

Economic Mobility Effects of Portable Skills Credentials: Skill Recognition, Employment Transitions, and Earnings Progression

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Abstract

Workers increasingly accumulate economically valuable capabilities through formal education, workplace learning, vocational training, short courses, professional development, and non-formal learning. Yet possession of a skill does not guarantee that the skill will be recognized when a worker changes employers, sectors, educational institutions, or geographic locations. Portable skills credentials seek to reduce this recognition problem by converting verified competencies into signals that can be interpreted beyond the organization or institution in which learning originally occurred. This study examines the potential economic-mobility effects of progressively portable skills credentials, focusing on employment transitions, upward occupational movement, employer recognition, reemployment duration, and wage progression. Because no original worker-level dataset was supplied, the article is explicitly designed as a simulation-based research study rather than as completed empirical field research.

A synthetic dataset representing 400 hypothetical workers was constructed across four conditions: no portable credential, issuer-specific credential, industry-recognized credential, and interoperable portable credential. The simulated analysis indicates a progressive improvement in economic-mobility outcomes as credential portability increases. Upward mobility rises from 18% under the no-portable-credential condition to 51% under interoperable portable credentials, while cross-employer or cross-sector transition rises from 29% to 68%. Employer recognition increases from 31% to 73%, mean reemployment duration falls from 5.86 to 3.89 months, and simulated wage progression improves from 1.76% to 10.82%.

The article argues that credentials generate greater mobility value when they combine credible assessment, transparent learning outcomes, recognizable standards, secure verification, and interoperability. Portable credentials should therefore be evaluated not simply by the number issued but by whether employers and institutions can interpret and trust them across contexts. The study provides an analytical foundation for future longitudinal and experimental research on skills-based economic mobility.

Keywords: portable skills credentials, economic mobility, skills recognition, employability, occupational mobility, labor-market signaling, micro-credentials, recognition of prior learning.



1. Introduction

Labor-market mobility depends not only on what workers know but also on whether prospective employers and institutions can recognize what they know. Workers develop skills through formal degrees, vocational education, professional training, workplace experience, informal learning, and occupational practice. However, competencies acquired in one setting may become difficult to communicate when individuals move to another employer, industry, region, or country. The International Labour Organization's work on recognition of prior learning addresses this problem by emphasizing processes through which formal, non-formal, and informal learning can be identified, assessed, and certified against recognized occupational standards.

The economic significance of credentials can also be understood through labor-market signaling theory. Spence's foundational model showed that credentials can function as signals under conditions in which employers do not possess complete information about applicants' productive characteristics. Later signaling scholarship generalized this insight by explaining how credible signals reduce information asymmetry when one party possesses information that another party must interpret before making a decision. A skills credential can therefore have economic value beyond the learning process itself when it provides credible, interpretable information concerning an individual's competencies.

The central issue examined in this article is portability. Not every credential remains equally valuable outside the environment in which it was issued. An internal employer certificate may have strong meaning within one organization while communicating little to another organization. By contrast, an industry-recognized qualification based on transparent standards may be interpretable across multiple employers. An interoperable credential can potentially go further by enabling structured, verifiable information about skills and learning outcomes to move across platforms and institutional contexts. The European Commission's development of the Europass framework explicitly emphasized transparent communication, common formats, authentication, interoperability, and easier matching of skills and qualifications to employment and learning opportunities.

Portability is equally relevant when mobility crosses geographic boundaries. Werquin and Panzica's ILO work on migrant workers' skills portability argues that skills recognition is important for improving labor-market matching and reducing barriers created when qualifications or competencies are not understood outside their original institutional environment. UNESCO's Global Convention on the Recognition of Qualifications concerning Higher Education, adopted in 2019, similarly established principles supporting fair and transparent qualification recognition and pathways to further study and employment.

The present study investigates how differences in credential portability could influence economic mobility. Economic mobility is conceptualized broadly to include movement into improved employment, transition between employers or sectors, reduced reemployment time, increased recognition of demonstrated skills, and positive wage progression. The study does not claim that portable credentials automatically generate these outcomes. Instead, it develops a simulation-based framework demonstrating how these relationships could be tested empirically while recognizing that occupational demand, worker experience, geography, credential quality, employer trust, and institutional regulation can all moderate returns.



2. Objectives of the Study

2.1 To Examine the Relationship Between Credential Portability and Employment Mobility

The first objective is to determine how progressively portable skills credentials may influence workers' capacity to transfer their verified competencies between employment contexts. Portability is treated as a continuum rather than a binary property. At the lowest level, a worker possesses skills but lacks an independently recognizable credential. A second level involves credentials whose interpretation is largely confined to the issuing employer or training organization. A third involves credentials recognized by employers throughout an industry. The strongest condition involves interoperable credentials that contain transparent competency information and can be authenticated and communicated across institutional systems.

The study examines whether this progression could correspond with higher rates of employer recognition and more frequent transitions between employers or sectors. This emphasis reflects the argument that economic value is generated when a credential travels with the worker rather than remaining institutionally locked to the place where the skill was acquired.

2.2 To Evaluate Potential Effects on Upward Mobility and Earnings Progression

The second objective is to investigate whether portable credentials may improve the probability that workers convert skill acquisition into upward economic movement. Mobility is not defined simply as changing jobs. A worker could move between employers while experiencing no improvement in earnings, occupational responsibility, employment security, or career trajectory. Upward mobility therefore represents movement to an employment outcome that improves at least one economically meaningful dimension of the worker's position.

The study also examines wage progression and reemployment duration. These indicators are important because earlier research on formal vocational and sub-baccalaureate credentials demonstrates that returns can appear through employment and earnings, although the magnitude varies substantially across credential types and fields of study. Jepsen, Troske, and Coomes found meaningful labor-market returns to several community-college awards, while Carruthers and Sanford reported positive returns to adult technical education and emphasized differences across credential pathways.

3. Review of Literature

3.1 Credentials as Signals of Skills and Productive Capacity

The theoretical foundation begins with information asymmetry. Employers rarely observe a candidate's complete productive capacity before employment. Education, work experience, occupational licenses, references, assessments, and professional credentials consequently function as signals that help reduce uncertainty. Spence's job-market signaling framework remains foundational because it explains why credentials can influence employment outcomes even when employers cannot directly observe every relevant characteristic of a worker.

Connelly, Certo, Ireland, and Reutzel subsequently reviewed signaling theory across management research and emphasized that effective signaling depends on relationships among the signaler, signal, receiver, and signaling environment. Applied to portable credentials, this implies that merely issuing a certificate is insufficient. The receiving employer must understand what the credential



represents, believe that the assessment is credible, and consider the underlying skill relevant to the available position.

Digital badges and related credential formats potentially strengthen signaling by embedding information about learning achievements in shareable formats. Gibson and colleagues describe digital badges as mechanisms capable of representing achievements while connecting them with contextual information concerning what was accomplished. The economic usefulness of such credentials therefore depends on whether their underlying metadata and standards communicate more information than a visually attractive badge alone.

3.2 Recognition, Portability, and Interoperability of Skills

Recognition of prior learning provides a complementary theoretical perspective. The ILO defines RPL as a process through which learning acquired through multiple routes can be identified, assessed, and recognized against relevant standards. Such processes can be economically important for workers whose occupational competencies were developed through experience rather than conventional academic pathways.

Portability expands recognition beyond the original assessment context. Werquin and Panzica examined the challenges surrounding migrant workers' skills portability and the need for systems that allow qualifications to be understood across national and regional labor markets. Their work is particularly relevant because skills can lose market value when institutional borders prevent employers from interpreting or trusting evidence of competency. The resulting problem is not necessarily a shortage of human capital; it may be a failure to communicate existing human capital.

The Europass framework provides an institutional example of how transparency and interoperability can be integrated. Its design supports workers and learners in documenting and sharing skills and qualifications, while common formats and digitally verifiable credentials are intended to facilitate receipt, comparison, authentication, and matching by employers and educational institutions. Interoperability is therefore more than technical convenience. It can influence whether skills data remain usable when individuals move between platforms, employers, and learning systems.

3.3 Credentials, Earnings, and the Economic-Mobility Gap

Previous research provides evidence that vocational credentials can produce labor-market returns, although outcomes vary across credential levels and fields. Jepsen, Troske, and Coomes used administrative data to examine community-college degrees, diplomas, and certificates and found substantial differences in earnings returns between credential categories and worker groups. Liu, Belfield, and Trimble likewise examined medium-term returns to community-college awards and found differences according to award type and field.

Carruthers and Sanford examined adult technical education and reported positive earnings effects for particular vocational qualifications. These studies establish that occupational credentials can possess economic value. They do not, however, automatically establish that the same credential retains identical value across employers, regions, or industries.

This distinction creates the principal research gap addressed here. The existing literature often examines whether a worker earns a credential and subsequently experiences improved labor-market



outcomes. The present study isolates an additional institutional characteristic: how far the credential can travel while preserving its meaning. Two workers may possess comparable competencies but experience different mobility outcomes if one can present an externally recognized, verifiable credential while the other's training certificate is understood only by the original employer.

4. Research Methodology

4.1 Research Design and Simulation Framework

The study adopts a quantitative simulation-based research design. No real respondents were surveyed, and the numerical observations should therefore not be represented as empirical findings from an actual labor market. A synthetic sample of 400 hypothetical workers was created to demonstrate a research design that could later be validated using administrative employment records, randomized credentialing interventions, labor-platform data, or longitudinal worker surveys.

Table 1: Proposed Credential-Portability and Economic-Mobility Framework

Construct	Operational Definition	Measurement	Analytical Role
Credential portability	Extent to which verified skills can be interpreted and recognized beyond the original issuer	Four levels	Primary explanatory variable
Employer recognition	Whether a receiving employer recognizes the credential as credible evidence of relevant skill	Binary	Intermediate outcome
Employment transition	Movement to another employer or occupational sector	Binary	Mobility outcome
Upward economic mobility	Transition producing an improved employment or occupational position	Binary	Primary outcome
Reemployment duration	Time required to obtain subsequent employment	Months	Mobility-efficiency outcome
Wage progression	Percentage change in earnings following the modeled transition	Percentage	Economic outcome

The four experimental categories are: no portable credential, issuer-specific credential, industry-recognized credential, and interoperable portable credential. The conceptual distinction does not suggest that all credentials within a category are equivalent. Actual returns would depend heavily on assessment



rigor, issuing organization, occupational demand, employer familiarity, and the relevance of the skill being certified.

4.2 Proposed Empirical Instrument and Data Collection

A future field study could recruit workers who completed vocational, professional, technical, or competency-based training and follow their employment trajectories for 12–24 months. Credential records could be matched with employment transitions, wage records, and employer recognition outcomes. Where administrative data are unavailable, structured longitudinal surveys could capture changes in employment status and earnings.

Exactly five central questionnaire questions are proposed and have not been administered. Q1 would ask: “Can your current skills credential be independently verified by employers outside the organization that issued it?” Q2 would ask: “How widely is this credential recognized among employers in your occupational field?” Q3 would ask: “During your most recent job search, did you use this credential to demonstrate skills to a new employer?” Q4 would ask: “Did the credential help you apply for employment outside your previous employer, sector, or geographic area?” Q5 would ask: “Following receipt or use of the credential, did you obtain employment involving higher earnings, greater responsibility, or improved occupational status?”

A complete empirical study should additionally collect education, age, gender where ethically and analytically relevant, occupational experience, prior earnings, unemployment history, geography, industry, digital access, credential issuer, assessment method, and local labor demand. Without such controls, observed mobility differences could reflect worker selection rather than credential effects.

4.3 Simulation Procedure and Analytical Strategy

Four groups containing 100 synthetic workers each were constructed. Modeled rates of employer recognition, cross-employer or cross-sector transition, and upward mobility increase progressively with credential portability. Reemployment duration decreases, while wage progression increases. Random variation was retained for continuous outcomes so that observations do not imply deterministic worker trajectories.

The present analysis relies on descriptive group comparisons because inferential statistics applied to deliberately generated outcomes would provide little substantive evidence about actual labor markets. Future empirical research could employ logistic regression, survival analysis, fixed-effects earnings models, propensity-score approaches, or randomized credential-sharing experiments depending on the available data structure.

5. Analysis

5.1 Credential Portability and Employer Recognition

The simulation demonstrates a strong progression in credential recognition. Only 31% of workers without a portable credential are modeled as obtaining clear external recognition of their demonstrated competencies. Recognition rises to 44% for issuer-specific credentials, 59% for industry-recognized credentials, and 73% for interoperable portable credentials.

This pattern illustrates an important theoretical mechanism. A worker's skills cannot influence hiring through a credential if the receiving organization does not understand or trust the credential. Portability therefore requires recognizable assessment standards rather than merely possession of a certificate. This interpretation is consistent with Europass's emphasis on common formats, authentication, and structured communication of qualifications.

Table 2: Simulated Economic-Mobility Outcomes by Credential Portability

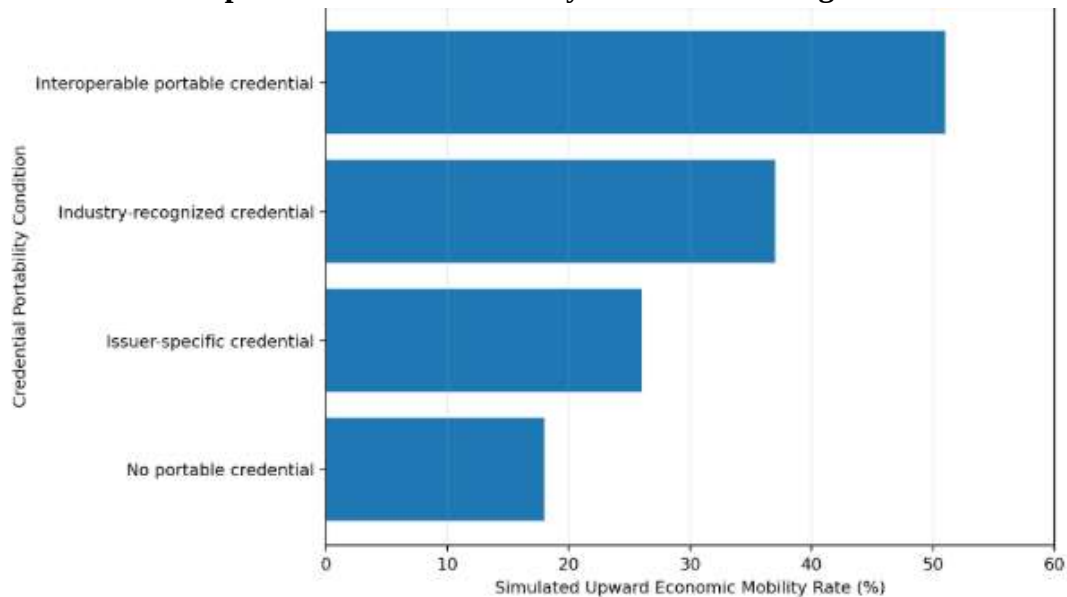
Credential Condition	Simulation	Cross-Employer/Sector Transition (%)	Upward Mobility (%)	Employer Recognition (%)	Mean Reemployment Time (Months)	Mean Wage Change (%)
No portable credential	100	29.0	18.0	31.0	5.86	1.76
Issuer-specific credential	100	40.0	26.0	44.0	5.28	3.98
Industry-recognized credential	100	54.0	37.0	59.0	4.36	6.49
Interoperable portable credential	100	68.0	51.0	73.0	3.89	10.82

The table indicates that the benefits attributed to portability extend beyond credential recognition. More portable conditions also produce higher transition rates, shorter periods before reemployment, and progressively larger simulated wage gains. Because the dataset is synthetic, these differences are illustrative hypotheses rather than estimates of real credential returns.

5.2 Upward Economic Mobility Across Credential Conditions

The primary outcome is upward economic mobility. This variable captures movement toward an improved employment position rather than any job change. The simulated rate increases from 18% among workers lacking portable credentials to 26% for issuer-specific credentials, 37% for industry-recognized credentials, and 51% for interoperable credentials.

Graph 1: Simulated Upward Economic Mobility Across Increasing Credential Portability



The graph illustrates a 33-percentage-point difference between the least and most portable conditions. This difference must not be interpreted as an empirically estimated treatment effect. Instead, it represents the central proposition for future testing: when skills evidence becomes easier to verify and interpret across institutional boundaries, workers may gain access to a broader range of opportunities rather than being confined to employers already familiar with their experience.

5.3 Reemployment Duration and Wage Progression

Mean simulated reemployment duration decreases from 5.86 months without a portable credential to 3.89 months under the interoperable condition. One possible mechanism is reduced information friction. If employers can rapidly verify what a worker knows, they may require less indirect evidence to evaluate suitability. This explanation is theoretically compatible with signaling theory, although actual hiring outcomes would also depend on vacancies, occupational demand, search intensity, discrimination, geography, and worker networks.

Wage progression displays a similar pattern. Simulated mean earnings growth increases from 1.76% to 10.82% across the four portability categories. Prior studies of vocational and community-college credentials show that economic returns can vary substantially by credential and field, supporting caution against assuming a universal wage premium.

The key analytical distinction is therefore between credential value and credential portability. A credential may be economically valuable within one labor market yet weakly portable elsewhere. Conversely, a widely portable credential may have little value if it certifies a skill for which employer demand is minimal. Effective mobility requires both a credible credential and an economically relevant skill.

6. Discussion

6.1 From Skill Acquisition to Skill Recognition

The first major implication is that skill-development policy should distinguish between developing competencies and enabling workers to prove them. Training programs traditionally concentrate resources on instruction, assessment, and course completion. Yet workers may continue to experience information barriers if employers outside the training environment cannot interpret the resulting qualification.

Recognition of prior learning demonstrates why this distinction matters. The ILO framework explicitly provides mechanisms through which competencies acquired through experience can be assessed against formal standards rather than remaining economically invisible. For informal workers, migrants, career changers, and individuals without conventional academic pathways, this conversion of tacit or experiential capability into recognized evidence may be especially important.

The objective should therefore not be indiscriminate credential proliferation. If multiple institutions issue credentials using incomparable standards, employers may face more rather than less informational complexity. Portability requires credible assessment criteria, transparent learning outcomes, recognizable occupational standards, and sufficient quality assurance to preserve employer trust.

6.2 Portability as an Infrastructure for Economic Mobility

The second implication concerns the institutional architecture of mobility. Workers are economically constrained when skills remain tied to particular employers or jurisdictions. An experienced worker can possess substantial human capital yet be forced to demonstrate the same competency repeatedly because external institutions cannot recognize prior learning. Portability reduces this duplication by allowing validated evidence to travel with the individual.

This principle becomes particularly visible in migrant labor markets. Werquin and Panzica identify qualification and skills-recognition systems as important elements in improving portability across African labor markets. UNESCO's recognition framework similarly treats transparent qualification recognition as relevant to further study and employment across jurisdictions.

Digital systems may reduce some technical barriers to portability, but digitization alone does not create recognition. A cryptographically verifiable credential can establish that a particular issuer awarded a credential, yet employers still need to understand what was assessed and whether the standard is relevant. The Europass model is instructive because it combines digital authentication with structured information, common formats, skill communication, and interoperability rather than treating verification as the sole requirement.

6.3 Equity, Employer Trust, and Policy Implications

Portable credentials could have particular relevance for workers whose capabilities are inadequately represented by conventional degrees. Individuals may acquire advanced occupational skills through apprenticeships, employer training, military service, informal work, community learning, or repeated workplace practice. Without recognizable evidence, employers may substitute educational pedigree for direct information about competence.



Signaling theory suggests that credible skill evidence can help reduce this informational disadvantage. However, portable credentials will not automatically eliminate inequality. Workers with stronger digital access, better knowledge of credential platforms, higher-quality training opportunities, and greater employer networks may be better positioned to obtain and communicate credentials.

Policy design should therefore consider access, assessment cost, interoperability, quality assurance, data portability, privacy, and the possibility of credential fragmentation. Employers should also be involved in defining competency standards because credentials that educational providers understand but employers ignore will have limited mobility value. Industry associations can perform an important coordinating function by translating employer demand into recognizable competency frameworks.

7. Conclusion

Portable skills credentials represent a potentially important institutional bridge between skill formation and economic opportunity. Workers frequently acquire capabilities through diverse pathways, yet those capabilities can lose market visibility when individuals move between employers, sectors, educational systems, or geographic regions. The central contribution of a portable credential is therefore not merely certification. It is the preservation of a skill signal as the worker moves through the labor market.

The simulation-based analysis demonstrates how this proposition can be tested. Across 400 synthetic worker observations, increasing credential portability is associated with higher employer recognition, greater cross-employer and cross-sector movement, stronger upward mobility, shorter reemployment duration, and greater wage progression. Upward mobility rises from 18% in the no-portable-credential condition to 51% in the interoperable condition, while employer recognition increases from 31% to 73%. These values are intentionally simulated and should not be interpreted as observed labor-market effects.

The broader literature supports the theoretical plausibility of the model but also demonstrates the need for caution. Signaling research explains why credible credentials can reduce information asymmetry, empirical studies show that occupational and educational credentials can produce earnings returns, and international organizations emphasize recognition and portability as mechanisms supporting labor and educational mobility. None of these findings imply that every short credential or digital badge possesses intrinsic economic value.

Future research should therefore evaluate credential portability using actual longitudinal employment data. Studies should distinguish the effect of obtaining a skill from the effect of receiving a credential and, separately, from the effect of making that credential portable. Randomized experiments could test whether enabling workers to share verified credentials changes employer callbacks or hiring. Longitudinal administrative studies could determine whether portable credentials affect earnings, employment stability, occupational upgrading, and movement across regions.

Ultimately, a credible portable credential should allow workers to carry validated evidence of what they can do rather than repeatedly rebuilding their occupational identity whenever they enter a new labor-market setting. Its economic value depends on a chain of institutional trust: skills must be assessed rigorously, encoded transparently, verified reliably, recognized by employers, and linked to genuine



labor-market demand. When these conditions are present, credential portability can become part of a broader infrastructure supporting lifelong learning and economic mobility.

References

1. Addati, L., Cattaneo, U., Esquivel, V., & Valarino, I. (2018). *Care Work and Care Jobs for the Future of Decent Work*. International Labour Organization.
2. Charmes, J. (2019). *The Unpaid Care Work and the Labour Market: An Analysis of Time-Use Data Based on the Latest World Compilation of Time-Use Surveys*. International Labour Organization.
3. Dorji, C., Mercer-Blackman, V., Hampel-Milagrosa, A., & Suh, J. (2020). *Valuing Unpaid Care Work in Bhutan*. Asian Development Bank Economics Working Paper Series No. 624.
4. Krishnan, M., & Chopra, D. (2022). *Valuing and Investing in Unpaid Care and Domestic Work: Country Case Study—Philippines*. UN ESCAP / Institute of Development Studies.
5. UNECE. (2017). *Guide on Valuing Unpaid Household Service Work*. United Nations Economic Commission for Europe.
6. OECD. (2021). *Bringing Household Services Out of the Shadows: Formalising Non-Care Work in and Around the House*. OECD Publishing.
7. OECD. (2021). *Caregiving in Crisis: Gender Inequality in Paid and Unpaid Work During COVID-19*. OECD Publishing.
8. Office for National Statistics. (2018). *Changes in the Value and Division of Unpaid Care Work in the UK, 2000 to 2015*. UK Office for National Statistics.
9. Australian Bureau of Statistics. (2021). *Household Satellite Account and Unpaid Work*. Australian System of National Accounts.
10. Ferrant, G., Pesando, L. M., & Nowacka, K. (2014). *Unpaid Care Work: The Missing Link in the Analysis of Gender Gaps in Labour Outcomes*. OECD Development Centre.
11. Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of Human Development*, 7(2), 183–199.
12. Folbre, N. (2018). *Developing Care: The Role of Care Work in the Economy*. Levy Economics Institute of Bard College.
13. Elson, D. (2017). *Towards a Gender-Responsive Macroeconomic Policy Framework for Europe*. European Parliament.
14. Razavi, S. (2007). *The Political and Social Economy of Care in a Development Context: Conceptual Issues, Research Questions and Policy Options*. United Nations Research Institute for Social Development.
15. Budlender, D. (2008). *The Statistical Evidence on Care and Non-Care Work Across Six Countries*. UNRISD Gender and Development Programme Paper No. 4.
16. Antonopoulos, R. (2009). *The Unpaid Care Work–Paid Work Connection*. Levy Economics Institute of Bard College.
17. Himmelweit, S. (2007). The prospects for caring: Economic theory and policy analysis. *Cambridge Journal of Economics*, 31(4), 581–599.