ISBN 978-989-9121-31-7
44th ISTANBUL International Conference on "Literature, Education, Humanities & Social Sciences" (LEHSS-23)
Istanbul (Turkiye) Nov. 23-24, 2023

The Potential Impacts of AI on the Vietnamese Labor Market

Van Ha Nguyen[1], Huong Giang Huynh[2], Mai Phuong Nguyen[2,] Nam Quoc Dang[3]

[1] Associate Professor. Ph.D., Dean of Business Administration,
Banking Academy of Vietnam, Vietnam
[2]Master's Student, Banking Azademy of Vietnam, Vietnam
[3] Student, ESSCA, France

***Abstract*:** *Artificial Intelligence (AI) is set to transform the labor market, with the potential to revolutionize industries and create new job opportunities. However, the rise of AI also threatens to disrupt traditional roles and displace workers, particularly those in low-skilled, routine jobs. In this article, we explore the potential impacts of AI on the labor market, including the jobs that are most at risk, the skills that will be in demand, and the policy implications for governments and businesses. Vietnam is a developing country, with a large labor market and abundant human resources. Therefore, Artificial Intelligence is posing many challenges as well as opportunities for this labor market. In this journal, we draw on expert quotes and studies to highlight the risks and opportunities of AI, focusing on the Vietnamese Labor market and offer recommendations for how to ensure that the benefits of AI are shared widely and equitably. Ultimately, the choices we make as a society will determine whether AI leads to greater prosperity and shared benefits, or whether it exacerbates existing inequalities and creates new forms of exclusion.*

Keywords: *Artificial Intelligence, Labor, Labor Market*

1. Introduction:

Artificial Intelligence (AI) is reshaping the labor market, drawing attention from economists and policymakers. AI offers the promise of industry transformation and new job opportunities, but it also poses a threat to traditional roles. One concern is the potential for automation to replace humans in routine tasks, affecting fields like manufacturing, transportation, and customer service. However, jobs requiring creativity, critical thinking, and interpersonal skills are less vulnerable. In fact, AI could create jobs in areas such as healthcare and education. Another issue is the risk of widening inequality, as low-skilled workers face displacement while the highly educated benefit. In summary, AI's labor market impact is multifaceted, with both risks and opportunities. Understanding these dynamics and taking proactive steps is essential to ensure a balanced and inclusive AI-driven future.

2. Labor and Labor Market, the definition:

Labor, in the economic context, refers to the effort expended by humans to produce goods or deliver services. This broad definition encompasses all types of work, from manual to intellectual, conducted either for personal sustenance or for remuneration (Paul II, 1981). The value of labor is a crucial aspect of the economy, as it contributes directly to the creation of wealth and shapes economic development trajectories.

The labor market, on the other hand, is an abstract concept representing the space where workers (labor suppliers) and employers (labor demanders) interact (Kenton, 2023). It is the marketplace in which the quantity of labor provided matches the quantity of labor desired, thereby determining the price of labor, usually referred to as wages.

Gradually, the introduction of artificial intelligence (AI) has led to transformative changes in the labor market. AI's potential to automate tasks, augment human capabilities, and generate new types of jobs has profound

implications for the nature and structure of work. While it might lead to job displacement in certain sectors due to automation, it could also create new roles that require unique skill sets.

3. The Growth of Labor Market

The labor market has seen significant changes over the years. In the past, manual labor dominated, with physical jobs being the norm. However, technology has gradually replaced many of these physical jobs. For example, today's machines can complete tasks that once took days or even weeks in just a few hours.

Today's labor market demands specialized skills, innovation, and adaptability. Demand for low-skilled jobs has decreased while high-skilled jobs are in demand, leading to a growing income gap. However, one constant is the irreplaceable human factor. Modern devices and technology are created and controlled by humans. Machines can only perform pre-programmed tasks and lack the ability to adapt to unforeseen situations. Humans, with their logical thinking and problem-solving skills, remain essential for sustainable and long-term development.

4. Artificial Intelligence, the aspect that Change the Game:

Before getting into the impact of Artificial Intelligence (or AI) on the labor market, understanding the definition of *Artificial Intelligence* is important. First of all, *What is Intelligence?* The term "intelligence" refers to the ability to perform actions related to the activity of the brain, such as abstraction, logic, understanding, self-awareness, learning, emotional knowledge, reasoning, planning, creativity, critical thinking, and problem-solving. More generally, it can be described as the ability to perceive or infer information, and to retain it as knowledge to be applied towards adaptive behaviors within an environment or context.

Some researchers have pointed out the road map of AI's evolution. Based on the ability of AI, there are some definitions that researchers have shown to clarify where AI is: *Narrow AI* (or *Artificial Narrow Intelligence*, also known as Weak AI, abbreviated as ANI): are AIs that are capable of performing a certain task. These AIs are currently still under human control, that is, they are still performing specific tasks set by humans, do not have depth perception and are not yet capable of multitasking as a human. *General AI* (or *Artificial General Intelligence*, also known as Strong AI, abbreviated as AGI): are AIs that are capable of performing many certain tasks at the same time (like humans). In addition, when the AI has reached this "realm", the AI begins to have an awareness of what it is doing, as well as begins to behave and behave like humans. In general, to this extent, AI is really "smart".

5. Literature Review

The impact of modern technology in general, and AI in specific, on various aspects of job outcomes was emphasized in the STARA model proposed. STARA stands for Science, Technology, Automation, Robotics, and Artificial Intelligence. According to their model, there are three main aspects that can affect effective job outcomes: organizational commitment, career satisfaction, and turnover intentions. AI awareness among laborers and workers can be negatively associated with these three aspects. In effect, it becomes harder for the employee to feel like they are 'part of the family' (Meyer, Allen, & Smith, McCammon, 1993) if management is exploring ways to replace workers with AI. It has also been found that commitment to one's career can be negatively related to job withdrawal intentions (Aryee & Tan, 1992). Based on the various findings in the career-planning literature, we suggest AI awareness will be detrimental to job outcomes and posit the following.

Hypothesis 1: *AI awareness will be negatively associated with job outcomes*

AI can create conflicts among the workforce in terms of their perception. According to Broady et al. (2010), it is increasingly important for older individuals to accept and utilize emerging technologies. They tend to use digital technology at a lower rate compared to younger individuals. Generally, older adults have lower capabilities and slower progress in achieving their goals when using digital technology (Johnson, 2022). On the other hand, younger individuals tend to use a greater variety of technologies compared to older adults.

Young individuals are always eager to incorporate AI into their future careers. According to a recent survey conducted by market research company Ipsos on AI, despite the increasing concerns surrounding artificial intelligence, nearly 40% of the young workforce remains enthusiastic about utilizing the capabilities of AI in their roles. Furthermore, 53% even believe that it can have a positive long-term impact on the workplace. Young workers are digital natives who have grown up using constantly evolving technologies such as smartphones and social media applications, and they are familiar with online interactions (Peralta, 2023). However, being

newcomers to the workforce, they have less time to develop deep skills compared to older or more experienced colleagues.

The aforementioned factors highlight the similarities and differences in the trends of older and younger individuals regarding Artificial Intelligence technology.

Consequently, it leads to the following hypotheses:

Hypothesis 2: *The awareness of AI among young employees will be significantly higher compared to older employees and Age will diminish the impact of AI awareness on outcomes, with younger employees experiencing more adverse effects from AI compared to older employees.*

We anticipate negative effects of AI on wages for several reasons. First, there's concern, as noted by Wajcman (2017), regarding potential job displacement. As AI systems become more sophisticated, they can replace human workers, particularly in industries reliant on repetitive tasks. This displacement can lead to job losses and stagnant wages for those replaced. Additionally, AI's benefits aren't evenly distributed among workers. Highly skilled AI specialists may see wage increases, while low-skilled workers in precarious roles might face wage declines, exemplified in industries like manufacturing and customer service (Acemoglu & Restrepo, 2018).

AI could also exacerbate wage inequality by favoring certain industries and corporations with greater resources to adopt and leverage AI. Large corporations and tech giants are better positioned to harness AI's advantages, potentially concentrating economic benefits in their hands. This centralization of power could marginalize smaller enterprises and workers in other sectors. As Badet (2021) highlights, AI's ability to automate routine tasks may reduce overall labor demand, leading to productivity gains. However, it might also result in lower wages due to decreased labor needs. AI's role in enhancing decision-making could boost enterprise profitability, but this might not necessarily translate into higher wages for workers across the board (Limna, 2022).

Hypothesis 3: *Wages will be negatively impacted by the implementation of AI*

6. Results

In all statements, we offer 2 hypotheses: Hypothesis H0: people evaluate the statement in a neutral way, there is no big difference in opinions compared to level 3 (neutral)

Hypothesis H1: *there is a significant difference between opinions compared to level 3 (neutral)*

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Workshops/sharing sessions about AI	240	2.90	1.199	.077
Knowledge and experience in using AI to serve work	240	3.13	1.228	.079
AI - a powerful and effective assistant for work	240	3.77	1.110	.072
Work supported by AI is more interesting than other jobs	240	3.78	1.082	.070
AI creates more jobs than it will replace in the future	240	3.37	1.214	.078

One-Sample Test

	Test Value = 3					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Workshops/sharing sessions about AI	-1.292	239	.198	-.100	-.25	.05
Knowledge and experience in using AI to serve work	1.577	239	.116	.125	-.03	.28
AI - a powerful and effective assistant for work	10.760	239	.000	.771	.63	.91
Work supported by AI is more interesting than other jobs	11.095	239	.000	.775	.64	.91
AI creates more jobs than it will replace in the future	4.734	239	.000	.371	.22	.53

Figure 1

After implementing the survey and analyzing the data that we accumulated from those people who participated in the survey, our research team is going to exhibit some outstanding results. In hypothesis 1, our research team made 5 statements about the possibility that AI could have an impact on job outcomes.

For the first two statements “The company organizes workshops/sharing sessions about AI.” ($p = 0.198 > 0.05$) and “The company requires employees to have knowledge and experience in using AI to serve their work.” ($p = 0.116 > 0.05$), all results display that the opinion of the respondents do not have a big difference compared to the neutral level. The first statement has the mean score 2.9 and 3.13 for the second one.

Meanwhile for the last three statements “AI will be a powerful and effective assistant for your current work.”, “Work supported by AI is more interesting than other jobs.” and “AI creates more jobs than it will replace in the future.”. Our analysis shows that those statements with $p = 0 < 0.05$ demonstrate this result is statistically significant, and also show the difference between opinions compared to level 3.

In summary, the majority of the analysis results show that the respondents have higher than neutral opinions. The results show that AI is positively related to job outcomes, supporting hypothesis 1.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
AI field attracts young people	240	4.07	1.039	.067
People under 30 adapt to AI	240	4.08	1.024	.066
Job opportunities for younger people	240	3.77	1.136	.073
People over 30 can still get work done without AI	240	3.29	1.142	.074

One-Sample Test

	Test Value = 3					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AI field attracts young people	15.973	239	.000	1.071	.94	1.20
People under 30 adapt to AI	16.262	239	.000	1.075	.94	1.21
Job opportunities for younger people	10.513	239	.000	.771	.63	.92
People over 30 can still get work done without AI	3.957	239	.000	.292	.15	.44

Figure 2

Hypothesis 2 explored the potential differences in AI perception between younger and older employees. The data was segmented into two age groups: "People under 30” and "People over 30”. Three variables were measured for each group: “AI field attracts young people”, “Adaptation to AI” and “Job opportunities”, with mean, standard deviation, and standard error calculations.

One-sample t-tests were conducted for each variable against a test value of 3, which represents a neutral outcome. This determined whether the mean of the variable significantly differed from the test value. The analysis revealed the following results: “AI field attracts young people” and “People under 30 adapt to AI” both had significantly higher means than the test value (3), with t-test values of 15.973 and 16.262, respectively. This indicates that both younger age groups perceive a more positive impact of AI in these aspects.

“Job opportunities for younger people” also exhibited a significantly higher mean (10.513) than the test value, suggesting that younger individuals perceive more job opportunities due to AI. “People over 30 can still get work done without AI” had a mean (3.29) lower than the test value, with a t-test value of 3.957. This suggests that older individuals perceive a reduced ability to complete tasks without AI.

In summary, the data and analysis support the hypothesis that younger employees have a more positive perception of AI compared to their older counterparts. Younger employees find AI attractive in their field of study, adapt better and see more job opportunities due to AI. In contrast, older employees tend to perceive AI as less essential for completing tasks

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
AI causes wage inequality	240	3.53	1.105	.071
AI creates high-paying jobs	240	3.76	1.010	.065
Increased productivity thanks to AI leads to high salaries	240	3.45	.963	.062

One-Sample Test

	Test Value = 3					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AI causes wage inequality	7.360	239	.000	.525	.38	.67
AI creates high-paying jobs	11.627	239	.000	.758	.63	.89
Increased productivity thanks to AI leads to high salaries	7.309	239	.000	.454	.33	.58

Figure 3

Variables were assessed using one-sample t-tests against a test value of 3, representing neutrality, to determine if the mean significantly differed from this value. The analysis yielded the following results: "AI causes wage inequality" had a mean (3.53) higher than the test value, with a t-test value of 7.360 and a p-value of 0.000. This indicates strong evidence that the perception of AI causing wage inequality differs significantly from neutrality.

"AI creates high-paying jobs" had a mean (3.76) higher than the test value, with a t-test value of 11.627 and a p-value of 0.000. This suggests strong evidence that the perception of AI creating high-paying jobs differs significantly from neutrality.

"Increased productivity thanks to AI leads to high salaries" had a mean (3.45) higher than the test value, with a t-test value of 7.309 and a p-value of 0.000. This provides strong evidence that the perception of increased productivity from AI leading to higher wages differs significantly from neutrality.

In summary, the results do not support the hypothesis that AI implementation will negatively impact wages. Instead, respondents generally perceive positive associations between AI and wages, including the creation of high-paying jobs and increased productivity leading to higher wages.

7. Discussion

In our research conducted in Vietnam, our primary focus has been to comprehend the impact of Artificial Intelligence (AI) on the labor market. This exploration encompassed five central hypotheses, each shedding light on different facets of this relationship: job outcomes, well-being outcomes, age moderation effects, the media's influence on workers' attitudes toward AI, and the influences of AI on wages.

Regarding job performance, the consensus among respondents is that AI has a positive effect, with an average score of 3.39 out of 5. AI is perceived as an efficient assistant that equips employees with knowledge, ultimately enhancing their productivity in the workplace. In terms of age and job opportunities, respondents generally believe that individuals under 30 possess more AI-related career prospects. This perspective is rooted in the idea that younger individuals, such as Generation Z, have grown up with the internet and experienced the rapid progression of artificial intelligence. As a result, they are viewed as more adaptable and poised for AI-related employment opportunities. Simultaneously, AI has introduced wage disparities while creating higher-paying jobs, reflecting a complex influence on wages.

In summary, our research suggests that AI's impact on the labor market in Vietnam is, for the most part, moderate. This may be attributed to the fact that AI is still a relatively new concept for many workers in the country. As a result, workers may not yet possess sufficient exposure to AI to make an accurate assessment of its full impact on the labor market. It can be inferred that the ramifications of AI on the labor market in Vietnam are still unfolding and evolving.

8. Implications

This ongoing study carries significant implications for Vietnam's job market. It underscores the need for current and prospective employees to understand AI's transformative potential within their fields. They should be aware of how AI may reshape industries and be prepared to adapt.

The impact of AI on jobs remains uncertain, as historical precedent shows mixed outcomes during industrial revolutions. AI can both replace and create jobs, potentially eliminating repetitive roles while revitalizing manufacturing by reducing labor costs. This impending change presents opportunities for personal growth and self-discovery. Predicting the future in this dynamic landscape is challenging, and AI's impact on employment is just one facet of this multifaceted scenario.

9. Limitations and future research

While this study has shed light on the implications of AI in the Vietnamese job market, it is not without its limitations. First, the analysis primarily relies on existing data and trends up to the present day, which may not fully capture the rapidly evolving nature of AI technology. Secondly, the study focuses on the general impact of AI without delving into specific sectors or regions within Vietnam, leaving room for more granular investigations. Future research in this area could involve a deeper exploration of AI's effects on particular industries and regions, as well as the development of predictive models to forecast its influence more accurately. Additionally, qualitative research methods, such as interviews and surveys with industry professionals and policymakers, could provide valuable insights into the nuanced challenges and opportunities posed by AI in the Vietnamese job market. Finally, as AI continues to advance, ongoing research is essential to monitor its evolving impact and ensure that policies and strategies remain relevant in the face of this technological disruption.

10. Conclusion

In conclusion, this study has illuminated the multifaceted implications of artificial intelligence on the job market in Vietnam. It underscores the necessity for current employees to proactively assess and adapt to the changing landscape, given the potential for AI to both create and displace jobs. Despite the limitations of this study, which primarily relies on historical data and trends, it paves the way for future research to delve deeper into specific industries and regions, employing more advanced predictive models and qualitative research methods. As AI technology continues to advance, it remains a dynamic and transformative force in the job market, with the potential to reshape the employment landscape in ways we are yet to fully comprehend. Vigilant monitoring, ongoing research, and adaptive policies will be essential to navigate this evolving terrain, ensuring a prosperous and resilient job market for the workforce of Vietnam in the years to come.

11. Acknowledgment

This paper has been helped by two Master’s Students namely Huong Giang Huynh and Mai Phuong Nguyen.

12. References

[1] Acemoglu, D., & Restrepo, P. (2018). *Artificial Intelligence, automation and work*. National Bureau Of Economic Research. https://www.nber.org/system/files/working_papers/w24196/w24196.pdf https://doi.org/10.3386/w24196

[2] Broady, T., Chan, A., & Caputi, P. (2010, April). Comparison of older and younger adults’ attitudes towards and abilities with computers: Implications for training and learning. https://bera-journals.onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8535.2008.00914.x https://doi.org/10.1111/j.1467-8535.2008.00914.x

[3] Badet, J. (2021, August 9). *AI, automation and New Jobs*. SCIRP. https://www.scirp.org/journal/paperinformation.aspx?paperid=112070

[4] Johnson, J. A. (2022, November 24). *Myths about digital technology and older adults*. Nature News. https://www.nature.com/articles/s43587-022-00319-4

[5] Limna, P. (2022). Artificial Intelligence (AI) in the hospitality industry: A review article. *Int. J. Comput. Sci. Res*, *6*, 1-12.
[6] Luísa, N., & Schiff, D. S. (2021, September 10). *The impact of automation and artificial intelligence on worker well-being*. Technology in Society. https://www.sciencedirect.com/science/article/pii/S0160791X21001548
[7] Peralta, P. (2023, June 5). *Employers may be unsure about ai, but gen Z isn't. can they meet in the middle?* Employee Benefit News. https://www.benefitnews.com/news/gen-z-want-ai-at-work-according-to-ringcentral-survey
https://doi.org/10.1111/1468-4446.12239
[8] Wajcman, J. (2017). *Automation: Is it really different this time?*. Wiley. https://onlinelibrary.wiley.com/doi/abs/10.1111/1468-4446.12239
[9] Yarlagadda, R. T. (2017, March). *AI automation and it's future in the UnitedStates*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3798873