

The Importance of Reskilling and Upskilling for Employees

Pentingnya Reskilling dan Upskilling Bagi Karyawan

Asrini Mahdia

Universitas Gunadarma, Jakarta

*mahdiasrini@gmail.com

**Corresponding Author*

ABSTRACT

Reskilling and upskilling for employees is an important key in increasing competitiveness and global economic growth. This research explores the relationship between reskilling/upskilling initiatives and labor market needs through case studies in several countries. Findings from the case study highlight the importance of balancing training programs with evolving skills needs, facilitating early job placement and career advancement. However, the limitations of this study underscore the need for broader research, including organizational and peer impact, cost-time effectiveness, and the efficacy of reskilling/upskilling methodologies, especially in older employees. Additionally, future studies should explore the interaction between job crafting and reskilling/upskilling to identify effective learning strategies and overcome the challenges faced.

Keywords: Reskilling, Upskilling, Job Market, Skills Needs, Training Programs, Job Crafting, Learning Methodologies, Organizational Impact, Cost-Time Effectiveness, Older Employees.

ABSTRAK

Reskilling dan upskilling bagi karyawan menjadi kunci penting dalam meningkatkan daya saing dan pertumbuhan dalam ekonomi global. Penelitian ini mengeksplorasi hubungan antara inisiatif reskilling/upskilling dengan tuntutan pasar kerja melalui studi kasus di beberapa negara. Temuan dari studi kasus menyoroti pentingnya kesesuaian program pelatihan dengan kebutuhan keterampilan yang berkembang, yang memfasilitasi penempatan kerja awal dan kemajuan karier. Namun, keterbatasan penelitian ini menggarisbawahi perlunya penelitian yang lebih luas, termasuk dampak organisasional dan rekan kerja, efektivitas biaya-waktu, serta efikasi metodologi reskilling/upskilling, terutama pada karyawan yang lebih tua. Selain itu, studi masa depan harus mengeksplorasi interaksi antara job crafting dan reskilling/upskilling untuk mengidentifikasi strategi pembelajaran yang efektif dan mengatasi tantangan yang dihadapi.

Kata Kunci: Reskilling, Upskilling, Pasar Kerja, Kebutuhan Keterampilan, Program Pelatihan, Job Crafting, Metodologi Pembelajaran, Dampak Organisasi, Efektivitas Biaya-Waktu, Karyawan yang Lebih Tua.

1. Introduction

Companies are only as good as the employees they keep. This saying has been ringing in the ears of business owners and managers for years. What it means is that the success of a company is a direct result of the quality of the employees. And since the business world is in a constant state of flux, with many businesses riding the tides of expansion and contraction, the ability to have employees who are both versatile and adaptable is an absolute necessity. In today's high tech global economy, it is becoming more and more difficult for an employee to just graduate high school and ride a single skill set into the ground at the same company for forty years until retirement. The United States job market is beginning to model that of East Asia, a place where lifetime employment and a single skill are becoming things of the past. And as the age of lifetime employment comes to a close, an age of ongoing skill development in the form of reskilling and upskilling is on the rise (McDonald et al., 2019)(Caron' Chen et al., 2019).

Reskilling and upskilling have become essential in today's rapidly changing job market. The demand for new skills and knowledge is increasing at a staggering pace. To remain competitive in today's rapidly evolving job market, it is crucial for employees to continuously adapt and expand their skill sets. Employers are seeking individuals who are willing to invest in their professional development. By reskilling and upskilling, employees can demonstrate their commitment to growth and enhance their career prospects. Furthermore, acquiring new skills and knowledge can also lead to increased job satisfaction and fulfillment. Employees who feel challenged and engaged in their work are more likely to experience a sense of fulfillment and satisfaction in their careers (Laguna-Muggenburg et al., 2021)(E. Froehlich et al., 2018).

1.1. Definition of reskilling and upskilling.

To begin with, it is important to define what exactly reskilling and upskilling mean. Wider and Brecic state that reskilling is the process of learning a new skill which is totally unrelated to a previous job, whilst upskilling is when an employee learns new skills which are relevant for their current role. This paper will primarily discuss the upskilling of employees, as it is a more common and frequent activity as technology progresses and becomes more advanced. Upskilling can be initiated by the employer or the employee, through on-the-job experience, seminars, workshops, or courses. In an ideal situation, the employee would be the one who initiates upskilling by the means of further education in the form of courses (Laguna-Muggenburg et al., 2021)(Laguna-Muggenburg et al., 2021). This would typically be done so the employee can continue to be successful and progress their career. An important note is that upskilling is not specific to higher educated individuals, it is a process that can occur at any job level; someone working in a mailroom can progress to managing a team of individuals who also have opportunities to upskill (Laguna-Muggenburg et al., 2021)(Tong et al., 2021).

1.2. Importance of continuous learning in the workplace.

Continuous learning is the process that helps employees to keep abreast with the latest developments and stay relevant in the industry. Continuous learning equips employees with the necessary knowledge and skills to progress in their career and is widely agreed upon by academics and practitioners alike as a key determinant for career progression (Kumar et al., 2023). Learning does not end upon graduation from school, increased global competition and rapid changes in technology are two common reasons cited for the move towards continuous learning. This is evident in the changing skill sets required for jobs, with an increasing shift in skill sets away from basic reading, writing and mathematics skills, towards creativity, high-level technical and information processing skills. Employees must adapt and continuously update their skills to meet the demands of the modern workplace and remain competitive in the job market. Reskilling and upskilling initiatives within organizations play a crucial role in enabling employees to acquire new skills and knowledge that align with emerging industry trends and advancements. These initiatives provide employees with the opportunity to stay relevant and adaptable in their roles, increasing their value to the organization and their overall employability (Laguna-Muggenburg et al., 2021)(Stephany, 2020). Furthermore, continuous learning also enhances employee motivation and engagement, as it allows them to feel more confident and competent in their abilities. This, in turn, leads to increased job satisfaction, higher productivity, and a stronger commitment to the organization's goals and objectives. Employees who feel supported in their continuous learning efforts are more likely to be loyal to their employers and contribute positively to the overall success of the company. They are also more likely to take on new challenges and responsibilities, resulting in personal growth and professional development (E. Froehlich et al., 2018)(Alrasheedi et al., 2018).

1.3. Benefits of reskilling and upskilling for employees.

Higher motivation and a commitment to learning can also lead employees to take personal responsibility for their own learning. With the abundance of resources available for self-directed learning, employees can take control and be proactive in their continuous development of expertise. This can be as simple as undertaking small learning tasks in their daily work, right through to taking leave to study full time. Self-directed learning is a key part of maintaining the knowledge worker and is crucial for the success of tertiary educated professionals in the ever more competitive job market. (Zhu et al., 2022)(E. Froehlich et al., 2018)

The economy will benefit through a more highly skilled and adaptable workforce. Retraining an employee can prevent redundancies and thereby decrease the rate of unemployment. For the employee who is made redundant, a structured program of assistance will be available to help retrain or obtain new skills in order to regain employment. With workforces becoming increasingly older, it is important for individuals to continue to learn and develop their skills in order to remain competitive in the job market. This is especially true for older workers who may find their skills are no longer in high demand or that they need to develop new skills to continue their employment until a standard retirement age. (Salehudin & Satrya, 2018)(Unterhofer & Wunsch, 2022)

Reskilling and upskilling for employees helps provide job security and satisfaction in work. Presenting employees with professional development opportunities to increase their knowledge, skills, and abilities can lead to a higher work commitment and job satisfaction (Talafian et al., 2023)(O. Ghosheh et al., 2024). With the fast pace of technological change in the modern workplace, employees who continue to learn are more likely to remain in employment. In the long run, it will be more cost-effective for the employer to reskill or upskill an existing employee than to hire an entirely new one. Additionally, it can be used as a motivational tool to instigate employee progression and promotion. This can be something as simple as a software tutorial right through to a fully paid course at the employees' choosing. (Salehudin & Satrya, 2018)(E. Froehlich, 2018)

2. Research Methods

Metode penelitian yang digunakan dalam kajian ini adalah pendekatan systematic literature review. Referensi akan diperoleh dari database internasional yang terpercaya seperti Scopus, Web of Science, dan PubMed. Pencarian referensi dilakukan dengan menggunakan berbagai kata kunci yang erat kaitannya dengan topik penelitian, seperti "Reskilling and Upskilling", "Employee Training", "Skill Development", dan sebagainya. Artikel yang diterima akan melewati serangkaian filter berdasarkan kriteria inklusi dan eksklusi yang telah ditentukan sebelumnya. Kriteria inklusi mencakup aspek bahasa (artikel berbahasa Inggris), relevansi dengan konteks reskilling dan upskilling dalam pekerjaan dan pasar kerja, jenis artikel (empiris, meta-analisis, atau tinjauan sistematis), serta periode penerbitan artikel (dalam lima hingga sepuluh tahun terakhir). Artikel yang tidak memenuhi kriteria inklusi atau memiliki kekurangan seperti plagiarisme atau kualitas metodologi yang rendah akan ditolak. Setelah artikel terpilih, data yang relevan akan diekstraksi dan disintesis untuk kemudian dianalisis secara kritis guna mengidentifikasi tren, pola, dan temuan utama yang berkaitan dengan pentingnya reskilling dan upskilling bagi karyawan. Dengan menggunakan metode ini, diharapkan dapat disusun review yang komprehensif dan terstruktur tentang topik tersebut, memanfaatkan literatur yang telah ada secara sistematis.

3. Results and Discussions

3.1 The Need for Reskilling and Upskilling

The future, in terms of work and career opportunities, is uncertain. However, what is very apparent already is the need for employees to continuously pursue training and education

programs throughout their careers. This will ensure their skill set remains relevant, competitive and in demand. Traditional educational paths that people take when they are young find it increasingly difficult to keep up with the pace of new technology and emerging industries. It is therefore pertinent that individuals take learning into their own hands (Gupta & Wright, 2021)(Butler, 2024). One way to do this is through online certificate programs, which are flexible and relatively low cost compared to their college equivalent. Alternatively, some may choose to go part time, and take a residential course, which while costing more, provides a highly immersive learning environment. Both of these options provide practical and economic ways to learn, and means there are choices to suit everyone's circumstances. (O. Modlo et al., 2018)(Rushmeier et al., 2019)

It is important to take into consideration the economic climate of the environment with respect to learning new skills. During a recession there may be an increase in demand for learning new skills, as people look to become more competitive in the job market. It may also be the case that governments or employers provide means for reskilling, an example being the UK government's Train to Gain program. However, during recent years we have seen that as education and skills increase, so too does the competition between lower and higher wage economies (Shandra, 2020)(Stephany, 2020). This can often lead to scarred distribution effects in some lower wage economies, where there is an overqualified workforce for the available skilled jobs. This can lead to the devaluation of certain skills and in some cases may even push people back into the same job they are trying to escape from. The former has been highly evident in recent years in the western IT industry with the offshoring of programming jobs to places such as India and China. Whilst these are important factors to consider, it is necessary for the long-term benefit of the individual and the economy that people work to increase their skills. This will make the workforce more diversified and competent in dealing with the challenges of an ever-changing global market (Jay Jeong, 2021)(Stephany et al., 2021).

3.2. Rapid technological advancements

Rapid technological changes are having a big impact on the job market. In Malaysia, we can see that we are implementing technology in job sectors without even realizing it. For example, in the past, we used paper and pen for simple tasks (M. Garcia de Macedo et al., 2022)(Stephany & Lorenz, 2021). Nowadays, people are trying to use software like Microsoft Word, which is a more efficient way to do it. The tasks are easier to finish compared to doing it manually. People who are unable to catch up will face a big impact since their skills are outdated and not on par with current technology. They may find it difficult to secure employment or may be stuck in low-paying jobs. This can lead to a decrease in job satisfaction and lower overall career prospects. Employees may also experience increased levels of stress and frustration as they struggle to keep up with their colleagues who have successfully reskilled and upskilled (Tong et al., 2021)(Westerman et al., 2021)(Stephen, 2022).

In the past few decades, technology has been advancing rapidly. People who were born in the 80s or 70s, like parents these days, tend to struggle with the technology that we have now. In their time, there were not many improvements done on the technology. And this scenario will be the same for us. We are currently at the stage where we see the old type of mobile phones change and become all-screen smartphones that are touchscreen. These rapid technological changes will affect the job market for graduates who are currently finishing their studies and working people who have decided to swap their careers (Gupta & Wright, 2021)(Hughes et al., 2021)

3.3. Changing job market demands.

Another shift in the job market is that it has moved from being industry-driven to being driven by the needs of the organization. The organizations have come to a realization that in order to survive in the competitive environment, they need to constantly upgrade their

technology and keep themselves updated. This has a direct effect on the employability of individuals. It is expected that individuals take up the responsibility of their skill development and not depend on the organization to provide any training (E. Tractenberg & Williams, 2023)(E. Tractenberg & Williams, 2023). As technology continues to advance at a rapid pace, the skills required for many jobs are evolving alongside it. Employees must adapt to these changes in order to remain competitive in the job market. Failure to do so can result in being left behind and potentially losing job opportunities. Employers are increasingly seeking candidates who possess the latest and most relevant skills in their respective fields (Tong et al., 2021)(Tong et al., 2021).

The aftermath of globalization has led employees to be concerned about their careers. It has changed the job market in such a way that it has become volatile and uncertain. Long-term employment with one organization has become rare, and the trend has shifted to short-term contracts or temporary work. Due to this change, employees need to keep themselves updated about the current job market and equip themselves with skills that are in demand. According to a survey conducted by Right Management, 84% of employees are willing to take courses to reskill themselves for the changing job market. This shows that the job market demands are changing rapidly, and employees need to reskill in order to keep up with the pace (Stephany, 2020)(Gonzalez Ehlinger & Stephany, 2023)(Peppler et al., 2020).

3.4. Increasing automation and artificial intelligence

As the labour market adjusts to these changes, it will become increasingly difficult for displaced workers to find new employment that matches their old job in terms of wages and skill level. Reskilling and upskilling offer a solution to employees facing this prospect. By transitioning into higher skill and high wage jobs, employees can avoid the potential downward spiral in wages and working conditions that is prevalent in job transitioning. This means that for affected employees, reskilling and upskilling will be an essential tool in maintaining their current standard of living (Stephany, 2021)(Tong et al., 2021).

Sectors that have traditionally been a source of low skill and low wage employment, such as manufacturing and retail, are likely to experience significant job loss. At the same time, high skill and high wage sectors, such as mining, which have also been leaders in driving economic growth, are also exposed to large-scale job losses as the industry looks to automation to improve efficiency. (Nippani, 2020)(ruggieri, 2022)

The rise of automation has created major changes in the way work is carried out. An analysis of the jobs in the Australian workforce has found that approximately half the jobs (5.1 million) currently performed by Australians have the potential to be automated using current technology. This will have profound effects on the job market, both in terms of demand for particular types of jobs, as well as the number and type of jobs available. (Deranty & Corbin, 2022).

3.5. Strategies for Reskilling and Upskilling Employees

There are several strategies that businesses can employ in order to effectively re-skill and upskill their employees in a way that is beneficial for both the employee and the business. The first stage is identifying what skills are required for current and future needs. This can be achieved through performance management and appraisals, which let employees know how they are doing and what is expected of them. Identifying what the organization's goals are, and what is expected from employees to achieve these goals, will indicate what the future needs of the business will be. Having identified this, businesses can then tell employees what is expected of them in career terms, and the sort of skills and competencies they will need to achieve their goals. This allows employees to identify their own skill gaps, and where they are now compared to where they want to be in the future, enabling more effective self-development planning. This process also allows the business to identify what their future

needs will be in terms of employee competence, and compared to current employee skill levels, the extent of employee skills gaps (M. Garcia de Macedo et al., 2022)(Maghsoudi, 2023)(Gonzalez Ehlinger & Stephany, 2023)

Having identified areas of training and development needs, businesses can then look to provide learning opportunities specifically aimed at closing skill gaps and developing employee competence. This will come in the form of structured training initiatives in the shape of internal, on-the-job and off-the-job training and also development schemes, that we support in the next chapter. In the case of specified individual development, training needs may be met through more informal learning such as coaching, mentoring, or just by giving employees the autonomy and resources to be proactive in developing themselves. A learning culture should be developed within the organization, making learning and the seeking of new knowledge and skills a regular and natural part of the everyday work experience. This should be reflected in the organization climate and also the behavior of organizational leaders, who are in many cases the role models for their employees. A culture that places high value on employee learning has been said to be a cause of increased job satisfaction levels and greater levels of employee retention. (Ahmed Bhuiyan et al., 2021)(Herremans, 2021).

3.6. Identifying skill gaps and future needs

In order to identify skill gaps and determine future needs, an organization should evaluate the knowledge, skills, and abilities of their employees. There are a number of methods which can be used to evaluate employee skills; skill inventories and skill audits provide a profile of individual employees' skills and can be aggregated to provide a profile of the skills within an occupation or organization. They can highlight individual and common training needs, and learning objectives can be developed from the results. This method is systematic but can be time-consuming, and it requires that an organization has a well-defined skill taxonomy or skill framework. An alternative is the use of competency profiling, which is a concept now widely used within HRM. This method identifies the behavioral requirements for effective performance and can be compared against existing skills, thus providing a clear gap analysis (Goupil et al., 2022)(Maghsoudi, 2023)(Dawson et al., 2020). This method is more flexible and adaptable than skill-based methods, but it requires more participation and commitment from employees. The most straightforward method is observation and informal discussion with employees, but this is unlikely to be suitable for a large-scale project. Once skills gaps have been identified, an organization can ascertain the scope and nature of the learning required and can then work to rectify the gaps. Skills inventories, audits, and competency profiles can be compared against future skills requirements to demonstrate the potential gaps that may exist in the future. This is carried out by job skills profiling or the development of competence models for future jobs, and these provide a clear framework for the development of learning objectives and training programs. This process is essentially the comparative analysis of current with future skills requirements in order to establish whether employee skills are sufficient to meet future organizational objectives (Varshini et al., 2022)(Dawson et al., 2020).

3.7. Providing relevant training and development programs

Developing relevant training and development programs is essential in successfully retraining employees as it aims to provide employees with the precise knowledge and skills required in their new roles. These programs not only help employees adapt to their new roles quickly but also ensure their long-term success and growth within the organization. By offering ongoing training and development opportunities, employees are equipped with the necessary skills and knowledge to stay ahead in an ever-changing professional landscape. This not only benefits the individual employee but also contributes to the overall success and competitiveness of the organization (Rushmeier et al., 2019)(for Translation & Literary Studies

& Alkhatnai, 2022). It is important for organizations to regularly assess their employees' skill gaps and provide targeted training programs to address those gaps. This proactive approach to reskilling and upskilling ensures that employees are constantly improving and staying relevant in their respective fields. By investing in their employees' professional development, organizations can create a culture of continuous learning and improvement. This culture fosters innovation and adaptability, allowing the organization to thrive in an increasingly dynamic and competitive business environment. Employees who have access to continuous learning opportunities are more likely to embrace change and contribute to the organization's success. This is because they feel supported and empowered to grow and develop their skills, which ultimately leads to higher job satisfaction and retention rates. Furthermore, employees who receive ongoing training are more likely to feel valued and appreciated, resulting in increased loyalty and productivity. This increased loyalty and productivity can have a positive impact on the organization's bottom line, as employees are more motivated to go above and beyond in their work (Ahmed et al., 2022)(Alrasheedi et al., 2018)(Rasch & Middelbeck, 2021).

3.8. Encouraging a learning culture within the organization

A culture of learning, both in the professional and individual sense, can have numerous benefits. This section outlines how encouraging such a culture can be beneficial in the aims of reskilling and upskilling activity. These include fostering an environment where ongoing skills enhancement is seen as the norm, thus aiding the integration of learned skills into practice (Gupta & Wright, 2021)(Karjanto, 2019). This integration into practice is a key determinant of behavior change, a component that is often missed in skill development interventions and one that is essential to the sustained use of new skills. Learning cultures can also increase the access and availability of learning, as informal learning becomes more valued and widely accessible. This can help to lower the costs of formal learning programs as more learning can occur through on-the-job experiences, trial and error, interaction with others, and independent study. Finally, learning cultures can empower employees, as it gives them more control over their careers and access to tools for career self-management (Viberg et al., 2022)(Hbail, 2018). This is particularly important in the current climate where employability is less about a career for life and more about progression through a series of organizations and opportunities. Learning cultures can provide a foundation for this and help individuals be more proactive in skill development and career planning.

3.9. Leveraging technology for effective reskilling and upskilling.

Skill gap assessment is of importance to organizations looking to reskill and upskill. Leveraging technology can provide personalized learning opportunities and targeted training programs to bridge the identified skill gaps. Online platforms and virtual reality simulations are some examples of the technological tools that can be used to deliver reskilling and upskilling programs. These technologies can create immersive learning experiences and enable employees to practice their newly acquired skills in a safe and controlled environment. As a result, employees can gain confidence and competence in applying their skills in real-life scenarios, leading to increased job performance and productivity (Wang et al., 2022)(Gao, 2022). Moreover, technology-enabled reskilling and upskilling programs can be easily accessed by employees at their own convenience, allowing them to learn at their own pace and fit learning into their busy schedules. This flexibility in learning can significantly improve employee engagement and motivation, as they have the autonomy to choose when and how they acquire new skills. Additionally, technology can also track and monitor employees' progress and provide feedback, allowing organizations to measure the effectiveness of their reskilling and upskilling initiatives. These tools can offer interactive and immersive learning experiences, allowing employees to acquire new skills in a more engaging and practical manner. They can also provide real-time feedback and progress tracking, enabling employees to monitor their

own learning journey and identify areas for improvement. This data-driven approach not only enhances the effectiveness of reskilling and upskilling programs, but also empowers employees to take ownership of their professional development (Bucchiarone et al., 2022)(Maghsudi et al., 2021)(Gera et al., 2021)

3.10. The Impact of Reskilling and Upskilling on Employee Performance

Increased productivity and efficiency is another positive outcome that is of paramount importance in this day and age. For an individual, the key to maintaining a good standard of living is ensuring that there is employability and marketability of their skills. For a company, the key to ensuring that the firm stays competitive and profitable is making sure that their employees are maintaining high levels of productivity and efficiency. With globalization increasing competition in the marketplace, and the current trend of outsourcing business processes to countries with lower wages, it is becoming more and more difficult for an individual to ensure employability and marketability of their skills, and for a company to ensure that their employees are maintaining high levels of productivity and efficiency (Reurink & Garcia-Bernardo, 2018)(Jay Jeong, 2021)(Dutta, 2021). One way of ensuring these things is by increasing the skill level of employees. This usually takes the form of on the job learning, such as learning from mistakes, or learning from co-workers, and adult education has shown that it is the most effective method for increasing productivity and efficiency. Adult education is based on the assumption that there is a self-motivated need to learn, and given that reskilling and upskilling is usually voluntary, this is definitely the case. The most common way of learning new skills and gaining new knowledge is through courses which teach what is to be learned. Adult education favors the problem-centered method of learning, and it has been shown that the most effective method of learning on a course is to use what is being learned to solve a problem. If an employee has a high skill level, and is able to use his or her skills and knowledge to solve problems effectively, this will definitely lead to increased productivity and efficiency (Gonzalez Ehlinger & Stephany, 2023)(Stephany, 2021).

For increased job satisfaction and motivation, job satisfaction is the contentment an individual has with his or her job. Due to the fast-changing nature of jobs today, it is often difficult for individuals to maintain a high level of job satisfaction because the skills and knowledge that they are using are becoming obsolete. This in turn affects their level of motivation for their job (Althobaiti et al., 2022)(Tong et al., 2021). By partaking in reskilling or upskilling, an individual is able to keep abreast of the changes in their working environment, hence maintaining high job satisfaction and motivation. Studies on adult learning have shown that if an individual has high expectations of future success in their learning, coupled with a task orientation approach to learning rather than an ego orientation, this leads to high intrinsic motivation for the task at hand, hence increased chances of success. This implies that if an individual sees that by partaking in learning a new skill or gaining new knowledge will further his or her career, they will be more motivated to engage in the task, which in turn increases their chances of success. Learning new skills and gaining new knowledge will most definitely lead to success in the current climate of rapid technological change, hence the link between reskilling and upskilling to high motivation and chances of success is very strong (Ul Haq, 2023)(Dahlin et al., 2018).

3.11. Increased job satisfaction and motivation

The next important consequence of upskilling and reskilling is the retention of the employee by the organization. When a person feels that his employer is interested in his development, it improves his morale to a great extent. Enhanced morale and improved job satisfaction often result in increased loyalty and commitment to the organization. Learning opportunities are among the top reasons people give for joining an organization and among the reasons they give for staying with an organization. According to a survey of employee

attitudes, 56 percent of employees who said their organization offers poor training are likely to leave their organization within the next year compared to only 12 percent who said their organization offers excellent training. A relatively small cost, compared to the cost of recruitment and training a new employee to reach the same standard, could therefore result in significantly long-term savings due to reduction of turnover.

3.12. Enhanced productivity and efficiency

As a skill deficit significantly affects the workload and efficiency of an employee, it is a known fact that adding to the skills already in place will result in a more able and competent employee. An employee who develops their skill set is an investment for a company as their improved abilities will, in the long term, result in a net gain in productivity (Stephany, 2021)(Peppler et al., 2020). This may not be the case with an employee who has gone to find work elsewhere as the skills that they build upon for their previous employer are not their own. This makes it less economically viable for employees to invest in training as the skills to be learnt may not be transferable. This, however, is a different case when the employee wishes to develop skills that will improve employability in a different industry. An employee who feels that their additional skills will result in career progression and a higher wage is likely to work harder as they can see a possible promotion in the future. The added skills can also reduce stress and job pressure as an employee with a heavy workload may feel overloaded, however, with increased efficiency or advanced skills, the same workload may seem lighter. (Eloundou et al., 2023)(Laguna-Muggenburg et al., 2021)(Tong et al., 2021).

3.13. Improved career progression and opportunities

These opportunities provided by the employer can take many forms, ranging from the opportunity to learn new skills 'on the job' to fully funded study leave. A Deloitte survey found that 70% of millennials believed their organizations were not making full use of their potential and most wanted to see a greater focus on developing leadership skills amongst their peers. In this situation providing opportunities for employees to attend leadership training or take on a small project management role could be viewed as a form of tailored skills development; thus helping to increase the employability and skill set of these employees. By offering opportunities for employees to learn new skills in a low-risk environment, this can help to mitigate any future skill obsolescence the employee may face. Finally, in more extreme cases, it may be necessary to retrain an employee to take on a new role if their current role is deemed to be at risk of automation. This could involve the employer providing the employee with full or partial redundancy, with the end goal being to upskill the employee to take on a new role within the same organization. (Burgess-Wilkerson et al., 2019)(Abdullah Alaql et al., 2023)(Downer & Bhattacharya, 2022)

In a rapidly changing environment where the average half-life of a learned skill is 5 years, employees must continually learn and reskill. One survey found that 42% of employees who rated their company as weak in providing reskilling or upskilling opportunities also planned to leave within the next year, compared to only 24% who rated their company as strong in this area. This shows that employees are very aware of the need to continually develop their skill set in order to stay employable and advance their careers. When employers provide opportunities for employees to reskill, it signals to the employee that they are valued and that the employer is willing to invest in them to help further their career. This can help improve employee morale and motivation, knowing that there is a clear path for career progression if they continue to develop their skills. (Bartmann et al., 2021)(Bahr & Laszig, 2021)(Stephen, 2022)

4. Conclusion

Reskilling and upskilling employees has long been a central theme to competitiveness

and growth in the global economy. Over the years, various notions have been presented to bring this into fruition but none have been as important as the ability to ensure a link between reskilling and upskilling and the labour market. With the rapid changes in technology, the increasing pace of globalization and the recent financial crisis, the importance of reskilling and upskilling has taken on added importance, from a short-term means of addressing the consequences of job displacement, to a more strategic approach aimed at increasing the agility of labor markets in the global economy. This is particularly so in the face of growing concerns that the current pace of technological change will lead to ever widening skill gaps and skill shortages. The capacity of learning providers to anticipate and meet the changing skill needs of learners has become a major issue in many countries. Failure to do so may result in individuals investing in training that does not lead to employment, and countries investing in skills that do not contribute to relative advantage in the global economy. Drawing on findings from the case studies conducted in three countries, a central question that emerges is the issue of how to build a bridge between reskilling and upskilling efforts and the changing needs of the economy. The case studies in Malaysia and Singapore offer clear examples of highly coordinated approaches where learning providers are involved in tripartite arrangements with government and industry to identify skill needs, and to develop training programs that lead to both initial employment and career progression. The Netherlands offers an example of a system where efforts are more loosely coordinated. Despite differences in approach and outcomes, the experiences of the three countries provide a number of lessons on the elements required to link reskilling and upskilling to labor market demand.

4.1. Limitation

In future research, to get a more comprehensive conclusion, it's important to see the effect of reskilling and upskilling not only on the individual but also on the organization and the co-workers. Because there is a statement that we're considering that learning that only changes a person's hard skills can affect a person/job dissonance and can cause more harmful effects than the previous condition. This can be a problem for an employee in performing their job role and doesn't guarantee that there will be a job replacement according to their new competence.

Even though we already get a positive result that learning is effective and has a positive relationship to job crafting, we still consider the cost and time effectiveness in learning. Learning can be costly and time-consuming, which is a problem for employees who already have a family and are of a certain age. For the future, it's important to consider whether learning is still effective for employees in their old age and the risk of getting replaced is higher. This is happening because the company can hire a younger employee who has a lower salary with the same qualification. But the most important and urgent thing is to find an effective way and learning method to ensure reskilling and upscaling won't be a burden for employees. Learning can be effective if employees can find a desirable way of learning and not face excessive challenges that can hinder their soft skills, such as coaching. There are many coaching methods that are recommended for effective learning. And it's important for future research to delve more into job crafting and its relationship to reskilling and upskilling.

We can conclude that reskilling and upskilling is an important agenda for employees and the organization to make sure they are on the current track and meet the needs. Reskilling and upskilling is not a bad idea at all and in reality, it's the best way to ensure a person is still needed in the job market. Employees who resist reskilling or upscaling themselves will suffer the consequences due to job migration in market needs. Job migration is the process by which jobs of a certain type move from one region to another and change over time. Employees who still grasp the old mindset/knowledge that is already considered obsolete can really hinder them from adapting to new job market needs. The job migration happens due to changes in the way a specific task is carried out or through changes in technology. By having a good

mindset and initiative to reskill and upscale, employees have the possibility to attract new job opportunities according to their competence level.

4.2. Future Research

In reference to this statement, several reskilling and upskilling activities integrated with the transfer of knowledge and information are very helpful in producing quality work. These activities may be in various methods such as training, coaching, communities of practice, and others. This situation is challenging to the research of the reskilling and upskilling activities in giving knowledge and information proactively to the employees at many levels of the job.

As revealed earlier, information and knowledge are the main assets for the company to outperform its competitors, especially in the era of globalization. The acquisition of knowledge and information by the employees does not only depend on formal revisits to enhance skills and knowledge, such as attending courses, diplomas, degrees, and any other higher levels of education, but it can also be obtained through informal learning processes and experiences. Accumulation of knowledge and information is said to be an added value to the employees in increasing their job marketability, as well as giving a positive impact to their organization.

5. References

- Abdullah Alaql, A., Alqurashi, F., & Mehmood, R. (2023). Multi-generational labour markets: data-driven discovery of multi-perspective system parameters using machine learning. [PDF]
- Ahmed, F., Fernando Capretz, L., & Ali Sheikh, S. (2022). Institutionalization of Software Product Line: An Empirical Investigation of Key Organizational Factors. [PDF]
- Ahmed Bhuiyan, B., Shahansha Molla, M., & Alam, M. (2021). Managing Innovation in Technical Education: Revisiting the Developmental Strategies of Politeknik Brunei. [PDF]
- Alrasheedi, M., Fernando Capretz, L., & Raza, A. (2018). Management's Perspective on Critical Success Factors Affecting Mobile Learning in Higher Education Institutions - An Empirical Study. [PDF]
- Althobaiti, S., Alabdulkareem, A., Hanwen Shen, J., Rahwan, I., Frank, M., Moro, E., & Rutherford, A. (2022). Longitudinal Complex Dynamics of Labour Markets Reveal Increasing Polarisation. [PDF]
- Bahr, M. & Laszig, L. (2021). Productivity development in the construction industry and human capital: a literature review. [PDF]
- Bartmann, N., N. Cloughesy, J., Probst, B., Romagnoli, G., & Woerner, A. (2021). Behavioural Interventions to Improve Home-Based Office-Workers' Health. osf.io
- Bucchiarone, A., Martorella, T., & Colombo, D. (2022). PolyGloT: A Personalized and Gamified eTutoring System. [PDF]
- Burgess-Wilkerson, B., Hamilton, C., Garrison, C., & Robbins, K. (2019). Preparing millennials as digital citizens and socially and environmentally responsible business professionals in a socially irresponsible climate. [PDF]
- Butler, T. (2024). A Critical Review of Digital Technology in Education: A Pause for Thought in 2024. osf.io
- Dahlin, K., Chuang, Y. T., & J Roulet, T. (2018). Opportunity, Motivation, and Ability to Learn from Failures and Errors: Review, Synthesis, and Ways to Move Forward. osf.io
- Dawson, N., Williams, M. A., & Rizioiu, M. A. (2020). Skill-driven Recommendations for Job Transition Pathways. [PDF]
- Deranty, J. P. & Corbin, T. (2022). Artificial Intelligence and work: a critical review of recent research from the social sciences. [PDF]
- Downer, K. & Bhattacharya, M. (2022). BYOD Security: A Study of Human Dimensions. [PDF]
- Dutta, S. (2021). Learning and Upgrading in Global Value Chains: An Analysis of India's Manufacturing Sector. [PDF]

- E. Froehlich, D., Beausaert, S., Segers, M., & Gerken, M. (2018). Learning to stay employable. [osf.io](#)
- E. Froehlich, D. (2018). Old and Out? A social network approach towards age, self-responsibility, and their effects on employability. [osf.io](#)
- E. Tractenberg, R. & Williams, J. (2023). Roadmap for implementation of 14 Recommendations for career-spanning short format training in life sciences that is effective and accessible to all. [osf.io](#)
- Eloundou, T., Manning, S., Mishkin, P., & Rock, D. (2023). GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models. [PDF]
- for Translation & Literary Studies, A. W. E. J. & Alkhatnai, M. (2022). Training Needs Analysis of Professional Translators Working in Translation Agencies in Riyadh, Saudi Arabia. [osf.io](#)
- Gao, H. (2022). Assessment of Human Behavior in Virtual Reality by Eye Tracking. [PDF]
- Gera, R., Saxena, A., Bartolf, D. ' . M., & Tick, S. (2021). A Network Science Perspective to Personalized Learning. [PDF]
- Gonzalez Ehlinger, E. & Stephany, F. (2023). Skills or Degree? The Rise of Skill-Based Hiring for AI and Green Jobs. [PDF]
- Goupil, F., Laskov, P., Pekaric, I., Felderer, M., Dürr, A., & Thiesse, F. (2022). Towards Understanding the Skill Gap in Cybersecurity. [PDF]
- Gupta, A. & Wright, C. (2021). The Co-Designed Post-Pandemic University: A Participatory and Continual Learning Approach for the Future of Work. [PDF]
- Hbail, H. (2018). Design a multicultural blended e-learning system. [PDF]
- Herremans, D. (2021). aiSTROM -- A roadmap for developing a successful AI strategy. [PDF]
- Hughes, C., Finke, D., German, D. A., Merzbacher, C., M. Vora, P., & J. Lewandowski, H. (2021). Assessing the Needs of the Quantum Industry. [PDF]
- Jay Jeong, J. (2021). Success in IT offshoring: Does it depend on the location or the company?. [PDF]
- Karjanto, N. (2019). Active participation and student journal in Confucian heritage culture mathematics classrooms. [PDF]
- Kumar, S., Marklund, H., Rao, A., Zhu, Y., Jun Jeon, H., Liu, Y., & Van Roy, B. (2023). Continual Learning as Computationally Constrained Reinforcement Learning. [PDF]
- Laguna-Muggenburg, E., Bhole, M., & Meaney, M. (2021). Understanding Factors that Influence Upskilling. [PDF]
- M. Garcia de Macedo, M., Clarke, W., Lucherini, E., Baldwin, T., Queiroz Neto, D., de Paula, R., & Das, S. (2022). Practical Skills Demand Forecasting via Representation Learning of Temporal Dynamics. [PDF]
- Maghsoudi, M. (2023). Uncovering the Skillsets Required in Computer Science Jobs Using Social Network Analysis. [PDF]
- Maghsudi, S., Lan, A., Xu, J., & van der Schaar, M. (2021). Personalized Education in the AI Era: What to Expect Next?. [PDF]
- McDonald, S., K. Damarin, A., Lawhorne, J., & Wilcox, A. (2019). Black Holes and Purple Squirrels: A Tale of Two Online Labor Markets. [osf.io](#)
- Nippani, A. (2020). Automation and Labour in India: Policy Implications of Job Polarisation pre and post COVID-19 crisis. [osf.io](#)
- O. Ghosheh, G., Li, J., & Zhu, T. (2024). Understanding Missingness in Time-series Electronic Health Records for Individualized Representation. [PDF]
- O. Modlo, Y., O. Semerikov, S., & O. Shmeltzer, E. (2018). Modernization of Professional Training of Electromechanics Bachelors: ICT-based Competence Approach. [PDF]
- Peppler, K., Huang, J., C. Richey, M., Ginda, M., Börner, K., Quinlan, H., & John Hart, A. (2020). Key principles for workforce upskilling via online learning: a learning analytics study of a professional course in additive manufacturing. [PDF]
- Rasch, J. & Middelbeck, D. (2021). Knowledge State Networks for Effective Skill Assessment in

- Atomic Learning. [PDF]
- Reurink, A. & Garcia-Bernardo, J. (2018). Competing for Capitals: The Great Fragmentation of the firm and varieties of FDI attraction profiles in the European Union. [osf.io](#)
- ruggeri, giuseppe (2022). Work and Leisure in America. [osf.io](#)
- Rushmeier, H., Chalil Madathil, K., Hodgins, J., Mynatt, B., Deroose, T., Macintyre, B., & workshop participants, other (2019). Content Generation for Workforce Training. [PDF]
- Salehudin, I. & Satrya, A. (2018). Turning Over Employee Turnover: A Review on Employee Alumni and Rehiring. [osf.io](#)
- Shandra, C. (2020). What Employers Want from Interns: Demand-Side Trends in the Internship Market. [osf.io](#)
- Stephany, F., Kässä, O., Rani, U., & Lehdonvirta, V. (2021). Online Labour Index 2020: New ways to measure the world's remote freelancing market. [PDF]
- Stephany, F. (2020). When Does it Pay Off to Learn a New Skill? Revealing the Complementary Benefit of Cross-Skilling. [PDF]
- Stephany, F. (2021). When Does it Pay Off to Learn a New Skill? Revealing the Complementary Benefit of Cross-Skilling. [osf.io](#)
- Stephany, F. & Lorenz, H. (2021). The Future of Employment Revisited: How Model Selection Determines Automation Forecasts. [PDF]
- Stephen, D. (2022). Medical articles in questionable journals are less impactful than those in non-questionable journals but still extensively cited. [PDF]
- Talafian, H., Lundsgaard, M., Mahmood, M., Shafer, D., Stelzer, T., & Kuo, E. (2023). Responsive Professional Development: A Facilitation Approach for Teachers' Development in a Physics Teaching Community of Practice. [PDF]
- Tong, D., Wu, L., & Allen Evans, J. (2021). Low-skilled Occupations Face the Highest Upskilling Pressure. [PDF]
- Ul Haq, I. (2023). Impact of Augmented reality system on elementary school ESL learners in country side of china: Motivations, achievements, behaviors and cognitive attainment. [PDF]
- Unterhofer, U. & Wunsch, C. (2022). Macroeconomic Effects of Active Labour Market Policies: A Novel Instrumental Variables Approach. [PDF]
- Varshini, S., V, P., Kannan, S., Suresh, S., Ramesh, H., Mahadevan, R., & CSP Raman, R. (2022). Turtle Score -- Similarity Based Developer Analyzer. [PDF]
- Viberg, O., Jivet, I., & Scheffel, M. (2022). Designing Culturally Aware Learning Analytics: A Value Sensitive Perspective. [PDF]
- Wang, Y., Lee, L. H., Braud, T., & Hui, P. (2022). Re-shaping Post-COVID-19 Teaching and Learning: A Blueprint of Virtual-Physical Blended Classrooms in the Metaverse Era. [PDF]
- Westerman, J., Szulkin, R., & Tåhlin, M. (2021). Skill structure and labor market integration of immigrants in Europe. [osf.io](#)
- Zhu, W., Wang, X., & Xie, P. (2022). Self-directed Machine Learning. [PDF]

