

BI4Impact: Business Intelligence for Employability-Oriented SEOs

Pedro Oliveira¹ and Ana Fernandes²

¹DINÂMIA-CET/ISCTE-IUL & Life Quality Research Centre (CIEQV), Santarém Polytechnic University, Santarém, Portugal

²Santarém Polytechnic University, School of Management and Technology, Santarém, Portugal

anna.tica@gmail.com

pedro.oliveira@esg.ipsantarem.pt

Abstract: Social Economy Organisations (SEOs) working in employability operate under growing pressure to document results, monitor beneficiary trajectories and demonstrate accountability to funders and partners. Yet many still rely on fragmented spreadsheets, paper files and informal recording practices, which weakens longitudinal follow-up and evidence-informed decision-making. This paper presents BI4Impact, a Business Intelligence (BI) prototype designed to support information management, indicator monitoring and reporting in SEOs delivering employability interventions. The study adopts an exploratory mixed-method design. First, an online survey mapped current information practices and perceived needs across 26 professionals from Portuguese SEOs. Second, five semi-structured interviews were conducted to identify operational bottlenecks, functional requirements and ethical concerns. Third, a preliminary validation of the prototype involved 20 potential users who assessed usability, perceived usefulness, priority functionalities and expected barriers to adoption after a guided demonstration. Findings reveal substantial data fragmentation: 61% of respondents rely on dispersed spreadsheets and 48% still combine digital records with paper-based files. At the same time, 91% expressed interest in a simple data-visualisation tool. Prototype validation showed high usability scores for navigation, visual clarity and information comprehensibility, as well as very high perceived usefulness. Participants prioritised dashboards with key indicators, automated reports for funders, structured registration of job placements and longitudinal follow-up features, while identifying the main adoption barriers as lack of implementation time, current data disorganisation and training needs. The paper contributes by documenting information-management constraints in employability-oriented SEOs, proposing a low-cost and ethics-aware BI architecture tailored to the social economy, and arguing that digital transformation in mission-driven organisations should be understood less as technological sophistication and more as organisational capacity-building for evidence use, accountability and learning. The study does not claim causal effects on employability outcomes; rather, it offers preliminary evidence on the relevance and feasibility of BI adoption in a socially oriented organisational setting.

Keywords: Business Intelligence; Social Economy Organisations; Employability; Accountability; Data Use; Social Impact.

1. Introduction

Social Economy Organisations (SEOs) play a central role in contemporary welfare, community-development and labour-market ecosystems. In many European contexts, these organisations deliver services to groups facing multiple barriers to employment, including long-term unemployment, low qualifications, disability, migration-related vulnerability, poverty, social exclusion and unstable labour-market attachment. Their work often combines social support, training, counselling, job mediation, employer engagement and post-placement follow-up. As a result, employability-oriented SEOs generate substantial operational information about beneficiaries, interventions, outputs and trajectories.

However, the capacity to transform this information into usable organisational knowledge remains uneven. Many SEOs still rely on spreadsheets, paper-based files, email exchanges and informal records to document activities and outcomes. Such practices may be adequate for short-term administrative purposes, but they are poorly suited to longitudinal monitoring, evidence-informed decision-making and systematic reporting. In employability interventions, this limitation is particularly consequential because the relevant effects unfold over time. A beneficiary trajectory may include registration, diagnosis, referral, training, job-search support, placement, dropout, job retention, re-entry into unemployment or progression into more stable employment. When these data are fragmented, the organisation's ability to understand intervention pathways is weakened.

At the same time, SEOs face growing external pressure to demonstrate accountability to funders, public authorities, partners and communities. Reporting requirements increasingly demand indicators, evidence of outputs, documentation of results and, in some cases, demonstration of social impact. Yet the infrastructure needed to produce such evidence is often underdeveloped. This creates a paradox: organisations are required to become more evidence-oriented, while frequently lacking the data architectures, staff time and analytical tools necessary to do so sustainably.

This paper addresses that problem by presenting BI4Impact, a Business Intelligence prototype designed to support information management, indicator monitoring and reporting in SEOs delivering employability interventions. The prototype was developed as a low-cost and ethics-aware artefact intended to help

organisations consolidate fragmented data, visualise key indicators, generate reports and support longitudinal follow-up of beneficiaries. Rather than presenting Business Intelligence as a technologically sophisticated corporate practice to be transferred directly into the social economy, the paper frames BI as a socio-technical capacity for evidence use.

The study adopts an exploratory mixed-method design. First, an online survey was administered to 26 professionals from Portuguese SEOs to map current information practices and perceived needs. Second, five semi-structured interviews were conducted to identify operational bottlenecks, functional requirements and ethical concerns. Third, a preliminary validation of the prototype involved 20 potential users who assessed usability, perceived usefulness, priority functionalities and barriers to adoption after a guided demonstration.

The paper makes three contributions. Empirically, it documents information-management constraints in employability-oriented SEOs. Technologically, it proposes a BI architecture tailored to the operational realities of social economy organisations. Theoretically, it argues that digital transformation in mission-driven organisations should be understood less as technological sophistication and more as organisational capacity-building for evidence use, accountability and learning.

2. Theoretical Background

2.1 Data Use and Information Fragmentation in Social Economy Organisations

SEOs occupy a distinctive position within contemporary welfare and labour-market governance. Their legitimacy derives not only from the services they deliver, but also from their capacity to demonstrate that resources are converted into social value. This expectation has intensified as public funders, philanthropic organisations and institutional partners increasingly require evidence of outputs, outcomes and impact.

However, data use in the nonprofit and social economy sectors remains constrained by organisational capacity. Recent research on nonprofit data use shows that organisations collect heterogeneous forms of data, including programme, financial, beneficiary, volunteer and community data. These data are used for reporting, internal management, communication, advocacy and service improvement. Yet organisations frequently struggle with data quality, data integration, indicator selection, staff capacity and the alignment between funder requirements and internal learning needs (Mayer and Fischer, 2023).

This problem is particularly relevant for employability-oriented SEOs. Employability interventions are rarely linear. They involve sequences of actions and interactions that may include intake assessment, skills diagnosis, training, counselling, job-search support, employer mediation, placement and post-placement follow-up. The value of the intervention depends not only on the number of beneficiaries reached, but also on whether beneficiaries progress toward more stable labour-market participation. Therefore, longitudinal information is essential.

When information is dispersed across spreadsheets, paper files or individual staff records, three risks emerge. First, operational continuity is weakened because knowledge about beneficiary trajectories remains dependent on individual workers. Second, reporting becomes inefficient because data need to be manually reconstructed for funders and partners. Third, organisational learning is limited because managers and practitioners lack timely information about intervention patterns, bottlenecks and outcomes.

2.2 Business Intelligence as Socio-Technical Capacity

Business Intelligence refers to the processes, tools and practices through which organisations collect, structure, analyse and visualise data to support decision-making. In corporate contexts, BI is often associated with integrated databases, dashboards, key performance indicators, analytical reporting and advanced decision-support systems. In the social economy, however, the value of BI must be interpreted differently.

For SEOs, BI should not primarily be understood as a mechanism for optimisation in a narrow managerial sense. Instead, it can be seen as a socio-technical capability that enables organisations to transform operational records into actionable knowledge. This distinction is important because social economy organisations operate under mission-driven logics, resource constraints and ethical responsibilities that differ from those of commercial firms.

The adoption of BI depends on more than technical availability. Research on information systems adoption has repeatedly shown that implementation is shaped by technological, organisational and environmental factors.

Technological factors include usability, compatibility, perceived usefulness, information quality and system quality. Organisational factors include leadership support, staff skills, routines, available time, data governance and readiness for change. Environmental factors include funder expectations, regulatory requirements, stakeholder pressures and inter-organisational collaboration (DeLone and McLean, 2003; Tornatzky and Fleischer, 1990; Venkatesh et al, 2003).

In SEOs, these dimensions are tightly connected. A dashboard may be visually clear, but still fail if staff lack time to update records. A reporting tool may be technically accurate, but create ethical concerns if access rules and data minimisation principles are unclear. A prototype may be useful for managers, but burdensome for frontline professionals if it increases administrative workload. Therefore, BI adoption in SEOs must be evaluated as a socio-technical process.

2.3 Accountability, Evaluation and Organisational Learning

Accountability is a central concept in the governance of social economy organisations. SEOs are accountable to multiple stakeholders: beneficiaries, staff, volunteers, funders, public authorities, community partners and society at large. These accountabilities may not always align. Funders may prioritise quantitative outputs and compliance indicators, while practitioners may value qualitative progress, trust-building and long-term empowerment. Beneficiaries may experience success in ways that are not fully captured by standard employability indicators.

This plurality makes information systems politically and ethically significant. Data systems do not merely record reality; they help define what becomes visible, measurable and reportable. If a system only captures short-term placements, it may underrepresent the complex work involved in preparing disadvantaged beneficiaries for labour-market participation. Conversely, if a system captures too much personal information, it may create risks related to privacy, surveillance and administrative burden.

Recent literature on nonprofit accountability emphasises the relationship between evaluation, data utilisation and learning. Evaluation data become meaningful when they are not merely produced for external reporting, but incorporated into organisational reflection and decision-making. In this sense, accountability can be understood as both external and internal: external accountability concerns the responsible use of resources and communication of results, while internal accountability concerns the capacity to learn from evidence and improve practices (Cavicchi and Vagnoni, 2023; Handley, 2025; Robichau et al, 2025).

BI tools can support both dimensions when appropriately designed. Dashboards can make key indicators visible to managers and teams. Automated reports can reduce the administrative burden of funder reporting. Longitudinal tracking can help organisations understand whether beneficiaries remain employed after placement. However, these benefits depend on data quality, ethical governance and organisational use.

2.4 Social Impact Measurement and Ethical Digital Transformation

The social economy has been increasingly influenced by debates on social impact measurement and management. Public and philanthropic funders often expect organisations to measure their contribution to social inclusion, employability, well-being or community development. However, social impact is difficult to define and measure, particularly when interventions address complex and long-term social problems (OECD, 2023; OECD, 2024).

Employability interventions illustrate this difficulty. A job placement may be an important output, but it does not automatically indicate sustainable inclusion. Retention, job quality, income stability, confidence, skills development and reduced dependence on social support may also matter. Some of these dimensions are quantifiable; others require qualitative interpretation. Therefore, digital tools for impact-oriented organisations should avoid reducing social value to simplistic metrics.

Ethical digital transformation in SEOs requires attention to proportionality, data minimisation, informed consent, access control, transparency and responsible interpretation. Beneficiary data can be sensitive, especially when it concerns unemployment, disability, social vulnerability, migration status or household conditions. A BI prototype for this context must therefore be designed with safeguards. These include collecting only necessary data, restricting access according to roles, anonymising or aggregating data where possible, and ensuring that indicators are used for support and learning rather than punitive judgement (Qian-Khoo et al, 2025).

3. Methodology

3.1 Research Design

The study adopted an exploratory mixed-method design structured in three sequential stages: an online survey, semi-structured interviews and preliminary prototype validation. This design was selected because the research problem concerns both organisational practices and technology adoption. Understanding the feasibility of BI in employability-oriented SEOs requires mapping existing information practices, interpreting operational bottlenecks and assessing user perceptions of the proposed prototype.

The research was exploratory rather than confirmatory. It did not aim to test causal hypotheses about the effect of BI adoption on employability outcomes. Instead, it sought to identify current constraints, translate them into functional requirements and evaluate the perceived relevance and usability of BI4Impact among potential users.

3.2 Data Collection

The first stage consisted of an online survey administered to 26 professionals from Portuguese SEOs working in or around employability interventions. The survey focused on current data-recording practices, monitoring and reporting routines, perceived difficulties and interest in digital visualisation tools. Respondents were asked about tools used to register beneficiary information, the extent of data centralisation or fragmentation, use of paper-based files, existence of indicators and perceived usefulness of dashboards and automated reports.

The second stage involved five semi-structured interviews with professionals familiar with employability interventions and organisational reporting requirements. The interviews explored the practical meaning of information fragmentation, difficulties in beneficiary follow-up, reporting burden, perceived risks of digital tools and functional requirements. Interview topics included registration practices, data quality, duplication of work, longitudinal tracking, indicator monitoring, funder reporting, access to information, staff training and ethical concerns.

The third stage consisted of a preliminary validation of BI4Impact with 20 potential users. Participants attended a guided demonstration of the prototype and subsequently assessed several dimensions: navigation, visual clarity, information comprehensibility, perceived usefulness, priority functionalities and expected barriers to adoption. The validation focused on early-stage acceptance and feasibility rather than full implementation.

3.3 Analytical Approach

The survey data were analysed descriptively, with particular attention to frequencies and percentages regarding data fragmentation, use of spreadsheets, reliance on paper records and interest in visualisation tools. Interview data were used to interpret these patterns and identify functional and ethical requirements. Prototype validation results were analysed in terms of perceived usability, usefulness, priority features and adoption barriers.

The three stages were integrated through a requirements-oriented logic. Survey results identified broad patterns; interviews explained operational causes and consequences; prototype validation assessed whether BI4Impact responded to the identified needs.

4. Results

4.1 Current Information Practices

The survey revealed substantial fragmentation in the information practices of employability-oriented SEOs. A majority of respondents reported reliance on dispersed spreadsheets, while a significant proportion indicated that digital records were still combined with paper-based files. Specifically, 61% of respondents relied on dispersed spreadsheets and 48% combined digital records with paper files.

These findings suggest that many organisations operate with hybrid and weakly integrated information environments. Data may exist, but it is not necessarily structured in a way that supports longitudinal follow-up, indicator monitoring or efficient reporting. In practical terms, beneficiary information may be distributed across multiple files, staff members, folders and formats.

Interviewees confirmed this pattern. They described situations in which different teams maintained separate spreadsheets, information had to be manually copied between systems and historical data were difficult to retrieve. Some participants noted that reporting to funders required substantial manual effort because the necessary information was not available in a consolidated format. Table 1 summarises the main empirical findings from the three stages of the study.

Table 1: Summary of Empirical Findings

Research Stage	Main Focus	Key Findings
Survey with 26 professionals	Current information practices and perceived needs	61% rely on dispersed spreadsheets; 48% combine digital records with paper files; 91% expressed interest in a simple data-visualisation tool
Five semi-structured interviews	Operational bottlenecks and requirements	Fragmented records, duplication of work, difficulty in longitudinal follow-up, manual reporting burden, concerns about data protection and staff workload
Prototype validation with 20 potential users	Usability, usefulness and adoption barriers	High perceived usability for navigation, visual clarity and information comprehensibility; very high perceived usefulness; main barriers: lack of implementation time, data disorganisation and training needs

4.2 Perceived Need for Data Visualisation

Despite the fragmented information environment, the survey revealed strong interest in digital support for data visualisation. Ninety-one per cent of respondents expressed interest in a simple data-visualisation tool. This result is important because it suggests that professionals recognise the value of better information systems, provided that they are simple and operationally useful.

Participants did not describe a need for highly complex analytics. Instead, the most valued functionalities were practical: dashboards with key indicators, automated reports for funders, structured registration of job placements and longitudinal follow-up features. This indicates that the immediate digital transformation need in these organisations is infrastructural. Before advanced analytics can be meaningful, SEOs need reliable mechanisms for structuring, accessing and interpreting basic operational data.

4.3 Operational Bottlenecks

The interviews identified four major bottlenecks. First, data fragmentation created inefficiency and uncertainty. Participants reported that information about beneficiaries, interventions and outcomes was often distributed across different files and people. This made it difficult to obtain a complete view of each beneficiary's trajectory.

Second, longitudinal follow-up was weak. Organisations could often document initial participation or placement, but had greater difficulty monitoring what happened after the intervention. In employability work, this is a major limitation because the sustainability of outcomes depends on what occurs after placement. Third, reporting was burdensome. Participants described the preparation of reports for funders and partners as time-consuming because data needed to be manually compiled and verified. Fourth, ethical and organisational concerns influenced attitudes toward digitalisation, particularly data protection, controlled access, staff training and data-cleaning needs.

4.4 Prototype Validation

The preliminary validation of BI4Impact produced positive results. Participants assessed the prototype favourably in terms of navigation, visual clarity and information comprehensibility. They also reported very high perceived usefulness, especially in relation to dashboards, automated reporting and beneficiary follow-up.

The most prioritised functionalities were dashboards with key employability indicators, automated reports for funders and partners, structured registration of job placements, longitudinal follow-up of beneficiary trajectories and filtering by intervention, period, beneficiary profile and outcome status. The main expected barriers to adoption were lack of implementation time, current data disorganisation and training needs. This

finding reinforces the socio-technical interpretation of BI adoption. Even a useful and understandable prototype requires organisational conditions for implementation.

5. BI4Impact Prototype and Proposed Architecture

5.1 Prototype Rationale and Functional Components

BI4Impact was designed as a Business Intelligence prototype tailored to employability-oriented SEOs. Its purpose is to support information management, indicator monitoring and reporting by transforming fragmented organisational records into structured and visual information. The prototype is grounded in four design principles: simplicity, operational relevance, longitudinal visibility and ethical data use.

The prototype includes four main functional components. The first is a structured data-registration layer that organises information about beneficiaries, intervention history, training activities, job placements, follow-up contacts and outcome status. The second is an indicator dashboard that visualises key indicators related to employability interventions, such as number of beneficiaries, intervention phases, completed activities, placements, active follow-ups and pending records.

The third component is an automated reporting module intended to reduce the administrative burden associated with funder and partner reporting. The fourth is a longitudinal follow-up module that supports monitoring after placement or intervention completion, allowing organisations to document whether beneficiaries remain employed, require additional support or re-enter intervention pathways.

5.2 Socio-Technical Architecture

The architecture of BI4Impact is presented in Figure 1. The model connects fragmented organisational records to structured data, BI dashboards, operational use, accountability use and learning use. The final purpose is organisational capacity-building for evidence-informed work.

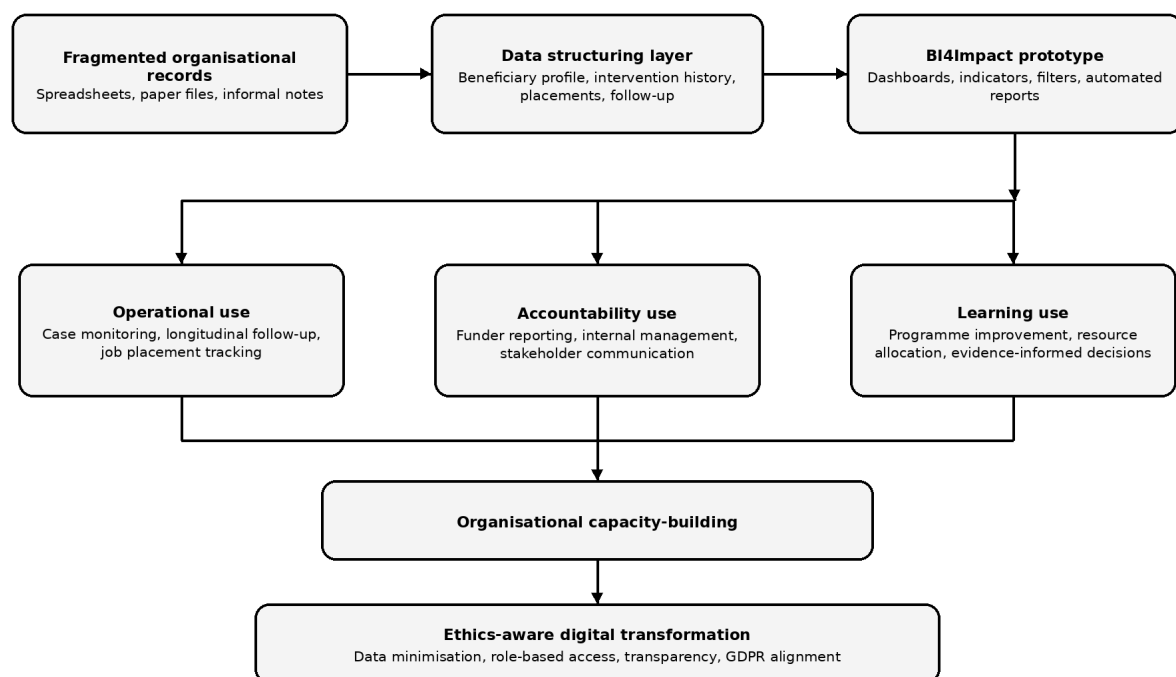


Figure 1: BI4Impact socio-technical architecture for evidence use in employability-oriented SEOs.

The figure positions BI4Impact as an intermediary between fragmented records and organisational use. It also emphasises that the value of the prototype is not limited to reporting. The same structured information can support operational monitoring, external accountability and organisational learning.

Because employability-oriented SEOs work with potentially vulnerable beneficiaries, ethical design is central. BI4Impact should not promote excessive data collection or intrusive monitoring. Instead, it should help

organisations use necessary information responsibly. Data should be limited to what is necessary for intervention, follow-up and reporting; access should be role-based; reporting should privilege aggregated indicators whenever possible; and interpretation should remain contextual and professional.

6. Discussion

The findings confirm that employability-oriented Social Economy Organisations (SEOs) face a structural information-management problem. This problem is not primarily the absence of data, but the fragmentation of data across spreadsheets, paper files and informal recording routines. This finding is consistent with Mayer and Fischer's (2023) analysis of nonprofit data use, which shows that nonprofit organisations often collect multiple types of data but struggle to transform them into integrated and actionable organisational knowledge. In the present study, the reliance on dispersed spreadsheets and hybrid paper-digital records illustrates this gap between data collection and data use.

This fragmentation has direct implications for accountability, evaluation and organisational learning. As Cavicchi and Vagnoni (2023) argue, digital information systems can support accountability in welfare-oriented organisations when they help structure information and make reporting processes more transparent. However, the present findings also show that accountability cannot be reduced to the production of indicators for external stakeholders. In line with Robichau et al (2025), evaluation information becomes organisationally valuable when it supports learning and data utilisation practices, rather than serving only compliance-oriented reporting. BI4Impact therefore responds to a dual need: improving external accountability to funders and partners, while also strengthening internal learning about beneficiary trajectories, intervention bottlenecks and follow-up needs.

The high level of interest in a simple data-visualisation tool suggests that Business Intelligence adoption in this context should not be framed as a demand for advanced analytics. Participants valued basic but operationally consequential functionalities: dashboards with key indicators, automated funder reports, structured registration of job placements and longitudinal follow-up. This aligns with the DeLone and McLean (2003) information systems success model, which emphasises the importance of system quality, information quality and perceived usefulness. In the case of SEOs, these dimensions are strongly associated with simplicity, clarity and operational relevance. A technically sophisticated tool would have limited value if it increased administrative burden or failed to fit existing organisational routines.

The validation of BI4Impact also supports a socio-technical interpretation of digital adoption. The positive assessment of navigation, visual clarity and information comprehensibility is consistent with technology acceptance research, particularly the emphasis placed by Venkatesh et al (2003) on perceived usefulness and ease of use as determinants of user acceptance. However, the main barriers identified by participants - lack of implementation time, data disorganisation and training needs - show that adoption depends on more than individual perceptions of usefulness. These barriers correspond to the organisational and environmental dimensions highlighted in the technology-organisation-environment framework proposed by Tornatzky and Fleischer (1990). In this sense, BI implementation in SEOs requires not only a usable artefact, but also leadership support, staff training, data-cleaning routines and alignment with funder requirements.

The findings also contribute to current debates on digital transformation in the social economy. The European Commission (2021) stresses the role of the social economy in building more inclusive and resilient economic systems, but this role increasingly depends on the capacity of organisations to demonstrate results, coordinate partnerships and communicate social value. At the same time, the OECD (2023, 2024) emphasises that social impact measurement should support organisations in measuring, managing and maximising their impact. The present study suggests that such ambitions require basic data infrastructures before more complex impact measurement frameworks can be realistically implemented. In many employability-oriented SEOs, the priority is not advanced impact modelling, but the consolidation of reliable operational data that can support follow-up, reporting and decision-making.

This point is particularly important in relation to employability interventions. Immediate outputs, such as the number of beneficiaries registered or job placements achieved, provide only a partial view of organisational contribution. As the OECD (2023, 2024) notes, social impact measurement requires attention to outcomes and to the processes through which social value is created. In employability work, this means that job placement should be complemented by information on retention, progression, re-entry into support pathways and other forms of social and labour-market inclusion. BI4Impact addresses this need by emphasising longitudinal visibility rather than isolated output reporting.

The study also reinforces the importance of ethical digital transformation. Beneficiary data in employability-oriented SEOs may concern unemployment, disability, poverty, migration status, social vulnerability or other sensitive dimensions. For this reason, BI tools should not intensify surveillance or encourage excessive data collection. The ethical design principles incorporated into BI4Impact - data minimisation, role-based access, aggregation and responsible interpretation - are consistent with the caution expressed in recent literature on digital impact measurement. Qian-Khoo et al (2025), for example, argue that digital impact measurement tools should be developed with attention to situated organisational learning, rather than imposed as neutral technical solutions. Similarly, Handley (2025) shows that accountability in small nonprofit organisations is shaped by stakeholder ambiguity, networks and trust, which means that data systems must be sensitive to relational and organisational contexts.

From this perspective, BI4Impact should be understood as a capacity-building artefact rather than as a purely technical solution. This interpretation is also supported by Al-Daraba et al (2025), whose review of BI adoption factors highlights that implementation is shaped by the interaction between technological, organisational and human factors. In the present study, the prototype was valued because it made information clearer and more usable, but participants also recognised that implementation would require time, training and prior data organisation. This confirms that digital transformation in SEOs is not simply a matter of introducing software; it is a process of changing routines, improving data quality and creating conditions for evidence-informed decision-making.

The findings have practical implications for SEOs, funders and technology developers. First, SEOs should treat data organisation as a strategic capability rather than a secondary administrative task. Without coherent data structures, organisations remain dependent on individual memory, fragmented files and manual reconstruction of information. Second, funders should avoid increasing reporting demands without supporting the informational capacity needed to meet them. If accountability requirements are not accompanied by investment in data systems, training and implementation time, they risk increasing administrative burden without improving learning. Third, technology developers should design BI tools for the social economy around usability, minimal data burden, role-based access and alignment with existing workflows.

The study also highlights an important tension in contemporary social impact measurement. On the one hand, SEOs need stronger data infrastructures to demonstrate accountability and improve their interventions. On the other hand, excessive measurement can distort organisational priorities or reduce complex social processes to narrow metrics. This tension has been widely recognised in debates on accountability and social impact evaluation (Handley, 2025; OECD, 2023; Robichau et al, 2025). BI4Impact attempts to address it by focusing on practical evidence use rather than metric proliferation. The prototype is designed to make existing information more coherent and actionable, not to impose a technocratic model of social value.

In employability interventions, this distinction is crucial. Employment outcomes are influenced by multiple factors beyond the control of SEOs, including labour-market conditions, employer behaviour, public policy, health, family responsibilities and local opportunity structures. Therefore, a BI tool should not be used to attribute causal responsibility simplistically. Instead, it should help organisations understand patterns, identify follow-up needs, detect gaps in service provision and communicate results transparently. This modest but realistic understanding of BI is aligned with the broader argument that digital transformation in mission-driven organisations should strengthen evidence use, accountability and learning, while preserving professional judgement and ethical responsibility.

7. Conclusion

This paper presented BI4Impact, a Business Intelligence prototype designed to support information management, indicator monitoring and reporting in employability-oriented Social Economy Organisations. Based on an exploratory mixed-method design involving a survey, semi-structured interviews and preliminary prototype validation, the study identified substantial data fragmentation and strong interest in simple, usable and visually clear data-visualisation tools.

The contribution of the paper is threefold. Empirically, it documents information-management constraints in Portuguese SEOs working in employability. Technologically, it proposes a low-cost BI architecture oriented towards dashboards, automated reports, job-placement registration and longitudinal follow-up. Theoretically, it frames BI adoption as a socio-technical capacity-building process that connects accountability, organisational learning and ethical data use.

The study does not claim causal effects on employability outcomes. Its contribution is more modest and, arguably, more realistic: it shows that evidence-informed work in SEOs depends on the capacity to transform fragmented operational records into usable organisational knowledge. For mission-driven organisations, digital transformation should therefore be understood less as the adoption of sophisticated technologies and more as the development of practical, ethical and sustainable capacities for evidence use.

Several limitations should be acknowledged. The survey sample was modest, the interviews were exploratory and the prototype validation assessed perceived usefulness rather than long-term use in real organisational settings. Future research should examine the implementation of BI4Impact in SEOs over time, assess how staff incorporate dashboards into decision-making routines, and investigate whether improved data integration affects reporting quality, follow-up practices and organisational learning. Comparative studies across different types of SEOs would also be valuable, particularly to understand how organisational size, funding model and digital maturity influence BI adoption.

Despite these limitations, the study provides preliminary evidence that BI adoption is relevant and feasible in employability-oriented SEOs when designed around simplicity, ethical safeguards and organisational capacity-building. BI4Impact offers a practical contribution to the digital transformation of the social economy by supporting a form of evidence use that is operationally grounded, socially oriented and attentive to the realities of mission-driven organisations.

Ethics Declaration

This study involved professionals and potential users of a Business Intelligence prototype rather than vulnerable beneficiaries. Participation was voluntary and based on informed consent. No personally identifiable beneficiary data were collected, processed or reported. Survey, interview and validation data were analysed in aggregated form. The prototype was designed according to principles of data minimisation, role-based access and responsible information use.

AI Declaration

AI-assisted tools were used to support language refinement, structural revision, formatting adaptation and consistency checking of the manuscript. The authors remain fully responsible for the research design, data interpretation, scholarly argument, references and final content of the paper.

References

- Al-Daraba, K., Alshurideh, M., Al Kurdi, B. and Salloum, S. (2025) "Systematic Review of Factors Influencing Adoption of Business Intelligence Systems", *Discover Sustainability*, Vol 6, No. 936.
- Cavicchi, C. and Vagnoni, E. (2023) "Digital Information Systems in Support of Accountability: The Case of a Welfare Provision Non-Governmental Organisation", *The British Accounting Review*, Vol 55, No. 5, 101112.
- DeLone, W.H. and McLean, E.R. (2003) "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update", *Journal of Management Information Systems*, Vol 19, No. 4, pp 9-30.
- European Commission (2021) *Building an Economy that Works for People: An Action Plan for the Social Economy*, European Commission, Brussels.
- Handley, K.L. (2025) "Accountability and Social Impact Evaluation in a Small NPO: Stakeholder Ambiguity, Networks and Trust", *Accounting, Auditing & Accountability Journal*, Vol 38, No. 9, pp 239-264.
- Mayer, D.J. and Fischer, R.L. (2023) "Exploring Data Use in Nonprofit Organizations", *Evaluation and Program Planning*, Vol 97, 102197.
- OECD (2023) *Policy Guide on Social Impact Measurement for the Social and Solidarity Economy*, OECD Publishing, Paris.
- OECD (2024) *Measure, Manage and Maximise Your Impact: A Guide for the Social Economy*, OECD Publishing, Paris.
- Qian-Khoo, J., Barraket, J., Barrelle, K., Scheepers, H., Ward-Christie, L., Saporta, K. and Armstrong, W. (2025) "Developing Digital Impact Measurement Tools with Social Enterprises: A Situated Learning Perspective", *Social Enterprise Journal*.
- Robichau, R.W., Bryan, T.K. and Lee, J. (2025) "Sharing Evaluation Information to Strengthen Nonprofit Accountability: The Influence of Learning and Data Utilization Practices", *Nonprofit and Voluntary Sector Quarterly*, Vol 54, No. 1.
- Tornatzky, L.G. and Fleischer, M. (1990) *The Processes of Technological Innovation*, Lexington Books, Lexington, MA.
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003) "User Acceptance of Information Technology: Toward a Unified View", *MIS Quarterly*, Vol 27, No. 3, pp 425-478.