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Technology, Future of Work and Ageing Workforce Readiness

Dr. Vaishali Singh
Assistant Professor, School of Governance and Public Affairs, XIM University, Bhubaneswar, Odisha, India
Author Email: vaishali@xub.edu.in

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Abstract

Technological innovation and working patterns have a strong correlation. Advancements in technology and the availability and use of tech power have been the single most important tool in the hands of humanity to contrivance normality in the ongoing pandemic era. However, this reliance on technology has proved especially challenging for the grey population. In fact, ageism and misconstructions regarding older adults among employers is a major barrier faced by older people to continue working or to re-join the workforce. Taking this vital issue as the starting of analysis, this paper explores the challenges and options for integrating the geriatric population with the new demands of the workplace that alter in line with the new technological advancements. In envisioning the future of work, there is a need to also focus on the purposeful and inclusive aspects of work – employee well-being and employee engagement that keeps in mind the role and resourcefulness of employees of all age groups. The five generation workforce is a new emerging reality. If economic growth has to be maintained, employers and governments must take full cognizance of the productive capacity of older workers. Elderly workers have to be prepared for the skills that will be needed in the new and future digital-age careers.

Keywords: Ageing Workforce, Future of Work, Public Policy, Technology;

1. Introduction

As the world advances in economic development and both emerging and mature economies gain a strong foothold in the world economy, a central challenge looms large over the global workforce: ageing workforce readiness. People are living longer and healthier and ageing population is now a global phenomenon. The demographic transition might be going through different stages in different parts of the world but there are universal concerns related to the participation of the older people in the labor market; the sustainability of social protection systems; the availability of quality long term health care; and the rights of elderly people in the society in general (United Nations, 2008).

Nearly every country in the world is experiencing a growth in the size and proportion of older persons in their population.

There were 703 million persons aged 65 years or over in the world in 2019. The number of older persons is projected to double to 1.5 billion in 2050. Globally, the share of the population aged 65 years or over increased from 6 per cent in 1990 to 9 per cent in 2019. That proportion is projected to rise further to 16 per cent by 2050, so that one in six people in the world will be aged 65 years or over (UN Stats).

Although the impact of ageing population can be seen in family systems, health,

housing and social services, it is in the realm of work and productivity that the bearing is utmost challenging for most societies. Ageing population will have significant implications in terms of the demand for skilled labor and a shrinking workforce. The issue of ageing population and the retention of older workers in active employment is considered as one of the most significant issues facing the business and industrial world in major parts of the world.

The issue of aging workforce gets further convoluted with the new and emerging technologies that are disrupting the world of work at a faster pace than anyone could imagine. Older workers are stereotyped as lacking in the ability and confidence needed to effectively engage with innovative technologies. According to Fleming et al. (2017), ageism is so deeply entrenched in the mindset of people that any discussion on 'technology at work and age' is always skewed in favor of the young. Many of the reskilling and upskilling training practices in organizations have been sluggish in taking into account the needs of the older workers (Lazazzara and Bombelli, 2011; Young, 2013). This further exacerbates the gap that already exists between the technological adaptation capabilities of those who grew up before the dawn of modern technology and those who have had technology as a ubiquitous part of their lives (Prensky, 2001a, b).

In assessing the challenges or options of the aging workforce, there are different lenses through which organizations view the issue. There are organizations that feel contingent workforce is the key to competitive advantage through short service and high turnover. Thus the organization relies on short term employment and sourcing the skills for a limited period to meet business goals. Other organizations believe that long service and low turnover creates a competitive advantage. Such organizations bank on the experience and specialist skills or relationships which are hard to be replaced easily and produce a competitive pool of top talent. These companies stand to benefit the most from the aging of population and keep up the profits running in the long term as compared to the companies that rely on contingent workforce and will be facing challenges as the workforce becomes older and scarcer (Mercer, 2020).

The strength of older workers lies in their critical knowledge of the domain specific work and the savings in terms of the relative cost of training a new worker (Stachova, 2013). In fact, Timmons et al. (2012) opine that the exit of older workers from the workforce is leading to a 'labor drain' wherein the businesses lose the results-driven, idealistic and people-oriented work characteristics possessed by experienced workers. Moreover, older employees mean enrichment for the organization and their retention or re-employment does not constitute a disproportionate financial burden for the organizations. An overwhelming 76 percent of businesses monitored in Czech Republic reported no impact on wage funds due to hiring of older workers (Cermakova, 2015). The study also highlighted the benefits of age management for organizations in terms of retaining key employees and a visible improvement in the motivation and work performance of employees in all age groups. Other related benefits include – improving organizational climate and culture; employer brand building; and better crisis management (Urbancova and Fejfarova, 2017).

However, in the study of older workers, there is a basic semantic difficulty. The difficulty revolves around setting the point at which a worker is considered old which adds to the woes of both the employer and the employee. Given that life expectancy statistics have shown an upward trend across the world, there exist hazy boundaries of who and when should be counted as an older worker. There is no unanimously agreed upon definition of the category of 'older workers'. In the Australian Ageing Workforce Report 2019, the findings suggest considerable variability in people's perceptions of who is an 'older worker', with answers ranging from 30 to 80 years of age (Aging Workforce Report, 2019). The most widely shared perspective considers a 65 year old as an older worker. Only a small percentage of people consider that there is no particular age to be considered old. The commonplace conception is that the aging is happening due to the baby boom in the post-world war era. However, it is not so much about baby boomers but more about a function of life expectancy, living longer and healthier. The proportion of people in their infirm years is actually shrinking. People are living healthier for long and in perfect shape and mind to work. However ageism in the world of work is a sad reality. Age discrimination is endemic and technological shifts in the world of work are fuelling it further. This is more so than racism or gender based discrimination because age based discrimination has a social sanction as against other forms of discrimination.

2. Future of Work and Technology

The landscape of work and jobs changed dramatically in 2020. The envisioning of the future of work in bringing about a sea change in the labor market no longer seems unlikely. In the 2019 survey, about 73 percent of the executives predict significant industry disruption in the next three years due to technological changes and other factors, up from 26% in 2018 (Mercer, 2019). One in five jobs will be replaced by artificial intelligence and automation and 42 percent of core skills required to perform existing jobs will change in the next two years (World Economic Forum, 2020). The impact is visible across a wide array of sectors. Robots and automated machinery are disrupting the jobs in production industry as much as advanced software and artificial intelligence is replacing the white-collar occupations in sales, accounting, trading and logistics (Acemoglu and Restrepo, 2018).

The emergence of the so-called 'techno-axial age' (Bessant and Watts, 2021) has made the analytical and novel cognitive technologies as the most important skill for a human worker. The massive retraining and reskilling of the workforce is touted as the way forward. However, it is possible that the pace of reskilling might not be as fast as the changes in technology. The relentless pace at which automation is taking place, societies will no longer have the ability to foretell reliably the skills that will be needed in future decades (Harbert, 2020). With the constant evolution of technology, the future of work has become devoid of meaning and certainty. The digital economy has a negative impact on the labor market in terms of increasing a sense of insecurity and isolation for existing workers. The state of flux and anxiety ushered in by the increased dependence on tech power has given rise to a global debate about how far it will be possible to gainfully employ all workers. The world of work has realized that for organizations to fully benefit from technology, they must support the development of a workforce with digital skills. Capitalism is being replaced by 'talentism' (Carlson, 2021). Younger workers seem to be getting all the leverage in this. According to the director of Malaysian Employers Federation,

"The younger generation has an advantage, especially those who are more agile, flexible and IT-savvy compared with older workers. They are generally digitally savvy and can accept new forms of employment such as the gig economy and e-commerce platforms." (Kwan, 2020)

Although automation induced worker displacement affects workers in all age groups, it is the older adults who would move to less automated and low wage domains or even choose to exit the labor force entirely (Groshen and Holzer, 2019). A study in the U.S by Wanberg et al. (2016) found that the tendency to remain unemployment after redundancy is 10.6 weeks longer for those aged 50 or above as compared to those between 20 and 29 years of age. The older workers also constituted 48 percent of the category of workers at risk of displacement by automation in Singapore (Lee, 2017). With the onset of the pandemic and the concomitant shifting of work from office to home has increased the reliance on tech usage abilities. Consequently, the workers in the older age group have been the worst affected. In Malaysia, almost 18,397 workers aged 45 and above lost their jobs and are now less likely to find employment in the weak labor market following the Covid-19 pandemic (Kwan, 2020).

1. Challenges in the age of technology for Older Workers Naturalistic Age Induced Changes

There are certain age-related issues such as difficulty with corporal deftness and agility; reduced cognitive functions; impaired vision and problems in performing activities of daily living (ADLs) (Czaja and Lee, 2003). Particularly, technology usage requires a good level of cognitive functioning and research shows that there is a cognitive impairment with age (Administration on Ageing, 1996). Cognitive aging causes mental functionality to become less dexterous and flexible with some facets of memory function getting affected. As a consequence, older people find it hard to concentrate in busy environments and get distracted easily which also leads to more time and efforts on their part to work their way through complicated problems and decisions (Institute of Medicine, 2015).

The Economic Risk Perception

A higher proportion of older workers is often correlated with a lower productivity in terms of output per capita. Prskawetz et al. (2008) reports that as the working age population declines, the support ratio changes and this increases the

proportion of consumers to producers. This has a direct negative effect on output per capita. The hiring of older workers also carries the biggest risk of a substantial rise in healthcare expenses. The prevalence of chronic illness becomes much more common and in turn affects the sustainable employment projections for both employers and employees.

The Concern for Younger Employees

The age bias in recruitment and promotion policy of most enterprises stems also from a concern for the career growth of the younger workers. Kulik et al. (2014) have found that strategies to retain or retrain older workers may block the promotion and advancement prospects of the younger workers. The delays in promotion of the younger workers may deprive them of the experience to make the transition towards leadership positions. The changes in retirement and reemployment structures in favor of the older workers can thus prove challenging in terms of keeping the younger workers engaged and motivated.

The Complex Nature of Technology

There is a widespread feeling of uneasiness amongst the elderly groups that stems from the perceived complex features of technology and its usage. These characteristics of technology can range from the small prints, keyboard patterns, system designs to the online or tech jargon and the changes in modes and patterns of tech usage. Malenhorst et al. (2001) have found that the most common argument advanced by older adults with regard to new technology is that some types of technologies do not work easily. Furthermore, technologies keep evolving and the standard studies on the know-how of their working can take some time to be deciphered, understood and disseminated.

Existence of a Disinclined Attitude

Due to failed experiences, older adults fathom technology as a risky alternative to traditional modes. They consider technology is costly, confusing and complicated to use and thus do not feel inclined enough to take advantage of the benefits that technology can offer. Some simply reject online tools as they consider them too arduous and time consuming. In a study by Lancaster University, more than the accessibility issue, it was the personal fear over making mistakes and disdain over the suitability of online tools that drove older people away from an extensive use of technology in day to day life. In an interesting finding, older people want to hold on to the traditional face to face or offline interactions between people to prevent the loss of jobs and social isolation that can ensue with online and automated mode of work (Knowles and Hansen, 2018).

Perceived Difficulty in Learning

According to Marquie et al. (2002), learning about new technologies is challenging for all but the elderly population usually views this learning process as a giant task or too difficult to be grasped well without a base in ICT knowledge. This basic attitude leads to a very low confidence in their self-potential or ability to learn about or to operate technology (Eastman and Iyer, 2004).

Issues Related to Training and Assistance Support

Older workers face a number of hurdles in a meaningful participation in skill development programs. Irizarry et al. (2002) have found in their study that although training programs on tech usage abound, they do not specifically cater to the pace at which people in older age groups can understand. A mere provisioning of learning and training for all age groups is not enough, it has to be tailored to the specific needs of the geriatric workers. According to Osman et al. (2005), there is a lack of sensitive and caring training professionals who can make the learning process worthwhile for the elderly. In some cases, there is not enough training or assistance support within reach or budget.

Lack of Information and Locational Disadvantage

Technology has again induced a barrier in terms of the information about the options available for the experienced and skilled workers for those who have not yet embraced new modes of working. Online recruitment has become a norm everywhere and the use of social media and other professional platforms or job searching engines require a minimum online workability. Older workers trying to find flexible work opportunities suffer from the geographical mismatch between the needs of the labor force and demands of the labor market. Places where skilled workers are in high demand face skilled labor shortages and places where skilled labor is available have very few work opportunities.

Employer Attitudes

Most employers have a deep skepticism about the returns that any investment in older workers will reap. Most commonly held perception relates to the retirement intentions of the older workers and how far any training or reskilling can be beneficial for the organization. A study by Ferrier et al. (2008) explored the views of managers about the productivity of older workers and the findings revealed that most managers perceive the return on investment in reskilling to decline with age. The consensual view appeared to hold the contention that it was more prudent and frugal to teach new technologies to younger employees than their older coworkers (Ranzijn 2004). According to Chappell et al. (2003), older workers are often the most vulnerable targets whenever any disruptive changes take place in the modes of working and the compliance of employers with the age related anti-discrimination laws is highly uneven. Peter Cappelli, Professor of Management at Wharton School of the University of Pennsylvania, makes a strong argument in stating that it is a myth that older workers lack in their ability to work around new technology or are too slow for the fast paced work. The real issue is that younger supervisors do not want to hire older workers as they are afraid and do not know how to manage these older workers. Thus the basis of discrimination is a sense of insecurity and lack of sensitivity or prior experience in dealing with the older workers.

The Cost of Accessibility

A subscribed access to the internet is indispensable for working with technology and the cost is not affordable for many older adults in the lower income bracket. According to one estimate, out of 70 nations only 44 nations had the cost of monthly DSL (digital subscriber line or the high-speed internet) access within the considered affordable point of 2.5 percent or less in the median household income (The Economist, 2008). Research from the Alliance for Affordable Internet and the Web Foundation reveals that low and middle income countries are finding the mobile phones too expensive and this is keeping many offline. The survey found that as many as 2.5 billion people reside in nations where the price of the lowest range available smartphone is at least a quarter of the average monthly income. This amounts to the spending of an average European household on housing and utilities (Woodhouse, 2020). Needless to say, older people are an important marginalized section in low income nations and have to struggle more for getting access to IT enabled products and services due to affordability issues.

Lack of Suitable and Flexible work

Some companies are losing experienced talent because there is little appetite to offer flexible working conditions. Employees who have worked in the organization for a long time are the most loyal and know exactly the most efficient way of getting the work done through their long-standing networks and web of relationships. After a certain age, most employees are looking for a flexible work hours to allow a good balance between work and non-work activities (Griffin and Beddie, 2011). In terms of the type of work, older people want work that is not as demanding or target-filled but one that utilizes their know-how and expertise in meeting the larger goals of the company. This typically translates as opportunities for mentoring and coaching the young talent. Unfortunately, employers are not able to provide this flexibility in terms of time and choice of work and end up losing the good talent. Dalen et al. (2009) compared the attitudes and actions of employers in their handling of older employees in the European Employers Attitudes Survey 2005 conducted in four European countries — Netherlands, Greece, Spain, and the United Kingdom. They found that –"The majority of employers anticipate future problems due to a shrinking workforce, and the ageing population is one of the core drivers of this. However, only a minority of employers implement or consider implementing measures aimed at retaining personnel, in terms of easing the leisure—work trade-off, reducing stress at work, adjusting tasks and capabilities, and adjusting working conditions".

3. The Way Forward: Options

Forward Looking Employers

Policy changes such as extending retirement age limit can provide motivation for older workers to remain in the labor force. However, this does not necessarily translate into enough motivation for the employers to hire older workers. The world needs forward looking employers. Employers have a role to play in propagating a fluid interpretation of retirement in the society. With the help of far-sighted employers, occupational changes, mini-retirements and sabbaticals and a non-linear career trajectory can become the new normal and help immensely in fighting the rampant societal ageism apart from curtailing labor shortages. Moreover, the effect of social portrayal in engagement of older workers at the workplace can be significantly

dealt with by organizational changes. For example, some challenging and techno-driven tasks can be allocated to older employees to boost their confidence and also to change the age-related stereotypes about age and work performance among the age-diverse workforce.

In the study by American Enterprise Institute, Orrell, et al. (2020) outline that the roadmap to workforce recovery calls for employers to establish 'Personal Reemployment Accounts' for each employee wherein the worker gets to select a training that fits best with individual need, level and interest. Employers who are looking at the long-term sustainability of labor and workflow can invest in the formation of reemployment departments or centres within the organization that can allow workers facing multiple barriers to return to work quickly and smoothly. Employers and businesses can benefit from the increased use and ease of technology by creating a real-time, easy-to-access and comprehensive labor market information system that can enable employers to nurture and develop the talent and skills that are currently in demand or will be needed in the futuristic world of work.

Retention Adjustments in Labor Policy

The Japanese government has implemented various employment policies, to actualize "a society where people can work until 70 years of age." The policymakers aim has been to encourage employment of older population; sustain and enable re-employment of middle-aged and older people willing to work; and accelerating assistance in making diverse work opportunities and social participation of older adults a normal feature of Japanese society (Japan Organization for Employment for the Elderly and Persons with Disabilities, 2006). Countries in Europe have also initiated phased retirement and post-retirement work programs to leverage worker expertise and commitment

Active ageing

A significant development in the discourse on the policy issue of ageing society is the Active Ageing Policy Framework. The concept being promoted is "Active Ageing" i.e. the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age (WHO, 2002). The framework is a vision that intends to deal with world ageing through positive policy interventions and calls upon the policymakers to spring into action. The concept has created a blueprint for devising multi-dimensional and multi-sectorial policies catering to active ageing with an aim to improve wellbeing and involvement among elderly populaces while safeguarding that older people have sufficient security, support and care when they need assistance (Andrews, 2001).

Multi-Generational Workplace

As the new demographics play out in the world of work, the five generation workforce is already becoming a reality. A multigenerational workforce comprises a workforce with diverse age groups with employees belonging to different generations such as the baby boomer generation, Generation X, the millennial generation, and Generation Z. Organizations thus need to prepare themselves to manage a multigenerational team with changing requirements, standards, and concerns (Fica, 2019). From technophobic to tech savvy and tech native, the employees are bound to have vast differences in their abilities and perceptions of new technologies. Thus organizations need to cater to the need of each age group in making them up-to-date with the new innovations at work.

Technology Based Training

The most important policy change that can redress the problem of lack of tech skills is a holistic yet dynamic and flexible training model for the specific pace and needs of the geriatric workers. Lee et al. (2009) in their research have found that workers express a desire to receive additional training on technology and display a preference for classroom training. A self-paced training by sensitive and caring professionals can effectively meet the needs of the elderly workers in adapting to new technological shifts at workplace and to integrate technology in their day to day life. The literature on skill acquisition reveals that although older workers may take longer and more practice and environmental support, they are able to learn new skills just as anybody else (Charness and Czaja, 2005).

Flexible Working Practices

Flexibility matters and it matters the most when employees have spent a lifetime working for the organization or in a particular domain of work. It is important to be mindful of the

heterogeneity of the population in the older age cohort. Loretto et al. (2009) have pointed out that workers in later years of their lives differ vastly in terms of skills, education, work pattern and history, health, geographical location, gender and family circumstances. To cater to the varying needs and privations of this group and to keep them motivated, the working arrangements need to be generously flexible. This entails bringing about policy changes for both temporal and functional flexibility in work. Flexible working arrangements (FWAs) for older workers have been implemented in firms in United Kingdom to promote 'more sustainable working lives' (Atkinson and Sandiford, 2016). These practices and arrangements can work out well in retention of skilled and highly talented and experienced workforce.

Aging not Existential but Contingent

A very subjective but significant dimension related to perceptions surrounding ageing is the difference between contingent and existential limitations. Baars et al. (2006) underscores the need to recognize that age-induced senescence like lack of adequate care, societal social seclusion, undernourishment or poor housing and sanitation conditions. Quite often these limitations result from insufficient information, negative fallouts of some policies or just caused by a disinterest or lack of concern for the welfare and well-being of the elderly. On one hand, an existential perspective will view all limitations as given and part of senescing wherein the older people can only accept all circumstances even if they are awful. On the other hand, a non-existential perspective will adopt a contingent view of the limitations suffered by the elderly and lead to the development of a positive attitude wherein one does not have to accept the circumstances but understand that if proper time, resources and willpower to change is there, then all sorts of problems can be solved (Grey, 2005).

Building an Age Diverse Talent pool

With regard to the retention of talent and reduction in attrition rate, the companies can find a middle ground between keeping a certain level of turnover and also addressing the shrinking workforce. Employers realize that experience and tenure is important. It is time now to act on the building of talent pool and models that focus on critical jobs with a 'ready to work now' cohort and creating pipelines of skilled labor supply by making it age diverse. This also requires redefining the definition of what is the right talent and stripping it of its age and other stereotypes. When the right kind of pipelines exist in the workforce, finding the right person with the right skills for the right person becomes smooth with the added advantage of atrophying ageism in the world of work.

4. Conclusion

This paper looked at how innovation and technology can redefine the future of work and how this can impact the ageing workforce. In envisioning the future of work, there is a need to also focus on the purposeful and inclusive aspects of work – employee well-being and employee engagement that keeps in mind the role and resourcefulness of employees of all age groups. The study calls for demystifying the presumptions that make older workers stay away from exploring their full potential and to learn the new technological know-how. With concerted efforts, the challenges being faced by the workers in later years due to the shifts in new technology-induced work patterns can be offset and the looming crisis of shrinking workforce can be resolved.

5. References

Administration on Aging, 1996. 'Aging into the 21st century', Retrieved December 20, 2020, from www.aoa.gov/prof/Statistics/future_growth/aging21/aging_21.aspx

Acemoglu, D. and P. Restrepo, 2019. Automation and New Tasks, Journal of Economic Perspectives, 33 (2), 3-30

Ageing Workforce Report, 2019. Employer readiness to support the needs of Australia's ageing workforce.

Andrews, K., 2001. National Strategy for an Ageing Australia. Commonwealth of Australia.

Atkinson, C. and P. Sandiford, 2016. An exploration of older worker flexible working arrangements in smaller firms, Human Resource Management Journal 26 (1), 12–28.

Baars, J., D. Dannefer, C., Phillipson, and A. Walker, 2006. Ageing, Globalization, and Inequality: The New Critical Gerontology, Baywood Publishing, New York.

Bessant, J. and R. Watts, 2021. COVID, capital, and the future of work in Australia,

Australian Quarterly, 92 (1), 20-28.

Knowles, B. and V. L. Hanson, 2018. The wisdom of older technology (non)users, Communications of the ACM, 61(3), 72.

Carlson, T., 2021. Building a future-ready global workforce post-COVID-World Economic Forum, Retrieved January 30, 2021, from https://www.weforum.org/agenda/2021/01/building-a-future-ready-global-workforce-post-covid/

Cermâkovâ, H., 2015. The Costs of Age Management in Agriculture Companies, Agricultural Economics, 61 (1), 14-22.

Chappell, C., G, Hawke, C., Rhodes, and N. Solomon, 2003. Major research program on older workers: Stage 1 – The conceptual framework, OVAL Research Centre, University of Technology, Sydney.

Charness, N. and S.J. Czaja, 2005. Older worker training: What we know and don't know. Technical report prepared for AARP.

Czaja, S. J. and C. C., Lee, 2003. The impact of the internet on older adults, in Charness, N. and K. W. Schaie, (eds), The Impact of Technology on Successful Aging, Springer Publishing, New York.

Dalen, V., K. Henkens, and J. Schippers, 2009. Dealing with older workers in Europe: a comparative survey of employers' attitudes and actions. Journal of European Social Policy, 19, 47-60.

Eastman, J. K. and R. Iyer, 2004. The elderly's use and attitude towards the internet, Journal of Consumer Marketing, 21 (3), 208-220.

Fica, T., 2019. How to Manage a Multigenerational Workforce https://www.bamboohr.com/blog/manage-multigenerational-workforce/

Fleming, J., K Becker, and C. Newton, 2017. Factors for successful e-learning: does age matter?, Education + Training, 59 (1), 76-89.

Ferrier, F., G. Burke, and C.S., Smith, 2008. Skills development for a diverse older workforce, National Centre for Vocational Education Research, Australian Government.

Grey, D., 2005. Foreseeable and More Distant Rejuvenation Therapies, in Rattan, S. (Ed.) Ageing Interventions and Therapies, World Scientific Publishing, Singapore.

Griffin T. and F. Beddie, 2011. Older workers: research readings, National Centre for Vocational Education Research, Australian Government.

Groshen, E. L. and H. J. Holzer, 2019. Improving Employment and Earnings in Twenty-First Century Labor Markets: An Introduction, The Russell Sage Foundation Journal of the Social Sciences, 5 (5), 1-19.

Harbert, T., 2020. Technology and the Future of Work: Which Way Will We Go? https://www.shrm.org/hr-today/news/all-things-work/pages/technology-and-the-future-of-work.aspx

Institute of Medicine, 2015. Cognitive Aging: Progress in Understanding and Opportunities for Action, The National Academies Press, Washington, DC.

Irizarry, C., A. Downing and D. West, 2002. Promoting modern technology and internet access for under-represented older populations, Journal of Technology in Human Services, 19 (4), 13-30.

Kulik, C. T., S. Ryan, S. Harper and G. George, 2014. Aging Populations and Management, The Academy of Management Journal, 57 (4), 929-935.

Kwan, F., 2020. Jobs Squeeze hits older workers harder, https://www.freemalaysiatoday.com/category/nation/2020/09/21/jobs-squeeze-hits-older-workers-harder-says-employers-group/

Lazazzara, A. and M.C. Bombelli, 2011. HRM practices for an ageing Italian workforce: the role of training, Journal of European Industrial Training, 35 (8), 808-825.

Lee, C.C., S. J. Czaja and J. Sharit, 2009. Training older workers for technology-based employment. Educ Gerontol, 35(1), 15–31.

Lee K. F., 2017. Automation, Computerization and Future Employment in Singapore, Journal of Southeast Asian Economies, 34 (2), 388-399

Loretto, W., S. Vickerstaff and P. White, 2009. Flexible work and older workers, in W. Loretto, Vickerstaff, S. and P. White (eds), The Future for Older Workers, The Policy Press, Bristol.

Marquie, J. C., L. Jourdan-Boddaert and N. Huet, 2002. Do older adults underestimate their actual computer knowledge?, Behaviour and Information Technology, 21(4), 273-80

Melenhorst, A. S., W. A. Rogers and E. C. Caylor, 2001. The use of communication technologies by older adults: Exploring the benefits from the user's perspective, paper presented at the Human Factors and Ergonomics Society, 45th Annual Meeting.

Mercer, 2020. Meeting the challenges of retirement. Mercer UK. Retrieved January 5, 2021, from https://www.uk.mercer.com/our-thinking/ageing-workforce/ageing-workforce-retirement-inadequacy.html

Orrell, B., M. B. Mason and J. Hawkins, 2020. A Road Map to Reemployment in the COVID-19 Economy: Empowering Workers, Employers, and States, American Enterprise Institute.

Osman, A., D. Poulson, and C. Nicolle, 2005. Introducing computers and the internet to older users: Findings from the Care OnLine project, Universal Access in the Information Society, 4 (1), 16-23.

Prensky, M., 2001(a). Digital natives, digital immigrants part 1, On The Horizon, 9 (5), 1-6.

Prensky, M., 2001(b), Digital natives, Digital Immigrants: Do They Really Think Differently?, On The Horizon, 9 (6), 1-6.

Prskawetz, A., T. Fent and R. Guest, 2008. Workforce Aging and Labor Productivity: The Role of Supply and Demand for Labor in the G7 Countries, Population and Development Review, 34, 298-323.

Ranzijn, R., 2004. Discrimination against the older worker: Psychology and economics, presentation to a seminar on age discrimination in the workplace, Retrieved February 1, 2021, from http://www.hreoc.gov.au/ age/work-ingage/speeches/ranzijn.html .

Stachovâ, K., 2013. Organisational arrangement of human resources management in organisations operating in Slovakia and Czech Republic, Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 61 (7), 2787-2799.

Timmons, J., A. Hall, S. Fesks and A. Migliore, 2011. Retaining the older workforce:

Social policy considerations for the universally designed workplace, Journal of Aging

& Social Policy, 23, 119-140.

United Nations, 2008. Regional dimensions of the ageing situation, UN Department of Economic and Social Affairs, New York.

Urbancová, H. and M. Fejfarová, 2017. Age Management Aspects in the Czech Republic, Journal of East European Management Studies, 22 (4), 621-640

Wanberg, C. R., R. Kanfer, D. J. Hamann and Z. Zhang, 2016. Age and Reemployment Success Loss: An Integrative Model and Meta- Analysis, Psychological Bulletin, 142 (4), 400.

Woodhouse, T., 2020. Mobile devices are too expensive for billions of people — and it's keeping them offline, Web Foundation. Retrieved November 6, 2020, from https://a4ai.org/mobile-devices-are-too-expensive-for-billions-of-people-and-its-keeping-them-offline/

World Health Organization, 2002. Active Ageing: A Policy Framework, Second United Nations World Assembly on Ageing, Madrid, Spain.

Young, K., 2013. Changing demographics: are companies meeting the development needs of an ageing workforce? Development and Learning in Organizations, 27 (4), 4-5.

AUTHOR BIOGRAPHY

Vaishali Singh is an Assistant Professor in Public Policy at XIM University, Bhubaneswar. Dr. Singh has earned her PhD in East Asian Studies (specializing in China studies) from the University of Delhi. She is an alumnus of Miranda House in Delhi University where she completed her BA Honors in Political Science. She has a Masters in Political Science from Hindu College, Delhi University and has also spent two years at the prestigious Peking University in China for a second Masters in Public Policy. She has taught at Graphic Era University and University of Petroleum and Energy Studies in Dehradun and also worked in think tanks and non-governmental organizations. Her research interest lies in India-China comparative studies, comparative political economy and public policy analysis.