

**Discuss the evidence on the effect of cognitive and non-cognitive skills on labour market outcomes.**

**I. Introduction**

The labour market refers to the marketplace where workers find employment and employers find labour. It is a dynamic system where individuals offer their skills and services in exchange for wages or salaries. Cognitive skills, which involve mental processes such as thinking, reasoning, and problem-solving, play a crucial role in determining job performance and success in the labour market. On the other hand, non-cognitive skills, like social skills, motivation, and emotional intelligence, also significantly impact labour market outcomes by influencing how individuals interact with others, handle challenges, and demonstrate resilience. Economists and policymakers have been increasingly interested in the growing importance of cognitive and non-cognitive skills in shaping labour market outcomes (Heckman et al., 2006; Deming, 2017). Cognitive skills, such as intelligence and academic achievement, have long been recognised as critical determinants of an individual's labour market success, as they are closely linked to worker productivity and the ability to perform complex tasks (Heckman et al., 2006).

However, in recent years, a growing body of evidence has highlighted the significant impact of non-cognitive skills, including traits like motivation, perseverance, social skills, and emotional intelligence, on a wide range of labour market outcomes (Deming, 2017; Noray, 2020). This has led to a greater appreciation of the multidimensional nature of human capital and the need for a more comprehensive understanding of the factors that contribute to an individual's labour market success.

In this essay, I will review the empirical evidence on the relative importance of cognitive and non-cognitive skills for various labour market outcomes, such as wages, employment, and career advancement. I aim to give a thorough review of the present state of knowledge on this topic by drawing on significant research in the literature, such as the ground-breaking work of Heckman et al. (2006) and the more recent contributions of Deming (2017) and Noray (2020). The essay will also discuss the limitations and potential of the existing research.

**II. Cognitive Skills and Labour Market Outcomes**

The empirical evidence has consistently demonstrated the significant impact of cognitive skills on various labour market outcomes. A large body of research has shown that higher levels of cognitive abilities, as measured by IQ tests or standardised academic assessments, are associated with higher wages and earnings (Heckman et al., 2006; Anger & Heineck, 2010). For example, Anger and Heineck (2010) found a positive relationship between cognitive abilities, as measured by word fluency and speed test scores, and the probability of employment for both men and women in Germany. Similarly, Heckman et al. (2006) established that cognitive and non-cognitive skills are crucial in explaining a wide range of labour market and behavioural outcomes. The authors argued that cognitive abilities are particularly relevant in determining individuals' earnings, as they are closely linked to worker productivity and the ability to perform complex tasks (Heckman et al., 2006).

The literature also suggests that cognitive skills' effects on labour market success may be amplified by their interaction with educational attainment. Anger and Heineck (2010) found a positive joint impact of education and cognitive abilities on the probability of employment, indicating that the combination of formal training and mental skills is essential for labour market outcomes. Overall, the evidence highlights the crucial role of cognitive skills in shaping various aspects of labour market performance (Heckman et al., 2006; Anger & Heineck, 2010).

### **III. Non-Cognitive Skills and Labour Market Outcomes**

The growing body of empirical evidence highlights the significant impact of non-cognitive skills on various labour market outcomes. (Noray, 2020; Heckman et al., 2006). Studies have found that multiple non-cognitive skills, such as motivation, perseverance, social skills, and emotional intelligence, are associated with higher wages, better employment prospects, and tremendous career success (Noray, 2020; Deming, 2017). Noray (2020) reviewed the literature on the labour market value of non-cognitive skills and concluded that improving these skills can positively impact wages and employment. Similarly, Heckman et al. (2006) demonstrated that non-cognitive and cognitive skills are crucial in explaining various labour market and behavioural outcomes. The authors argued that non-cognitive skills are particularly relevant as they are closely linked to worker productivity and the ability to perform complex, interactive tasks (Heckman et al., 2006).

Moreover, the evidence suggests that the importance of non-cognitive skills relative to cognitive skills has risen, especially in the post-2000 period (Deming, 2017). Given the likelihood that this tendency will continue, the changing nature of work has become more collaborative and interactive, increasing the demand for social and interpersonal skills (Deming, 2017). Overall, the accumulated research highlights the significant impact of non-cognitive skills on various aspects of labour market success (Norway, 2020; Heckman et al., 2006; Deming, 2017).

The existing literature highlights cognitive and non-cognitive skills' complex and interrelated nature in shaping labour market outcomes (Heckman et al., 2006; Deming, 2017). Rather than viewing these skill sets as distinct and independent, research suggests that they often work in tandem to influence various aspects of an individual's career success (Heckman & Kautz, 2012). For instance, Heckman et al. (2006) emphasised that only a tiny portion of human action is thoughtless, underscoring the difficulty separating the independent effects of cognitive and non-cognitive skills. The authors argued that traits like perseverance, self-discipline, and impulse control, typically considered non-cognitive, are closely intertwined with cognitive abilities (Heckman et al., 2006).

Similarly, Deming (2017) found that the need for solid cognitive abilities often complements the rising demand for social skills in the labour market, as many high-paying jobs require a combination of interpersonal and analytical skills. This suggests that the most successful individuals likely possess well-rounded mental and non-cognitive capabilities (Deming, 2017).

Overall, the evidence indicates that a holistic approach, which recognises the interplay between these skill sets, is essential for understanding and promoting labour market success (Heckman & Kautz, 2012; Deming, 2017). Therefore, efforts to enhance educational and

workforce development should consider the development of cognitive and non-cognitive skills (Heckman et al., 2006).

#### **IV. Casual evidence and limitation**

The literature on the relationship between cognitive and non-cognitive skills and labour market outcomes faces some crucial limitations. While numerous studies have established correlations between these skills and various labour market outcomes, establishing causal evidence has proven challenging (Heckman et al., 2006; Deming, 2017).

One fundamental limitation is the difficulty separating the independent effects of cognitive and non-cognitive skills, which are often closely interrelated (Heckman et al., 2006).

Additionally, more successful interventions that effectively enhance non-cognitive skills in developed countries need to be developed, making it harder to assess their causal impact (Deming, 2017).

Furthermore, most of the existing evidence is based on observational data, which can be subject to omitted variable bias and other endogeneity issues (Anger & Heineck, 2010). Using natural experiments or randomised controlled trials could help establish more robust causal relationships, but such studies still need to be expanded in this area of research (Heckman et al., 2006).

Despite these limitations, the accumulated evidence strongly suggests that cognitive and non-cognitive skills play a crucial role in shaping labour market outcomes. However, more research is needed to understand how these skills influence employment, earnings, and other measures of success in the labour market (Deming, 2017).

#### **V. Conclusion**

The evidence reviewed in this essay highlights the multifaceted and interrelated nature of cognitive and non-cognitive skills in shaping labour market outcomes. While cognitive skills, such as intelligence and academic achievement, have long been recognised as critical determinants of an individual's success, the growing body of research has underscored the significant impact of non-cognitive skills on a wide range of labour market outcomes. Studies have shown that motivation, perseverance, social skills, and emotional intelligence can substantially influence wages, employment, and career advancement (Noray, 2020; Deming, 2017). The importance of non-cognitive skills relative to cognitive skills has been rising, particularly in the post-2000 period, as work has become more collaborative and interactive, increasing the demand for interpersonal and social skills (Deming, 2017).

Furthermore, the literature suggests that cognitive and non-cognitive skills often work in tandem to influence an individual's labour market success. Rather than viewing these skill sets as distinct and independent, research indicates they are closely intertwined, with traits like perseverance and self-discipline closely linked to cognitive abilities (Heckman et al., 2006; Heckman & Kautz, 2012).

While the existing evidence has established strong correlations between cognitive and non-cognitive skills and various labour market outcomes, the challenge of establishing causal relationships remains. Limitations such as the difficulty separating the independent effects of these skills and the need for successful non-cognitive skills interventions in developed

countries have hindered the ability to draw definitive conclusions (Heckman et al., 2006; Deming, 2017).

Nevertheless, the accumulated evidence strongly suggests that a holistic approach, which recognises the interplay between cognitive and non-cognitive skills, is essential for understanding and promoting labour market success. Thus, to better prepare people for the changing needs of the labour market, efforts to improve workforce development and education should consider both skill sets (Heckman et al., 2006; Deming, 2017).

## **References**

- Kadeem Noray, (2020) “The Labor Market Value of Non-Cognitive Skills” 1-36
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. *Journal of Labor Economics*.
- Deming, D. J. (2017). “The growing importance of social skills in the labour market” *The Quarterly Journal of Economics*, 132(4), 1593-1640.
- Silke Anger & Guido Heineck (2010) Cognitive abilities and earnings – first evidence for Germany, *Applied Economics Letters*, 17:7, 699-702,
- Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics*, 19(4), 451-464.