gaps in the software industry of Pakistan," Zareen Sharf and Dr. Wasim (2009) revealed that the crucial factor for organisational performance is the alignment of individuals' qualifications with their respective job positions. Furthermore, research has determined that a significant number of businesses frequently struggle to accurately identify and assign individuals to suitable positions, a situation that might potentially result in the complete failure of projects. The source cited is the "Skills Gaps in the World's IT Workforce" white paper published by the Centre for Strategy Research in February 2008. The CompTIA Research Organisation and Centre for Strategy Research Inc. conducted an international research study to identify trends and gaps in IT skills, explore issues related to recruiting and hiring, and investigate the current and potential growth of the IT market and the rising demand for IT professionals. The study identified the primary factors that exerted the greatest influence on the worldwide IT sector, as well as the elements that were projected to have an impact on the industry in 2008. The study clearly highlights the significance of the collected information in addressing the shortage of IT skills among employers. It can serve as a valuable benchmark for employers to assess the skills of their current and future employees, guide them in recruitment and hiring processes, and inform policy-makers and educators about potential roles they can play in the industry. Additionally, it helps employees understand the specific qualities and skills that employers are seeking. The future of business is threatened by the international talent gap in career growth. In 2009, an assessment was conducted to determine the disparity in skills between students in school, college graduates, and individuals in the corporate sector. The study was done based on input from HR specialists. The survey revealed that a significant number of school learners and recent graduates had a deficiency in fundamental abilities required for employment in the business sector.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

III. Theoretical Framework

The essential abilities that every IT professional should obtain to suit their business objectives can be encapsulated as follows:

i. **Proficiency in Technical Skills**: Technical skills refer to the specific abilities and knowledge needed to effectively carry out practical tasks. It is necessary for any IT professional to have a foundation of basic technical knowledge and skills, as well as certain advanced technical talents. Under this category, activities such as coding, auto CAD, database administration, network structure development, and network security can be classified.

ii. **Communication skill:** It is imperative for an IT professional to possess excellent linguistic proficiency, clear articulation, and impeccable communication abilities. This is crucial since they frequently need to operate internationally, cooperate with clients and other corporate entities, and, most importantly, function effectively as part of a team.

iii. **Problem-solving abilities:** Problem-solving skills encompass the application of creativity, logical thinking, and intelligence to identify appropriate solutions to a problem. Proficiency in these skills is crucial for an IT worker for tasks such as content generation, app development, software development, and so on.

iv. **Interpersonal skills**: It refer to the abilities we employ on a daily basis to effectively communicate and engage with people. These skills encompass listening, speaking, and questioning abilities. The communication skills encompass both verbal and non-verbal abilities necessary for the sharing of information.

v. **Decision-making proficiency**: Decision-making proficiency encompasses the range of skills required to judiciously choose an optimal course of action from a given set of possibilities. IT workers must formulate and implement optimal decisions amidst a time characterised by business-related disorder.

vi. **Analytical skill**: Analytical skills encompass the abilities required to gather information and solve both simple and difficult problems. These skills empower IT workers to assess the issue and identify the optimal solution.

vii. **Creative skills**: This skill refers to the ability or propensity to analyses or evaluate anything in a comprehensive manner. Creative thinking is a fundamental requirement for IT professionals as it enables them to identify and develop unique and novel business strategies that enhance the long-term viability of the company.

viii**. Punctuality**: As an IT worker, it is crucial to adhere to strict time management principles in all work-related tasks. It is imperative to priorities the completion of projects and meeting deadlines for clients. In addition, it is imperative for every IT professional to consider timely planning, prioritising tasks above extraneous matters, and scheduling their work.

viii. **Emotional intelligence**: It encompasses self-awareness, self-assessment, self-confidence, self-control, trust, and team spirit, all of which are crucial for the efficient functioning of a business.

x. **Project management**: It involves the systematic planning and organisation of necessary resources to execute a project in a highly effective and efficient manner. Proficiency in leadership, adaptability, teamwork, and time management is necessary for this.

Industrial Profile

Infoparks Kerala is an IT Park that is wholly owned by the Government of Kerala. It was created in 2004 with the aim of providing infrastructure for IT/ITES companies to operate in the state of Kerala. Infopark is officially recognised as a society under the Travancore-Cochin Literary, Scientific and Charitable Societies Registration Act, 1955. Its primary campus is located in Kakkanad, Ernakulam. In 2004, the Government of Kerala transferred 100 acres of property owned by KINFRA in Kakkanad to Infoparks Kerala for the purpose of establishing an IT Park in Kochi. Currently, Infopark accommodates more than 427 enterprises operating from its campuses, employing about 48000 IT experts across different organisations.

Objectives of The Study

- To quantify the correlation between factors that contribute to the skill gap and employee performance
- To assess the impact of employees' skill gap on corporate performance
- To examine the strategies implemented by organisations to address the skill gap

Hypothesis Framed for the study

H0: The presence of skill gap difficulties does not have any effect on the performance of companies.

Ha: The presence of skill gap issues significantly affects the performance of firms.

The scope of this study

In order to ensure their survival and match the preferences of customers and organisations, enterprises must adapt to the ever-changing business and technology environments of the dynamic globe. Companies must exercise great vigilance and awareness when adapting to these changes. The paramount prerequisite for a corporation to fulfil their customer preferences is the cadre of proficient and specialised employees they possess. The employees who are entirely devoid of skill gap issues possess the capability

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

to elevate themselves to the desired standard expected by employers and clients who rely on their help. Therefore, it is crucial for every organisation to recognise the disparity in skills among employees and provide them with training to address this issue. The extent of this study is shown at this point. The objective of this study was to identify the skill gaps among employees in IT firms, specifically focusing on Infopark Kochi in Kerala. Additionally, the study aimed to examine the methods implemented by these companies to address these inadequacies, if any.

IV. Research Methodology

The survey done among prestigious IT organisations situated at Infopark, kochi, Kerala facilitated the successful completion of the study. A total of 50 IT companies were selected from the Infopark premises, which is home to over 427 IT companies. The selection was made using a basic random sampling technique. The necessary data for the analysis were gathered from the HR managers of the corresponding IT organisations, using a well-designed questionnaire as the method of data collection. The study has gathered secondary data from many sources including journals, webpages, databases, case studies, textbooks, and government papers. The data collection and subsequent analysis were conducted using IBM SPSS (Statistical Package for Social Sciences) using a five-point Likert scale.

Analysis & Interpretation Results

Table 1Modes of Recognizing Skill Gaps in the Companies

Modes		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employee Assessment	23	46.0	46.0	46.0
	Observation	4	8.0	8.0	54.0
	360 Degree Reviews	1	2.0	2.0	56.0
	Key Performance Indicators	12	24.0	24.0	80.0
	Interview With Employees	1	2.0	2.0	82.0
	Benchmarking Performance	8	16.0	16.0	98.0
	Using Skill Management Software	1	2.0	2.0	100.0
	Total	**50**	**100.0**	**100.0**	

Table 1 shows the methods used by the companies for assessing skill gaps existing among their employees. It is understood from the table that 'employee assessment' is the most used mode for identifying the skill gaps. Meanwhile software used methods have not gained required popularity and acceptance even in this epoch flooded with cutting edge technologies.

Table 2

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.748	.750	10

The alpha coefficient for the ten items is 0.750, suggesting that the items have acceptable internal consistency.

Table 2.1

Item Statistics			
Skills	Mean	Std. Deviation	N
Technical Skills	3.60	.881	50
Communication Skills	2.56	.787	50
Problem Solving Skills	2.60	.990	50
Interpersonal Skills	3.64	.898	50
Decision Making Skills	3.24	.797	50

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

Analytical Skills	3.48	.931	50
Creative Skills	2.90	.763	50
Time Management	2.90	.839	50
Emotional Intelligence	3.70	.974	50
Project Management	4.28	.904	50

Table 3 Level of Satisfaction Regarding the Skills Employees Possess

Skill	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied
Technical Skills	14	34	40	12	0
Communication Skills	0	18	20	62	0
Problem Solving Skills	0	18	42	22	18
Interpersonal Skills	16	44	28	12	0
Decision Making Skills	0	42	44	10	04
Analytical Skills	08	42	32	16	02
Creative Skills	0	18	60	16	06
Time Management	0	26	42	28	04
Emotional Intelligence	22	40	24	14	0
Project Management	54	24	18	04	0

The table given above clearly projects that none among the total companies are highly satisfied with the various skills their employees possess. Even though many feel content on the skills they have, there exists a few who stick to the neutral opinion and the count varies according to the nature of skills. Another poignant or disappointing fact that seeks attention is the companies' discontent on their employees' skills. It ranges from dissatisfied to highly-dissatisfied.

Table 4 Problem If Any Due to Skill Gap

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all a problem	1	2.0	2.0	2.0
	No problem	3	6.0	6.0	8.0
	Somewhat a problem	15	30.0	30.0	38.0
	Serious problem	21	42.0	42.0	80.0
	Very serious problem	10	20.0	20.0	100.0
	Total	50	100.0	100.0	

Table 5 Impact on Companies Due to the Problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased workload	12	24.0	24.0	24.0
	Inability to stay competitive in global market	9	18.0	18.0	42.0
	Difficulty in introducing new working practice	20	40.0	40.0	82.0
	Delay in completion of project works	5	10.0	10.0	92.0

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

	No particular problem / none of the above	4	8.0	8.0	100.0
	Total	50	100.0	100.0	

Testing of Hypothesis

H_0: Skill gap problems have no impact on the performance of the companies

H_a: Skill gap problems have impact on the performance of the companies

Paired T Test

Table 6 Paired Samples Statistics

Variables		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Problem If Any Due To Skill Gap	3.72	50	.927	.131
	Impact On Company Due To The Problem	2.60	50	1.195	.169

Table 6.1 Paired Sample Correlations

Variables		N	Correlation	Sig.
Pair 1	Problem If Any Due To Skill Gap & Impact On Company Due to the Problems.	50	-.803	.000

Table 6.2 Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Problem If Any Due To Skill Gap Impact On Company Due to the Problems.	1.120	2.017	.285	.547	1.693	3.927	49	.000

Since the variables i.e. the problems and the impact, adopted for the study were dependent, paired sample T test has been used for the better analysis. It has been revealed from the test that the level of significance is **.000** which is less than **0.05.** So we reject the null hypotheses and accept the alternative hypothesis. Hence it is proved that **a significant relationship exists between the inherent problems of the skill gap and the companies' performance.**

i.e. $H_0 \neq H_a$

Table 7 Mostly Practiced Effective Measure

Effective Measure		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Providing Training Programmes	31	62.0	62.0	62.0
	Inject New Talents Into The Company	3	6.0	6.0	68.0
	Changing Job Design	9	18.0	18.0	86.0
	Embrace Continuous Learning	7	14.0	14.0	100.0
	Total	50	100.0	100.0	

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

Of several effective measures taken by the respondents to assuage the skill gaps and its problems 62% companies i.e. the majority here, have been relying on the method of 'providing training programmes' to the employees. Table 5 clearly conveys this. This need for training reveals the existence of skill gaps in the employees. Not to mention, other remedial measures such as new talent injection, changing job design and providing continuous learning also play a significant role in diminishing the chance for skill gaps.

V. Findings

- Skill gaps significantly affect company performance in Info park IT organizations.
- Communication, creative thinking, and problem-solving are major areas of concern.
- Despite technological advancements, companies rely heavily on traditional assessment methods.
- Training remains the primary intervention strategy.

Implications

For Organizations:

- Implement data-driven, continuous skill assessments.
- Adopt 360-degree feedback systems.
- Enhance targeted skilling programs rather than generic training.
- Strengthen internal career pathways to motivate employees.

For Academia:

- Align curricula with emerging technologies and industry requirements.
- Promote internships, live projects, and experiential learning.

For Policymakers:

- Support training initiatives and talent development programs within IT hubs like Infopark.

Limitations

- Data were collected only from HR managers; employee perspectives were not included.
- Self-reported questionnaire data may include subjective bias.
- The study is localized to Infopark, limiting generalizability.
- Objective performance metrics such as productivity indices or turnover rates were not incorporated.

Suggestions for Future Research

- Use a multisource dataset incorporating employees, supervisors, and performance analytics.
- Conduct longitudinal studies to evaluate long-term effects of training interventions.
- Expand the study across major IT hubs such as Bengaluru, Hyderabad, Pune, and Chennai.
- Quantify the financial cost of skill gaps at the organizational level.

VI. Conclusion

The perpetual significance of reducing skill gaps is recognised in the study. No organisation or company can attain optimal performance when burdened with employees that struggle with a skill gap. Given the frequent occurrence of skill gaps in the workplace, excluding such employees from the organisation offers no discernible benefit or advantage. Instead, companies should strive to recognise and comprehend the issue of skill gaps from the employees' perspective. In the case of IT personnel, they not only control technology but also play a crucial role in the business. Therefore, every aspect of the business that involves technology relies on the employees' skills. Therefore, it is essential for every IT expert to undergo training in order to improve skill gap issues and enhance the performance and productivity of firms. The study revealed that the organisations surveyed are also experiencing talent shortfalls, along with various other challenges in today's rationalised world. Even proficient IT professionals have skill gap issues, resulting in their inability to meet the required levels of productivity and performance set by employers and corporations. It is important to note that many organisations studied have tried to take effective strategies to address talent problems. These companies can be seen as an ideal example for other companies in different industries. An optimal training initiative not only improves the performance of a company, but also diminishes the skill disparities among employees, resulting in increased efficiency

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

and productivity. IT workers that possess strong technical, communication, language, and other abilities will recognise their own value and contribute to improved functionality. They will also address skill gaps and take the lead in implementing technologies for more efficient results.

References

1. Sharf, Z. & Khan, W. A. (2005). An Investigation into the Skills Gap in the Software Industry of Pakistan. International Conference on Information and Communication Technologies. 24(3). pp. 206-209, doi: 10.1109/ICICT.2005.1598586.
2. Jessica, B. & McGuinness, Seamus. (2009). Assessing the Impact of Skill Shortages on the Productivity performance of High tech firms in Northern Ireland**.** The Economic Research Institute of Northern Ireland, 41(6) 727-737. doi.org%2F10.1080%2F00036840601007450.
3. Andrew, D., Stephen. I. & R. David, (2004). Bridging the skills gap: A regionally driven strategy for resolving the construction labor market crisis. Engineering, Construction and Architectural Management, 11(4), pp.275-283, https://doi.org/10.1108/09699980410547621
4. The Center for Strategy Research. (2008). Skills Gaps in the World's IT Workforce. CompTIA White Paper.
5. McGrath, M. (2007) Building up your Business Knowledge. Certification Magazine, 34 -40
6. Swartz. N. (2005). Employees not Receiving Critical Training, Study Says. Information Management Journal 39(2),
7. Kim, Y., Hsu, J., & Stern, M. (2006). An update on the IS/IT skills gap. Journal of Information Systems Education, 17(4), 395–402.
8. Luftman, J., Kempaiah, R., & Nash, E. (2006). Key issues for IT executives 2005. MISQ Executive, 5(2), 81–99.
9. Gorman, Michael. F. (2011), A Case Study in Effectively Bringing the Business Skills Gap for the Information Technology Professional. Journal of Education for Business, 86 (1), 17-24.
10. Shivaramu, Manjunath, Murthy, M B Shravan, Datchakka. (2019) A Study on Assessment of Skill Gap to Enhance Workforce Performance. International Journal of Management, Technology and Engineering, 9 (4), 3561-3576.
11. Andale(2017) Cronbach's Alpha :Simple Definition, Use and Interpretation
12. Banerjee S., & Lin, W. (2006). Essential entry-level skills for systems analysts. Journal of Education for Business, 81, 282–286.
13. Weiss, J., & Anderson, D. (2004). CIOs and IT professionals as change agents, risk and stakeholder managers: A field study. Engineering Management Journal, 16(2), 13–18.
14. Romo, G. (2013). Improving human performance: Industry factors influencing the ability to perform. Knowledge Management & E-Learning: An International Journal, 5, 66-83. https://doi.org/10.34105/j.kmel.2013.05.006.
15. Roszyk-Kowalska, G., Kraśniak, J., & Klimanek, T. (2022). The Skills' Gap of Management Staff in Poland: Results of a Research of IT Companies. EUROPEAN RESEARCH STUDIES JOURNAL. https://doi.org/10.35808/ersj/2864.
16. Harahap, R., & Wardhono, F. (2020). Modifying Balanced Scorecard as a Strategic Tool of Public Sector Organisations: Evidence from a Community Health Centre in Indonesia. , 11, 35-44. https://doi.org/10.18311/sdmimd/2020/25083.
17. Hay, D. (2003). Skills Gaps and Training Needs for Information and Communications Technology in Small and Medium Sized Firms in the South East of England. J. Educ. Technol. Soc., 6.
18. Thota, V. (2011). Role of Management and Technology in Bridging the Skill Gap of An Employee. Indian journal of applied research, 4, 8-10. https://doi.org/10.15373/2249555X/FEB2014/96.
19. Krotov, V. (2015). Bridging the CIO-CEO gap: It takes two to tango. Business Horizons, 58, 275-283. https://doi.org/10.1016/J.BUSHOR.2015.01.001.
20. Dubey, R., Paul, J., & Tewari, V. (2021). The soft skills gap: a bottleneck in the talent supply in emerging economies. The International Journal of Human Resource Management, 33, 2630 - 2661. https://doi.org/10.1080/09585192.2020.1871399.
21. Rose, T. (2000). Prescriptions for Managing IT Priority Pressure. Information Strategy: The Executive's Journal, 17, 19 - 26. https://doi.org/10.1080/07438613.2000.10744629.
22. Mammi, H., & Ithnin, N. (2012). Competency-based education (CBE) for IT security: towards bridging the gap. Proceedings of IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 2012, W2A-15-W2A-16. https://doi.org/10.1109/TALE.2012.6360293.
23. Ghotbifar, F., Marjani, M., & Ramazani, A. (2017). Identifying and assessing the factors affecting skill gap in digital marketing in communication industry companies. Independent Journal of Management & Production, 8, 001-014. https://doi.org/10.14807/IJMP.V8I1.507.
24. Al-Qadhi, A., & Abdullah, A. (2021). Impact of Intensive Training and Quality Assessment on Core Competency of Oil And Gas Employees in Yemen Petroleum Companies Fall Under Competency Framework. International Journal of Academic Research in Business and Social Sciences. https://doi.org/10.6007/ijarbss/v11-i4/9719.
25. Grindley, K. (1992). Information systems issues facing senior executives: the culture gap. J. Strateg. Inf. Syst., 1, 57-62. https://doi.org/10.1016/0963-8687(92)90002-E.
26. Schirf, E., & Serapiglia, A. (2017). Identifying the Real Technology Skills Gap: A Qualitative Look across Disciplines.. Information Systems Education Journal, 15, 72-82.
27. Gorman, M. (2011). A Case Study in Effectively Bridging the Business Skills Gap for the Information Technology Professional. Journal of Education for Business, 86, 17 - 24. https://doi.org/10.1080/08832321003663348.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

28. Gallivan, M., Truex, D., & Kvasny, L. (2002). An analysis of the changing demand patterns for information technology professionals. , 1-13. https://doi.org/10.1145/512360.512363.
29. Stemberger, M., Manfreda, A., & Kovačič, A. (2011). Achieving top management support with business knowledge and role of IT/IS personnel. Int. J. Inf. Manag., 31, 428-436. https://doi.org/10.1016/j.ijinfomgt.2011.01.001.