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Article

Disability and labor market outcomes

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Evidence-based policy making

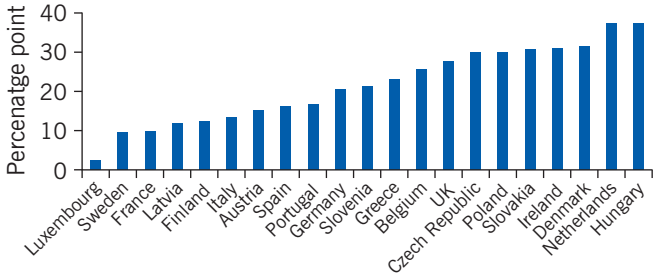
Disability and labor market outcomes

Disability is associated with labor market disadvantage; recent evidence points to a causal relationship

Keywords: disability, discrimination, employment, earnings

ELEVATOR PITCH

In Europe, about one in eight people of working age report having a disability; that is, the presence of a long-term limiting health condition. Despite the introduction of a range of legislative and policy initiatives designed to eliminate discrimination and facilitate retention of and entry into work, disability is associated with substantial and enduring employment disadvantages. Identifying the reasons for this is complex, but critical to determine effective policy solutions that reduce the social and economic costs of disability disadvantage.



Notes: Shows the gap in employment rates between those who do and do not report a disability (aged 15–64).

Source: Based on Figure 2.

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KEY FINDINGS

Pros

- There is growing international body of evidence regarding the labor market experience of disabled individuals.
- Part of the raw gaps in labor market indicators by disability are explained by factors other than disability, including age and educational attainment.
- Longitudinal evidence highlights that for many individuals who experience disability onset, it is not permanent.

Cons

- There are limitations of using self-reported information on disability status from survey data.
- There is consistent evidence that disability is associated with substantial labor market disadvantage, particularly in terms of employment.
- Longitudinal analysis provides greater evidence of a causal influence of disability on labor market outcomes.
- Disability may affect work productivity and preferences for work, making it particularly difficult to identify discrimination.
- There is no consistent evidence that anti-discrimination legislation has improved the labor market outcomes of disabled individuals.

AUTHOR'S MAIN MESSAGE

The prevalence of disability, combined with its substantial labor market disadvantage, makes the design of effective policy critical for reducing its negative social and economic consequences. However, this process is complicated by difficulties in measuring disability and in distinguishing its influence on productivity and preferences for work from employer discrimination. Recognizing that the experience of disability varies by type, severity, and duration may nevertheless facilitate a more flexible and tailored approach to policy, which provides the necessary incentives and support to work for those who are able.

MOTIVATION

Across European countries, about one in eight working-age individuals (aged 15–64) report disability as defined by a long-term health problem (at least six months) and a basic activity limitation; in some countries, such as France and Finland, this proportion rises to one in five (see Figure 1).

There is also widespread evidence of a substantial and enduring disability employment gap, which refers to the percentage-point difference in the employment rate between those who do and do not report disability. When disability is defined as limitations in basic activities, the average employment gap across Europe is about 20 percentage points, reflecting an employment rate among disabled individuals of 47% as compared to 67% among those not disabled. As shown in Figure 2, the gap varies from about ten percentage points in Sweden and France to nearly 40 percentage points in the Netherlands and Hungary. There is an important link between the prevalence rate (i.e. the number of people reporting disability) and the associated employment disadvantage experienced by disabled people; tighter definitions of disability, which typically exclude those with milder disabilities, are accompanied by more substantial estimates of disadvantage. Indeed, in Europe, the corresponding employment gap relating to disability when it is defined as limitations with work (as opposed to limitations in basic activities) is larger, at nearly 30 percentage points.

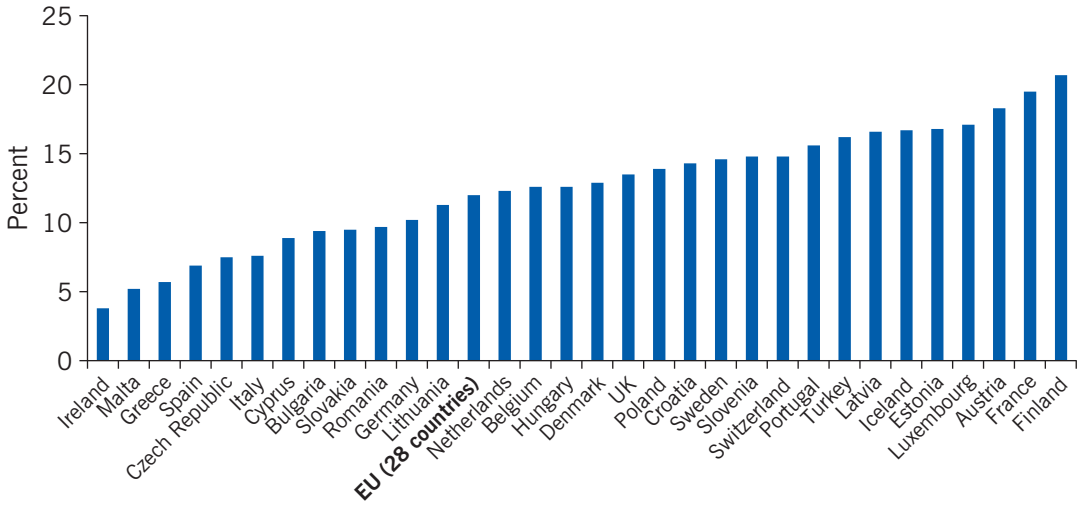
DISCUSSION OF PROS AND CONS

Measuring disability

While the availability of comparable international survey data such as that presented in Figure 1 and Figure 2 appear to provide opportunities for cross-country analysis, there are important measurement issues involved. The magnitude and nature of international variation, particularly in terms of disability prevalence, raise important concerns about the extent to which self-reported disability, which depends on the social, economic and policy context, is comparable across countries [1]. Indeed, the incentives to self-report disability may depend on social acceptability and financial implications, which may relate to country specific institutional features, such as the welfare system and anti-discrimination legislation. Nevertheless, some common patterns have been observed: rates of disability are typically higher in northern than in southern Europe, these rates increase with age and decrease with more formal educational qualifications. Across the EU, for example, the percentage of the population reporting disability among those aged 55–64 (26%) is eight times higher than among those aged 15–24 (3%).

The majority of evidence used in this article relies on self-reported measures of disability, which are now routinely available from international survey data. They have, however, been subject to a number of criticisms, and studies have sought to explore their validity using more objective information such as activity restrictions arising from functional limitations. But these objective measures of health are also likely to suffer from measurement error as the concept of disability will itself depend on the social and economic environment. As such, rather than using an alternative measure in place of self-reported information, studies examined how self-reported disability varies compared to "true" disability that is, for example, constructed from objective health measures or receipt of disability benefits. The results are, however, mixed and inconclusive, with studies finding evidence both for and against the use of self-reported disability data.

Figure 1. Percentage of the population (aged 15–64) who report a long-term health problem and difficulties in basic activities



Source: European Union Labor Force Survey (EU-LFS), 2011.

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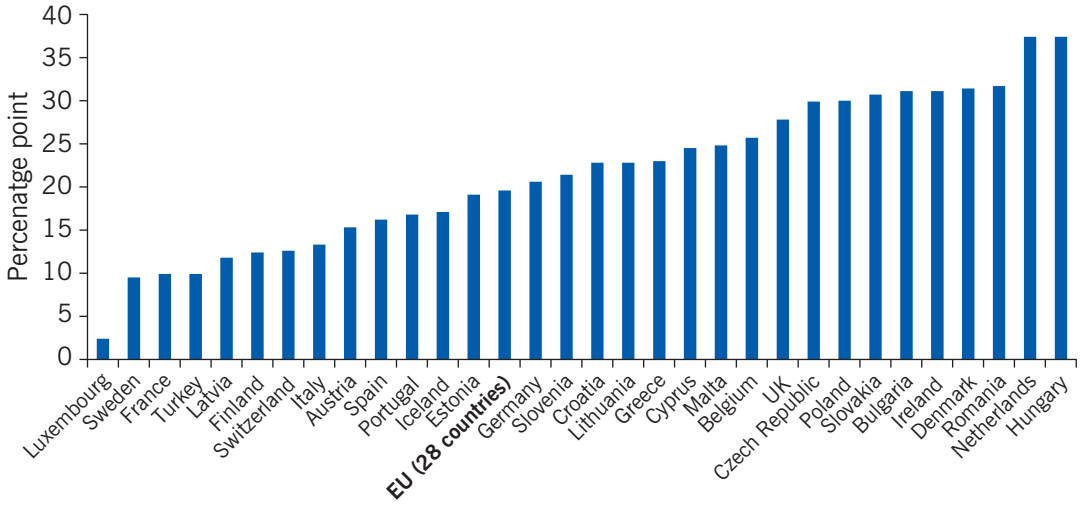
Figure 2. Gap in the employment rate between those who do and do not report disability (aged 15–64)



Note: "Disability" is defined as long-standing difficulties in basic activities.

Source: European Union Labor Force Survey (EU-LFS), 2011.

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The analysis of a subset of disabled individuals, who receive disability welfare payments, forms a largely separate strand of literature. While this is arguably a more objective measure of disability, in the sense that recipients typically have to meet specified medical criteria, eligibility for, and therefore receipt of benefits depends on the nature of the scheme. Further, despite institutional differences, the majority of these schemes are designed as income replacement, and therefore tend to impose intentional and substantial restrictions on "permitted employment". This design feature limits the usefulness of disability, when defined in relation to welfare benefit, in analyzing individual

The definition and measurement of disability

Evidence relating to the labor market experience of disabled workers is frequently based on survey data where individuals self-report disability in response to a series of questions. Disability is usually defined as a long-term limiting health condition. Although precise definitions vary, the main measures typically define "long-term" as a period of six or 12 months and relating to limitations in terms of (1) daily/life activities and/or (2) work. Regardless of the precise definition, self-reported information suffers from two main sources of bias: measurement error and justification bias.

Measurement error arises because the responses are not directly comparable between individuals who are likely to have different thresholds for reporting disability. Justification bias arises because the incentive to report disability may depend on labor market outcomes themselves. In particular, individuals may use disability to justify non-participation in the labor market.

Source: Bound, J. "Self-reported versus objective measures of health in retirement models." *Journal of Human Resources* 26:1 (1991): 106–138.

labor market outcomes. Nevertheless, cross-country variation in receipt of disability benefits among older workers, which substantially exceeds variation in indicators of objective health, is sufficient to suggest that disability welfare forms a route into early retirement in some countries. Moreover, country-specific studies, such as those based on changing benefit regimes, provide important evidence of a causal relationship between the level of disability benefit and non-participation in the labor market. As such, the design of the disability welfare system is undoubtedly an important contributory factor to the broader self-reported disability employment gap.

The nature of disability welfare schemes have attracted increasing attention, at least partially due to significant growth in disability benefit caseloads and the associated financial pressure, particularly in parts of northern Europe, the US, the UK, and Australia. This growth has occurred over a period where objective measures of health have generally been improving and dominant explanations for growth instead relate to the design of the scheme (e.g. relaxation in eligibility requirements and increasing relative generosity), changes in demographics, female labor force participation and reduced demand for low skilled workers [2]. Recent reforms of disability benefit systems have tended to contain active strategies to encourage re-engagement with work designed to enhance the (typically low) rate of exit from disability benefits. Tighter medical (among other) eligibility criteria have also been introduced to reduce the inflow of recipients and to better target support to those that are unable to work. While there is recognition of the difficulty associated with attempting to achieve two conflicting goals, that is, providing financial support to those unable to work while at the same time encouraging those who can to retain or re-engage employment, there has been some recent success, at least in terms of reducing caseloads, particularly in the Netherlands. Nevertheless, to understand the broader disability employment gap, future work needs to examine the extent to which such reforms have led to continued labor market attachment (or reattachment) rather than benefit displacement.

Disability, employment and earnings

The size of the employment gap (see Figure 2), combined with its persistence over time and across countries, has motivated a body of evidence which attempts to identify the drivers of disability labor market inequality and monitor its trend over time. The latter, in particular, has been used to assess the effectiveness of major changes in policy and legislation. This evidence frequently considers hourly labor market earnings, where the disability gap is significant but often more modest, generally being between 10 and 20%.

Explanations for the disability-related employment gap vary and include: pre-existing disadvantage, changes in capacity for and ability to work, and changes in preferences for work, such as those arising from changes in the value of leisure and/or eligibility for welfare support. They also include reverse causality, including justification bias; that is, the incentive for those who are out of work to legitimize their situation by subsequently reporting disability. A key issue has, however, been the influence of discrimination or unequal treatment by employers arising from prejudice or imperfect information (whereby the employer uses disability as a signal of low productivity). Studies have attempted to distinguish discrimination from the disadvantage associated with other personal and work-related characteristics. This type of analysis asks to what extent gaps in the raw data reflect disability, per se, rather than other factors, such as age and education, which are correlated with disability. A substantial proportion of both the employment and earnings gaps are found to relate to disability, or what is often referred to as being unexplained by other factors. In the UK, for example, about 75% of the employment gap, and between 50–75% of the earnings gap, are found to relate to disability [3], [4].

One main limitation of this type of analysis is that it is difficult to control for other unobserved factors such as the impact of disability on productivity at work or preferences to work. As such, the unexplained gap is almost certainly an overestimate of disability discrimination. Studies have attempted to tackle this issue by controlling for functional limitations and/or by using different definitions of disability to identify groups of disabled individuals who are more or less likely to experience discrimination or productivity reductions at work. These studies tend to find that discrimination plays a less important role [3], [4], [5]. Nevertheless, contributions using an alternative approach based on correspondence studies, in which job applications of disabled and non-disabled people with otherwise identical CVs are sent to employers in response to a job advert, find that rates of invitation to interview are significantly lower for disabled relative to non-disabled applicants, consistent with employer discrimination.

Studies have sought to evaluate the impact of major changes in legislation which have made discrimination against disabled individuals unlawful in several countries, including the 1990 Americans with Disabilities Act (ADA) in the US and the 1995 Disability Discrimination Act (DDA) in the UK, by comparing the outcomes of disabled and non-disabled individuals before and after the introduction of the legislation. Both pieces of legislation contain two main components: an antidiscrimination element that makes disability discrimination unlawful, and a reasonable adjustment element that requires employers to make changes to the workplace and work practices to prevent a disabled person from being disadvantaged. Although the threat of legal action related to disability discrimination on hiring would be expected to increase the employment of disabled individuals, the anticipated increase in firing costs arising from wrongful

termination combined with the costs of accommodation are predicted to act in the opposite direction. It is the latter that is anticipated to dominate and, due to the expected increased costs for employers when hiring disabled individuals, is predicted to reduce demand for disabled workers [6].

Overall, there is little evidence of positive employment effects arising from the introduction of such legislation [6], [7]. Moreover, negative employment effects in the US have been found to vary by firm size and by variations in disability discrimination charges among states, which is consistent with an adverse influence of the ADA [6]. Indeed, when using variation in pre-existing legislation between US states, there is preliminary evidence that it was the introduction of the reasonable accommodation element of the legislation that had short-run negative consequences [8]. Nevertheless, these findings have not gone undisputed, with factors other than the ADA—for instance, the economic cycle and changes in the disability welfare regime—put forward as alternative explanations for the decline in the employment rate among disabled individuals in the US.

Disability and disadvantage in work

Recent studies have considered a broader range of labor market outcomes including hours of work and the nature of employment. The concentration of disabled workers in part-time and self-employment raises questions about the extent to which this reflects "push" factors, such as inequality of treatment, or "pull" factors, including the ability to accommodate disability in work. Such analysis has also started to consider the experience of work using subjective measures of skill utilization, job satisfaction, perceptions of managers and employee commitment. Relative to their non-disabled counterparts, disabled workers tend to report more negative experiences across a range of in-work outcomes; this trend is evident across several countries including the US, Spain, the UK, and Australia [9]. Further, this is not explained by differences in personal characteristics or more objective work-related characteristics, such as hours worked or occupation, and therefore exists, on average, between comparable disabled and non-disabled workers in comparable jobs. Accordingly, differences in work-related wellbeing are consistent with higher rates of reporting of bullying and harassment from employers and co-workers among disabled relative to non-disabled employees in the UK.

An interesting question, which can be explored using matched employee–employer data, is the role of the employer and the influence of specific workplace policies and practices on this disability disadvantage. While these issues remain underexplored, recent US evidence finds that the disability gap in perceptions disappears in workplaces that are viewed as the most fair among all employees, pointing to the importance of "corporate culture" [9]. Understanding the work-related wellbeing of disabled workers is not only important in its own right, but also because of its likely contribution to the employment and earnings gaps via the impact on the recruitment, retention and productivity of disabled individuals.

Longitudinal evidence

A major criticism of the literature is the focus on cross-sectional data and associations/correlations between variables rather than causal relationships. More recently,

longitudinal evidence, which is able exploit the dynamic nature of disability to track the same individual over time has been used to identify the disadvantage associated with disability measured relative to the same individual pre-onset (i.e. before that individual became disabled), rather than a similar non-disabled individual, who may differ in a range of unobserved ways. Among other things, such analysis is able to separate the disadvantage associated with disability onset from pre-existing disadvantage, and is able to use the timing of disability onset relative to the observed disadvantage to rule out reverse causality. Longitudinal evidence has one further advantage: it is able to identify and distinguish between disadvantage associated with different dynamic patterns of disability, particularly the duration of disability. Indeed, analysis of the dynamics of disability highlights that, for many, disability is not permanent.

Although much of the existing longitudinal evidence is based on US data, there have also been important recent contributions for Germany, the UK, and Australia. Several key findings emerge from this literature. First, there is evidence that disability onset is associated with employment and earnings disadvantages relative to the same individual pre-onset, which is consistent with a causal explanation. Further, the dynamics of disability are important: those with chronic disability, which is defined as persisting post-onset, experience greater disadvantage at onset and, in contrast to arguments that individuals adapt, this disadvantage is exacerbated post-onset. Finally, self-reported severity is a key driver of the magnitude of disadvantage. For example, those who report chronic severe disability experience more than 3.5 times the reduction in annual working hours ten years into the post-onset period [10]. Further, this type of framework has been used to consider the broader impact of disability on wellbeing, recognizing that the implications of changes in individual labor market status may have a less pronounced impact on household income and/or consumption when there is support within the household or from the government, such as disability benefit income. Indeed, recent evidence on the negative impact of disability onset on subjective self-reported life satisfaction raises interesting questions for policymakers about how disadvantage should be measured.

The focus on the dynamics of disability has also raised questions about the influence of the timing of onset [11]. It is important to distinguish between those who are disabled at birth or during childhood and those who have already entered the labor market when becoming disabled because the barriers to employment for these two groups may differ. Among the first group, disability may affect the accumulation of human capital and will precede entry into the labor market, whereas human capital is likely to have been largely determined prior to disability onset among the latter, where the key issue may instead be the retention of employment [12]. Indeed, in [11] a distinction is made between general human capital, which is valued equally for disabled and non-disabled individuals (such as formal education or training); healthy human capital (that is, human capital that cannot be utilized due to disability), which is valued only for non-disabled individuals; and disability human capital, which is valued for those with disability (such as learning to use adaptations). If healthy human capital increases with age, those with age-onset disability will face more severe disadvantage at onset. Further, those who are disabled at a younger age should have more incentive to invest in disability-specific human capital (for example, by entering a less physical occupation, or learning to use adaptations), which should reduce the disadvantage experienced over time. Consistent with this, the impact of disability has been found to be greater among older onset groups across several countries, including the US, the UK, and Australia.

LIMITATIONS AND GAPS

Relative to research on other minority groups such as ethnic minorities, evidence on disability is still scarce. One reason for this is that disability is difficult to define and measure, and these issues are exacerbated in comparisons across time or countries. Indeed, even within a country, relatively small changes in the order and nature of survey questions used to identify disability can have important consequences for the prevalence of disability in the resulting data. Future research could usefully explore the dynamic relationship between (1) self-reported disability and more objective measures of health, and (2) self-reported disability and receipt of disability benefits, possibly by linking survey information to administrative data. This may shed light on important issues such as for whom and at what point health conditions become disabling and lead to welfare support, and who is subsequently most likely to exit welfare support and/or disability. Doing so may provide information that would help develop proactive policy measures, which can prevent disability onset and support exit from disability.

Disability, and the disadvantage associated with disability, is typically considered at the level of the individual, but useful insights may be afforded by considering the household, both in terms of patterns of onset but also in terms of the wider impact of disability. Thus, it would be useful to consider the likelihood of disability passing from one generation to the next as well as the clustering of disability across households. In a similar vein, studies could consider the household implications of disability onset, such as the impact on spousal labor supply and/or workless households.

Future research should acknowledge that the influence of disability depends on both the characteristics of disability and the characteristics and circumstances of the individual. In this respect, there are gaps in knowledge with respect to the role of the age of onset and, in particular, the influence of disability on key events such as (1) retaining work, where there is a lack of evidence on the role of workplace adjustment and past labor market experience, and (2) the school-to-work transition. Indeed, the percentage of disabled people in Europe aged 15–24 who are not in employment, education, or training (24%) is twice that of non-disabled individuals (12%), suggesting an important role for early policy intervention. More detailed information on the nature of disability, including duration and severity, is often missing from the survey data that are typically used to analyze labor market outcomes. The simple binary measure of disability (i.e. disabled or not), while having the advantage of simplicity, ignores substantial intra-group heterogeneity. Indeed, there is a clear need for evidence to routinely distinguish between conditions, particularly with respect to physical and mental health problems, given that the latter is associated with more severe disadvantage [4] and has been linked to rising disability welfare claimants.

In the current context, perhaps the most important omission from the literature is a clear picture of what works in terms of policy. The lack of consensus in part reflects the fragmented nature of the evidence, which often focuses on individual schemes including quotas, sheltered employment, wage subsidies, welfare reform and employment support, which are features of particular institutional environments and where the results are not easily generalizable. Where there has been deeper investigation, such as the evaluation of legislation, the absence of a positive effect simply demonstrates how complex and difficult the challenge is for policy.

SUMMARY AND POLICY ADVICE

Descriptive evidence provides insights into the prevalence of disability and the scale of associated labor market disadvantages. It is important to recognize, however, that since disabled individuals are often disadvantaged relative to non-disabled individuals pre-onset (for example, in terms of educational attainment), such comparisons may overstate the true influence of disability. Identifying the causal influence of disability is difficult, but the existing longitudinal evidence points to a negative onset effect, which, for those with severe and persistent disability, is exacerbated over time [10]. More positively, longitudinal analysis also identifies that disability onset is not necessarily permanent and that the disadvantage associated with temporary disability is less severe.

Typically, less than half of the raw cross-sectional gaps in employment or earnings associated with disability are explained by other observable factors, such as education. The reasons for the residual disadvantage, however, remain contested, with the (unobserved) influence of disability on productivity and preferences for work proving difficult to separate from discrimination, resulting in a risk of discrimination being overestimated. Nevertheless, despite the introduction of legislation that prohibits disability discrimination in countries such as the UK and the US, there is little evidence that this has led to a narrowing of the disability employment gap.

Given the lack of consensus about what works in terms of policy, it is worth noting that disability is heterogeneous, and that differences in the type, severity and chronicity of disability are fundamental to the pattern of disadvantage experienced, and are therefore also critical to the design of effective support mechanisms. Indeed, recent studies highlight the importance of a more tailored policy response and, in particular, matching individual job demands to functional limitations in order to mitigate negative productivity effects in work [13]. Consistent with this, there is increasing recognition of the importance of the employer and of effective occupational health in supporting flexibility and adjustments to work in order to enable employees to retain and/or reengage with work. The government also plays an important role in this regard, such as by providing incentives for employers to retain disabled workers and by designing welfare systems that support *working* disabled individuals. In contrast, many current welfare schemes provide permanent support conditional on *not* working. The broadening of permitted employment and/or the provision of temporary financial support to facilitate work-related adjustments would provide greater incentives for disabled individuals to remain in work, or return to work, when they are able.

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Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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Further reading

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