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Taxonomies in Information Systems Research: Towards A Knowledge Development Perspective

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TAXONOMIES IN INFORMATION SYSTEMS RESEARCH: TOWARDS A KNOWLEDGE DEVELOPMENT PERSPECTIVE

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Abstract

Taxonomies are widely adopted artefacts in Information Systems (IS) research, frequently applied to categorize complex subject areas. Despite their increasing use, explicit reflections on how taxonomies actually contribute to knowledge generation remain surprisingly rare, thus limiting the cumulative advancement of IS research. This study explores the epistemological contributions of taxonomy papers—defined as studies that present a taxonomy as a central research artifact and explicate its development process. Following an iterative, conceptual and empirical approach, we analyzed (1) methodological taxonomy literature from IS and adjacent fields and (2) IS taxonomy papers as real-world cases to build and evaluate a taxonomy of nine dimensions of knowledge contributions of taxonomy paper across descriptive-analytical, conceptual-theoretical, and practical perspectives. We identified six archetypal patterns of how taxonomy papers enact these contributions. In addition, we developed initial evaluation guidance to support more transparent and consistent assessment of taxonomy papers. Our study provides a foundation for more explicit positioning, systematic evaluation, and cumulative development of taxonomy research in IS.

Keywords: Taxonomy, Knowledge Contribution, Evaluation Guidance, Archetypes, Information Systems Methodology.

1 Introduction

In IS research, the systematic structuring and synthesis of domain knowledge is of crucial importance in order to advance scientific understanding and to guide practical decision-making (Schryen et al., 2020). Among the various approaches that exist, taxonomies have emerged as a particularly important research tool due to their potential to organize and structure complex knowledge domains clearly and systematically (Nickerson et al., 2013). While taxonomies can also appear in various supporting roles across research (e.g., as conceptual overview in larger empirical studies e.g., Kävrestad et al., 2023), our focus in this work lies on those papers where the taxonomy and its development are core parts of a paper. We refer to these papers as *taxonomy papers* and define them in line with foundational perspectives (e.g., Bailey, 1994) and IS-specific methodological work (e.g., Nickerson et al., 2013) as papers that (1) present a taxonomy as a primary research artifact, and (2) explicate the methodological process underlying the development of this taxonomy.

Foundational methodological work has laid important groundwork for understanding taxonomy development. Nickerson et al. (2013) introduced a widely adopted framework for taxonomy construction in IS, and more recent updates, such as Kundisch et al. (2022), have highlighted the aim of taxonomy use, including describing, identifying, classifying, analyzing and clustering. However, despite these valuable contributions, there remains limited understanding of how taxonomy papers—when considered as a body of research—actually contribute to knowledge generation within the IS domain. In particular, while prior methodological work provides guidance on how to build taxonomies and recognizes their potential roles, it does not yet systematically map the actual types of knowledge contributions that taxonomy papers make. Such a mapping is important because it enables authors to position taxonomy papers more explicitly and to align their contribution claims with journal expectations, while providing reviewers and editors with a clearer basis for consistent evaluation—thereby supporting more cumulative knowledge development in IS research. In conference discussions and reviewer feedback (e.g., ICIS, ECIS, WI), taxonomy papers are often criticized for unclear contribution articulation. To illustrate, reviewers repeatedly point to the vague or generic articulation of taxonomy contributions: Table 1 presents representative excerpts from reviewer feedback received on taxonomy submissions.

Table 1. Reviewer comments.

Reviewer excerpt (anonymized)	Contribution problem illustrated
"There are quite a lot of general statements for the contribution […] which are – probably – true, but I question whether they provide something to your (!) contribution."	Contribution phrased too general, reviewer doubts it reflects the paper's own distinct value
"[the] taxonomy represents an analytical theory and model, following Gregor (2006), and provides a detailed understanding of [domain]-specific […] characteristics and dimensions […]. The contributions to theory are rather generic (i.e., you find them in most taxonomy papers)."	Theoretical contribution interchangeable across taxonomy papers; not distinctive
"I would advise the authors to focus their contributions much more […] on the specifics of the domain […] and abstract something based on that. Rather, you could explore more what–uniquely–your work contributes."	Lacks domain-specific abstraction; contribution not sharpened to what the study uniquely reveals

By contrast, other research methodologies, particularly literature reviews, have established clear typologies (e.g., Paré et al., 2015; Rowe, 2014; Leidner, 2018) and systematic frameworks for articulating their knowledge contributions (e.g., Schryen et al., 2020). Early foundational work, such as Cooper's (1988) taxonomy of literature reviews, also contributed to structuring approaches for knowledge synthesis. These efforts have helped clarify what can be expected from different types of literature reviews, how they can be evaluated, and what their epistemic boundaries are. This lack of clarity for taxonomy papers limits their theoretical and practical value and may hinder the cumulative development of knowledge within IS research. Drawing on our extensive experience as authors (>15 taxonomy papers) and reviewers of multiple taxonomy studies, as well as our participation in research projects and scholarly networks focused on taxonomy foundations and development within the IS community, we have repeatedly observed such uncertainty in positioning and evaluation. Similarly, review panels and editors are left with little guidance on how to evaluate taxonomy papers in terms of their knowledge contributions. Addressing this lack of systematic articulation is thus critical for improving methodological rigor, transparency, and cumulative progress in our field. Against this backdrop, the objectives of this research are to shed light on the knowledge contributions of taxonomy papers within the domain of IS research and to work towards identifying and delineating archetypal taxonomy papers. Specifically, we seek to answer the following research question(s):

RQ1: What are the typical knowledge contributions of IS taxonomy papers?

RQ2: Which archetypes of IS taxonomy papers can be distinguished?

To address RQ1, we first identify and conceptualize the typical knowledge contributions of IS taxonomy papers by developing a taxonomy. Unlike literature reviews, taxonomy papers have not yet been comprehensively categorized regarding their knowledge contributions. Therefore, given the lack of extensive prior work on the potential classification of taxonomy papers in IS, a theory-driven approach like that of Paré's et al. (2015) to provide a typology for literature reviews (e.g., theoretical, narrative, descriptive, scoping review type) is challenging. Instead, we adopt a conceptual and empirical approach. In the course of developing a taxonomy through an iterative process, we identify nine distinct categories of potential knowledge contributions of taxonomy papers, namely, *Structure to Organize Domain Knowledge*, *Classification of Single Objects*, *Archetypes*, *Research Gaps*, *Research Agenda*, *Develop other Theory*, *Methodological Advancement*, *Practice Gaps*, and *Decision Making and Action*. To evaluate and refine the taxonomy, we conducted two expert interviews and assessed the consistency of contribution assignments through classifications by three independent researchers. Building on this, we then turn to RQ2, which seeks to identify archetypes of taxonomy papers. Using the identified categories of our taxonomy, we illustrate the diversity of knowledge contributions using 67 taxonomy papers in top IS outlets. By identifying and conceptualizing the typical knowledge contributions associated with taxonomy papers, we aim to provide a taxonomy for understanding how taxonomy papers contribute to knowledge development in IS research. By applying a cluster analysis to uncover groups of taxonomy papers that share similar contribution patterns and methodological characteristics, we interpreted and described the resulting clusters as archetypes of taxonomy contributions, providing a structured view of how taxonomy papers differ in their epistemological roles. Finally, we offer evaluation guidance criteria supporting clearer positioning and more consistent assessment of IS taxonomy research. With our work, we aim to offer a *Home Disciplinary Contribution* (Tarafdar & Davison, 2018), as we seek to advance the IS discipline’s understanding of taxonomy papers’ epistemological roles by building on IS-specific and broader conceptual foundations.

2 Background and Related Work

2.1 The Role of Taxonomies in IS Research

Before turning to the role of taxonomies, it is useful to clarify what a taxonomy is and how it relates to the neighboring notion of a typology. Both are forms of classification—the ordering of entities into groups or classes on the basis of shared characteristics (Bailey, 1994). Bailey distinguishes the two primarily by their mode of derivation: a typology is conceptual, developed deductively from theory or a priori dimensions, whereas a taxonomy is empirical, developed inductively from observed cases. Another distinction concerns the way in which objects are assigned to classes: In single-trait classifications, every member of a class must share the same defining characteristics, whereas in multiple-trait classifications, objects are grouped based on having many—but not necessarily the exact same—characteristics in common (Bailey, 1994).

In IS research, Nickerson et al. (2013) explicitly frame taxonomy development as combining conceptual (conceptual-to-empirical) and empirical (empirical-to-conceptual) reasoning within a single iterative process, and the term taxonomy has since been adopted as an umbrella label for classificatory artifacts irrespective of whether they were derived deductively, inductively, or—most commonly—through a combination of both. We follow this established IS usage, referring to the resulting artifact as a taxonomy while acknowledging its conceptual heritage in Bailey's (1994) broader theory of classification.

Taxonomies are therefore recognized as fundamental artifacts in IS, offering structured classifications of complex concepts and phenomena. Taxonomies serve as essential instruments for defining, differentiating, and organizing knowledge within various subfields, e.g., business models (Weking et al., 2020), FinTech (Gimpel et al., 2018), digital platforms (Blaschke et al., 2019), the Internet of Things (Püschel et al., 2016), blockchain applications (Labazova et al., 2019), crowdsourcing (Geiger et al., 2011), and chatbots (Janssen et al., 2020). Particularly in the IS domain, the continuous emergence of novel socio-technical phenomena—driven by rapid technological advancements such as blockchain, cloud computing, and the Internet of Things (Ross et al., 2019)—further highlights the crucial role of taxonomies. They enable researchers to systematically conceptualize and structure newly arising sociotechnical phenomena (e.g., data ecosystems, autonomous vehicles) and facilitate cumulative knowledge development. The structured nature of taxonomies allows researchers to create shared terminologies, reduce conceptual ambiguity, and systematically analyze patterns within a given domain (Nickerson et al., 2013). Although taxonomy papers already existed in IS research prior to 2013, the well-cited work of Nickerson et al. (2013) catalyzed and shaped the methodological foundation for taxonomy development. This approach and further updated research (e.g., Kundisch et al., 2022) has evolved into the de facto standard for taxonomy development in IS, ensuring methodological rigor by incorporating well-defined design criteria and predefined ending conditions (Nickerson et al., 2013). While these methods provide guidance for how to develop taxonomies, they do not explicitly address when and for what epistemological purpose taxonomies should be developed. What is missing so far is a critical engagement with their epistemological role, i.e., the ways in which taxonomies build and expand knowledge within the IS discipline. Moreover, in contrast to the field of literature reviews where established typologies already exist (e.g., Paré et al., 2015; Rowe, 2014; Leidner, 2018), taxonomy papers have not yet been systematically classified. At first glance, taxonomy papers may appear methodologically homogeneous because they commonly follow a similar taxonomic approach. However, a closer reading of their objectives, methodological emphases, results, and stated contributions reveals variation in how they contribute to IS knowledge. It therefore remains unclear whether different types of IS taxonomy papers can be meaningfully inferred.

2.2 Knowledge Contribution in IS Research

In IS research, the question of what constitutes a meaningful knowledge contribution has been discussed extensively. Established knowledge types include definitional, descriptive, explanatory, predictive, explanatory-and-predictive, and prescriptive knowledge, where within this broader understanding, definitional knowledge explicitly covers constructs such as terminologies, vocabularies, classifications, and taxonomies (Johannesson & Perjons, 2014). Related discussions have been particularly prominent in the context of Design Science Research (DSR). Prior work distinguishes fundamental knowledge contributions as either prescriptive (how-to) or descriptive (what-is) knowledge (Maedche et al., 2011).

Beyond these discourse spans the building blocks of a significant theoretical contribution—the What, How, and Why of a theory (Whetten, 1989); the distinction between theoretical, empirical, and artefactual contributions, and the separation of a contribution from its mere implications (Ågerfalk & Karlsson, 2021); the characterization of design-science knowledge as theories or technological designs and the differentiation of design-science research genres (Woo et al., 2014; Peffers et al., 2018); the argument that contributions to knowledge are heterogeneous and extend well beyond theory (Draper & Maguire, 2023); the differentiation of contributions by their disciplinary focus into single-, home-, cross-, and inter-disciplinary types (Tarafdar & Davison, 2018); the recognition of methodological work as a contribution in its own (Cecez-Kecmanovic et al., 2020); and the distinction between a contribution's impact on scientific knowledge and its impact on practice (Rai, 2019).

However, these distinctions remain too coarse for our purposes: taxonomy papers are often broadly positioned as definitional knowledge, which does not sufficiently capture the diverse epistemological roles and contribution patterns observed across taxonomy papers in IS. Our initial analysis reveals substantial diversity in the way contributions were framed, but also in the kinds of contributions taxonomy papers appear to pursue (see Table 2 for three illustrative examples). This suggests that taxonomy papers may differ not only in how they frame their contributions, but also in the kinds of contributions they make.

Table 2. Condensed original contributions statements from selected IS Taxonomy Papers.

References	**Exemplarily stated contributions (shortened original citations, highlights not in the original)**
Bandara et al. (2020)	"Our study contributes to the literature by (i) identifying major privacy themes in the e-commerce context in the past two decades **to synthesize and portray** a cohesive picture of privacy, (ii) identifying privacy themes at general and specific levels and presenting a taxonomy **to capture context- and situation-specific effects** of privacy that **will enable researchers to specify and interpret** privacy dynamics more precisely in future research and (iii) presenting **a future research agenda** for e-commerce privacy addressing current challenges, limitations, and future opportunities in this context."
Marcus et al. (2024)	"Our main contribution is a **theoretically well-founded taxonomy** developed with the active involvement of PM experts. Our taxonomy is a **theory for analyzing** (type I) (Gregor 2006), offering descriptive insights into various organizational PM setups and presenting relevant dimensions. […] From a practical perspective, we have **provided a holistic overview of the relevant dimensions and characteristics** of a PM setup and possible manifestations. Diving into selected practical examples of a diverse group of organizations, we shed light on the rationales involved in designing and developing an organizational PM setup. […]"
Knote et al. (2020)	"Our results contribute to theory by providing a taxonomy of SPAs that can serve as the **foundation for the subsequent development** of suitable smart services. Furthermore, we propose how each type of SPA may influence value co-creation with users in smart services. For practitioners interested in leveraging the potentials of an existing SPA for their business, **we provide the basis to make an informed choice** of an SPA for their particular goal. […]"

Building on these general IS discussions, the literature on literature reviews goes one step further by specifying and operationalizing knowledge contributions at a more fine-grained level. For instance, Schryen et al. (2020) developed a framework that distinguishes six knowledge contributions performed by literature reviews: synthesizing existing knowledge, aggregating evidence, criticizing (i.e., critically assessing) the state of the art, building theory, identifying research gaps, and developing a research agenda. The framework's central insight is that different methodological approaches to conduct a literature review contribute to knowledge in distinct and specifiable ways.

In contrast, in the domain of taxonomy research, existing work has thus far primarily concentrated on developing methodological guidance for taxonomy construction and on the purposes that taxonomies may serve, such as describing, identifying, classifying, analyzing, and clustering (e.g., Nickerson et al., 2013; Kundisch et al., 2022), while a comparable systematic engagement with the epistemological contributions of taxonomies remains absent.

This is noteworthy, as the same insight applies here: How researchers use a taxonomy once it has been developed varies considerably—from purely descriptive structuring efforts (e.g., Püschel et al., 2016; Hartmann et al., 2016) to the use of a taxonomy for explanation and theory development (e.g., Gimpel et al., 2018) to practical application and decision support (e.g., Ablirzi et al., 2020). These varied uses correspond closely to the heterogeneous contribution types identified in the broader IS discourse introduced above, yet they have not been systematically related to it in the taxonomy literature. Thus, even though many taxonomy papers draw on similar methodological guidance for taxonomy construction, particularly the approaches proposed by Nickerson et al. (2013) and Kundisch et al. (2022), this methodological convergence in the design phase (see Section 2.1) does not lead to uniformity among the contributions. Minor adjustments of the methodological approach may reflect different focal points of the intended contributions and are not merely alternative forms of presentation. At the same time, not every methodological deviation represents a fundamentally different contribution to knowledge.

Overall, if taxonomies function as instruments of knowledge building in the same way as literature reviews, it should be both possible and meaningful to identify taxonomy papers that exhibit different combinations of knowledge contributions and to group them accordingly. However, IS research has not yet systematically identified and categorized these contributions. Figure 1 illustrates this distinction and positions our study at the knowledge level, where we seek to identify the specific epistemological contributions of taxonomy papers (corresponding to Schryen et al., 2020, Fig. 1).

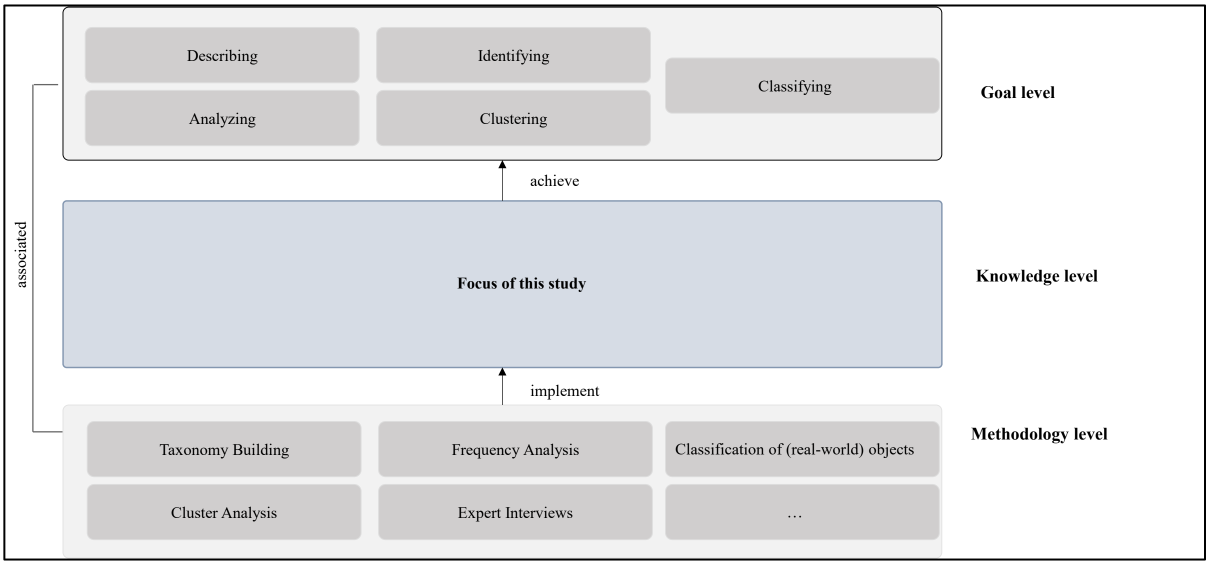


Figure 1. Conceptual Framework.

3 Methodological Approach

Our study follows the iterative taxonomy development procedure proposed by Nickerson et al. (2013) and Kundisch et al. (2022) (Figure 2).

The meta-characteristic of our taxonomy is defined as "the knowledge contribution dimensions of taxonomy papers in IS research". Its intended audience comprises IS researchers who develop taxonomies, editors and reviewers who evaluate them, and method scholars interested in understanding how taxonomies contribute to scientific knowledge. The development proceeded through one conceptual-to-empirical (C2E) and three empirical-to-conceptual (E2C) iterations.

We make use of two complementary datasets: a corpus of 67 IS taxonomy papers (ISTP) for three E2C iterations and a set of 18 methodological papers and books (MPB) on taxonomy development and 10 taxonomy-independent papers from IS and non-IS research for the C2E iteration. The ISTP corpus was compiled via a systematic search restricted to journals listed in the VHB Jourqual 4 sub-ranking "Information Systems Journals" (section "Wirtschaftsinformatik or Information Systems Journals"), covering the 32 outlets rated A+, A, or B. To identify candidate ISTP, we were using the keyword "taxonomy" in title, abstract, or keywords. We focused our search on papers that were published between 2017 and mid-2025. Papers were included if they (1) presented a taxonomy as a core research artifact and (2) explicitly described their taxonomy development process. Across the dataset, taxonomy papers are distributed across a broad set of IS outlets, with a strong concentration in Electronic Markets (n = 25). The remaining papers are spread across multiple journals, including BISE, CAIS, JIT (each n = 4), and several outlets with smaller counts (see Appendix A1).

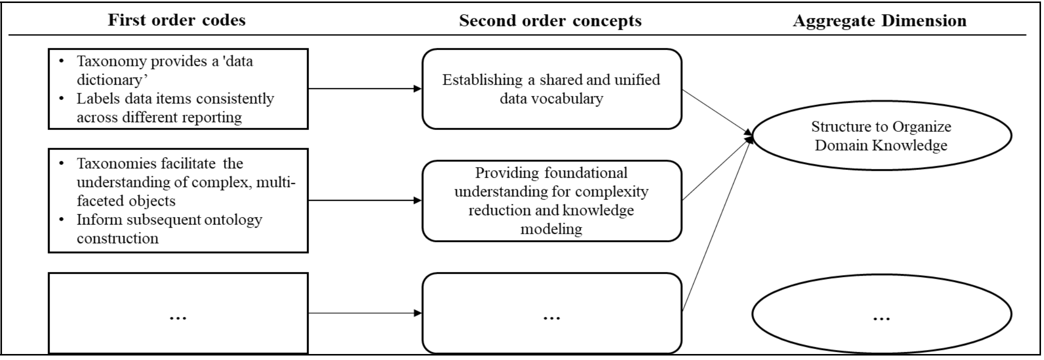
Iteration 1 (E2C): For the first E2C iteration, we began with an exploratory random sub-sample of ten ISTP. We examined how ISTP articulate their knowledge contribution(s). The objective of this phase was twofold: First, to examine how taxonomy authors themselves articulate the contributions of their ISTP. Second, to get first insights into how diverse the set of contributions is.

Iteration (C2E): We analyzed a broad sample of MPB (n=18). Our selection of the literature was based on relevance to taxonomy development (identified through Kundisch et al., 2022, including the taxonomy papers listed in the supplementary material accompanying their study), and ensured inclusion of both IS-specific and general methodological sources. Thus, our sample encompasses both general foundational works on taxonomy development across disciplines, as well as IS-specific contributions that particularly address methods and procedures for developing taxonomies within the IS field. We consider MPB particularly suitable because they do not merely prescribe procedural steps, but often implicitly or explicitly discuss the intended knowledge outcomes and epistemic value of taxonomies. In addition, we included taxonomy-independent literature on knowledge contributions (n=10), as discussed in Section 2.2. This second literature stream helped us position taxonomy papers within broader debates on what constitutes a contribution to knowledge.
Inspired by (Schryen et al., 2020), we adopted a rigorous qualitative content analysis, utilizing the software MAXQDA to systematically code explicit statements in these MPB about the usefulness, purpose, and knowledge contribution of taxonomies inspired by Gioia (2021): (1) First-order concepts were extracted as explicit statements, capturing the literal phrasing used in the papers and books to describe the contributions of taxonomies, (2) second-order themes were generated by clustering conceptually similar statements (e.g., "organizing concepts", "defining domain") into interpretive categories, and (3) aggregate dimensions were derived by abstracting across themes to form overarching knowledge-contribution categories (see Table 3 for an example coding procedure).

Table 3. Overview of analyzed methodological sources.

	Non-IS	**IS**
References	Bailey (1994); Bayona-Orè et al. (2014); Correia et al. (2018); Draper & Maguire (2023); Eldredge & Cracraft (1980); Hambrick (1984); McKelvey (1975); Niu et al. (2015); Ojala et al. (2018); Sneath (2005); Usman et al. (2017); Vu & Hemmje (2019); Wang & Wang (2018); Whetten (1989).	Ågerfalk & Karlsson (2021); Cecez-Kecmanovic et al. (2020); Kundisch et al. (2022); Land et al. (2013); Mwilu et al. (2015); Nickerson et al. (2013); Notheisen et al. (2019); Peffers et al. (2018); Rai (2019); Sarkintudu et al. (2018); Tarafdar & Davison (2018); Woo et al. (2014)
Example citation used for coding	The taxonomy provides a 'data dictionary' that labels data items consistently across different reporting entities, enhancing interoperability, data integration, and administrative efficiency within government reporting systems, thus reducing reporting burdens and errors (Ojala et al., 2018).	Through systematic classification, taxonomies facilitate the understanding of complex, multi-faceted objects and support structured decision-making processes (Mwilu et al., 2015).

Example coding procedure



Iteration 3 (E2C): We analyzed another 29 papers from the ISTP corpus. We identified the need to refine our contribution taxonomy by adding an additional dimension, namely *Methodological Advancement*.

Iteration 4 (E2C): We analyzed the remaining 28 ISTP. This final iteration did not result in further changes in the dimensions (and the respective characteristics), suggesting conceptual saturation of the contribution dimension within our sample and, in line with Nickerson et al. (2013), suggested that our iterative development met the objective ending conditions. For each dimension we then consistently arrived at three mutually exclusive characteristics: no contribution, implicit contribution, and explicit contribution. Explicit contributions were directly stated by the authors, whereas implicit contributions were inferred from context (such as from the positioning within the paper, the classification of objects or derivation of archetypes, the discussion of implications, or the claimed role of the taxonomy in subsequent theory building) (see Table 4).

Table 4. Illustrative examples of explicit and implicit archetype contributions in taxonomy papers

	Explicit	**Implicit**
Archetypes	"Beyond mere evaluation, the **identification** of these business model **archetypes** via clustering is, in **itself, a valuable contribution**." (Beinke et al., 2024, p. 29)	"With the four digital sustainable BM **archetypes** and their implementations in the BM taxonomy, we **contribute an ecological perspective** to the predominantly economically oriented research on digital sustainable BMs." (Böttcher et al., 2024, p. 753)
	"The **contribution** of our work is threefold. […] Second, we introduce a taxonomy and a set of **archetypes** that extend existing literature DDBMs and establish a unified language for analyzing, classifying, and configuring connected car business models." (Sterk et al., 2024 p. 2)	"Furthermore, the **results of the cluster analysis help firms to acquire knowledge** about common configurations of material properties that can inform both market research and own SPA development processes." (Knote et al., 2020, p. 43)

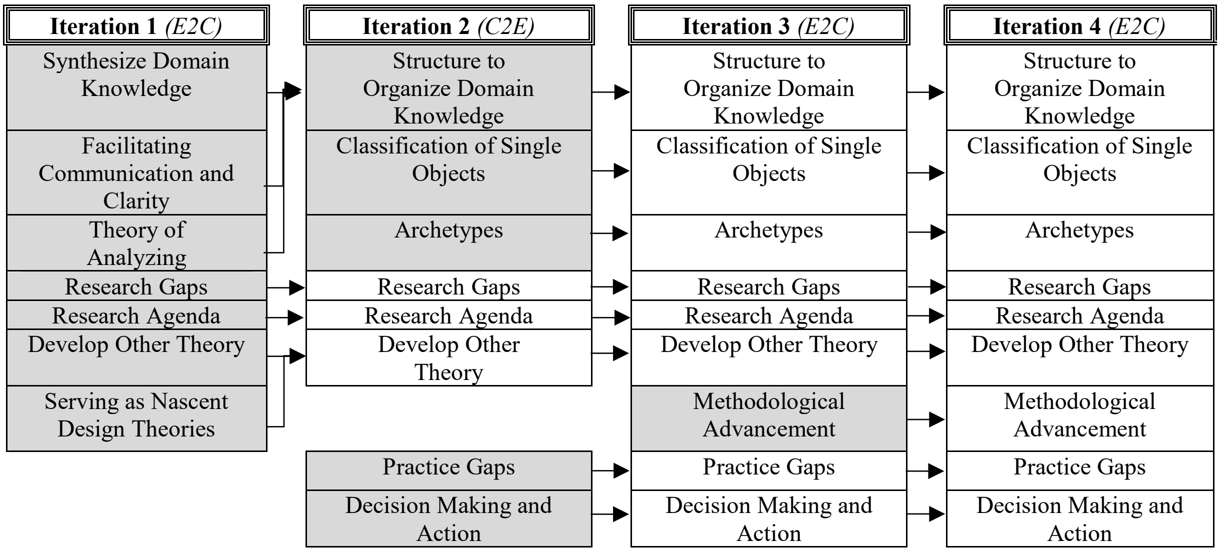


Figure 2. Research process.

Legend: Grey boxes indicate newly introduced, modified, or merged contribution categories.

Evaluation: We applied a twofold evaluation strategy. First, we conducted two expert interviews with experienced IS taxonomy developers. The interviews focused on assessing the taxonomy's usefulness, completeness, and applicability, and explicitly addressed Nickerson et al.'s (2013) subjective ending conditions. The experts evaluated these aspects using Likert-scale items and provided qualitative feedback. Second, we assessed the consistency of contribution assignments through an independent classification exercise. Three researchers who were not involved in the taxonomy development coded all ISTP using the final contribution dimensions. We then compared the coding results.

Application: To apply the taxonomy empirically, we classified all 67 ISTP according to the nine knowledge contribution categories. These classifications served as the basis for a subsequent cluster analysis. We conducted the cluster analysis to empirically identify potential archetypes of taxonomy papers, i.e., recurring patterns of contribution combinations and epistemological positioning. This step aims to further validate our taxonomy and to lay the groundwork for understanding genres or types of taxonomy papers in IS research—addressing a gap similar to the one Paré et al. (2015) targeted for literature reviews. With the cluster analysis we want to identify groups of taxonomy papers that exhibit internal similarity while being distinct from other groups (Hagerty, 1985). In the context of our research, the cluster analysis aims to uncover archetypes of taxonomy papers based on their respective profiles of knowledge contribution categories. We conduct the cluster analysis using the ISTP dataset and with a Two-Step cluster analysis using IBM SPSS Statistics. The knowledge contribution categories were coded on an ordinal scale (0 = not mentioned, 1 = implicitly mentioned, 2 = explicitly mentioned), reflecting increasing strength of contribution articulation. Although this scale differentiates between implicit and explicit articulation, the purpose of the clustering is not to distinguish explicit from implicit papers. Instead, the objective is to uncover distinct profiles of contribution types—for example, papers that primarily focus on structuring domain knowledge, those contributing mainly to research agenda building, or those emphasizing theory development or practical implications. The Two-Step cluster analysis involves two stages. In the first stage, cases are grouped into pre-clusters using a fast-sequential clustering approach based on a cluster feature tree structure, conceptually related to the BIRCH algorithm for large databases (Zhang et al., 1996). This compresses dense areas of the dataset into subclusters. In the second stage, these pre-clusters are agglomerated using hierarchical clustering to produce the final cluster solution. The procedure is suitable for clustering datasets with categorical or mixed-type variables and medium to large sample sizes, and it combines good scalability with automatic selection of the number of clusters (Kent et al., 2014). The algorithm relies on a model-based distance measure derived from the decrease in log-likelihood when merging two clusters, which enables the joint treatment of categorical and continuous attributes (Chiu et al., 2001). Determining the optimal number of clusters represents a critical step in the analytical process (Kodinariya & Makwana, 2013). We therefore relied on the automatic model-selection procedure implemented in SPSS, which evaluates alternative solutions based on the Bayesian Information Criterion (BIC) and changes in the distance ratio. In addition, we inspected BIC values, changes in BIC, distance ratios, cluster sizes, and substantive interpretability to identify a meaningful and interpretable cluster structure.

4 Knowledge Contributions of Taxonomy Papers

In the following, we present the results of our study. Section 4.1 introduces the taxonomy of knowledge contributions associated with IS taxonomy papers. Section 4.2 reports the evaluation of the taxonomy, drawing on expert interviews and an independent classification exercise. Section 4.3 then uses cluster analysis to identify recurring archetypes of taxonomy paper contributions.

4.1 Taxonomy

In the following Table 5, we summarize nine categories of knowledge contributions (here: dimensions) associated with taxonomy papers organized along three perspectives. *Descriptive–Analytical* contributions describe and structure a domain, making its elements comparable and conceptually clear. *Conceptual–Theoretical* contributions extend or refine scientific understanding—by identifying research gaps, proposing research paths, developing theoretical foundations, or advancing taxonomy methodology itself. *Practical* contributions translate conceptual knowledge into actionable insights, guiding practical decision-making and design. Within these three perspectives, the knowledge contributions represent the dimensions of our taxonomy, each operationalized through three mutually exclusive characteristic expressions: explicit, implicit, or not present (we refrain from illustrating the characteristics in Table 5). Each identified dimension is supported by an exemplary reference from the analyzed literature thereby ensuring transparency and traceability. In the following, we describe all nine contribution dimensions.

Table 5. Taxonomy of knowledge contributions associated with IS taxonomies.

Perspective	Dimension	Short Description	Example Key references
Descriptive-Analytical	Structure to Organize Domain Knowledge	Organizes fragmented knowledge into coherent structures and fosters shared terminology and understanding.	Sarkintudu et al., (2018); Nickerson et al., (2013); Kundisch et al., (2022); Bailey, (1994); Hambrick, (1984)
	Classification of Single Objects	Assigns real-world instances to taxonomy characteristics to support analysis and reduce complexity.	Hambrick, (1984); Notheisen et al., (2019); Kundisch et al., (2021); Usman et al., (2017)
	Archetypes	Identifies recurring and stable patterns across cases to enable comparison and generalization.	Hambrick, (1984); Bailey, (1994)
Conceptual-Theoretical	Research Gaps	Highlights areas of missing or underexplored knowledge within a domain.	Bayona-Oré et al., (2014)
	Research Agenda	Proposes structured directions, specific and actionable recommendations on closing the research gaps.	Bayona-Oré et al., (2014); Land et al., (2013)
	Develop other Theory	Provides foundational structures that support explanatory, predictive, or design theory development.	Doty & Glick, (1994); Nickerson et al., (2013); Kundisch et al., (2022)
	Methodological Advancement	Provides methodological innovation by refining how taxonomies are developed, validated, or applied.	Szopinski et al. (2020); Beinke et al. (2024)
Pragmatic	Practice Gaps	Highlights divergence between theory and application and thus helps to identify gaps in the market.	Land et al., (2013); Mwilu et al., (2015); Notheisen et al., (2019); Usman et al., (2017); Nickerson et al., (2013)
	Decision Making and Action	Supports practical decisions, implementation strategies, or policy design.	Mwilu et al., (2015); Sarkintudu et al., (2018); Notheisen et al., (2019)

Structure to Organize Domain Knowledge (ST): Taxonomies help structure fragmented knowledge by organizing concepts into multidimensional and coherent categories. They support conceptualization by highlighting relevant dimensions (Kundisch et al., 2022) and provide a shared vocabulary that facilitates communication and alignment across researchers and practitioners (Sarkintudu et al., 2018; Land et al., 2013). Their visual representation also enables comparison and reuse of conceptual knowledge. As theories for analyzing (Gregor, 2006), taxonomies lay the foundation for identifying patterns (Nickerson et al., 2013; Bailey, 1994). This knowledge contribution is also reflected in taxonomy-independent literature (e.g., Woo et al. 2014; Tarafdar and Davison, 2018).

Classification of Single Objects (CL): Taxonomies describe and classify objects based on shared dimensions and characteristics. This classification helps to reduce complexity, enables comparison of objects, and supports systematic decision-making (Hambrick, 1984; Notheisen et al., 2019; Kundisch et al., 2021; Sarkintudu et al., 2018; Usman et al., 2017). Moreover, a clear classification is often a necessary prerequisite for identifying archetypes by revealing recurring patterns across objects.

Archetypes (AR): Some taxonomy papers reveal higher-order patterns—so-called archetypes—that represent combinations of characteristics. These types are not arbitrary but reflect meaningful groupings that support theory building (Hambrick, 1984). This contribution is related to typology development, as typologies are built around named types, whereas taxonomies primarily organize objects along dimensions and characteristics. Bailey's (1994) discussion of managing and naming types therefore helps clarify the conceptual proximity between archetypes and typologies, while we treat archetypes here as a distinct taxonomy-related contribution.

Research Gaps (RG): By systematically categorizing what is known within a domain, taxonomies expose areas where knowledge is lacking or inconsistent. This makes them effective tools for identifying research gaps that require further exploration (Bayona-Oré et al., 2014). In this context, taxonomies highlight where important open questions remain unresolved, thus setting the stage for future research efforts—a knowledge contribution also recognized in literature review methodology, such as those proposed by Schryen et al. (2020).

Research Agenda (RA): Some taxonomy papers go beyond descriptive categorization by suggesting structured paths for future research. This includes proposing research agenda themes linked to the taxonomy's structure (Land et al., 2013; Bayona-Oré et al., 2014). Such forward-looking guidance is likewise acknowledged by Schryen et al. (2020) as an important form of knowledge contribution within literature reviews.

Develop other Theory (DT): Taxonomies can serve as a theoretical foundation for building more complex theories. By defining constructs and relationships, they support the development of explanatory, predictive, or design theories (Nickerson et al., 2013; Kundisch et al., 2022). This contribution to knowledge is likewise evident in literature that is independent of taxonomy research (e.g., Whetten, 1989; Woo et al., 2014; Ågerfalk & Karlsson, 2021).

Methodological Advancement (MA): Some taxonomy papers contribute by advancing the methodological foundations of taxonomy development itself. Rather than merely applying established procedures, these studies refine, extend, or innovate upon existing methods for constructing and evaluating taxonomies. For instance, they may propose new evaluation or transparency criteria (e.g., Szopinski et al., 2020). Such methodological innovation is also acknowledged in broader IS research discussions, where advancing and refining methodological foundations is highlighted as a significant form of knowledge contribution (e.g., Cecez-Kecmanovic et al., 2020).

Practice Gaps (PG): Taxonomies can reveal disconnects between theoretical constructs and practical realities. By systematically categorizing current research, they help uncover where academic models fail to address relevant practitioner concerns or real-world complexity (Land et al., 2013). This contribution type is especially important for highlighting where conceptual frameworks fall short in applicability (Notheisen et al., 2019; Usman et al., 2017). This contribution is similarly present in non-taxonomy literature (e.g., Rai, 2019).

Decision Making and Action (DM): Taxonomies can directly support decision-making by helping practitioners and policymakers compare alternatives, evaluate strategic options, or define implementation paths. Unlike the identification of general practice gaps, this contribution type is oriented toward actionability: it helps translate abstract structures into concrete organizational, technological, or policy-related decisions (Mwilu et al., 2015; Sarkintudu et al., 2018; Notheisen et al., 2019). This contribution is likewise reflected in literature that stands apart from taxonomy research (e.g., Draper & Maguier, 2023; Rai, 2019).

4.2 Evaluation

We evaluated the taxonomy in two complementary ways: through expert feedback and through an independent classification exercise. The expert assessment provided support for the taxonomy's usefulness, completeness, and applicability[1]. Both experts considered the taxonomy helpful, comprehensive, and manageable for analyzing knowledge contributions in taxonomy papers. They did not identify missing contribution categories or fundamental structural problems. Their feedback mainly concerned terminology: the category initially labelled as "pragmatic" was perceived as potentially misleading and was therefore renamed to "practical" to more clearly capture contributions related to practice gaps, decision making, and action. The independent classification exercise further supported the robustness of the taxonomy. Across the author team coding and the three independent codings, we observed 85% classification agreement. This indicates that the contribution categories could be applied consistently beyond the original taxonomy development team. The remaining disagreements mainly concerned borderline cases, particularly where contributions were implicit rather than explicitly stated. These cases were reviewed and discussed within the author team, and individual assignments were adjusted where appropriate. Taken together, the expert assessment and the independent classification exercise indicate that the taxonomy is conceptually sound, sufficiently clear, and robust enough for application to the corpus of IS taxonomy papers.

4.3 Application

In order to illustrate how taxonomy papers varies in its epistemological contributions, we classified all 67 ISTP. The classification was based on a close reading of the papers' objectives, methodology, results, and stated contributions. The classification reported here represents the final version after incorporating the refinements from the evaluation step. Table 6 provides a randomized excerpt of the classification. The full classification is included in Appendix A2.

[1] The interview guide is available upon request.

Table 6. Classification of IS taxonomy papers to contribution types.

Reference	**Structure to Organize Knowledge**	**Classification of Objects**	**Archetypes**	**Research Gaps**	**Research Agenda**	**Develop other Theory**	**Methodological Advancment**	**Practice Gaps**	**Decision Making and Action**
Althaus et al. (2025)	X	(X)	X					(X)	X
Bandara et al. (2020)	X	(X)		X	X				
Beinke et al. (2024)	X	X	X				X		X
Böttcher et al. (2024)	X	X	(X)	X	X				X
Gottschewski-Meyer et al. (2024)	X	(X)	X						X
Kazan et al. (2018)	X	(X)	X						X
Knote et al. (2020)	X	(X)	(X)	(X)		X			X
Limaj et al. (2022)	X					X		X	X
Marcus et al. (2024)	X					X			
Szopinski et al. (2020)	X	X		(X)	X	X	X		X

The classification shows that IS taxonomy papers differ considerably in the types and combinations of contributions they provide. While all papers contribute to structuring and organizing domain knowledge, they vary in whether they additionally classify individual objects, derive archetypes, identify research gaps, formulate research agendas, develop theory, advance methodological knowledge, reveal practice gaps, or support decision making and action. This variation provides the empirical basis for identifying recurring contribution profiles across the corpus.

To identify such recurring profiles, we applied a Two-Step cluster analysis to the final classification. Table 7 reports the auto-clustering results based on BIC and distance measures. The comparison shows that the four-cluster solution yielded the lowest BIC value. However, the purpose of the cluster analysis was not only to identify the most simple statistical solution, but to derive substantively meaningful archetypes of taxonomy paper contributions. We therefore additionally inspected fixed cluster solutions with regard to statistical indicators, cluster quality, cluster sizes, profile distinctiveness, and theoretical interpretability.

Table 7. Comparison of cluster solutions based on BIC and distance measures.

Number of Clusters	Schwarz's Bayesian Criterion (BIC)	BIC Change	Ratio of BIC Changes	Ratio of Distance Measures
1	769,424			
2	709,329	-60,095	1,000	1,549
3	692,899	-16,430	0,273	1,248
4	692,261	-0,638	0,011	1,548
5	714,187	21,926	-0,365	1,147
6	741,384	27,197	-0,453	1,004
7	768,712	27,327	-0,455	1,287
8	804,015	35,303	-0,587	1,032
9	840,181	36,166	-0,602	1,273
10	882,117	41,936	-0,698	1,114
11	926,213	44,096	-0,734	1,126
12	972,425	46,212	-0,769	1,009
13	1018,788	46,363	-0,772	1,039
14	1065,773	46,985	-0,782	1,160
15	1114,980	49,207	-0,819	1,020

Therefore, although the four-cluster solution performed best in terms of BIC, the six-cluster solution provided the most fine-grained yet still theoretically interpretable differentiation of contribution profiles. In particular, it separated contribution patterns that were merged in more parsimonious solutions, such as theory-method contributions and theory-driven decision contributions. The six-cluster solution was therefore selected as the final interpretive model. The solution comprised clusters of 21, 8, 3, 19, 8, and 8 papers, respectively. One cluster in the six-cluster solution is comparatively small with three papers. We nevertheless retained this cluster because it showed a coherent and theoretically distinctive contribution profile, combining explicit theory development, methodological advancement, and decision-making contributions. We therefore treated it as a meaningful niche archetype.

To support the interpretation of the final solution, we examined the dominant contribution profile of each cluster. A cross-tabulation of contribution categories by cluster is provided in Appendix A3. In addition, we visualized the six archetypes using radar charts. For each cluster and contribution category, we computed a mean contribution score, following the visualization logic of Schryen et al. (2020). Scores range from 0 to 2, where 0 indicates that a contribution is not present, 1 indicates an implicit contribution, and 2 indicates an explicit contribution. The resulting radar charts are shown in Figure 2 and form the basis for the interpretation of the six archetypes.

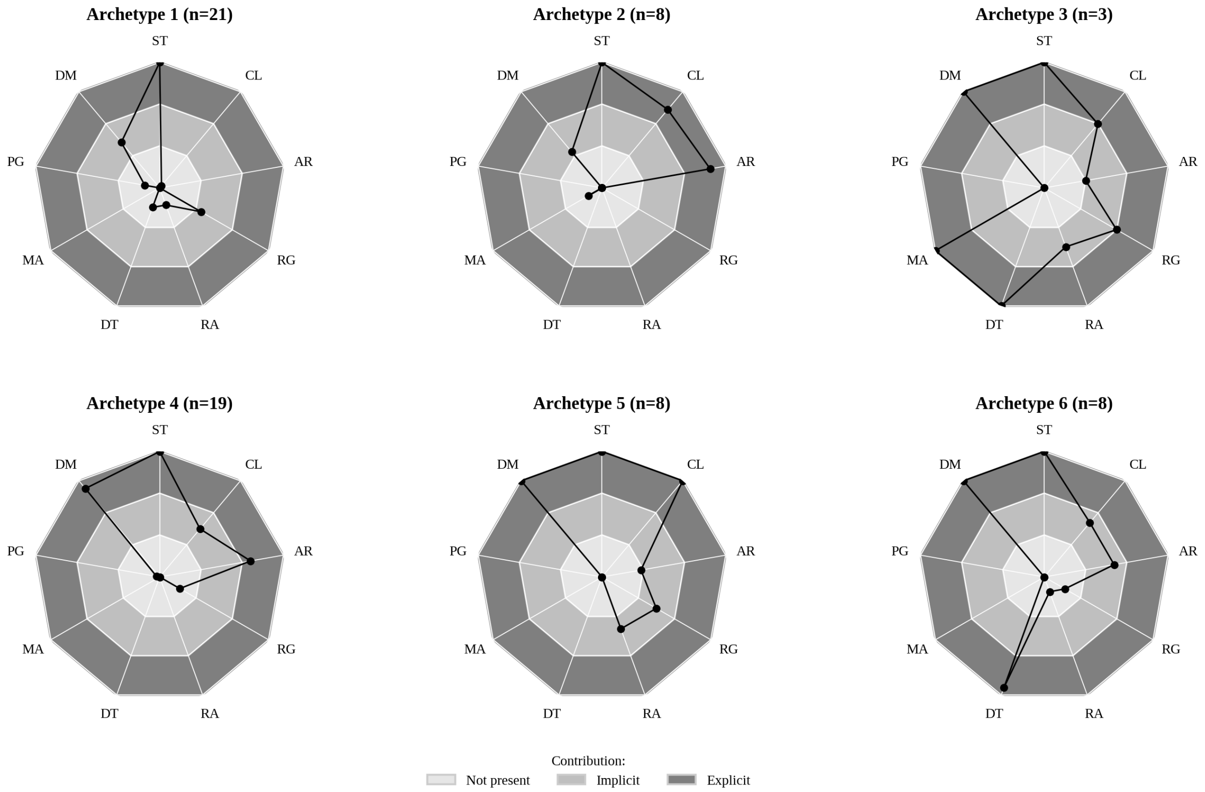


Figure 2. Radar visualization of knowledge contribution patterns across archetypes.

4.4 Archetypes

The six-cluster solution identified six distinct archetypes of taxonomy papers with different knowledge contribution profiles. Cluster sizes were 21, 8, 3, 19, 8, and 8 papers, respectively. The detailed list of individual paper-to-cluster assignments is in Appendix A4. The following interpretation is based on the dominant contribution profiles of each cluster.

Archetype 1: Organize Domain Knowledge

The largest archetype represents the standard and most foundational form of taxonomy work. These papers primarily focus on structuring and organizing domain knowledge. Compared to other archetypes, object-level classifications and archetype development are either absent or not explicitly reported in the paper. Their core contribution lies in systematically synthesizing and clarifying existing knowledge (e.g., Bandara et al., 2024; Cong et al., 2025).

Archetype 2: Archetype Classification

This archetype includes papers that systematically synthesize and clarify existing knowledge and, in addition, derive archetypes. The main contribution of these papers lies in identifying and describing recurring patterns or archetypes within a domain. Some papers also present the underlying classification of individual objects, while others show only the final results, namely the clusters/archetypes. Papers in this group therefore frequently include implicit and explicit archetypes development and show classifying specific objects beforehand (e.g., Gottschewski-Meyer et al., 2024; Kazan et al., 2018). Compared to more practice-oriented archetypes, this group does not strongly emphasize decision support, action-guiding implications, theory advancement, or research agenda setting.

Archetype 3: Method Contribution

The third archetype is small but highly distinctive. Its defining feature is its pronounced contribution to methodological advancement. This archetype consists of papers that combine explicit theory development, methodological advancement, and decision-making contributions. Unlike the more classification- or archetype-centered clusters, this archetype is characterized by a broader and more integrated contribution profile. Its papers do not merely organize knowledge but actively use taxonomy work to advance theory, refine methodological approaches, and support action-oriented implications. Thus, the core contribution of this archetype lies in advancing how taxonomy research can be conducted. Examples include work of Schoormann et al. (2023) and Szopinski et al. (2020).

Archetype 4: Practice-Driven Archetype

The fourth archetype represents papers that combine archetype development with a strong practical and decision-oriented contribution. These papers typically use archetypes not only to describe recurring patterns but also to generate action-guiding insights for practice. In contrast to Archetype 2, the archetypes in this group are more strongly connected to decision making and action, for example by suggesting practically relevant configurations or implications for how actors can interpret and respond to different types. Examples include Kazan et al. (2018), Klotz et al. (2022), Mühlburger et al. (2024), and Sterk et al. (2024). They stand out through their high contribution to decision making and action, while showing little emphasis on research agendas, theory development, or methodological advancement.

Archetype 5: Action-Guiding Classification

The fifth archetype is characterized by explicit classification of objects combined with a strong contribution to decision making and action. In contrast to archetype-focused papers, this group shows only limited archetype development and little emphasis on theory development or methodological advancement. The core contribution of these papers lies in providing classifications that help actors interpret, compare, and position objects within a domain. In this sense, classification serves as a basis for practical orientation and action-guiding insights. While some papers in this group also point to research gaps or future research directions, these aspects are secondary to the dominant classification- and practice-oriented contribution profile. Examples include Böttcher et al. (2024), Cipriano and Za (2024), Hartwich et al. (2024), Singh and Varshney (2020), and Werth et al. (2023).

Archetype 6: Theory Development and Decision Making

The sixth archetype captures papers that combine strong theory development contributions with explicit decision-making and action-oriented contributions. These papers also show moderate levels of classification and archetype development, but they do not substantially contribute to methodological advancement or practice gaps. Compared to the third archetype, this cluster is less methodologically oriented but more clearly represents a theory-based and action-oriented contribution pattern. Taxonomies in this group therefore serve to support theoretical advancement and inform decision making. Examples include Bergman et al. (2022), Bhatt and Seetharaman (2023), Buck et al. (2023), Knote et al. (2020), Oberländer et al. (2021), and Tessmann et al. (2022).

5 Discussion

The six-cluster solution yielded six archetypes of taxonomy papers with distinct knowledge-contribution profiles, comprising 21, 8, 3, 19, 8, and 8 papers, respectively. Because each paper is assigned to exactly one archetype, these clusters provide an empirically grounded map of how taxonomy papers contribute to knowledge in IS. In the following, we discuss these insights.

The first insight is that taxonomy research is far less homogeneous than its established taxonomy development method surface suggests. Although the papers in our sample overwhelmingly rely on a common development method (i.e., Nickerson et al., 2013 and Kundisch et al., 2022), they distribute into six related and recurring contribution profiles. The archetypes further reveal a structure among these contributions. The largest archetype—organize domain knowledge (21 papers)—represents the foundational and most common mode of taxonomy work, in which the contribution lies in synthesizing and clarifying existing knowledge without necessarily classifying individual objects or deriving archetypes. The remaining archetypes can be read as adding further contributions onto this foundation: some add the systematic derivation of archetypes (Archetypes 2 and 4), one channels the explicit classification of individual objects toward practical orientation (Archetype 5), and others extend toward theory development (Archetypes 3 and 6). Organizing domain knowledge thus appears to be the shared base of the genre, upon which more specialized contributions are built. Moreover, contributions to theory development and, in particular, to methodological advancement are comparatively rare: the method-oriented Archetype 3 comprises only three papers, and pronounced theory development is characteristic of only two of the six archetypes. In this context, theory development primarily refers to taxonomy papers that explicitly position their taxonomy as a foundation for subsequent theory building, rather than papers that necessarily provide a fully developed theory themselves. Overall, the most of taxonomy research is directed toward organizing domain knowledge and toward practice- and decision-oriented contributions.

However, identifying these archetypes only addresses one part of the problem that motivated this study. The archetypes clarify what kind of contribution a taxonomy paper makes by providing a shared vocabulary for distinguishing contribution profiles. Yet they do not indicate how well a paper realizes its respective contribution. For example, two papers may both belong to a practice-driven archetype, but they may differ substantially in how useful, original, or methodologically rigorous their taxonomies are.

Table 8. Proposed evaluation criteria for knowledge contributions of taxonomy papers.

Knowledge contribution	How to evaluate its usefulness	How to evaluate its originality	How to evaluate its rigor
Structure to Organize Domain Knowledge	Does the taxonomy make the domain easier to understand or navigate?	Does it offer a new way of structuring or framing the field compared to previous approaches?	Is the structuring logic clearly derived and systematically justified (e.g., dimensions, ending conditions)?
Classification of Single Objects	Does the taxonomy enable clear and consistent classification of real-world cases or phenomena?	Does it introduce novel classification or perspectives that reveal new insights?	Are the classification criteria transparent, replicable, and empirically grounded?
Archetypes	Do the identified archetypes help researchers or practitioners recognize meaningful patterns or types?	Are the archetypes conceptually new or more explanatory than previous research?	Were the archetypes derived systematically (e.g., clustering)?
Research Gaps	Does the taxonomy clearly highlight areas where knowledge is missing or inconsistent?	Does it reveal gaps that were not previously visible?	Is the identification of gaps grounded in comprehensive coverage of existing knowledge?
Research Agenda	Are the proposed research directions specific, actionable, and logically derived from the taxonomy?	Does the research agenda extend theory or open new conceptual perspectives?	Is the link between taxonomy and suggested research areas clearly justified?
Develop other Theory	Does the taxonomy provide conceptual clarity that facilitates further theory development?	Does it propose new constructs or relationships that advance theorizing?	Is the theoretical reasoning sound and are construct definitions and relationships rigorously derived?
Methodological Advancement	Does the paper improve the way taxonomies are developed, evaluated, or applied?	Does it introduce novel procedures, criteria, or methodological integrations?	Are the proposed methodological refinements systematically justified, transparently documented, and demonstrated?
Practice Gaps	Does the taxonomy help identify disconnects between academic concepts and real-world practices?	Does it uncover new or overlooked issues relevant to practitioners?	Is the comparison between taxonomy and practice systematic and well-supported by evidence?
Decision Making and Action	Does the taxonomy provide clear decision-support value?	Does it enable new forms of action or practical reasoning?	Is the link between taxonomy and decision proposals logically or empirically validated?

This distinction between contribution type and contribution quality motivates the need for complementary evaluation guidance. While the archetypes describe recurring contribution profiles, evaluation criteria are needed to assess the quality of these contributions. We therefore complement this with an evaluation lens that helps appraise taxonomy papers not only according to what they contribute, but also according to how convincingly they deliver this contribution. Following Corley and Gioia (2011), we adopt two established dimensions for evaluating research contributions—usefulness and originality—and extend them with a third, rigor, which reflects the methodological soundness of taxonomy development (e.g., Nickerson et al., 2013; Kundisch et al., 2022). *Usefulness* refers to the practical or scholarly relevance of the taxonomy; *originality* captures the novelty of its conceptualization or insight; and *rigor* reflects the methodological and analytical soundness of its development. Table 8 provides an overview of how each contribution type can be evaluated along these measurements.

This evaluative lens helps authors, editors and reviewers assess not only what taxonomy papers contribute, but also how well they fulfil their intended epistemological roles. Therefore, this evaluative lens represents a first step toward assessing the quality of the different knowledge contributions. A second step—which we identify as an avenue for future research—will be to develop guidance on how the identified archetypes themselves can be positioned and evaluated.

6 Conclusion and Outlook

Recent advancements in literature review research (e.g., Schryen et al., 2020; Rowe, 2014) have provided new perspectives on how different methodological genres contribute to knowledge generation in IS research. Inspired by these developments, this study explores the epistemological role of taxonomies—a method widely used in IS research but, unlike literature reviews, still relatively underdeveloped in terms of systematic reflection on its knowledge contributions.

Through an iterative approach, we developed a taxonomy that identifies nine core knowledge contributions associated with taxonomy papers, ranging from structuring domain knowledge and classifying objects to revealing research gaps and supporting theory development. To strengthen the robustness of this taxonomy, we evaluated and refined it through two expert interviews with experienced IS taxonomy developers and an independent classification exercise by three researchers not involved in the taxonomy development. Building on this foundation, we empirically analyzed the taxonomy papers and applied a cluster analysis to identify six archetypes of taxonomy papers contribution: 1) organize domain knowledge, 2) archetype classification, 3) method contribution, 4) practice-driven archetype, 5) action-guiding classification, and 6) theory development and decision making. These archetypes reveal recurring patterns of contributions profiles and characteristics, illustrating how different types of taxonomy research occupy distinct epistemological roles within IS. The organize domain knowledge contribution archetype reflects the foundational role of taxonomies in structuring and clarifying existing knowledge. The archetype classification contribution and the practice-driven archetype contribution both build on archetype development but differ in their dominant orientation: while the former emphasizes classification and the derivation of archetypical patterns, the latter is more strongly oriented toward decision making and action by for example deriving implications for practitioners and support the assessment or positioning of real-world cases. The method contribution and the theory-driven decision contribution show that taxonomy papers can also move beyond knowledge organization by advancing theory, refining methodological approaches, or supporting theory-based action. In particular, the papers in the theory-driven decision contribution is emphasize theory development, yet they show only moderate archetype development. This is noteworthy because archetypes and higher-order configurations are one of the key mechanisms through which taxonomies can move beyond description toward theory building.

Together, these archetypes demonstrate that taxonomy research contributes to IS knowledge in multiple ways, ranging from foundational structuring to theory development, methodological refinement, agenda setting, and practice-oriented decision support.

Our findings advance IS research in three ways. First, they provide a structured vocabulary for articulating the diverse epistemological roles that taxonomies can play in knowledge development. Second, we complement this vocabulary with initial evaluation guidance—summarized as proposed criteria for assessing knowledge contributions of taxonomy papers—supporting more consistent and transparent reviewing and editorial decision making. Third, the identification of six archetypes lays the groundwork for a cumulative understanding of taxonomy research as a distinct methodological genre in IS. In developing our framework, we drew on methodological literature both from within the IS discipline (e.g., Nickerson et al., 2013; Kundisch et al., 2022) and from broader academic fields (e.g., Bailey, 1994; Eldredge & Cracraft, 1980). In this way, we create what Tarafdar and Davison (2018) define as a *Home Disciplinary Contribution*—the integration of reference discipline insights and IS-specific knowledge to generate new disciplinary understanding.

Like any exploratory and conceptual study, this work is subject to limitations. First, although our dataset of (methodological) taxonomy papers is broad, it is not exhaustive and may overlook less visible contributions or implicit epistemological intentions. Second, the identification of contribution dimensions is based on interpretive coding, which always includes an element of subjectivity. This subjectivity is further reinforced by the nature of the underlying material. The taxonomy papers in our sample were written without reference to our framework and without an established vocabulary for articulating taxonomy-specific knowledge contributions. Authors may therefore have faced similar challenges to those motivating our study: making the contribution of a taxonomy explicit and positioning it in relation to existing IS knowledge. Our coding and subsequent clustering therefore rely on interpreting contribution signals in texts that were not originally designed to be assessed through our framework. This introduces a degree of noise into the empirical basis of the archetype analysis. Third, the resulting clusters depend on the chosen algorithm, distance measure, and variable coding, and alternative specifications may yield slightly different groupings. As such, our archetypes should be interpreted as empirically grounded but not definitive representations of taxonomy contribution patterns. For researchers, our framework provides a vocabulary and structure to more explicitly position their taxonomy-based work within broader knowledge-building objectives. It encourages authors to go beyond descriptive classification and consider how their work contributes to theory development, agenda-setting, or practical relevance. For reviewers and editors, the taxonomy and evaluation criteria may serve as a heuristic to assess taxonomy papers more consistently—based not only on formal structure or rigor but also on their epistemological depth. Future methodological work could investigate the relationship between taxonomy contributions and research impact, explore how contribution types evolve over time, or develop author and reviewer guidelines to strengthen methodological rigor and foster greater clarity in research communication. By making taxonomy papers contributions more explicit, we hope this exploration encourages further contributions from researchers and fosters a fruitful dialogue within the community on the potential role of taxonomies in knowledge development in IS research.

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Appendix

Table A1. Distribution of taxonomy papers across publication outlets.

Journal	Number of papers
Electronic Markets	25
Business & Information Systems Engineering	4
Communications of the Association for Information Systems	4
Journal of Information Technology	4
ACM SIGMIS Database: The DATABASE for Advances in Information Systems	3
International Journal of Information Management	3
Internet Research	3
The Journal of Strategic Information Systems	3
Decision Support Systems	2
European Journal of Information Systems	2
Information Systems Journal	2
Information Systems Management	2
Information Technology & People	2
International Journal of Electronic Commerce	2
AIS Transactions on Human-Computer Interaction	1
Information & Management	1
Information Systems	1
Journal of Decision Systems	1
Journal of Management Information Systems	1
Scandinavian Journal of Information Systems	1
Total	**67**

Table A2. Final Classification.

Reference	Structure to Organize Knowledge	Classification of Objects	Archetypes	Research Gaps	Research Agenda	Develop other Theory	Methodological Advancement	Practice Gaps	Decision Making and Action
Abraham et al. (2023)	X			X		X		(X)	X
Albizri (2020)	X			X	X				X
Althaus et al. (2025)	X	(X)	X					(X)	X
Arnold et al. (2022)	X	(X)	X						X
Baier et al. (2023)	X	X	X	X	(X)	X	X		X
Bandara et al. (2020)	X	(X)		X	X				
Beinke et al. (2024)	X	X	X				X		X
Bergman et al. (2022)	X	(X)	X			X			X
Bhatt & Seetharaman (2023)	X	(X)	(X)			(X)			X
Bhattacherjee et al. (2018)	X			(X)					X
Böttcher et al. (2024)	X	X	(X)	X	X				X
Buck et al. (2023)	X	X	(X)			X			X
Buhalis & Volchek (2021)	X							X	(X)
Christmann et al. (2025)	X			X		(X)			(X)
Cipriano & Za (2024)	X	X			X				X
Degen & Gleiss (2025)	X	(X)							
Derave et al. (2024)	X	X							
Duparc et al. (2022)	X	(X)	X						X
Fabri et al. (2023)	X	X	X						
Fassnacht et al. (2024)	X	(X)	X	X		X			X
Fehrer et al. (2025)	X	(X)	X	X					X
Fteimi et al. (2017)	X			X					
Gimpel et al. (2018)	X	X	X						X
Gkinko & Elbanna (2023)	X			X					
Gottschewski-Meyer et al. (2024)	X	(X)	X						X
Hagn et al. (2025)	X	(X)		X					X
Hartwich et al. (2024)	X	X		X					X
Hermann et al. (2024)	X	(X)	X						X
Holland & Guiterrez-Leefmans (2018)	X		(X)		(X)				
Jiwasiddi et al. (2024)	X								X

Reference	Structure to Organize Knowledge	Classification of Objects	Archetypes	Research Gaps	Research Agenda	Develop other Theory	Methodological Advancement	Practice Gaps	Decision Making and Action
Kävrestad et al. (2023)	X								X
Kazan et al. (2018)	X	(X)	X						X
Klotz et al. (2022)	X	(X)	X						(X)
Knote et al. (2020)	X	(X)	(X)	(X)		X			X
Li et al. (2023)	X	(X)	X						
Limaj & Bernroider (2022)	X								
Marcus et al. (2024)	X					X			
McCarthy et al. (2022)	X								
Meier et al. (2023)	X				X				
Morana et al. (2017)	X	(X)		X					X
Möller et al. (2022)	X			(X)					
Mühlburger & Krumay (2024)	X	(X)							(X)
Muschkiet et al. (2023)	X	(X)	X						X
Nohutlu et al. (2023)	X	(X)							(X)
Oberländer et al. (2021)	X	(X)				X			X
Passlick et al. (2021)	X	X	X						
Petrik et al. (2024)	X								X
Plachkinova (2023)	X	(X)							X
Pousttchi & Gleiss (2019)	X								X
Renaud et al. (2024)	X								X
Scheider et al. (2023)	X	(X)	X						X
Schoormann et al. (2023)	X			(X)		X	X		X
Seutter et al. (2023)	X	(X)				X			X
Singh & Varshney (2020)	X	X			(X)				X
Sterk et al. (2024)	X	(X)	X						X
Szopinski et al. (2020)	X	X		(X)	X	X	X		X
Tessmann & Elbert (2022)	X	(X)							
Tilly et al. (2017)	X			X					
Tönnissen et al. (2020)	X	(X)	X	(X)					X
Trang et al. (2024)	X								
Valta & Maier (2025)	X	X		X					X

Reference	Structure to Organize Knowledge	Classification of Objects	Archetypes	Research Gaps	Research Agenda	Develop other Theory	Methodological Advancement	Practice Gaps	Decision Making and Action
Wambsganss & Schmitt(2024)	X	X	X		(X)				X
Wanner et al. (2023)	X	X	X						X
Werth et al. (2023)	X	X	(X)	X					X
Wu et al. (2023)	X		X						
Zeis et al. (2025)	X	(X)	X						X
Zhao et al. (2023)	X								
Σ = X	67	16	24	16	6	11	4	1	43
Σ = (X)	0	28	6	6	4	2	0	2	5

Table A3. Cross-tab Results.

Knowledge contribution	Characteristic	A1 (n=21)	A2 (n=8)	A3 (n=3)	A4 (n=19)	A5 (n=8)	A6 (n=8)
Structure to Organize Knowledge	2 – explicit	100%	100%	100%	100%	100%	100%
Classification of Objects	0 – none	95%	12%	33%	0%	0%	0%
	1 – implicit	5%	12%	0%	100%	0%	88%
	2 – explicit	0%	75%	67%	0%	100%	12%
Archetypes	0 – none	100%	12%	67%	26%	50%	25%
	1 – implicit	0%	0%	0%	0%	38%	38%
	2 – explicit	0%	88%	33%	74%	12%	38%
Research Gaps	0 – none	57%	100%	0%	79%	50%	75%
	1 – implicit	10%	0%	67%	5%	0%	12%
	2 – explicit	33%	0%	33%	16%	50%	12%
Research Agenda	0 – none	86%	100%	33%	100%	38%	88%
	1 – implicit	0%	0%	33%	0%	38%	0%
	2 – explicit	14%	0%	33%	0%	25%	12%
Develop other Theory	0 – none	81%	100%	0%	100%	100%	0%
	1 – implicit	5%	0%	0%	0%	0%	12%
	2 – explicit	14%	0%	100%	0%	0%	88%
Methodological Advancement	0 – none	100%	88%	0%	100%	100%	100%
	2 – explicit	0%	12%	100%	0%	0%	0%
Practice Gaps	0 – none	86%	100%	100%	95%	100%	100%
	1 – implicit	5%	0%	0%	5%	0%	0%
	2 – explicit	10%	0%	0%	0%	0%	0%
Decision Making and Action	0 – none	48%	62%	0%	0%	0%	0%
	1 – implicit	10%	0%	0%	16%	0%	0%
	2 – explicit	43%	38%	100%	84%	100%	100%

Legend: Cells show the percentage of papers within each archetype (column) coded at the respective contribution level (0 = not present/reported, 1 = implicit, 2 = explicit); percentages are computed within cluster and may not sum to 100 due to rounding. Shading intensity is proportional to the percentage of papers exhibiting the contribution (considering only 1 and 2). A1 = Organize Domain Knowledge; A2 = Archetype Classification; A3 = Method Contribution; A4 = Practice-Driven Archetype; A5 = Action-Guiding Classification; A6 = Theory Development & Decision Making.

Table A4. Cluster membership.

Reference	Cluster	Reference	Cluster	Reference	Cluster
Abraham et al. (2023)	1	Holland et al. (2018)	5	Tessmann et al. (2022)	6
Albizri (2020)	1	Jiwasiddi et al. (2024)	1	Tilly et al. (2017)	1
Althaus et al. (2025)	4	Kävrestad et al. (2023)	1	Tönnissen et al. (2020)	4
Arnold et al. (2022)	4	Kazan et al. (2018)	4	Trang et al. (2024)	1
Baier et al. (2023)	3	Klotz et al. (2022)	4	Valta & Maier (2025)	5
Bandara et al. (2020)	1	Knote et al. (2020)	6	Wambsganss & Schmitt(2024)	5
Beinke et al. (2024)	2	Li et al. (2023)	2	Wanner et al. (2023)	2
Bergman et al. (2022)	6	Limaj et al. (2022)	1	Werth et al. (2023)	5
Bhatt & Seetharaman (2023)	6	Marcus et al. (2024)	1	Wu et al. (2023)	2
Bhattacherjee et al. (2018)	1	McCarthy et al. (2022)	1	Zeis et al. (2025)	4
Böttcher et al. (2024)	5	Meier et al. (2023)	1	Zhao et al. (2023)	1
Buck et al. (2023)	6	Morana et al. (2017)	4		
Buhalis & Volchek (2021)	1	Möller et al. (2022)	1		
Christmann et al. (2025)	1	Mühlburger et al. (2024)	4		
Cipriano & Za (2024)	5	Muschkiet et al. (2023)	4		
Degen et al. (2025)	4	Nohutlu et al. (2023)	4		
Derave et al. (2024)	2	Oberländer et al. (2021)	6		
Duparc et al. (2022)	4	Passlick et al. (2021)	2		
Fabri et al. (2023)	2	Petrik et al. (2024)	1		
Fassnacht et al. (2024)	6	Plachkinova (2023)	4		
Fehrer et al. (2025)	4	Pousttchi & Gleiss (2019)	1		
Fteimi et al. (2017)	1	Renaud et al. (2024)	1		
Gimpel et al. (2018)	2	Scheider et al. (2023)	4		
Gkinko & Elbanna (2023)	1	Schoormann et al. (2023)	3		
Gottschewski-Meyer et al. (2024)	4	Seutter et al. (2023)	6		
Hagn et al. (2025)	4	Singh & Varshney (2020)	5		
Hartwich et al. (2024)	5	Sterk et al. (2024)	4		
Hermann et al. (2024)	4	Szopinski et al. (2020)	3		