

Exploring Comparative Economic Theories: Human Capital Formation Theory vs Screening Theory

Joy Cooper
Northeast Texas Community College

Larry Davis
Texas A&M University-Texarkana

This paper explores two economic theories used to determine how education affects productivity in the labor market. It will define, compare, contrast and illuminate both human capital theory and screening theory as they relate to education and human resource development.

INTRODUCTION

Every nation must address the economic questions of what products it will produce, for whom to produce, and how to produce (Schiller, 2011). Land, labor, capital, and entrepreneurship are the factors of production that support a nation's economic foundation, but since resources are scarce, choices regarding production decisions are necessary. When individuals, governments, and organizations make those choices, they experience opportunity costs. Economics revolves around the choices countries, governments, organizations, and individuals make in responding to the dilemma of scarcity. Economies form the human activities that support the production, distribution, exchange, and consumption of goods and services (Mankiw, 2003).

Human resources are integral factors of production and the process of developing human resources utilized to shape and improve organizational performance is known as human resource development (HRD) (DeSimone, 2002). Economics plays an important role in shaping HRD for the purposes of expanding individual and organizational performance, increasing production efficiency, creating desired returns, and other economic facets. Human capital theory (HCT) and screening theory are two theories that are relevant to emerging demographic trends, particularly as they relate to Texas, that impact training and development. The history of economic thought and evolution of the two economic theories will follow and include discussion of their similarities and differences. Additionally, the vital roles that both theories play and their implications for the labor force that are important to HRD research and practice will be presented.

THEORY EVALUATION

Human Capital Theory

Human capital theory (HCT) emerged from the neoclassical school of economic thought (Becker, 1962) and is considered foundational for HRD theory. The 2001 Nobel Prize in economics recipients,

Michael Spence and Joseph Stiglitz, offered screening theory as another explanation to labor acquisition and the filtering processes conducted by organizations. Economists have studied the relationship between education and income for years and HCT emerged from the correlation between education and income. The theory of human capital points out that education increases individual productivity resulting in higher earnings (Becker, 1975; Mincer, 1974; Schultz, 1961). Education comes with an opportunity cost of forgone current wages while investing in it. The theory contends that individuals consider the value of future earning as greater than the opportunity costs of current forgone wages (Rohling, (1986). This view considers human capital as a resource similar to physical capital where expected future benefits exceed the present cost of education (Wang & Sun, 2009). Accordingly, education may be considered as an investment that should be pursued until the point at which marginal productivity gain and marginal opportunity costs are in equilibrium (Brown & Sessions, (2004).

Capital serves as a fundamental investment with expected returns (Schiller, 2011). In terms of economics, capital is considered a final good used to produce other goods and services and is a type of asset that allows a business to prosper and achieve its goals. Human capital is the sum total of an individual's knowledge and skills that the company can use to further its goals (Wang & Sun, 2009). Human capital theory (Becker, 1964; Johnson, 1960) perceives capital as an investment with potential earnings. According to Quiggin (1999), the human capital model holds important influence on other social sciences such as sociology and demography. The work of Becker (1964) suggests that human capital is developed through the education process and is a mixture of human characteristics, performance possibilities, ability to learn and develop, motivation to train others, and shared knowledge and expertise. HRD claims to develop human capital in organizational environments (Swanson, 2008). Human knowledge is an asset to an organization much like a piece of equipment. The impact of education on production and earnings is documented through wage differentials among different levels of education acquired by human resources. According to Becker (1993), it is appropriate for organizations to compare human resources to human capital because adding value to the company is an underlying assumption for companies to invest in employees and to enrich employees with additional training and development.

Screening Theory

Screening theory provides an alternative with regard to education, production and wages. As hypothesized by Spence (1973), Arrow (1973), and Stiglitz (1975), it proclaimed education to be an essential screen or signal to productivity. Higher education is viewed as an endorsement to perform higher-level jobs yielding higher wages (Brown & Sessions, 2004). Proponents of the screening theory maintain that it provides the optional explanation that links organizational behaviors with the labor market (Sobel, 1982).

Screening theory addresses the selection needs of organizations in order to make ideal hiring decisions that yield desired production requirements. Thus, the theory considers the function that education plays in communicating necessary information to organizations and assumes that employers first establish the required education levels that classify job applicants (Riley, 2001; Spence, 2002). Education acts as a screening mechanism that signals an individual's capabilities (Swanson, 2008). Completion of education and training programs are often requirements or prerequisites to promotions and other personnel decisions (Torraco, 2001). Degrees and diplomas indicate employee production potential. Organizations can obtain education information in a low-cost manner to use in hiring decisions (Dobbs et al., 2008).

Theory Comparisons and Contrasts

Common to both Human Capital Theory and Screening Theory are that education, training, and development add value to individuals (Dobbs et al., 2008) and that increased production and future earnings outweigh increased production costs. Employees with higher levels of education have certain characteristics that include favorable attendance records and less likelihood of engaging in unhealthy habits such as smoking, excessive drinking, and illicit drug use (Brown & Sessions, 2004). These traits are attractive to firms that may factor into hiring decisions that employers subconsciously attribute to

education. Employees may follow the same school of thought when selecting a degree or education plan supported by HCT. Graduates may use acquired degrees to signal their qualities to potential employers. Employers, in turn, set minimum education requirements when setting job specifications to help screen applicants. Through the signaling and screening process, education serves to sort laborers according to their unobserved characteristics (Spence, 2002).

Both economic theories presented in this paper originate from different schools of economic thought. HCT as derived from the neoclassical school of economics assumes that market forces engage in perfect competition and market entry and exit do not involve costs. The correlations between education achievements and wages are the basis of HCT (Sobel, 1982). Becker (1963) provided distinctions to general and specific skill sets where general skills are acquired through education and are transferable to different organizations. Specific skills are beneficial to the organization that provides specialized training and development that are less portable (Dobbs et al., 2008). This distinction aligns HCT with a perfectly competitive market structure where organizations operating within perfectly competitive labor markets are not responsible for the cost of the education and training. As described by Rohling (1986), HCT views education as an investment rather than a service that will lead to future higher wages.

Institutional economics embraces a broader view of institutions and views markets as the product of sophisticated interactions between individuals, organizations, nations, social norms and culture. Similar to HRD, institutional economics suggests that organizations are fabricated and more complex than pure economics and assume a sociocultural view in attempting to understand organizations and markets (Swanson, 2008). Originating within the institutional school of economic thought, screening theory assumes education acts as an indicator of an individual's ability level in the screening process (Swanson & Holton, 2001).

While screening theory acknowledges the positive correlation between education and wages, it attributes the cause to the signaling effect of a degree or certificates (Dobbs et al., 2008; Rohling, 1986). Institutional economics holds a different view of the market structure that feeds the labor market. Screening theorist view imperfect markets as presenting ultimatums to organizations to bear the expense of additional training and development to remain competitive and achieve organizational goals (Acemoglu & Pischke, 1999). The screening theory argues that employers operate in imperfect labor markets and employees utilize the various general and specific skills during the process of performing the duties and expectations required by organizations.

Additionally, the HCT assumption is that access to information is free (Wang & Holton, 2005). Missing from this scenario provided from HCT is the lack of access to information employers must acquire regarding prospective employee production capabilities in order to make optimal hiring and placement decisions. This problem of asymmetry was highlighted by Akerlof (1970) who used a scenario of buying and selling used cars. He viewed employers as similar to the purchaser of a used car and prospective employees as the sellers. Organizations strive to acquire necessary information on prospective employees, however, without standardized employment screens, collecting the needed information on all sellers of labor would be an exorbitant expense to organizations (Bae, 2000).

Another deficiency excluded by HCT was the potential misalignment of production possibilities to the length of time an individual spent acquiring a degree. HCT predicts that the longer the period of education, the greater the returns or wages (Rohling, 1986). If the value is placed on education time, individuals that remained in school longer could potentially be over-valued based on the time spent in school (Riley, 1979). The relationship between wages and training and education does not increase productivity as hypothesized by HCT (Dobbs et al., 2008). The screening theory allows employers to sort out capable applicants based on education achievements, such as degrees and certificates.

IMPLICATION TO HRD RESEARCH

HCT, as identified in studies conducted by Cervellati and Sunde (2005), encompasses the lifespan of the human capital investment activities. Therefore, human capital is the knowledge and skills possessed by the entire population. Wang and Sun (2009), pointed out that HCT application to the field of HRD must define the appropriate range according to an individual's productive life for human capital studies. The U.S. defined the labor force as individuals sixteen and over who are employed or actively seeking employment (Mankiw, 2003). All individuals, regardless of their age and employment status are included in the population. The current concept considers human capital of a nation's population instead of the of the labor force. It is not possible for all in a nation's population to be productive or add value to the national economy during a given time period, therefore, only those actively involved in the labor force can contribute (Wang, Korte, & Sun, 2008). A national policy that appropriately amasses human capital of the labor force is important to HRD.

An additional challenge of human capital to HRD is the accurate measurement where evaluation is difficult and thought to be counterproductive to the profession (Swanson & Holton, 2001). Expertise in measuring human capital effectiveness is critical to the HRD profession regarding education, training, and development needs that support laborer efforts and improve productivity. The school that applicants attend can potentially act as a filtering agent to employers where academic institutions produce educational services and establish reputations regarding the quality of graduates. If an institution and accrediting agency have good reputations of producing quality graduates, employers are likely to assess applicants from that school as being less risky (Brue & Grant, 2013). Stiglitz (1975), identified screening as a mechanism to sort high ability applicants based on the place of degree which can be applied to the labor market.

CONCLUSION

The U.S. economy has shifted from an agriculture base to a service based economy (Schiller, 2011) and has increasingly progressed toward a deeper dependence on knowledge. Due to an ever-increasing reliance on knowledge and high-level skills, human capital will continue to grow as an important means to achieve economic and organizational goals. Table 1 compares the similarities and differences that exist between human capital and screening theories. HTC assumes that the supply and demand of the labor market will determine the distribution of wages that drive education decisions that ultimately determine labor market equilibrium (Riley, 2001). Screening theory emphasizes the mechanisms that provide organizations access to skills to enhance productivity (Dobbs et al., 2008). Both theories are important to HRD and underpin demographic research that is relevant to education and training.

TABLE 1
HUMAN CAPITAL vs. SCREENING THEORY

	Human Capital Theory	Screening Theory
School of Economic Thought	Neoclassical Theory	Institutional Economics
Theorist	Schultz, Becker	Spence, Arrow, Stiglitz,
Explanation	Accumulation of surplus (education) is valuable to the laborer	Addresses the selection needs of organizations
Capital	Educational Investment in technical skills and knowledge will increase production and yield higher wages	Education is a screen to signal potential employers of an individual's production capabilities and market forces determine wages
Market Structure	Operates under the assumption of perfect completion assuming low barrier/expenses to enter and exit the market	Operates under the assumption there are barriers/expenses associated with market entry (information) and exit (turnover)
Level of Analysis	Individual	Individual/Organizational
Similarities	Education and training add value to organizations and the present cost are outweighed by future earnings and increased production	

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