

The Alienating Effect of Technology: Does Technological Innovation Cause Work Alienation?

Saffet KARAYAMAN

Artvin Çoruh University, Arhavi Vocational School, Artvin, Türkiye.

saffetkarayaman@gmail.com <https://orcid.org/0000-0001-5624-4678>

Abstract

This article basically analyzes how technological innovation affects employees' alienation from their jobs. Detailed purpose of the article; It also aims to analyze the impact of technological innovation on employee alienation from their jobs and strategies to reduce the negative impact of technological innovation on employee alienation. These research studies prepared by the literature review method are named as "compilation article" method. The article tries to explain what technological innovation means and how it is implemented, the definition and determinants of alienation and work alienation, the impact of technological innovation on employee alienation from work and the factors contributing to this effect, and strategies that can be used to reduce the negative impact of technological innovation on employee alienation. Based on the results obtained; Technological innovation is the process of developing new ideas, products, services or processes or significantly improving existing ones. Technological innovation can drive changes in business processes, consumer experiences, or the products themselves. However, it can also trigger work alienation, a condition in which employees perceive their jobs as meaningless, unimportant, or worthless. It is hoped that the article, which is a theoretical analysis, will contribute to the ongoing discussions of technology, artificial intelligence and organizational behaviour.

Keywords: Organizational Behaviour, Technology, Alienation, Technological Innovation, Work Alienation

1. INTRODUCTION

The scientific and technological advances that accelerated after the Enlightenment have fundamentally changed all facets of society, including business. These advances have given rise to new business models, employment opportunities and industries. Technological innovation, defined as the potential for technological renewal, has the power to change fundamental organisational processes, including the division of labour, coordination, control, communication and decision-making (Garud et al., 1997). Technological determinism is based on the principle of continuity of development and progress, with the active desire that technology will advance humanity. However, it is important to acknowledge the possibility that this notion, rooted in early modernity, may remain inactive. The current situation of the digital age illustrates this possibility. The term 'digital age' typically refers to the rapid advancement of technology and the widespread integration of digital processes into almost every facet of life. This phenomenon has both positive and negative effects. The benefits of technology include efficient communication, easy access to information and expanded educational opportunities. Tomlinson (2013) argues that a digital global culture has emerged that should not be ignored.

However, while digital technologies have brought significant progress to fields such as medicine, industry, and transportation, they are not without drawbacks. The use of social media and digital devices has introduced new types of diseases and addictions, which are discussed in the relevant literature. Treatment protocols for these issues are still being developed (Darı, 2017). Additionally, the digital age has brought about concerns regarding the protection of personal data. Cyber security threats, digital fraud and virtual crime are among the new problems that have emerged. However, the rapid development of technology and the rise in unemployment are major concerns. The impact of the digital age is often seen as both positive and negative. It is important to develop an awareness of the negative effects of technology while also taking advantage of its benefits. The digital age is an ongoing process that goes beyond the digitisation of analogue and mechanical systems. It is vital to maintain social awareness in order to continue this expansion. As with previous technological advances, the digital age is often associated with technological determinism. This association stems from a focus on the positive aspects of the digital age. Technological determinism argues that technology affects all aspects of society and can even determine human behaviour. This perspective emphasises the influence of technology on society, suggesting that social change is a consequence of technological progress. The effects of technological determinism manifest themselves in different areas of society. For example, this perspective suggests that rapid technological progress can lead to equally rapid social change. Although these changes can bring many innovations and conveniences, it is important to consider their potential drawbacks. Technological determinism can lead to dependence on technology, which can result in diminished personal relationships, reduced social interactions, and increased loneliness. However, it is also a perspective that considers the impact of technology on society. The rapid development of technology has contributed to the advancement of services in various sectors, including medicine, transportation, communication, and information technology, ultimately improving people's quality of life. Technological developments can ultimately trigger social changes and cause social problems. It is crucial to avoid biased language and maintain a clear, objective tone. While the rapid development of technology can provide benefits in many areas, it is important to strike a balance. The trust in technological developments has led to the belief that technology can improve or perfect human beings by facilitating their lives. This belief has given rise to the philosophical movement of transhumanism, which seeks to enhance people's physical and mental capacities and transcend their limitations. In accordance with this objective, the utilization of technological advancements on the human body seeks to manage and enhance the natural process of human evolution.

There are differing opinions on transhumanism. Some view it as a philosophy that enables humans to surpass their natural limitations and improve themselves. This approach suggests that individuals can extend their lives and enhance their intelligence and creativity by utilizing technological advancements. However, others regard transhumanism as a risky stance that seeks to exceed the natural limits of humans. According to this approach, exceeding natural boundaries can harm organic processes such as the understanding of human nature and social interactions. Additionally, some parties are concerned that transhumanism will create a new distinction between people and increase social inequality. Another criticism of transhumanism is the uncertainty surrounding the extent of technological boundaries. Some people have expressed concerns that transhumanism could lead to biological harm or have negative effects on other parts of society. Additionally, there is a risk that technology's control over human evolution could result in falling behind technologically and socially, as has happened in other periods of human history.

Transhumanism is an approach that aims to enhance human evolution, but it raises concerns about exceeding natural human limits. Therefore, evaluating transhumanism requires

considering not only its social and societal impacts but also its ethical implications. The digital age can be viewed through the lens of futurism as a technological era, and transhumanism as an intellectual stance. Futurism is an artistic movement that originated in Italy in the early 20th century. It aimed to reflect future technological developments through art, emphasizing concepts such as speed, dynamism, and modernity. In the digital age, these concepts have continued to evolve in a technological context. For instance, technologies like smart devices, artificial intelligence applications, autonomous systems, and augmented reality are the components that drive futuristic visions in the digital age.

The movement towards technological innovation can impact an organization's structural traits, including formalization, centralization, standardization, and flexibility. This effect may provide options for departmentalization, whether through functional, regional, product, or customer-based formats. Technological innovation can enhance the quality, cost-effectiveness, speed, and innovativeness of an organization's production or service offerings while impacting the motivation, satisfaction, commitment, and performance of its employees (Avadikyan et al., 2016). Nonetheless, technological innovation does not exclusively yield favourable effects. Rather, it can also produce negative outcomes, such as alienation. Alienation refers to the loss or weakening of an individual's relationship with themselves, others, and the environment (Schacht, 2015). This phenomenon emerged with the introduction of technology into human life. The widespread use of technology, particularly in the business world, can lead to employees experiencing alienation from their jobs. Job alienation is a condition in which employees perceive their work to be meaningless, insignificant, or worthless. They are dissatisfied, lack commitment and responsibility, have trouble in communicating with colleagues and managers, and feel anxious and stressed in the work environment (Greenberg & Grunberg, 1995). The objective of this theoretical analysis is to investigate the impact of technological innovation on employee job alienation. Answers to the following questions will be sought to further explore the topic at hand: what constitutes technological innovation and how is it brought about? What is the influence of technological innovation on employee alienation and which variables exert an impact? How is alienation and job alienation measured? What is the influence of technological innovation on employee alienation and which variables exert an impact? Lastly, how can the impact of technological innovation on employee alienation be mitigated?

2. CONCEPTUAL FRAMEWORK

2. 1. The Concept of Technological Innovation

Technological innovation involves the creation of new ideas, products, services, or processes, as well as the substantial improvement of existing ones. Such innovations predominantly emerge in the spheres of technology, science, and engineering (Azar & Ciabuschi, 2017). Technological innovation involves the creation of new ideas, products, services, or processes, as well as the substantial improvement of existing ones; and it yields various benefits, including the acquisition of a competitive edge, the enhancement of products or services, and the expansion of markets (Tidd & Bessant, 2020). Part of technological innovation entwines the origination of fresh and innovative concepts. These concepts have the potential to address current issues, uncover new opportunities in the marketplace, or devise superior techniques. Although innovation may stem from science and technology, essential components of the innovation process include uncovering novel technologies or optimizing the use of existing technologies (Drake, 1994). Technological innovation can lead to transformations in industry, business, and society. Innovation, whether in business processes, consumer experiences, or product development, has the potential to yield commercial benefits. Companies can achieve a competitive edge by introducing novel products or services that satisfy customer demands (Moorhouse et al., 2018).

The scope of technological innovation is vast, spanning across various fields and sectors. To succeed in the innovation process, it is crucial to integrate factors such as creative thinking, engineering expertise, market research, and financial investment. Technological innovation can improve society and enhance quality of life (Puertas et al., 2020). In this respect the three stages of technological innovation involve: invention, innovation, and diffusion. Invention refers to scientific and technological advancements, while innovation reflects their impact on economic activities. Inventions are transformed into innovations by making them economically viable; subsequently, production commences. Technological change is an accumulative process, where small improvements and radical innovations both contribute to the formation of technologies. Technological innovation is an ongoing dynamic process that constantly evolves (Belcher, 1996).

Today, investments in new technologies and R&D activities are the primary drivers of technological innovation. New technologies encompass a system for developing novel production methods, new products, and innovative management techniques. The process of advancing existing production technologies involves a systematic production process that actively employs knowledge by facilitating global sharing (Fichman, 2004). In summary, the adoption of new technology is a dynamic innovation process that enhances productivity in enterprises, lowers costs, promotes flexibility in the production process, and advances the quality of existing products.

Although various technologies have been developed throughout history to respond to different needs, it can be argued that a Fordist production system based on Taylorism gained widespread adoption after the Second World War to meet increasing demand. Factories, as the engine of Fordist production, have generated diverse interactions in various areas ranging from education to family structure, effectively shaping industrial society. Over time, this mode of production became the focus of economic and social crises (Peaucelle, 2000). Changes were made in production technologies to overcome these crises. The most significant aspect of this period, known as the post-Fordist era, is the introduction of flexible production systems. Starting in the 1980s, specialized production replaced mass production, and rigid rules were replaced by flexible rules. This transformation is explained by the concept of post-Fordism. Post-Fordism refers to the economic opportunities and flexibility afforded by new technologies in production. The utilization of micro-technologies in production and a diverse array of production forms based on varying consumer preferences and expectations are known as flexible specialization (Jessop, 2005).

Underpinning post-Fordism is the concept of flexible production, based on the understanding that future demand for manufactured products is uncertain. The concept of flexible production is based on the idea that consumers can adapt to changing product types. Flexible production systems involve a technology-intensive production process that quickly delivers products to consumers and easily adapts to changes, resulting in improved cash flow compared to traditional methods (Shifrin & Michel, 2022). As a result of the flexible production style, mass production has been fragmented into smaller units through subcontracting, leading to targeted production in different regions. This has resulted in the emergence of new forms of work, with technological innovation movements being the most significant factor (Shagvaliyeva & Yazdanifard, 2014).

2. 2. How Technological Innovation Affects Ways of Working

Working life in the United States has shifted away from a Taylorist production approach, which was prevalent until the 1980s, towards a post-Fordist production structure that values "flexibility". This change has largely been driven by rapid developments in technology, such as digitalization. As a result, the innovative process of technological innovation has had a profound impact on the dynamics of production and consumption, causing production to gradually

transform into a more flexible form. The rapid pace of technological innovation has transformed the competitive landscape, necessitating companies to adopt flexible production methods and labor practices (Reilly, 2001).

Flexibility can be defined as the ability to adapt to market fluctuations with minimal cost and in a timely manner. This attribute is crucial for companies to maintain their competitiveness in a globalised economy. The spread of flexible working practices poses challenges for workers; however, these practices have led to increased productivity in companies. Workers believe that technological advances combined with flexibility lead to job insecurity, lower wages and poorer working conditions (Kossek et al., 2021). The meaning of flexibility shifts as market conditions evolve over time and technology enables new social interactions on a daily basis. The concept of labour market flexibility is associated with various concepts such as flexible production, flexible work, wage flexibility, labour process flexibility and marketing flexibility. It should be noted that definitions vary from country to country. The meaning of flexibility has evolved over time to include definitions such as 'situational employment' or 'non-standard employment'. The central concern is the employer's attitude to flexible working, which extends to atypical and non-standard forms of work or employment that fall outside the scope of permanent employment contracts (Giurge & Woolley, 2022).

Technological innovation and the evolving global market dynamics are the driving force behind the emergence of flexible work arrangements. Technological advancements are the driving force behind the transformation of organizational structures, redefining the traditional hierarchies of workplaces, employers, and employees. The shift towards flexible work has resulted in a paradigm shift, leading to changes in organizational management, the adoption of flexible business practices, flexible compensation and scheduling arrangements, and a complete transformation of production methods (Allen & Shockley, 2009). New technological advancements have spurred a transition towards flexible specialization in the business world.

Rather than abandoning traditional work structures and protecting employees' positions and working hours through predetermined rules, flexible working arrangements enable employees to adapt to the changing needs of organisations competing in a global marketplace. There are currently two dominant views of flexible working arrangements. The first view prioritises the needs of the employer, helping to adapt to changing competitive markets and enabling employees to balance work and personal commitments. The second view is that such working arrangements create job instability, hinder organisational efforts and favour employers by controlling wages and working conditions. In summary, technological innovation has revolutionised work flexibility and promoted a management approach that favours organisations. (Maxwell et al., 2007).

Various flexible working patterns arise with technological advancements. Functional flexibility, for instance, enables employees to adjust to evolving technological conditions and perform jobs that require diverse skills. Employees with functional flexibility can undertake multiple responsibilities across varying job functions in the workplace. Organizations that operationalize functional flexibility can satisfy new needs and fill job openings without the need for new hires (Paulhus & Martin, 1988). Quantitative flexibility, distinct from functional flexibility, denotes an organization's ability to adjust its workforce in response to market conditions by increasing or decreasing the number of employees as necessary. While historically associated with low-skilled work, temporary employment is now prevalent in high-skilled job sectors due to changing market conditions driven by technological innovation. Contract work, subcontracting, and other forms of temporary employment are becoming increasingly common as organizations seek increased flexibility. Quantitative flexibility allows the employer substantial leeway in hiring and dismissing workers depending on market conditions (Heydarian-Forushani & Golshan, 2020).

Wage flexibility permits employers to adjust compensation up or down as necessary. Enterprise-level wage flexibility requires setting rates based on employees' skills, occupations, and external factors that do not influence their job functions. In this system, skilled workers may receive rewards, and during times of crisis such as economic downturns or business setbacks, wages may be reduced to establish a competitive edge in the market (Galí & Monacelli, 2016).

2. 3. New Ways of Working Generated by Technological Innovation

In the aftermath of the economic crisis of the 1970s, global unemployment was a major problem, prompting employers to look for cost-saving approaches to employment. As a result, governments occasionally supported flexible work arrangements in the early days in the hope of resolving unemployment. Additionally, advances in technology ushered in the emergence of new forms of work. Classical forms of employment may no longer suffice in light of the industry's transformation with new technologies. This has led organizations to adopt different forms of employment. The practice of enterprises subcontracting their activities to other companies is one of the primary reasons for the emergence of these new forms of employment today. Increasing global competition and technological innovation have created increasingly harsh market conditions (Eyck, 2003).

Part-time work is the most prevalent flexible working model based on technological innovation. Part-time work is defined as continuous and regular work that is less than the normal working time, and is seen as a serious solution to unemployment, as those who are unemployed often prefer part-time work to remaining jobless (Dunn, 2018). The advancement of technology after the 1970s altered the centralized structure of organizations and enabled employees to work independently. Teleworking, which emerged during this period, allows individuals to conduct work activities either in the main office or in locations outside the office where production takes place. Through remote communication technologies, employees can work without face-to-face interaction with colleagues. Teleworking has become more popular after the Covid-19 pandemic. It allows employees to have more freedom and boosts their creativity, while also reducing daily issues like traffic congestion and air pollution due to less commuting (Elbaz et al., 2022). Additionally, the organization benefits from time and cost savings. However, teleworking isolates employees from each other and hinders socialization. The blurring of boundaries between work and personal life can lead to loneliness and disconnection from both oneself and one's work. Moreover, transitioning to working from home may decrease productivity and result in a lack of discipline and motivation (Herrera et al., 2022).

One of the latest employment models driven by technological innovation is on-call work. The duration of work is entirely dependent on the employer. On-call work involves employees reporting to work after receiving a call from their employer, in line with a pre-existing employment agreement. It is impossible to work without getting the call, as it is a mandatory requirement for working under this model. The worker adapts fully to the requirements of their job, fulfilling longer hours of duty when demand is high and fewer hours when demand is low. This circumstance necessitates the employee to organize their entire life in tandem with the requirements of their job (Ferguson et al., 2016). The work-from-home model has been in use for years, but the pandemic has brought it to the forefront of attention. This model entails producing goods or providing services for an employer or intermediary from a location chosen by the worker, usually their own home, according to a contract, without the employer's or intermediary's supervision. In this employment model, the workplace must be outside the employer's premises and annexes. In this employment model, which places new technologies at its forefront, disadvantaged groups can more easily participate in working life (Haridas et al., 2021). Subcontracting is one employment model that is based on technological innovation. By

outsourcing some of the work that can be done within the organization, subcontracting saves time for the organization and ensures that the work is done by more specialized personnel. Organizations that are unable to invest in emerging technologies but still want to remain competitive in the market opt to outsource their activities to skilled personnel. This approach not only enhances organizational productivity, but also increases overall employment opportunities, making it a win-win solution (Kimura, 2002).

The rise of technological innovation has given way to a novel employment model known as the online platform model. In this digital employment model, the relationship between employers and employees differs from the traditional employer-employee relationship. Each job can establish multiple employer and employee relationships. The employee is mobile and can work in various locations, including their own office outside the employer's premises. Some platform workers have expertise in jobs that can be performed remotely from any part of the globe, such as text editing and translation, that is, location independent. Others, on the other hand, undertake platform jobs that require local and physical effort, including taxi driving and food delivery (Jesnes, 2019). The work platforms share several features, including flexibility in work hours, overtime, mandatory minimum wages, and the ability to work outside the traditional structures set by legislation and collective bargaining agreements that define legal obligations. It is widely recognized that digital work platforms, serving significant purposes for remote work and job fragmentation via task allocation, are a significant transformation in the landscape of global labor markets. Moreover, although digital platforms offer cost-effectiveness and competitive benefits to businesses, the robust employment relationship fostered by such platforms impedes employees from fully exercising their fundamental labor rights (Garud et al., 2022).

2. 4. Does Technological Innovation Lead to Work Alienation?

Alienation is the inability to fully assimilate into one's cultural, living, belief or environmental circumstances and has its roots in an ancient philosophical framework. The concept of alienation also explains the state of individuals who are surrounded by internal and external conditions that lead to their dissociation from society or the workplace. This dissociation occurs because they feel that their own creativity and activity is being left behind or even becoming dysfunctional (Schacht, 2015). After the Industrial Revolution, the migration from rural to urban areas and the resulting complex class structure had a significant impact on the formation of feelings of alienation. In addition, the emergence of a new capitalist order and technological advances due to globalisation have played a role. (Hearst, 1986).

According to Hegel, alienation can be seen as a means for self-improvement rather than a negative phenomenon. Hegel posits that moving away from one's current environment is essential for personal development (Kolb, 1986). Conversely, Marx regards alienation as an obstacle to societal progress. For Marx, the alienation process manifests in four stages: (1) alienation from labor, (2) alienation from product, (3) alienation from colleagues, and (4) alienation from oneself (Benedict, 2009). The lack of control over the product of one's labor causes alienation from work. Marx contends that alienation from labor is most prevalent in the working class. The lack of control over the product of one's labor causes alienation from work. Alternatively, alienation in work processes results from the absence of autonomy. Consequently, workers perform tasks out of compulsion rather than volition, leading to a sense of detachment from their work (Rosen, 1970). In this system, workers receive only material compensation for their labor. However, individuals who are unable to integrate their creativity, ideas, and thoughts into their work will fail to find meaning in it over time, and the work will become meaningless. Individuals who are disconnected from their labor and work activities lose connection to their inherent nature and ability to shape, alter, and enhance nature, setting human beings apart from

other living organisms (Musto, 2013). The nature at issue can encompass the surroundings, workplace, or social milieu, but individuals who surrender the possibility of improvement and change find themselves alienated from it. In the final stage, individuals can experience alienation from themselves in various forms, including separation from their work, profession, culture, and society. Those who become alienated from these factors will inevitably encounter a significant disconnect between their desired self and their actual self-identity (Sayers, 2003). All forms of alienation arose primarily during the transition to industrial society and have subsequently become widespread due to technological advancements and the introduction of new technologies.

Employee alienation from work occurs when the job requirements clash with the employee's individual nature, resulting in a lack of harmony. The implementation and formulation of work processes without involving the employee can result in the employee not achieving emotional fulfillment at work and suppressing their individuality, leading to inevitable workplace alienation (DiPietro & Pizam, 2008). It is noteworthy that personal characteristics of the individual determine the extent of alienation and its causes and consequences may vary. Apart from individual factors, alienation can also emerge from social, political, cultural, and economic factors. Consequently, this phenomenon has an impact not only on individuals but also on society. When someone experiences alienation, their social environment, including coworkers, family, and friends, is likely to reflect it (Al Hosani et al., 2020).

The rapid advancement of technology and widespread fears that its development will lead to increased unemployment have led to opposition against it throughout different periods. While this situation may negatively impact individuals' attitudes towards technology, innovative technological initiatives have transformed the way businesses operate rather than affecting unemployment. Employment has been maintained as workers shift to different fields and acquire new qualifications through technological tools, providing them with new job opportunities. It should be noted, however, that a minority may experience job alienation if they are unable to adapt to these changes (Adibifar, 2016). Job alienation refers to a psychological state of unawareness and disinterest of an employee towards their work caused by various factors related to the nature of the job or the workplace. The ability of technology to innovate work plays a significant role here (Mehta, 2022). As the job structure becomes more technology-oriented, employees tend to experience feelings of work alienation. This can lead employees to feel powerless over their work, rendering it meaningless, causing isolation from colleagues and work, and fostering negative attitudes towards their job. In summary, sectors where technology is highly ingrained pose a potential for employee alienation. This process is often referred to in literature as powerlessness, meaninglessness, rulelessness, alienation from society, and self-alienation (Seeman, 1959).

The dimension of work alienation, specifically powerlessness, stems from an emotional state where an individual perceives themselves as having no control over the production process or product, thus making it impossible to achieve desired results. The employee may feel defeated by technological advancements or that they have lost control over the work system. The belief that they lack the qualifications required by new technology determines this dimension. Individuals cannot control the new technologies present in their workplace. Consequently, they recognize their inability to attain desired outcomes and slip into a depressive state (R. N. Kanungo, 1979). Avoiding the required new qualifications in technology undermines an employee's authority in the workplace and may lead to exclusion from decision-making processes. Powerlessness encompasses the negative feelings of helplessness experienced by employees who do not achieve desired results at work. Such feelings demotivate employees and contribute to negative attitudes towards work. Employees who struggle to keep up with

technological innovations may experience negative emotions such as burnout, fatigue, and hopelessness. As a result, they may become disconnected from the production process and decision-making mechanisms, leading to work alienation (Schacht, 2015).

Workers seek coherence in their work environment, colleagues, and tasks, which enables them to appreciate their job and confidently prepare for the future. Employees who experience workplace alienation may lose their trust and feel a sense of profound meaninglessness. They may struggle to comprehend the organizational structure, including understanding the role and function of their own work, how it contributes to the larger process, and the relationships between other units and employees. This situation hinders employees from attributing meaning to their work. Furthermore, employees might experience a confusing meaning due to inadequate information about events. In the dimension of meaninglessness, employees find their work negligible, and it disconnects them from their coworkers. They exhibit an ambivalent attitude since they are unsure of what to believe or support. The sense of meaninglessness hinders employee integration with their environment and society. The presence of meaninglessness leads to increasing isolation from the organization (Espinoza Mogollon, 2021; Seeman, 1959).

New technologies that stem from technological innovation transform how workers interact with each other and their work, making them an integral part of a system that operates like a machine. This process, known as digital Taylorism, leads to employees gradually losing the sense of purpose in their lives and turning into mere machines that exist only to generate output. Living without emotions compels the employee to relinquish the meaning of their work (Peaucelle, 2000). Today, some employees face difficulty in understanding how their work directly benefits their organization or themselves, due to the intensity of workload and work-life balance supported by technology. Employees who perceive their work as meaningless may lose motivation, affecting their overall performance. Organizations that undergo technological innovation involve complex work and social patterns, emphasizing the need for clear communication and guidance. Meanwhile, an employee in a state of meaninglessness may struggle to find their place within the organization and thus be unable to effectively manage their network of relationships. This can result in the employee disengaging from important organizational matters, feeling unable to make sense of their surroundings (Adibifar, 2016).

In the phenomenon of work alienation, a normlessness phase exists where employees act as mavericks, adopting behaviors that serve their own interest by disregarding organization-established rules to achieve their goals. During this phase, employees neglect the warnings of managers and coworkers, and have no need to always pursue a specific objective to experience normlessness. Normlessness may also arise when an individual lacks a goal or when their personal norms conflict with those of the organization (Schwartz, 2012). In workplace settings, instances of disruptive behavior often occur when an employee's qualifications fall short of the expected potential, resulting in a violation of expectations. In a modernized organization utilizing new technologies, deregulation may arise when the current order is disrupted and competition amongst employees to attain the necessary qualifications for the technology intensifies. Consequently, while technological innovation modernizes the organization and raises its competitiveness, it simultaneously cultivates a culture of competition within the workforce. Employees who are unable to adapt to the competitive culture are at risk of rebelling against the established rules and ultimately becoming disengaged from both the organization and their work (Licht et al., 2007; Masur, 2021).

Organizations have their own values and goals to ensure productivity, efficiency, and order. Employees are expected to act in accordance with these goals. However, in the context of social alienation, the employee's own values and goals become more important than those of the organization. When faced with the challenge of fulfilling roles and responsibilities within the

organization, employees may experience dilemmas between conforming to organizational norms and remaining true to their own nature (Tidd & Bessant, 2020). The aforementioned paradoxical scenario, whether conscious or unconscious, can result in an individual's seclusion as he or she avoids interacting with colleagues in the workplace. Such individuals may develop an obsessive preoccupation that they are being excluded or unwelcomed by other employees. Employees who cannot align with the goals of the organization or who cannot match their own potential with the job requirements also struggle to communicate with their environment and participate in socialization opportunities within the organization. This results in subjective alienation from the organization, rather than a pervasive issue within the organizational structure. What is significant in the case of an alienated employee are the individual's precise evaluations and tendencies. The psychological state of the individual, rather than the organization's structure, is the defining factor leading to reduced communication with the work environment (Harvey, 2018).

During the ultimate stage of work alienation, self-alienation, the employee displays behaviors that conform to the expectations of others rather than exhibiting their true selves. The employee disregards their own capabilities and endeavors to achieve the objectives established by others. This circumstance results in the employee feeling disconnected from themselves. At this juncture, they prioritize the values of others and engage in actions aligned with those individuals' expectations, positioning them as the creators of their life. However, in doing so, they fail to recognize their own abilities. The individual who consistently prioritizes meeting the expectations of others eventually loses touch with their own desires. Neglecting their own potential causes mounting anxiety in employees, ultimately leading to self-alienation. The result is a disconnection from their true identity. Although the qualified employee who feels estranged from their own self possesses the necessary job requirements, they may struggle to effectively communicate with their surroundings due to their disconnection from their essence (Costas & Fleming, 2009). In present-day organizations, the employee's self-alienation is frequently associated with dependence on technology. The worker knowledgeable about technology and recent advancements may risk alienation from work by spending excessive time on social media, the internet, or digital games (Göker & Tekedere, 2022).

Alienation is a multifaceted concept related to factors including the work environment, organizational structure, colleagues, and individual desires, behaviors, and perceptions. Marx argued that under capitalism, workers were distanced from their work processes. Employees were instructed to specialize solely in their designated tasks, resulting in their disconnection from the whole product and limitation to their particular area (Musto, 2013). This narrow focus has led to dull, routine work, preventing workers from expanding their skills in the workplace and discovering new job-related knowledge. The rise in technological advancements has also resulted in various concerns and complications for workers, including increased reliance on machinery. Production is typically controlled by machines rather than workers in a mechanized organization (Brennen & Kreiss, 2016). As a result, workers may experience a decrease in self-confidence and self-esteem, leading to a loss of motivation to improve their skills and work performance, and eventual exclusion from the system. Over time, technological innovation can result in employee alienation from the workplace (Goffman, 2021).

There are multiple factors that contribute to job alienation. Initially, the focus is on the characteristics of the job itself, where the absence of autonomy, responsibility, social communication, and self-realization can lead to job alienation amongst employees. Additionally, job alienation can stem from an autocratic management style, division of labor due to organizational growth, increased management levels and responsibilities, and unmet expectations regarding career and professional advancement. Depending on various factors, employees may unconsciously develop a reluctance towards work, which can result in alienation

from their work. Furthermore, environmental factors such as economic, technological, and social structures can contribute to this phenomenon (Hesmondhalgh & Baker, 2013). Factors such as economic downturns, rising unemployment rates, inflation, high exchange rates, and interest rates invoke fear in employees, hindering them from displaying their fullest potential. Moreover, technological advancement and the associated loss of control and autonomy add up to the alienation that employees experience (Harvey, 2018; Stiglitz & Regmi, 2023). Again, cultural structure, injustices in role distribution within society, gender-related issues, and incompatible beliefs and attitudes with societal expectations are additional factors that contribute to job alienation. Working conditions, environment, and job requirements also play important roles as causes of job alienation. In workplaces where employees lack the ability to freely express their ideas and opinions, and where their daily routines are determined by others rather than themselves, they may feel powerless and gradually become disconnected from the organization. It is evident that alienation occurs as a result of specific circumstances, rather than being an inherent personal trait, and can be avoided through the development of appropriate measures and policies (Al Hosani et al., 2020; Mottaz, 1981).

Employees who experience job alienation tend to disengage from work processes and are less likely to participate in decision-making mechanisms. It is important to mitigate employee alienation to maintain a productive and positive work environment. Furthermore, employee alienation not only affects attitudes and behaviors within the work structure, but also reflects changes in general attitudes and behaviors. Job alienation negatively impacts work processes, ultimately decreasing the quality of an organization's products and services. This has repercussions for the individual, workplace, and society as a whole (R. Kanungo, 1982). It is a critical emotional state that can disturb organizational order and affect individual job performance. During this process, individuals may believe that they have no control over their own lives and fail to recognize their own potential and creativity. As a result, they may view themselves as mere objects rather than active participants in their own lives. Those who become objectified and disconnected from their work may experience reduced performance and exhibit negative behaviors at their job, which can ultimately harm both their colleagues and the organization. This situation could potentially result in significant financial losses for the organization. Furthermore, employees who feel alienated from their jobs may lack motivation to enhance their work or themselves, instead viewing their job as a burden (Amarat et al., 2019).

3. RESULTS

Due to the wide adoption of technology in various industries, people now rely heavily on it in their daily lives. As organizations look to stay competitive in a digital world, they must constantly update their structures. Technological innovation necessitates that organizations and employees enhance their skills and qualifications. Employees who fail to update their qualifications or renew their skills as required by new technologies may eventually become unable to work within the organization. The relationship between technology and alienation can be viewed positively or negatively. On one hand, technology leads to the development and advancement of human beings, while on the other hand, it can lead to the loss of human values and control. On one hand, technology leads to the development and advancement of human beings, while on the other hand, it can lead to the loss of human values and control. For individuals who are caught between opposing views on technology, the typical decision is to use technology to their own advantage. Nevertheless, although technological advancements make work life more productive, efficient, and organized, they are unable to prevent people from experiencing dissatisfaction and desensitization. Due to the uniformizing nature of technology, employees are restricted from expressing themselves within their organization and are required to adapt to the demands of machines.

As a result of the widespread use of machines, employees have become integrated into them. In machine-dominated work environments, employees are solely responsible for operating machines, causing them to lose their creative abilities and skillsets. The worker tasked with performing routine duties restricted to a specific step of the production process is isolated from colleagues and their roles. Modern technological advances in the workplace may exacerbate this detachment, leading to confusion and disengagement from both the job and the self.

4. DISCUSSION AND CONCLUSION

Technological innovation relies on numerous factors, including employee commitment, workplace environment, work nature, technology purpose, and use. Research indicates that technological advancement enhances job satisfaction, productivity, and creativity among employees. However, technological innovation can also result in job disconnection, workplace strain, and anxiety. Therefore, it is crucial to assess the impact of technological innovation on employee alienation from their work at both the individual and organizational levels.

To avoid technological innovation causing worker disengagement, consider these suggestions:

- View technology merely as a tool and apply it to simplify tasks.
- Avoid relying excessively on technology.
- Retain human values that technology cannot provide.
- Do not lose sight of the goal, significance, and relevance of work when utilizing technology.
- Technology can be used to motivate employees by recognizing the value of their work to both the individual and society.
- It is important to communicate effectively with colleagues and managers while utilizing technology.
- Social relationships should not be negatively impacted by technological use.
- Creating an environment of trust, respect, and cooperation is critical in the workplace.
- Additionally, employees should be encouraged to take time for themselves and rest when utilizing technology to prevent physical and mental fatigue.

Technological innovation has the potential to both distance employees from their work and enhance their job performance. However, it is crucial to use technology appropriately and find a balance between these outcomes. While this study evaluates the theoretical concept of technological innovation and job alienation, further research is necessary to investigate the interaction between these phenomena in practical settings. Further empirical research is recommended to study how technology affects the workforce and its potential to transform the organizational climate.

REFERENCES

- Adibifar, K. (2016). Technology and alienation in modern-day societies. *Int'l J. Soc. Sci. Stud.*, 4, 61.
- Al Hosani, Y., Jabeen, F., Paul, J., & Stachowicz-Stanusch, A. (2020). Antecedents of employee alienation and its impact on individual work performance during post-merger integration (PMI). *Journal of Organizational Change Management*, 33(6), 1085–1110.
- Allen, T. D., & Shockley, K. (2009). Flexible work arrangements: Help or hype. *Handbook of Families and Work: Interdisciplinary Perspectives*, 265–284.
- Amarat, M., Akbolat, M., Ünal, Ö., & Güneş Karakaya, B. (2019). The mediating role of work alienation in the effect of workplace loneliness on nurses' performance. *Journal of Nursing Management*, 27(3), 553–559.
- Avadikyan, A., Lhuillery, S., & Negassi, S. (2016). Technological innovation, organizational change, and product-related services. *M@N@Gement*, 4, 277–304.
- Azar, G., & Ciabuschi, F. (2017). Organizational innovation, technological innovation, and export performance: The effects of innovation radicalness and extensiveness. *International Business Review*, 26(2), 324–336.
- Belcher, A. (1996). The invention, innovation and diffusion of self-regulation in corporate governance. *N. Ir. Legal Q.*, 47, 322.
- Benedict, C. (2009). Processes of alienation: Marx, Orff and Kodaly. *British Journal of Music Education*, 26(2), 213–224.
- Brennen, J. S., & Kreiss, D. (2016). Digitalization. *The International Encyclopedia of Communication Theory and Philosophy*, 1–11.
- Costas, J., & Fleming, P. (2009). Beyond dis-identification: A discursive approach to self-alienation in contemporary organizations. *Human Relations*, 62(3), 353–378.
- DiPietro, R. B., & Pizam, A. (2008). Employee alienation in the quick service restaurant industry. *Journal of Hospitality & Tourism Research*, 32(1), 22–39.
- Drake, M. A. (1994). Technological innovation and organizational change. *Journal of Library Administration*, 19(3–4), 39–53.
- Dunn, M. (2018). Who chooses part-time work and why. *Monthly Lab. Rev.*, 141, 1.
- Elbaz, S., Richards, J. B., & Provost Savard, Y. (2022). Teleworking and work–life balance during the COVID-19 pandemic: A scoping review. *Canadian Psychology/Psychologie Canadienne*.
- Espinoza Mogollon, J. A. (2021). *The Need for Purpose: The Desire for Meaningful Direction as a Fundamental Human Motivation* [Doctoral Dissertation]. The University of Western Ontario.
- Eyck, K. van. (2003). Flexibilizing employment: An overview. ILO Working Papers, 993597573402676.
- Ferguson, S. A., Paterson, J. L., Hall, S. J., Jay, S. M., & Aisbett, B. (2016). On-call work: To sleep or not to sleep? It depends. *Chronobiology International*, 33(6), 678–684.
- Fichman, R. G. (2004). Going beyond the dominant paradigm for information technology innovation research: Emerging concepts and methods. *Journal of the Association for Information Systems*, 5(8), 1-15.
- Galí, J., & Monacelli, T. (2016). Understanding the gains from wage flexibility: The exchange rate connection. *American Economic Review*, 106(12), 3829–3868.

- Garud, R., Kumaraswamy, A., Roberts, A., & Xu, L. (2022). Liminal movement by digital platform-based sharing economy ventures: The case of Uber Technologies. *Strategic Management Journal*, 43(3), 447–475.
- Garud, R., Nayyar, P. R., & Shapira, Z. B. (1997). *Technological innovation: Oversights and foresights*. Cambridge University Press.
- Giurge, L. M., & Woolley, K. (2022). Working during non-standard work time undermines intrinsic motivation. *Organizational Behavior and Human Decision Processes*, 170, 104134.
- Goffman, E. (2021). *The presentation of self in everyday life*. Anchor.
- Göker, H., & Tekedere, H. (2022). Phubbing, alienation, digital game addiction, independent self-construal, and interdependent self-construal among high school students: A path analysis. *Behavioral Psychology*, 30(1), 157–181.
- Greenberg, E. S., & Grunberg, L. (1995). Work alienation and problem alcohol behavior. *Journal of Health and Social Behavior*, 83–102.
- Haridas, P., Rahul, P. R., & Subha, K. (2021). Impact of work from home model on the productivity of employees in the IT industry. *International Journal of Innovative Research in Technology*, 8(2), 662–670.
- Harvey, D. (2018). Universal alienation. *Journal for Cultural Research*, 22(2), 137–150.
- Hearst, L. E. (1986). Protective Identification, Alienation and Society. *Group Analysis*, 19(1), 79–81.
- Herrera, J., De las Heras-Rosas, C., Rodríguez-Fernández, M., & Ciruela-Lorenzo, A. M. (2022). Teleworking: The Link between Worker, Family and Company. *Systems*, 10(5), 134.
- Hesmondhalgh, D., & Baker, S. (2013). *Creative Labour: Media Work in Three Cultural Industries*. Routledge.
- Heydarian-Forushani, E., & Golshan, M. E. H. (2020). Quantitative flexibility assessment of a comprehensive set of demand response programs. *International Journal of Electrical Power & Energy Systems*, 116, 105562.
- Jesnes, K. (2019). Employment models of platform companies in Norway: A distinctive approach? *Nordic Journal of Working Life Studies*, 9(56), 53–73
- Jessop, B. (2005). Fordism and post-Fordism: A critical reformulation. In *Pathways to industrialization and regional development* (pp. 54–74). Routledge.
- Kanungo, R. (1982). *Work Alienation: An Integrative Approach*. Bloomsbury Publishing USA.
- Kanungo, R. N. (1979). The concepts of alienation and involvement revisited. *Psychological Bulletin*, 86(1), 119–132.
- Kimura, F. (2002). Subcontracting and the performance of small and medium firms in Japan. *Small Business Economics*, 18, 163–175.
- Kolb, D. (1986). *The critique of pure modernity: Hegel, Heidegger, and after*. University of Chicago Press.
- Kossek, E. E., Gettings, P., & Misra, K. (2021). The future of flexibility at work. *Harvard Business Review*, 28.
- Licht, A. N., Goldschmidt, C., & Schwartz, S. H. (2007). Culture rules: The foundations of the rule of law and other norms of governance. *Journal of Comparative Economics*, 35(4), 659–688.
- Masur, J. S. (2021). Moral Norms, Adaptive Preferences, and Hedonic Psychology. *Theoretical Inquiries in Law*, 22(2), 35–54.
- Maxwell, G., Rankine, L., Bell, S., & MacVicar, A. (2007). The incidence and impact of flexible working arrangements in smaller businesses. *Employee Relations*, 29(2), 138–161.

- Mehta, P. (2022). Work alienation as a mediator between work from home-related isolation, loss of task identity and job insecurity amid the COVID-19 pandemic. *International Journal of Workplace Health Management*, 15(3), 287–306.
- Moorhouse, N., tom Dieck, M.C., & Jung, T. (2017). Technological Innovations Transforming the Consumer Retail Experience: A Review of Literature. In T. Jung & M. Claudia tom Dieck (Eds.), *Augmented Reality and Virtual Reality - Empowering Human, Place and Business*, Springer, Forthcoming.
- Mottaz, C. J. (1981). Some Determinants of Work Alienation. *The Sociological Quarterly*, 22(4), 515–529.
- Musto, M. (2013). Revisiting Marx's concept of alienation. In *Marx for today* (pp. 92–116). Routledge.
- Paulhus, D. L., & Martin, C. L. (1988). Functional flexibility: A new conception of interpersonal flexibility. *Journal of Personality and Social Psychology*, 55(1), 88.
- Peaucelle, J.-L. (2000). From Taylorism to post-Taylorism: Simultaneously pursuing several management objectives. *Journal of Organizational Change Management*, 13(5), 452–467.
- Puertas Medina, RM.; Martí Selva, ML.; Guaita Martínez, JM. (2020). Innovation, lifestyle, policy and socioeconomic factors: An analysis of European quality of life. *Technological Forecasting and Social Change*. 160, 1-10. <https://doi.org/10.1016/j.techfore.2020.120209>
- Reilly, P. A. (2001). *Flexibility at work: Balancing the interests of employer and employee*. Gower Publishing, Ltd.
- Rosen, Z. (1970). The Influence of Bruno Bauer on Marx' Concept of Alienation. *Social Theory and Practice*, 1(2), 50–68.
- Sayers, S. (2003). Creative activity and alienation in Hegel and Marx. *Historical Materialism*, 11(1), 107–128.
- Schacht, R. (2015). *Alienation*. Psychology Press.
- Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1), 11–39.
- Seeman, M. (1959). On the meaning of alienation. *American Sociological Review*, 783–791.
- Shagvaliyeva, S., & Yazdanifard, R. (2014). Impact of flexible working hours on work-life balance. *American Journal of Industrial and Business Management*, 2014.
- Shifrin, N. V., & Michel, J. S. (2022). Flexible work arrangements and employee health: A meta-analytic review. *Work & Stress*, 36(1), 60–85.
- Stiglitz, J. E., & Regmi, I. (2023). The causes of and responses to today's inflation. *Industrial and Corporate Change*, 32(2), 336–385.
- Tidd, J., & Bessant, J. R. (2020). *Managing innovation: Integrating technological, market and organizational change*. John Wiley & Sons.