| **#** | **Independent variable** | **Variable codification** | **Definition** | **Indicators** | **Time dimension** | **Factual dimensions** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Social influence | SocialInf | The degree to which the social environment imposes pressure on individuals and organizations to appear legitimate and conform to prevailing social norms, i.e., adopt and use the new technology. | * Intra-group effects: Institutional pressure, newness and uncertainty about technology, ambiguous goals, isomorphism, subjective norm / peer pressure, imitation, legitimacy, social worthiness, change agents, poor understanding of technology, social factors, image, cohesion, structural equivalence, social contagion (DiMaggio & Powell, 1983; Venkatesh et al., 2003, pp. 451-452; Yaraghi et al., 2013, p. 3) * Inter-linked group effects: Signaling across weak ties, connection of otherwise disconnected groups,cross-externalities of increased value perceived (Yaraghi et al., 2013, p. 3) | Time periods relevant for social influence effect:   * Past: Social influence occurrence that was present in the past but not anymore * Present: Social influence occurrence that still persists or generic statement * Future: Expected future social influence | * Unit of analysis: Individual, system (i.e., through isomorphism) (DiMaggio & Powell, 1983; Venkatesh et al., 2003; Venkatesh et al., 2012) * Stakeholders involved * Externality type a: Intra-group effects, inter-linked group effects (Yaraghi et al., 2013, p. 3) * Presence of change agents and innovation champions (Rogers, 2003, pp. 414, 365-366, 387-388) |
| 2 | Within- and cross-stakeholder alignment | StakeAlign | The level of alignment among individuals within an organization, as well as among organizations operating within the same system. | * Alignment of goals: Target goal, picture of ideal end state, self-interest, priorities, interests (Heyen & Reiß, 2014, pp. 248-249; Holmgren & Adler‐Milstein, 2017, p. 196; Öberg & Shih, 2014, p. 421) * Alignment of practices: Process and competence match (Corsaro & Snehota, 2011, p. 1043) * Cognitive alignment: Views and perceptions match, e.g., about the meaning of collaboration, assumptions, values (Corsaro & Snehota, 2011, p. 1043; Hansen & Baroody, 2020, p. 63) * Strong incentives: Financial payments/rewards (salary, subsidies), promotion (Adler-Milstein et al., 2016, pp. 1283-1284; Venkatesh et al., 2003, p. 448) * Misaligned incentives: Reduced switching costs, competitive concerns, lack of comm. btw. systems, islands of information / silos (Anderson & Agarwal, 2011; Kruse, Kothman, et al., 2016, p. 9; Kruse, Kristof, et al., 2016, p. 5; Ozdemir et al., 2011, pp. 491-492) * Priorities: Choice between alternatives (Öberg & Shih, 2014, p. 421) * Problems in gov. reg.: Lack of updated institutional frameworks and business laws governing the HC industry, state laws governing the requirements for patient consent to exchange PHI, clarity of federal and state policies (Adler-Milstein et al., 2016, p. 1284; Kruse, Kristof, et al., 2016, p. 5; Zhu et al., 2006) | Time periods relevant for within- and cross-stakeholder alignment:   * Past: Past interaction experience / history between stakeholders impacting the future relationship, (lack of) past regulations impacting the present / future * Present: Ongoing past, generic statement * Future: Planned (policy) initiative | * Unit of analysis: Individual, organization b, system (Besharov & Smith, 2014; Corsaro & Snehota, 2011; Ingstrup et al., 2020, p. 275; Öberg & Shih, 2014; Skålén et al., 2015) * Extent of alignment between institutional logics: Goals, practices, cognition (Corsaro & Snehota, 2011, p. 1043; Hansen & Baroody, 2020, p. 59) * Incentive direction: Strong incentives, lack of incentives, weak incentives, misaligned incentives (Holmgren & Adler‐Milstein, 2017, p. 196; Kruse, Kothman, et al., 2016, p. 9; Öberg & Shih, 2014, p. 426) * Problems in governmental regulations (Adler-Milstein et al., 2016, p. 1284; Holmgren & Adler‐Milstein, 2017, p. 196; Kahn, 1969, p. 16; Ozdemir et al., 2011, p. 501) * Stakeholders involved |
| 3 | Facilitating conditions | FacilCon | The extent to which an individual or organization as part of the US healthcare system perceives the existence of an infrastructure to facilitate the adoption of decentralized identity. | * Perceived behavioral control: Self-efficacy (control / autonomy, knowledge, technical affinity, and competence, holding on to the tried and proven) (Kruse, Kristof, et al., 2016, p. 5; Teckert, 2020, p. 635; Venkatesh et al., 2003, p. 454) * Objective facilitating factors in the environment: Provision of computer support, instructions, guidance (Venkatesh et al., 2003, p. 454) * Workflow integration: Compatibility with other systems, consistency with values, needs, and experiences, resistance to changing work habits (Dauwed et al., 2019, p. 520; Kruse, Kristof, et al., 2016, p. 5; Venkatesh et al., 2003, p. 454), | Time period relevant for facilitating conditions:   * Past: Conditions that were present in the past but not anymore * Present: Condition that persists, generic statement * Future: Expected condition | * Perceived behavioral control (Venkatesh et al., 2003, p. 453) * Objective facilitating factors in the environment (Venkatesh et al., 2003, p. 453) * Compatibility: Compatibility with work style and workflow, compatibility with needs (Dauwed et al., 2019, p. 520; Venkatesh et al., 2003, p. 453) |
| 4 | Exerted effort | ExEff | The degree of (expected) effort exerted for the use of decentralized identity. | * Perceived ease of use: Level of complexity, user experience, user friendliness (Venkatesh et al., 2003, pp. 450-451) * Willingness to exert effort to adopt and use the technology: Added burden, burn-out/overworked, attitude (Kruse, Kothman, et al., 2016, p. 9; Kruse, Kristof, et al., 2016, p. 5; Thompson & Graetz, 2019, p. 1) | Time periods relevant for effort expectations:   * Past: Experience * Present: Generic statement * Future: Expected exerted effort, exerted effort to be expected from a stakeholder | * Type of effort required: Perceived ease of technology selection, perceived ease of use (Kruse, Kristof, et al., 2016, p. 5; Venkatesh et al., 2003, p. 450) * Willingness to exert effort to adopt and use the decentralized identity (Venkatesh et al., 2003, p. 447) * Unit of analysis: Individual, organizational |
| 5 | Organizational innovativeness | OrgInnov | The degree and pace of technological innovation within an organization as part of the US healthcare system. | * Leader attitude toward change: Innovation champion, risk-aversion (Rogers, 2003, pp. 316-318, 414) * Organizational structure: Centralization (-/+), complexity (knowledge level and expertise of employees) (+/-), formalization (-/+), interconnectedness of employees (+/-), organizational slack (+/-), size (+/-), diversity (+/-), agility to make changes, system openness (+) (Rogers, 2003, p. 412) | Time period relevant to organizational innovativeness:   * Past: Experience * Present: Generic statement * Future: Expectation, hypothesis | * Leader’s attitude toward change (Rogers, 2003, p. 412) * Organizational structure (Rogers, 2003, p. 412) * System openness (Rogers, 2003, p. 412) * Location: Rural, urban (Kruse, Kothman, et al., 2016, p. 10) * Profitability of the organization * Leadership’s formal power * Dependency on external parties |
| 6 | Business value | Fin | Dimensions to be considered for quantifying decentralized identity’s impact on the business of the innovation-deploying organization. | * Direct, foreseeable, and quantifiable financial costs: Budget, subscription fees, technology implementation costs, maintenance / ongoing costs (Kruse, Kothman, et al., 2016, p. 9; Kruse, Kristof, et al., 2016, p. 5; Ozdemir et al., 2011, p. 492; Teckert, 2020, p. 635; Thompson & Graetz, 2019, p. 5) * Legal risk: Privacy concerns, security concerns, HIPAA compliance (Zhu et al., 2006, p. 524) * Managerial complexity: Level of complexity and attendant risk, organizational adjustment necessary, level of leadership attention requirement, limited intellectual performance of involved managers (Flessa & Huebner, 2021, p. 8; Zhu et al., 2006, p. 524) * Reduced productivity during transformation: Loss in time due to use of systems in parallel, loss in medical examinations (Teckert, 2020, p. 635) * Political costs: Innovation resistance, strike (Flessa & Huebner, 2021, p. 8) * Financial requirements: Business case, ROI uncertainty (Kruse, Kristof, et al., 2016, p. 5) | Time period relevant for business value:   * Past: Rationale that was present in the past but not anymore * Present: Rationale that persists, generic statement * Future: Expected rationale | * Type of deployment costs: Direct costs (direct, foreseeable, and quantifiable financial costs) indirect costs (legal risk, managerial complexity, reduced productivity during transformation,political costs) (Flessa & Huebner, 2021, p. 8; Teckert, 2020, p. 635; Zhu et al., 2006, p. 529) * Requirements: Financial requirements, non-financial requirements |
| 7 | Technology performance | TechPerf | The degree to which individuals or organizations operating within the US healthcare system perceive technology as aiding in the improvement of job performance, as well as an objective evaluation of technology performance. | * Task-technology fit: Replicating the physical in digital world * Quality of shared data: Accuracy of shared data, usefulness / meaningfulness of shared data, data availability, data completeness (Kruse, Kothman, et al., 2016, p. 9; Kruse, Kristof, et al., 2016, p. 5; Thompson & Graetz, 2019, p. 1) * Trust: Data integrity, data reliability (Rathert et al., 2017, pp. 18-19) * Magnitude in performance: Comparison to other technologies | Time periods relevant for technology performance:   * Past: Experience * Present: Generic statement * Future: Expected performance | * Task-technology fit (Goodhue & Thompson, 1995, p. 218) * Type of performance: Functional performance (i.e., technical performance) and non-functional performance (e.g., objective privacy and / or security, trust, quality of shared data, timeliness of data) (Kruse, Kothman, et al., 2016, p. 9; López Martínez et al., 2023, pp. 11-13; Rathert et al., 2017, pp. 18-19; Sahi et al., 2018, p. 467; Teckert, 2020; Thompson & Graetz, 2019, p. 5) * Magnitude of performance |
| 8 | Risk-trust trade-off | RiskTrust | The willingness of healthcare stakeholders to cooperate, based on a risk-trust trade-off analysis. | * Privacy and / or security concerns: Patient consent to provide access to health information, business intelligence (Anderson & Agarwal, 2011, p. 473) * Trust in electronic medium: Any factors considered when deciding on whether to trust a technology (Anderson & Agarwal, 2011, pp. 474-475, 487) * Emotions: Emotions about own health, anything beyond privacy and security concerns (Anderson & Agarwal, 2011, pp. 473-474) | Time periods relevant to the risk-trust trade-off analysis:   * Past: Past interaction, past interaction impacting future interaction * Present: Current perception / emotion, generic statement * Future: Expected perception / emotion | * Subjective privacy and / or security concerns h (Anderson & Agarwal, 2011, p. 487) * Trust in electronic medium (Anderson & Agarwal, 2011, pp. 474-475, 487) * Information requesting stakeholder (Anderson & Agarwal, 2011, p. 481) * Intended purpose of information request: Marketing, research, patient care (Anderson & Agarwal, 2011, pp. 480-481) * Unit of analysis: Individual, organizational, systemic * Stakeholder involved * Emotions |
| 9 | Systemic tensions | SystemTens | The building up of strain in the healthcare system due to decentralized technology, which brings about the need to establish a new equilibrium. | * Cultural configuration: Cross-over / integration of different fields (philosophy and technology), patient empowerment | Time period relevant to systemic tensions:   * Past (tension that was present in the past but not anymore) * Present (tension that persists, generic statement) * Future (future tension) | * Stakeholder involved * Tension-type: Technological, cultural configuration, raison d’être (Parsons, 1951, p. 331) |
| 10 | System characteristics | SystemChar | Idiosyncratic characteristics of the US healthcare system. | * System size: Number of stakeholder groups, percentage of GDP (Holmgren & Adler‐Milstein, 2017, p. 196) * Extent of regulation: multiple states and federal government (Holmgren & Adler‐Milstein, 2017, p. 196) | Time period relevant for system characteristic:   * Past: Learnings from past technology adoption attempts; attribute that was once a defining characteristic, but is no longer applicable or relevant * Present: Current characteristic, generic statement | * Stakeholders involved * Attribute description: System size, extent of regulation * Ease of change * Pace of change |
| 11 | Prior use of similar technology | PriorTech | An organization’s ability and incentive to adopt decentralized ID are largely a function of its level of related experience with prior technologies. | * Similar technology users: Switching costs, artificially stabilizing existing solutions * Perception of new technology: Perceived as a replacement / upgrade / parallel technology / complementation | Time period relevant to prior use of technology:   * Past: About the prior technology, implications of prior technology on new technology * Present: Generic statement, about the new technology * Future: About the technology to be adopted | * Unit of analysis (individual, organizational) * User classification: Similar technology users, non-similar technology users * Implication of having adopted other technologies prior (Katz & Shapiro, 1986, p. 825; Venkatesh et al., 2012, p. 161) * Perception of new technology (Katz & Shapiro, 1986, p. 825) |
| 12 | Magnitude of change | MagnChan | Decentralized technology’s expected magnitude of change on an organization and / or healthcare system. | * Shift in power structures: Dependence, lack of data ownership | Time period relevant to magnitude of change:   * Past: Experience * Present: Generic statement, current challenge, something in the past that still applies * Future: Expected magnitude of change | * Degree of organizational change: Structural change, cultural change (Kruse, Kothman, et al., 2016, p. 9; Kruse, Kristof, et al., 2016, p. 5) * Shift in power structure (Katz & Shapiro, 1986, p. 825; Parsons, 1951, p. 332) * Unit of analysis (organization, system) * Stakeholder involved |

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