**Supporting Information for Manuscript “Cross-Sector Partnerships to Address Societal Grand Challenges:
Systematizing Differences in Scholarly Analysis”**

**Appendix 1. Article Selection Process**

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**Appendix 2. Overview of Studies Included in the Analysis of Our Study (n=73)**

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|  | **Authors** | **Year** | **Title** | **Journal, Volume (Issue): Page Numbers** |
| 1. | Acosta, A. M.; Haddad, L. | 2014 | The politics of success in the fight against malnutrition in Peru. | Food Policy, 44: 26-35 |
| 2. | Almog-Bar, M.; Schmid, H. | 2018 | Cross-sector partnerships in human services: Insights and organizational dilemmas. | Nonprofit and Voluntary Sector Quarterly, 47(4): 119S-138S |
| 3. | Alonso, J. M.; Andrews, R. | 2019 | Governance by targets and the performance of cross-sector partnerships: Do partner diversity and partnership capabilities matter? | Strategic Management Journal, 40(4): 556-579 |
| 4. | Alvarez, S. M.; Alvarez, J. F. | 2018 | Leadership development as a driver of equity and inclusion. | Work and Occupations, 45(4): 501–528 |
| 5. | Arts, B.; de Koning, J. | 2017 | Community forest management: An assessment and explanation of its performance through QCA. | World Development, 96: 315-325 |
| 6. | Bacon, N.; Samuel, P. | 2017 | Social partnership and political devolution in the National Health Service: Emergence, operation and outcomes. | Work Employment and Society, 31(1): 123-141 |
| 7. | Biddle, J. C.; Koontz, T. M. | 2014 | Goal specificity: A proxy measure for improvements in environmental outcomes in collaborative governance. | Journal of Environmental Management, 145: 268-276 |
| 8. | Bitzer, V.; Francken, M.; Glasbergen, P. | 2008 | Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? | Global Environmental Change, 18(2): 271-284 |
| 9. | Bitzer, V.; Glasbergen, P. | 2010 | Partnerships for sustainable change in cotton: An institutional analysis of African cases | Journal of Business Ethics, 93(2): 223-240 |
| 10. | Brisbois, M. C.; Morris, M.; de Loe, R. | 2019 | Augmenting the IAD framework to reveal power in collaborative governance - An illustrative application to resource industry dominated processes. | World Development, 120: 159-168 |
| 11. | Brogaard, L. | 2017 | The impact of innovation training on successful outcomes in public–private partnerships. | Public Management Review, 19(8): 1184-1205 |
| 12. | Burch, S.; Schroeder, H.; Rayner, S.; Wilson, J. | 2013 | Novel multisector networks and entrepreneurship: The role of small businesses in the multilevel governance of climate change. | Environment and Planning C: Government and Policy, 31(5): 822-840 |
| 13. | Chorianopoulos, I.; Tselepi, N. | 2019 | Austerity urbanism: Rescaling and collaborative governance policies in Athens. | European Urban and Regional Studies, 26(1): 80-96 |
| 14. | Clarke, A.; Fuller, M. | 2010 | Collaborative strategic management: Strategy formulation and implementation by multi-organizational cross-sector social partnerships. | Journal of Business Ethics, 94: 85-101 |
| 15. | Cornelius, N.; Wallace, J. | 2010 | Cross-sector partnerships: City regeneration and social justice. | Journal of Business Ethics, 94(SUPPL 1): 71-84 |
| 16. | Crispeels, T.; Willems, J.; Scheerlinck, I. | 2018 | Public–private collaborations in drug development: Boosting innovation or alleviating risk? | Public Management Review, 20(2): 273-292 |
| 17. | Davies, A. L.; White, R. M. | 2012 | Collaboration in natural resource governance: Reconciling stakeholder expectations in deer management in Scotland. | Journal of Environmental Management, 112: 160-169 |
| 18. | de Wit, J.; Berner, E. | 2009 | Progressive patronage? Municipalities, NGOs, CBOs and the limits to slum dwellers' empowerment. | Development and Change, 40(5): 927-947 |
| 19. | Edge, S.; Meyer, S. B. | 2019 | Pursuing dignified food security through novel collaborative governance initiatives: Perceived benefits, tensions and lessons learned. | Social Science and Medicine, 232: 77-85 |
| 20. | Forsyth, T. | 2007 | Promoting the "development dividend" of climate technology transfer: Can cross-sector partnerships help? | World Development, 35(10): 1684-1698 |
| 21. | Fraser, E. D. G.; Dougill, A. J.; Mabee, W. E.; Reed, M.; McAlpine, P. | 2006 | Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. | Journal of Environmental Management, 78(2): 114-127 |
| 22. | Gazley, B. | 2010 | Linking collaborative capacity to performance measurement in government-nonprofit partnerships. | Nonprofit and Voluntary Sector Quarterly, 39(4): 653-673 |
| 23. | Gebre-Mariam, M.; Bygstad, B. | 2019 | Digitalization mechanisms of health management information systems in developing countries. | Information and Organization, 29(1): 1-22 |
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| 25. | Gerlak, A. K.; Heikkila, T. | 2011 | Building a theory of learning in collaboratives: Evidence from the Everglades restoration program. | Journal of Public Administration Research and Theory, 21(4): 619-644 |
| 26. | Gillett, A.; Loader, K.; Doherty, B.; Scott, J. M. | 2019 | An examination of tensions in a hybrid collaboration: A longitudinal study of an empty homes project. | Journal of Business Ethics, 157(4): 949-967 |
| 27. | Godenhjelm, S.; Johanson, J. E. | 2018 | The effect of stakeholder inclusion on public sector project innovation. | International Review of Administrative Sciences, 84(1): 42-62 |
| 28. | Guarneros-Meza, V.; Downe, J.; Martin, S. | 2018 | Defining, achieving, and evaluating collaborative outcomes: a theory of change approach. | Public Management Review, 20(10): 1562-1580 |
| 29. | Herrera, M. E. B. | 2016 | Innovation for impact: Business innovation for inclusive growth. | Journal of Business Research, 69(5): 1725-1730 |
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| 31. | Idemudia, U. | 2017 | Environmental business–NGO partnerships in Nigeria: Issues and prospects. | Business Strategy and the Environment, 26(2): 265-276 |
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| 34. | Klitsie, E. J.; Ansari, S.; Volberda, H. W. | 2018 | Maintenance of cross-sector partnerships: The role of frames in sustained collaboration. | Journal of Business Ethics, 150(2): 401-423 |
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| 37. | Lin, H. | 2019 | Government-business partnerships for radical eco-innovation. | Business and Society, 58(3): 533-573 |
| 38. | Lund-Thomsen, P. | 2009 | Assessing the impact of public-private partnerships in the Global South: The case of the Kasur Tanneries pollution control project. | Journal of Business Ethics, 90: 57-78 |
| 39. | May, P. J.; Winter, S. C. | 2007 | Collaborative service arrangements - Patterns, bases, and perceived consequences. | Public Management Review, 9(4): 479-502 |
| 40. | Mironska, D.; Zaborek, P. | 2019 | NGO-business collaboration: A comparison of organizational, social, and reputation value from the NGO perspective in Poland. | Nonprofit and Voluntary Sector Quarterly, 48(3): 532-551 |
| 41. | Muller, C.; Vermeulen, W. J. V.; Glasbergen, P. | 2012 | Pushing or sharing as value-driven strategies for societal change in global supply chains: Two case studies in the British-South African fresh fruit supply chain. | Business Strategy and the Environment, 21(2): 127-140 |
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| 60. | Sonday, S. M.; Wilson-Prangley, A. | 2018 | Intermediary capabilities in the context of challenging state dynamics. | Journal of Business Ethics, 152(3): 667-682 |
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| 67. | Trujillo, D. | 2018 | Multiparty alliances and systemic change: The role of beneficiaries and their capacity for collective action. | Journal of Business Ethics, 150(2): 425-449 |
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| 69. | Vogl, A. L.; Bryant, B. P.; Hunink, J. E.; Wolny, S.; Apse, C.; Droogers, P. | 2017 | Valuing investments in sustainable land management in the Upper Tana River basin, Kenya. | Journal of Environmental Management, 195(Part 1): 78-91 |
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| 71. | Wang, M. L. | 2012 | Managing HIV/AIDS: Yunnan's government-driven, multi-sector Partnership Model. | Management and Organization Review, 8(3): 535-557 |
| 72. | Weber, E. P. | 2009 | Explaining institutional change in tough cases of collaboration: "Ideas" in the Blackfoot watershed. | Public Administration Review, 69(2): 314-327 |
| 73. | Woodson, T. S. | 2016 | Public private partnerships and emerging technologies: A look at nanomedicine for diseases of poverty. | Research Policy, 45(7): 1410-1418 |

**Appendix 3. Sample Illustration**

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\*Based on the first analyzed CSP in each article.

**Appendix 4. Illustrative Data Excerpts**

**4.1 Examples of SGC-related Problem Framing**

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|  | **Example 1**  | **Example 2**  | **Example 3** |
| ***Diagnostic SGC Framing*** |
|  | *Example: Fraser et al. (2006, p. 118)* | *Example: Muller et al. (2012, p. 127-128)* | *Example: George et al. (2015, p. 41-42)* |
| Problematizing: Social and/or environmental SGC features | “Since independence in 1966, the Government of Botswana has privatised large areas of communal grazing land in the Kalahari by fencing off land for use by commercial cattle producers. Many environmental assessments show that **this** […] has actually increased **degradation problems** on both commercial ranches […] and in the remaining communal lands […].” | “Agriculture in South Africa has long been associated with human rights violations and land expropriation […], exploitation of farm workers and unsustainable social practices.” | “In spite of that head start, Indian emergency services have failed to keep up with **global standards**: It is estimated that from being the ninth leading cause of death, **trauma** will eventually move up to third position by 2020 […]. Worldwide, 50 million people were **injured each year** and it was expected to grow by 65 % over the next 20 years […].” |
| SGC info: Detailed SGC description, mentioning of a focal “solution" | “There is a real concern that a positive **feedback cycle** exists whereby privatisation leads to more boreholes, which leads to bush encroachment, leading to a loss of productive rangeland for cattle, leading landowners to drill additional boreholes in remaining grass dominant areas that then rapidly become bush encroached. This is especially troubling since […] a dryland’s ability to support livestock depends on maintaining a diverse and heterogeneous landscape in terms of fodder resources […] and that bush encroachment can only be checked by fire events […].” | “…relates to a **lack of education and skills** of a vast number of citizens, contributing to the current unemployment figures.” 🡪Causing an **excess offer of workers** and this way enabling exploitation of farm works and **unstainable social practices**.“Official statistics measure unemployment according to the narrow definition, which can present a skewed perception of the reality, especially in the light of other social problems […].”  | “India’s economic growth has created some of the best private health facilities but they have **not traditionally been accessible to a majority of the low-income population**. Accident victims frequently fail to receive timely medical care following an accident, whilst broader problems such as access to clean drinking water and sustained access to improved sanitation **also result in diseases and emergencies** unique to the Indian context.” |
| ***Prognostic SGC Framing*** |
|  | *Example: Forsyth (2007, p. 1684; 1686)* | *Example: Godenhjelm and Johanson (2018, p. 43,44)* | *Example: Woodson (2016, p. 1410-1411)* |
| Problematizing: Challenges related to a focal SGC “solution” | “In recent years, negotiators about climate change policy have used the term, ‘**development dividend**’ to describe social and developmental benefits that accompany activities to reduce or sequester greenhouse gas emissions in developing countries. The term was inspired by concerns that some low-cost approaches to climate change mitigation in developing countries might fail to enhance, or even detract from, other aspects of sustainable development. One important possible application of the development dividend is in the **transfer of technologies** that can both reduce greenhouse gas emissions and contribute to local social and economic development. […] But achieving the development dividend has been difficult for various reasons. First, […]. Second, […]. And third, […].” | “**Innovation** **[in public policy service delivery process]** represents a solution to welfare problems […]. However, innovation in governance is ambiguous and requires an institutional environment that fosters learning and knowledge sharing […]. A common notion is that knowledge is created when heterogeneous organizations or actors meet, create partnerships and share ideas. Thus, some see creative problem solving and collaboration as the cure for the alleged innovation deficit within the public sector […]. Consequently, many public management reforms and programmes identify innovation as their primary goal […].” | “Despite the improvements in overall health, the advancements are not evenly distributed. Many **medical discoveries** only target diseases of the very rich and other medicines are too expensive for impoverished communities to purchase. […] less than 10% of healthcare research and development (R&D) was on diseases that affect 90% of the world’s population […].” “One new health technology that some scientists believe will revolutionized healthcare is **nanotechnology.** […]. However, nanotechnology, and other emerging technologies, only have viable futures if there is a market for them […]. Yet, the market for Disease of Poverty (DoP) medicines is unclear because companies are unlikely to recoup their research expenses and make a profit on medicines for diseases that affect the poor […].” |
| SGC info: Detailed description of a SGC “solution,” short or missing SGC information | “The Marrakech Accords established an Adaptation Fund to help poor countries adapt to climate change, based on 2% of the value of certified emission reduction units under the Clean Development Mechanism.” p. 1690 “The theme of waste-to-energy was selected because it encompasses many dilemmas of climate technology transfer and the development dividend. **Waste is a growing health and planning problem in developing countries**, and is relevant to global climate change because it usually emits methane, which can also be harnessed and used as a renewable energy.” | “In public administration, problems usually **need to be solved by a wide audience** that extends beyond the resources controlled by any given organization […].” | “In 1999, there was **substantial public outrage directed at pharmaceutical companies** because they refused to provide low-cost HIV medicines to victims in poor countries. […]. Moreover, in 2000 the United Nations launched the Millennium Development Goals (MDGs) and increased the visibility of DoP. This **made the world community more responsive to the needs of the poor** and it put public pressure on countries to find solutions for these issues.” |

* 1. **Examples of SGC Interventions**

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|  | **Example 1** | **Example 2** | **Example 3** |
| ***Transformative SGC Intervention*** |
|  | *Example: Gerlak and Heikkila (2011, p. 626-627)* | *Example: De Wit and Berner (2009, p. 936-937)* | *Example: Ishan and Kähkönen (2002, p. 668, 673)* |
| Aim: Addresses factors underlying the SGC such as by enabling and/or empowering disadvantaged stakeholder groups | “The Everglades restoration program has become a network of multiple organizations that institutionalizes communications and **joint decisions among various actors that share responsibilities** for managing the Everglades and those who are affected by the restoration efforts.” | “The Dutch-funded pilot programme aimed at poverty reduction by **empowering slum inhabitants** and creating an enabling institutional framework to facilitate participation and co-operation between government agencies, NGOs and community organizations. […] Objective: addressing the root causes of urban poverty, and empowering people to tackle these themselves.” | “The collective demand for the type and level of services is more likely to be clearly expressed when **community members are accustomed to working together**, where leaders are accountable, and where all stakeholders have a voice. Water-users groups are more likely to succeed in communities with cohesive community groups and regular civic activities.” |
| Focal activities: Centered on a regulative and/or capacity building intervention | “The primary goal of the collaborative program is to **restore the ecological integrity** of the Everglades—a unique and culturally significant ecosystem that has been impaired after decades of engineering for flood control, agricultural, and urban development […]. This plan formalizes many of the shared goals of the collaborative program by identifying the operational projects that will **re-engineer the existing flood control and water management infrastructure** in the Everglades needed to restore, or at least improve, the health of the Everglades ecosystem.”  | “Between 1993 and 1999 the Bangalore Urban Poverty Alleviation Programme (BUPP) was implemented in the south Indian metropolis of Bangalore.” 🡪Drafting “a **Slum Development Plan (SDP),** reflecting the prioritized needs of the community. Guidance and support in drafting and implementing the plan was provided by an NGO working in the slum in question.” | ”In the early 1990s, three **community-based rural water projects** were prepared and implemented in Sri Lanka and in two states of India—Karnataka and Maharashtra. Their objective was to provide potable water to selected small rural communities that did not have reliable access to safe water within a kilometer or less.” |
| Involvement: Involving SGC stakeholder groups/ beneficiaries in its design and/or implementation | “Although most of these coordination and communication venues focus on the planning, technical, or implementation issues, there is also a state-sponsored venue, the Water Resources Advisory Commission (WRAC), designed to **bring together citizen, business, tribal, and local agency input into the restoration process**.” | “The vehicle for participation and empowerment at the local slum level was the ‘Slum Development Team’ (SDT), consisting of elected representatives (equal numbers of men and women) of each of the programme slums. Each SDT was expected to **consult the slum community** and subsequently draft a Slum Development Plan (SDP), reflecting the prioritized needs of the community.” |  “These projects adopted different ‘**community-based’ strategies**. The Sri Lankan households were supposed to contribute 20% of construction costs, in either cash or labor. […] In Sri Lanka and Karnataka, communities were supposed to take responsibility for operation and maintenance (O&M) (including the levying of household tariffs to cover O&M costs)..” |
| ***Mitigative SGC Intervention*** |
|  | *Example: Pavlovich and Akoorie (2010, p. 378, p. 382)**Increasing the sustainability of the New Zealand fishery industry* | *Example: Brogaard (2017, p. 1184-1190)**Public services (e.g. eldercare, daycare, public schools, services for the disabled)* | *Example: Woodson (2016, p. 1414)**Drug development for disease of poverty (DoP)* |
| Aim: Alleviating or helping cope with SGC implications (e.g. by satisfying basic yet critical needs) | “One example of the innovations that have been achieved is the extraction of collagen protein from the fish skin. This collagen is being used in the wine and beer industry to improve the clarity of the product with the protein removing unwanted particles from the liquid. This type of innovation is significant as not only does it **increase the value of the fish waste** but it also creates new opportunities in different industries.” | No details provided, but overall focus on eldercare, daycare, public schools, services for the disabled and other services | Providing patients with **disease treatment**:“PPPs can improve the DoP medicine market by connecting pharmaceutical suppliers with customers and lowering the barriers to entry so pharmaceutical companies can develop and sell medicines for DoP.” |
| Focal activities: Centered on a product/technology/service development and/or delivery intervention | “Assisting this process of conservation are significant multi-sector research and development partnerships designed to offer effective sustainable management of both fishery and waste products.” P. 382: “Two forms of innovation emerged from the primary data regarding **product innovation and process innovation**.” | “260 PPP projects oriented towards innovating public services in healthcare and social services in Denmark.” “The most common types of public innovations and developed solutions in a PPP, which are examined in this article, **are new products, processes, and services**.” | “Health PPPs can be divided into two broad groups: R&DPPPs; and advocacy, education and medicine pricing PPPs. […] The **R&D PPPs** are especially interesting for this study because they were the only PPPs that were developing **DoP nanomedicines**.” |
| Involvement: Designed / implemented mainly by core partners for beneficiaries | Products and processes innovation for **individual and business customers** allowing for: “the development of new industries around nutraceuticals which has the potential for developing products that add to health benefits for consumers.” | Focus on products and services for citizens: “By combining resources and competencies across sectors, public and private entities collaborate to develop **new services or** **products for use in the public sector** […].” | Focus on public-private partnerships developing drugs for “disease of poverty,” **for patients in low-income countries** |

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* 1. **Examples of SGC-related Effect Reporting**

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|  | **Example 1** | **Example 2** | **Example 3** |
| ***Impact-focused SGC Effect Reporting*** |
|  | *Example: Scott (2015, p. 545-546)**Watershed groups to improve water chemistry and in-stream habitat conditions* | *Example: Thorpe (2018, p. 162, p. 166)**Making agricultural value chains work for smallholder farmer* | *Example: Wang (2012, p. 548)CSP to address HIV/AIDS in Yunnan, China* |
| Focus: Evidence of social or environmental change | “The WSA and NRSA assess the ecological condition of each site according to a series of measurements of chemical stressors, metrics of physical condition, and biological indicators.”  | “It finds that public sector actors, through PPPs, are able to shape governance within value chains, influencing the relative skills, knowledge, and resources which different actors possess, the way that farmers are organized to engage in the value chain, and **the attributes of procedural justice reflected in chain arrangements.**”  | “[…] has generated positive effects in capacity building and stabilization of HIV transmission among intravenous drug users (IDUs), who form the majority of those with HIV in Yunnan. Data from the U.S. National Institute of Health (NIH) show that the **rate of new HIV infection among IDUs in Yunnan has slowed**.” |
| Level: Capturing effects at the systems / target group / community level | Capturing effects at the **ecosystem (i.e. watershed)** level | Indicators used at **country level** (e.g. farmer satisfaction, crop yield, quality, crop income, and income stability) | “Thus these data show that Yunnan has effectively **reached hidden intravenous drug users**; its integrated approach efficiently and simultaneously integrates multiple risks.”  |
| Indicators: Assessing direct and indirect intervention effects | “**Six variables** are selected to provide a holistic representation of stream condition and water quality: total phosphorus content and total nitrogen content (chemical stressors caused by human activities such as mining or agriculture), water turbidity and in-stream natural habitat (physical indicators reflect more proximate habitat destruction), and indices of riparian vegetation and benthic community abundance (biological indicators of condition).”  | “During this analysis an **unexpected observation** came to light: that in the PPP which was showing the most promising results in terms of crop yield and income gains (Uganda), farmers expressed a surprisingly high degree of dissatisfaction. This observation led to a re-analysis of the case studies to consider […].” | “[…] impact in reducing drug-related risky behaviours […]: safer sex and better social behaviour along with less crime and drug use. A two-year follow-up showed that **drug use** decreased from 77.9 percent to 52.3 percent; **safe sex** increased from 31.4 percent to 47.1 percent; **arrest rates** dropped from 12.8 percent to 4.5 percent; social rehabilitation measured in terms of **family relations** and **employment rates** for drug users was also positive.” |
| ***Output-focused SGC Effect Reporting*** |
|  | *Example: Szulecki et al. (2011, pp. 716-717)CSPs for sustainable development in the energy sector* | *Example: Gazley (2010, p. 658)* *Social service provision in social, human, and health services* | *Example: Knai et al. (2015, pp. 1-2)**Improving public health through the Public Health Responsibility Deal (RD)*  |
| Focus: Evidence of SGC-related output (e.g. process/product/policy) change | “[…] our focus in assessing the **effectiveness** of transnational multi-stakeholder partnerships is on their output, that is, their actual activities such as issuing regulations, producing reports, conducting research, or organizing meetings.” | “measured (a) by the partnership managers’ perceived **effectiveness** and (b) survey on real **performance improvements** (cost-benefits, service enhancement, build relationships)” | “We focused on six […] out of the eight RD food pledges […]: out-of-home calorie labelling, salt reduction, calorie reduction, front-of-pack nutrition labelling, fruit and vegetable consumption, and saturated fats.”; “Based on seventeen evidence reviews, some of the RD food interventions could **be effective, if fully implemented**.” |
| Level: Capturing effects mainly at the output level | Focus on the **outputs** that are delivered to the specific target groups (e.g. individual and business customers) | “**Service enhancement** = increased the level of [public] community services/programs and increased the quality of community services/programs.” | Focus on **individual consumers**; “However the most effective strategies to improve diet, such as food pricing strategies, restrictions on marketing, and reducing sugar intake, are not reflected in the RD food pledges.” |
| Indicators: Assessing the intervention’s direct effects | “Most of these functions have been operationalized and empirically assessed in the GSPD to measure effectiveness in terms of output. The amount of output is not only comparable among partnerships but can also be measured in terms of variables such as **the amount of information published** in a given period or dissemination in terms of how much information has been downloaded from the partnership Web site.” | “This analysis is based on **two dependent variables**: partnership accomplishments related to collaborative activity, and the perceived effectiveness of the partnership.” | “Finally, most interventions reported by organisations seemed either **clearly (37%) or possibly (37%) already underway**, regardless of the RD.” |

**Appendix 5. Coding Support**

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