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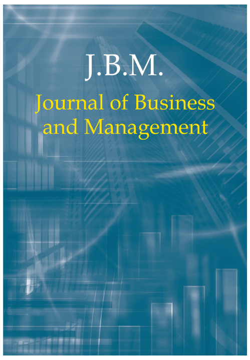

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The meta-organisation perspective on business angels: a thematic evolution

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Abstract: Early-stage investment, vital for innovation and entrepreneurship, faces hurdles in funding. Once led by venture capital (VC), now business angels take the forefront, providing both funds and expertise. A study of 1,607 articles reveals three critical phases: 'individual angels collaboration', 'angel networks' loose coupling', and 'angel alliance's tight coupling'. Meta-organisation theory categorises angel entities based on authority, motivation, participation, governance, and coordination. This research delves deep into early-stage investment, expanding the meta-organisation concept. Insights gleaned are crucial for angel investors, highlighting growth paths. Recognising these entities' evolution can boost startup success. This study lays the groundwork for future research, enriching understanding of early-stage investment dynamics.

Keywords: early-stage investment; business angels; angel group; main path analysis; MPA; meta-organisation.

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1 Introduction

Early-stage investment plays a crucial role in fostering innovation and entrepreneurship, enabling start-ups to become drivers of economic growth. Over time, the landscape of early-stage financing has evolved significantly, with business angels (BAs) emerging as a prominent and distinct source of funding.

While venture capital (VC) has traditionally been emphasised in early-stage investment literature, BAs are typically defined as high-net-worth individuals who invest their own money directly in unlisted early-stage ventures, often providing not only capital but also mentorship, networks, and strategic guidance to entrepreneurs (Mason and Harrison, 2000; Landström, 1993). Unlike institutional venture capitalists, BAs often operate independently or in small informal groups, and their motivations include both financial return and non-financial interests such as personal satisfaction or industry contribution. Over time, these individual investors have gradually shifted toward more structured collective entities, such as business angel networks (BANs) and syndicates. BAs now represent a substantial portion of early-stage investment activity and have undergone notable organisational evolution, transitioning from solo actors to structured, collective investment entities.

BAs as individual investors predate the emergence of the VC industry (Sohl, 2007). What shifted in the 1990s was not the appearance of angels per se, but rather the formation of organised angel groups. This development was partly driven by venture capitalists moving toward larger deals, which left a financing gap for early-stage ventures (Mason, 2006).

Research on BAs has gradually expanded across entrepreneurship, finance, and management domains. Early studies highlighted their critical role in seed financing (Wetzel, 1981), while subsequent work examined decision-making processes, syndication practices, and contributions beyond capital (Mason and Harrison, 2008; Avdeitchikova, 2009). More recent studies continue to explore the professionalisation of angel groups and their evolving role in entrepreneurial ecosystems (Mason and Botelho, 2024). This dispersed body of research underlines the need for an integrative perspective, which our paper seeks to provide through a meta-organisation lens.

Despite this shift, the academic literature remains fragmented. Much prior research continues to focus either on VC or on individual angel behaviours, leaving a gap in our understanding of how BA activity has evolved organisationally, particularly through the lens of meta-organisation theory. This theoretical perspective provides a useful lens for exploring how loosely affiliated individuals (angels) coordinate, govern, and operate without formal employment ties.

The initial stage of VC research began in the early 1980s, focusing on the behaviour of VC and how it adds value to its portfolio companies. For instance, Tyebjee and Bruno (1984) established a standard model for VC investments, outlining five steps (deal origination, deal screening, deal evaluation, deal structing, and post-investment activities) in VC activities that still form the basis for the current investment framework. MacMillan et al. (1985) analysed the standards that venture capitalists use to evaluate new investment projects, which have since become an indispensable topic for subsequent research on all investment behaviours. Bygrave (1988) studied how venture capitalists engage in syndicate investments.

Early-stage investment refers to those made during the seed stage, start-up phase, and other early stages of a business, specifically in new and young companies in technology-related fields (Murray and Lott, 1995); it serves as a crucial source of funding to help start-ups traverse the ‘valley of death’. For new start-ups, the seed and early stages are critical for their development (Timmons and Bygrave, 1986). Before the 1990s, early-stage investments in start-ups were the targets of VC, but as the world economy changed rapidly and pressure mounted on the short-term performance of VC, venture capitalists began to pursue lower-risk investment targets (Bygrave and Timmons, 1992; Camp and Sexton, 1992; Gompers, 1994), shifting their focus towards late-stage investments. This transition from early-stage to late-stage investments by VC led to an equity gap in early-stage investments. To fill this gap, many non-professional investors began to provide start-up financing through informal risk capital to reduce the equity gap in the early stage. As a result, early-stage angel investors have garnered increased attention from academia and the industry.

Early-stage investment is a significant pillar of support for entrepreneurs and has emerged as a hot topic for research in the realm of innovative entrepreneurship. Studies on early-stage investment mainly focus on issues related to the infusion of resources by investors, such as the types of resources involved in the investment, how entrepreneurs match with investors, and how non-professional investors conduct their investments, among others. With the evolution of the early-stage investment concept, a key role has emerged in the investment market: the BA investor, who not only provides financial support to entrepreneurs, but also serves as a supporter in a company's practical operations and a mental pillar for entrepreneurs. BAs invested US$23.1 billion in 2018, accounting for 41% of investors seeking financial support for start-ups, thus becoming the largest source of early-stage financing (Sohl, 2019). The emergence of BA investors has spurred more discussions about the concept of early-stage investment.

Moedl (2019) found that the characteristics of first-round investors play an important role in qualifying early funding as positive signals, and a reputable BA serves as a positive signal for follow-on financing from venture capitalists. However, despite the endorsement of its importance in the entrepreneurial ecosystem by practitioners and scholars, early-stage investment encompasses various concepts, such as informal risk capital, angel investment, angel groups, etc. Furthermore, there are over 30 years of research data in this field, with each research stage focusing on different aspects, and the relationship between various research streams has not been clearly defined or divided. Therefore, in building perspective theories for further research, this study examines two questions as follows.

1 How has early-stage investment literature developed?

2 What new developments are there in early-stage investment?

To answer these questions, we conduct a systematic review through the collection and analysis of 1,607 academic articles related to early-stage investment. The goal of this study is to investigate the existing literature on early-stage investment to provide a research roadmap for future research.

The aim of this paper is to examine the thematic evolution of research on BAs, as a distinct yet central component of early-stage investing, through the lens of a meta-organisation perspective. Specifically, it focuses on how BA research has evolved from individual-level studies to organisational forms, addressing prior fragmentation and providing an integrative framework for future inquiry.

This study aims to map and analyse the evolution of BA investing literature through main path analysis (MPA). Specifically, it targets both academic researchers and industry practitioners interested in early-stage financing, and delivers:

1 a clear typology of three meta-organisational forms – individual angels, loose-coupling networks, and tight-coupling alliances – based on patterns of collaboration and governance

2 empirical insights into how angel investing has shifted from informal, solo activities to structured, collective entities

3 practical guidance for angel investors, policymakers, and platform designers on navigating and fostering these evolving organisational models.

While a considerable body of literature has examined early-stage investment, particularly VC and BAs, important gaps still remain. Most existing studies have focused primarily on individual investment behaviours, decision-making processes, and investment performance metrics of BAs and VCs. However, there is limited research exploring the evolution of BA investment from an organisational perspective, especially through the lens of meta-organisation theory.

Moreover, although substantial literature exists on various forms of angel investment, few studies have systematically traced the developmental trajectory of angel investing literature itself. This has resulted in fragmented insights that do not fully capture the transformation from individual to collective forms of investment. In particular, the implications of angel investment's organisational evolution – such as shifts in governance structures, coordination mechanisms, and investment dynamics – remain under-explored.

To address these gaps, this study employs MPA to systematically review and analyse the evolution of early-stage investment literature. Specifically, it aims to elucidate how BAs have transitioned from informal, individual investment activities to more structured, organisational forms. By applying a meta-organisation framework, this study provides a nuanced understanding of how different organisational forms influence angel investing practices, governance, and outcomes, offering novel theoretical insights and practical guidance for researchers, investors, and policymakers.

2 Methodology

2.1 Main path analysis

MPA is a method combining bibliometrics and social network analysis, first introduced by Hummon and Doreian (1989). This method identifies the principal development trajectory of a research field by weighting the citation links among the literature. This trajectory not only pinpoints the most important studies in the research direction, but also uncovers the main pathways of knowledge flow within the research field (Bhupatiraju et al., 2012; Huang et al., 2021). By employing this analytical method, we can better understand the research development trajectory of early-stage investment, as well as various sub-fields of study.

MPA is conducted in two steps. The first step calculates the traversal counts of each citation link in a citation network, as a result differentiating the significance of each citation link. Among the various traversal count algorithms, in this study we adopt the search path link count (SPLC) algorithm suggested by Liu et al. (2019). The second step explores the crucial trajectory by connecting the significant citation links into a path according to the value of traversal counts. Taking into account that some aspects of the literature cannot be covered, this study adopts key-route MPA, proposed by Liu and Lu (2012), which can search multiple paths and ensure all significant citation links are included in the final results, making it more practical than the traditional MPA. Therefore, this study applies the key-route MPA to identify and illustrate the development trajectory of early-stage investment research.

2.2 Literature search

The search keywords were synthesised from several literature review articles (Colombo et al., 2023; Cumming et al., 2019; Drover et al., 2017; Landström and Sørheim, 2019; Tenca et al., 2018; White and Dumay, 2017) in recent years. These include highly relevant terms such as ‘early-stage investment’, ‘informal venture capital’, and ‘angel funding’. The database searched was the Social Sciences Citation Index (SSCI) and Science Citation Index Expanded (SCI-Expanded) within Web of Science, spanning the years from 1991 to 2022. The types of articles searched include articles, early access, and review articles.

Table 1 Search strategy and keywords used

Database	*Web of Science*
Search strategy	TS=((‘angel’ or (‘informal venture capital’ or ‘informal risk capital’) or ((‘early stage’ or ‘early-stage’ or ‘seed’ or ‘start-up’ or ‘startup’) and (‘funding’ or ‘finance’ or ‘investment’))) and (‘entrepreneur*’ or ‘startup’ or ‘start-up’ or ‘new venture’))
Document Type	Articles, early access, review articles
Search Area	SSCI and SCIE databases of the WOS
Time Span	From 1 January 1991 to 31 December 2022

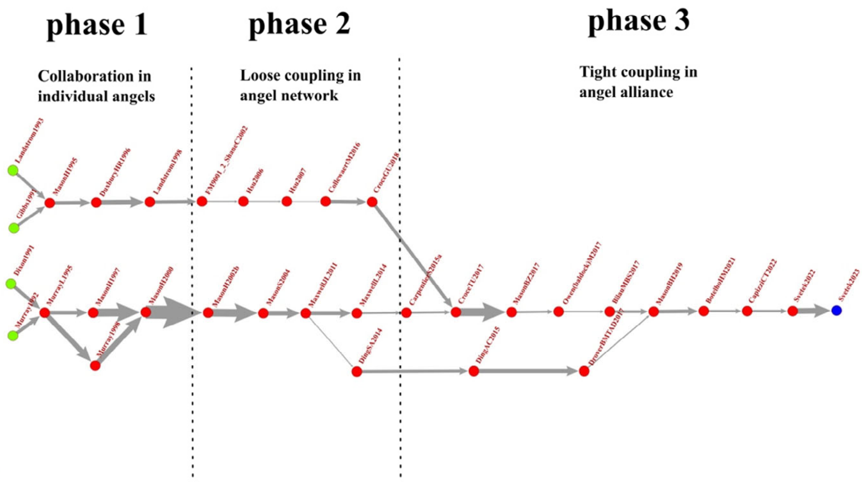
Through the aforementioned search strategy, 1,607 articles in total were found in the WOS database. The citation information from these articles was used as the data for constructing the MPA network.

After completing the literature collection, the citations were processed using the SPLC algorithm, transforming them into a comprehensive citation network in which articles are represented as nodes and citation relationships as directed edges. This network facilitated a systematic analysis of knowledge flow within the field. Traversal counts were then calculated using the SPLC algorithm to quantify the frequency and significance of citation links. Subsequently, Key-route MPA was applied by identifying significant start and end nodes (key literature) and tracing the prominent knowledge pathways connecting them. The resulting main path highlights the critical literature shaping the evolution of early-stage investment research.

3 Analysis

Based on the result of key-route MPA, we construct the development trajectory as shown in Figure 1, which includes 32 articles. In this figure the arrows indicate knowledge flow direction, pointing from the cited articles to the citing articles. Each article has a label, indicating the surname of the first author, followed by the initials of the co-authors, and finally the year of publication. The thickness of the lines represents the ratio of the SPLC value.

Figure 1 Development trajectory of early-stage investment literature (see online version for colours)



3.1 Development trajectory of early-stage investment

This section applies MPA to examine how scholarly understanding of BAs in early-stage investment has evolved – focusing not on proving their importance, which is well established, but on tracing the intellectual development and shifts in emphasis within the literature.

Based on an in-depth review and interpretation of the main path, this study categorises the evolution of BA investing into three distinct phases. These phases are delineated according to the changing patterns of investor collaboration and organisational structures observed across time. The analysis reveals that the composition of angel investment and its collaborative forms have significantly evolved alongside broader societal and technological developments.

- collaboration among individual angels: initially, angel investors operated individually or formed informal collaborations to pool resources and expertise
- loose coupling in angel networks: over time, structured yet loosely connected networks emerged to facilitate easier interaction between angel investors and entrepreneurs, characterised by informal relationships and limited collective actions
- tight coupling in angel alliances: more recently, tightly coupled and formally organised angel alliances have developed, featuring clearly defined governance structures, standardised investment procedures, and collective decision-making mechanisms.

The 1980s were a critical period for the restructuring of the world's financial markets. The VC industry played a significant role in this economic restructuring. However, scholars found that as VC firms entered the 1990s, they shifted towards investing in larger, mature companies, avoiding early-stage investment targets (Gibbs, 1991). The failure of the UK VC industry to pivot towards higher-risk start-ups and early-stage financing was the greatest shortcoming of the sector in the 1990s (Murray, 1992).

3.1.1 Phase 1: collaboration in individual angels

The origins of BA research can be traced back to the seminal work of Wetzel (1981), who conducted one of the earliest systematic studies of informal investors in the United States. Wetzel's pioneering research revealed that BAs played a substantial and largely undocumented role in financing early-stage ventures, predating the institutionalisation of VC. His work laid the foundation for subsequent research on the characteristics, motivations, and behaviours of individual angel investors (e.g., Gaston, 1989; Mason and Harrison, 1995), and highlighted the need to distinguish angel investing as a distinct phenomenon within the broader entrepreneurial finance landscape. In this study, we build upon that foundation to explore how angel investment has evolved not only in practice but also in organisational form.

Phase one of the study centres on the emergence of individual BAs who stepped in to fill the early-stage funding gap left by VC's shift toward later-stage investments during the 1990s (Gibbs, 1991; Murray, 1992). Early seminal studies identified these actors as informal investors operating independently, often motivated by a mix of financial and non-financial considerations (Mason and Harrison, 1995; Landström, 1993).

This phase, while dominated by individual investors, also witnessed the beginnings of informal collaboration through co-investment and personal networks. Although most literature at this stage (e.g., Mason and Stark, 2004; Ding et al., 2014; Maxwell and Lévesque, 2014) focused on individual-level investment decisions, some studies acknowledged that angels occasionally coordinated informally to share deal evaluations or jointly invest. For example, according to Mason and Harrison (2000), by the year 2000, the number of early-stage investments made by BAs was estimated to be approximately eight times greater than those made by institutional venture capitalists. However, it is important to note that such estimates are based on indirect data and approximations, as angel investment activity is inherently informal and often underreported in formal financial databases.

Therefore, rather than structured group behaviour, the 'collaboration' in this phase refers to ad hoc partnerships and informal syndications, not formal organisational forms. This distinction marks the early tension between the individualistic roots of angel investing and the eventual trend toward organised angel groups.

Overall, phase 1 research established the foundations of BA studies by emphasising individual-level characteristics and informal collaboration (Wetzel, 1981; Landström, 1993; Mason and Harrison, 1995), laying the groundwork for later examinations of institutionalisation.

3.1.2 Phase 2: loose coupling in angel networks

Building on these early collaborations, the 1990s witnessed the institutionalisation of angel activity through the formation of BANs. In this phase, BA organisations transitioned from informal collaboration to loosely structured networks. BANs served to connect investors with entrepreneurs and reduce information asymmetry. The development of BANs has also been shaped by policy interventions. Mason and Harrison (1997) argued that public sector-operated BANs were more cost-effective in bridging finance than private-sector models, which tended to focus on later-stage investments. Similarly, Murray (1998) emphasised the role of public policy in closing early-stage funding gaps. These views underscore the policy-driven origins of BANs in many

European contexts, although the organisational forms have since diversified. These networks provided opportunities for knowledge exchange and occasional joint investments but still lacked formalised procedures and group cohesion.

Recent studies further illuminate the internal dynamics of BA groups by identifying the pivotal roles played by internal gatekeepers and facilitators. Paul and Whittam (2010) describe how gatekeepers within angel syndicates serve as critical intermediaries, selecting, filtering, and presenting investment opportunities to the wider group. Their role shapes not only access to deals but also the structure of group-level deliberation.

Building on this, Mason and Botelho (2016) examine how exit considerations influence the initial screening behaviour of angel group gatekeepers. They find that the anticipated mode of exit significantly affects how investment opportunities are evaluated and communicated, highlighting the gatekeeper's strategic role in aligning individual and group-level interests.

Most recently, Botelho and Mason (2024) conceptualise angel groups as a form of collective action, where trust-based coordination and a shared sense of group identity help overcome the inherent decentralisation of informal investing. These mechanisms reflect the gradual transition of angel investing from a loosely connected network of individuals into a more coherent organisational form – supporting our classification of BA organisations as evolving meta-organisations.

In parallel with the development of BANs, another important institutional innovation was the emergence of angel investment platforms. Wetzel's (1983) discussion of the 'VC network' can be viewed as an early conceptualisation of such intermediary platforms – designed to facilitate connections between entrepreneurs and informal investors through systematic and centralised processes. These platforms share similarities with BANs but often place greater emphasis on information processing and deal-matching efficiency.

Over time, particularly with advances in digital technology, newer angel platforms such as AngelList, Seedrs, and Crowdcube have emerged. These digital platforms have transformed the way BAs interact with investment opportunities, enabling asynchronous decision-making, broader geographical reach, and even algorithm-driven screening processes. While these newer platforms are not the focus of the current study, they represent a critical extension of the loose coupling logic of BANs and should be acknowledged as part of the broader evolution of angel investing infrastructure.

Taken together, phase 2 research demonstrated how angel networks and platforms improved transparency and reduced information asymmetry, while still lacking formalised governance (Mason and Harrison, 1997).

While BANs improved connectivity, the subsequent stage saw the emergence of tightly coupled alliances, characterised by greater formalisation and collective decision-making.

3.1.3 Phase 3: tight coupling in angel alliance

BANs create many investment and financing opportunities for angel investors and entrepreneurs. Facing the increasingly diverse industry environment for early-stage investment, structured angel groups and clubs provide entrepreneurs with a more efficient operating mode, allowing angel investors to find investment targets more effectively and invest in transactions they originally could not accomplish.

In this stage there is a surge in research focusing on BA organisations. Carpentier and Suret (2015) found that members of BA organisations, unlike independent angel investors, are more like venture capitalists in their investment decisions, focusing on market and execution risks rather than agency risks. Croce et al. (2017) primarily explored the decision-making process of BA organisations and evaluated the criteria for assessing business opportunities at different investment stages. Their research mentioned that BA organisations are gradually becoming mainstream in early-stage investments, causing a rethinking and discussion of various investment behaviours of BAs from the perspective of group behaviour. In addition, the term 'communities-of-practice' was used by some scholars to describe the characteristics of BA organisations (Mason et al., 2017). Mason et al. (2019) further believed that the robust development of BA organisations would have significant implications for research in the field of angel investment. Specifically, this development challenges the traditional definition of BAs, changes the characteristics of BAs, and alters the way investment processes occur. BA organisations, besides being recognised academically, are also believed by the public sector to bring positive benefits to early-stage investment.

The UK government once co-invested in start-up teams with BA organisations using mutual funds, encouraging the establishment of new BA organisations (Owen and Mason, 2017). A similar approach has also been used in Portugal (Bilau et al., 2017). At this stage, angel investors, seeking mutual benefits, form alliances, accept the terms required by the alliance, and achieve common goals. Aside from bringing them investment benefits, it also enables knowledge and experience sharing and enhances investment negotiation capabilities. This type of tight coupling alliance forms a new group investment behaviour model in early-stage investment for the start-ups ecosystem. Capizzi et al. (2022) also indicated a positive correlation between start-up teams that receive investment through the network structure of BAs and the possibility of obtaining subsequent VC financing. Svetek (2022) found that BAs place great emphasis on cooperation in investment activities, attributing more importance to various signals of cooperativeness.

Overall, phase 3 underscores the increasing formalisation of angel groups, which now function as tightly coupled meta-organisations with defined governance structures and standardised procedures (Carpentier and Suret, 2015; Croce et al., 2017; Mason et al., 2019). This evolution demonstrates the convergence of angel investing with more formal organisational logics, while still retaining its distinctiveness from VC.

4 Discussion

Building on the three phases of thematic evolution identified in Section 3, this section discusses their implications for theory and practice.

4.1 Theoretical implications

Recent contributions to angel research highlight the increasing professionalisation of angel groups and their embeddedness in entrepreneurial ecosystems. These developments extend the trends described in phase 3, reinforcing how angel organisations now operate with more formalised governance and collective decision-making (Mason et al., 2019; Mason and Botelho, 2024). Rather than treating recent studies as a separate stream, they are integrated here as a continuation and consolidation of the thematic trajectory identified earlier.

We further examine BA organisations from another theoretical perspective, the meta-organisation. A meta-organisation refers to a network that includes corporations or individuals, which is not constrained by authority based on employment relationships, but characterised by system-level goals (Gulati et al., 2012). In a meta-organisation, each agent has its own motivations, incentives, and perceptions, but unlike traditional business corporations, each angel is not linked through a formal power framework associated with employment contracts. BA organisations consist of independent BAs who come together for early-stage investments in start-up teams. They evaluate and invest in the start-ups collectively, forming a network of coordinated consensus with no employment relationships among them. Given the definitions and nature of both, it is more appropriate to explore BA organisations using the theory of meta-organisations.

Meta-organisations are identified based on two important dimensions: permeability of boundaries and degree of stratification (Gulati et al., 2012). Permeability of boundaries is the degree to which a meta-organisation's boundaries are open or closed, whereas the degree of stratification is the degree of internal stratification and refers to how hierarchical it is. Through these two dimensions, four models of meta-organisations can be combined: closed community, open community, extended enterprise, and managed ecosystem.

According to Sohl (2007), BA organisations can be classified into several types: individual angels, the facilitator, the informal group, the formal angel alliance, matching networks, and the electronic network. We categorise these BA organisations identified by Sohl according to our prior development trajectory of early-stage investment research, as well as the structure of meta-organisations. Thus, the BA organisations can be divided into three types as follows.

4.1.1 Collaboration among individual angels

Considering the studies on phase 1 mainly focus on BAs collaborating with each other in joint investments, this study defines phase 1 as Individual Angels Investment as Collaboration in Individual Angels. This study considers the relationship among BAs at this stage as collaboration, because BAs are not affiliated with any particular organisation, yet they still cooperate and jointly invest in start-ups. As the literature has indicated, collaboration entails the voluntary participation of individuals, without a central authority, to address situations that require contributions from multiple interdependent parties (Beck and Plowman, 2014). This can happen through personal social capital, introduced by business associates, or via a facilitator bringing together by BAs. Some informal angel groups also fall under this category, because of their collaborative investment orientation.

Individual angels frequently collaborate in loosely organised comprising four to six angels, congregating around a specific investment. Each angel contributes specialised knowledge and experiences pertinent to the particular deal. Another distinctive attribute of the individual angel is their source of deal flow. While this sourcing might appear serendipitous, it is, in fact, highly efficient (Sohl, 2007).

4.1.2 Loose coupling in angel networks

In phase 2 the distinction of BAs organisations from phase 1 lies in the emergence of a networked structure. Organisations in phase 2 operate through specific interpersonal networks, holding regular or irregular matchmaking activities between angel investors and entrepreneurs. These formats include matching networks or BANs. Most of these organisations are hosted by non-profit public sectors, with a small portion hosted by private entities. Since the interactive relationship between members of Angel networks is relatively less intense and there is less concept of synergy, this study defines this type of meta organisation as 'loose coupling'.

In phase 2 the distinction of BA organisations from phase 1 lies in the emergence of a networked structure. Organisations in phase 2 operate through specific interpersonal networks, holding regular or irregular matchmaking activities between angel investors and entrepreneurs. These formats include matching networks or BANs. Most of these organisations are hosted by non-profit public sectors with a minority hosted by for-profit organisations. The interaction among members of angel networks is less intimate and there is lesser concept of synergy in this type of organisation. As from the definition by Glassman (1973), "the degree of coupling between units depends on the activity of the variables they share". When two units share fewer variables or the associated variables are weaker, they are loosely coupled. Snook (2000) also mentioned that the reason an organisation has loose coupling is because of the less interaction among its members. Based on these definitions, this study defines the meta-organisation model of angel networks as 'loose coupling'.

The biggest investment benefit of the meta-organisation for its members is that it can increase the transparency of the early-stage investment market and reduce information asymmetry (Mason and Harrison, 2000; Romaní et al., 2013; Zu Knyphausen-Aufseß and Westphal, 2008).

4.1.3 Tight coupling in angel alliance

In phase 3 Angel Alliance, the BA organisations operate as a professionally managed investment group with established procedures for sourcing deals, screening, conducting due diligence, negotiating investment terms, and executing investments (Mason et al., 2019). This type of angel alliance has a corporate structure, with a board of directors setting strategies and employing several staffs to handle administrative tasks. Angel investors join in the role of partners, not employees, of the BA organisation, and there is no hierarchical relationship among the angel investors, who can participate in various investment activities. The distinction from the first two phases lies in the tighter connections between investors, forming a tight structure.

In Angel Alliance the interaction between investors extends beyond matchmaking through interpersonal networks to close collaboration in sharing resources and co-investing. Furthermore, members in this organisational structure often engage in shared discussion and decision-making about investment targets, emphasising the concept of collective decision-making and carrying out investment activities through standardised procedures. According to scholars' studies, an organisation that emphasises standardisation, has a high degree of interdependence, and is centralised in power is defined as 'tight coupling' (Burke, 2014; Weick, 1976). Given the relatively close interaction and strong concept of collaboration among members of Angel Alliance, along with standardised investment activity procedures, this study defines such organisations as 'tight coupling'.

The meta-organisation of tight coupling in angel alliance offers number of advantages to its members in terms of investment risks, such as presenting a set of pre-screened investment opportunities, reducing due diligence costs, pooling larger amounts of investment capital, and diversifying greater investment risks (Butticè et al., 2021; Croce et al., 2017; Kerr et al., 2014; Paul and Whittam, 2010).

As meta-organisations are characterised by the lack of employment relationships and authoritative constraints among their members, BA organisations formed as meta-organisations exhibit different characteristics in terms of authority, motivation, and participation, as well as governance and coordination compared to traditional organisations. We thus draw on the three fundamental organisational perspectives proposed by Kretschmer et al. (2022) – authority, motivation and participation, and governance and coordination – to investigate angel organisations at different developmental stages.

First, in traditional organisations, authority is built upon the possession of essential productive assets and can be exercised through the power of management and employment contracts, which can terminate the employment of employees who violate rules (Kretschmer et al., 2022). This application of authority allows owners or management to control the operation of the workplace and ensures that employees comply with regulations. However, in the context of BA organisations, all organisations are typically characterised by high permeability at their boundaries. In the early phase of angel investment syndications, the authority lies in the social capital, business associates' networks, and the angel investor's past investment reputation. If initiated by a facilitator, then similarly the facilitator's network, social capital, and past credits are the influencing factors of authority. As the development progresses to the BAN phase, many BANs – particularly in certain European contexts – have historically been supported or operated by non-profit public sector institutions (e.g., Mason and Harrison, 1997; Murray, 1998). However, this is not universally the case, as some BANs are also established by private entities, foundations, or mixed governance models, with authority stemming from their networks, reputation, and social capital. Some non-public sector entities operate BANs as well, where the authority stems from the entity's past industry network relationships, credits, and social capital. Therefore, there are no binding constraints on angel members who join. Cooperation is based on investment cases, and social capital serves as a bonding force. In the case of BA groups, the organisation is more akin to a traditional company structure. There are certain norms and conditions for joining, and there are minimum requirements for participation in activities. Screening and elimination mechanisms exist to maintain the quality of members. From the perspective of meta-organisation, the BA group belongs to a closed boundary with a high degree of stratification.

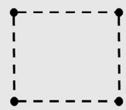
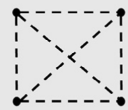
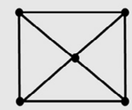
Second, from the perspective of motivation and participation, traditional organisations attract employees by directly paying wages and salaries. However, BAs constitute a unique ecosystem. Building on the widely accepted definition by Mason and Harrison (2008), we differentiate BAs not only by their individual traits, but also by their collaborative configurations and organisational embeddedness. Such a specific investor's motivation to enter the early-stage angel investment field is not solely for capital gains from investment; non-financial motives emerge as a very strong secondary consideration for becoming a BA (Mason and Harrison, 2002). These non-financial motives include commercial skills, experience, business know-how, and contacts, playing a hands-on role in the company (Mason and Harrison, 1995). However, since angel investors are informal investors, they are at a disadvantage in terms of investment efficiency and information acquisition. Therefore, BANs solve the problem of information asymmetry and provide a good investment matching platform to assist entrepreneurs and angel investors in establishing a communication channel for investment. Some BANs also offer value-added services such as helping entrepreneurs prepare for investment (Mason and Kwok, 2010; Mason and Harrison, 2001) and angel investment training courses (San José et al., 2005). These value-added services can also increase the willingness of angel investors to participate. In addition to the similar motivations for joining BANs, the motives for angel investors to join angel groups include having a diversified investment portfolio, superior deal flow, finding different investment opportunities, and learning from other investors (Mason et al., 2019).

Third, we explore about BA organisations' governance and coordination. In traditional organisations, governance and coordination are constrained by hierarchical management to regulate organisation rules and resources. In the types of meta-organisations of angel investment, the Collaboration in Individual Angels type has no formal governance and coordination mechanisms and relies on their social and human capital. Although loose coupling in angel networks is led by a specific organisation (public sector or for-profit organisation), there are no norms for task allocation and responsibility boundaries, and there are no specific rules for joining angels. Tight Coupling in Angel Alliance has an organisational structure, a board of directors, and an administrative team, and it imposes more conditions and requirements on the joining angel investors. The investment decision-making differs from the previous two types and is a group decision-making process. The group's operating strategic decisions are made by the board of directors.

In summary, the meta-organisational characteristics possessed by BA organisations – namely, the lack of employment relationships among members and the absence of authoritative constraints - break the constraints of authority in traditional organisations, offer more valuable motivation and participation, and provide more flexible governance and coordination. These factors invigorate the early financing momentum in the start-ups ecosystem. The three types of BA organisations can provide different investment support at the early stage under different regional and situational contexts.

These three types of BA organisation members are all BAs who, under different circumstances and opportunities, have the potential to link up and form together for early-stage investment. In random investment cases, the collaboration in individual angels is formed through networking and social capital, where angels link up to invest together. To stimulate regional early-stage investment activities and facilitate information exchange between entrepreneurs and investors, the loose coupling in angel networks, organised by the public sector or a few profit entities, regularly hosts matchmaking events. More stringent and disciplined BA groups have emerged as it develops, actively driving regional early-stage investment activities. These three types embody meta-organisations' characteristics but differ in organisational strategies. Combining the results of MPA and meta-organisation analysis, the summary is depicted in the following figure 2.

Figure 2 Three types of meta-organisation in early-stage investment

	Strategic dimensions		
Meta-organizational features	Collaboration in Individual Angels	Loose Coupling in Angel Networks	Tight Coupling in Angel Alliance
Meta-organizational networks			
Sources of power and authority	Social and human capital	Public sector, experienced investors	Boundary permeability and stratification
Sources of motivation for participation	• Self-motivation • Capital gains • Tax incentive	• Scale of network, Information and knowledge sharing • Good quality deals Angel training programs • Investing diversification	• Reputations and credits of angel group • Cognitive resources and shared competencies • Widen social network • Risk and information sharing
Modes of governance and coordination	Social connection	Collective engagement	Corporate governance

Building on the trajectory described in phase 3, recent research further consolidates this evolution. Studies such as Mason and Botelho (2024) and Arundale and Mason (2025) highlight the increasing professionalisation of angel groups and their embeddedness in entrepreneurial ecosystems. Rather than standing as a separate addition, these contributions are explicitly integrated into the phase 3 trajectory of formalisation and meta-organisational development, thereby reinforcing the theoretical implications discussed in Section 4.1.

Complementing this, Arundale and Mason (2025) investigate the due diligence process within a UK angel group and reveal that, despite being individually performed, due diligence activities are deeply embedded in informal peer coordination. Their findings illustrate that information exchange, mutual validation, and shared interpretation are essential elements of decision-making, even in loosely structured angel networks.

These recent contributions resonate with our classification of BA organisations as meta-organisations varying in their degree of structure and coordination. They offer additional empirical support for the proposed typology and highlight the relevance of our framework for understanding the evolving nature of angel investing as a collective and organised activity.

4.2 Practical implications

Based on the results of MPA, early-stage investments are moving towards a group-oriented development in the later stage both in practice and in academia. The development of BA organisations has stimulated this trend of angel investor collectivisation and requires rethinking and discussing various investment behaviours of BAs from a group behaviour perspective. This kind of development has been described by some scholars as 'communities-of-practice' in relation to the characteristics of BA organisations (Mason et al., 2017). The term 'communities-of-practice' refers to a group continuously striving towards a common goal. In this continuous participation, a series of ideas, ways of doing things, and resources (including experience, stories, methods for solving problems) evolve, along with a shared practice among members (Wenger, 2011). Therefore, Mason et al. (2017) believed over time that the development of BA organisations will continually improve the standardisation level of investment evaluation.

From a practical perspective, the increasing formalisation of angel groups has important implications. First, alliances adopting standardised due diligence and collective governance can enhance investment quality and reduce risks for individual investors. Second, public policy initiatives such as co-investment funds and tax incentives can play a catalytic role in sustaining the development of professionalised angel networks. Finally, by bridging the financing gap left by venture capitalists shifting toward larger deals, organised BA groups strengthen entrepreneurial ecosystems and provide more consistent support for early-stage ventures.

Together, these insights show how the thematic evolution traced in Section 3 translates into both conceptual clarity and practical relevance, reinforcing the need to view BA activity as a meta-organisational phenomenon.

5 Conclusions

5.1 Conclusions

From the 1990s to the present, there has been significant development in early-stage investment research, and the themes have greatly diverged from their origins. Through MPA, we have generated a main path comprised of 32 articles related to early-stage investment out of 1607 articles. Through this main path, we can trace the development context of early-stage investment and explore the evolution of key roles within it.

In response to the first question, ‘how has early-stage investment literature developed?’ through MPA we derive three phases from the main path. In the first phase, Collaboration in Individual Angels, BAs replaced VC as the mainstream source of funding in early-stage investment, becoming the focus of early-stage investment research. This research included the nature of BAs, investment decisions, the interaction with other investment funds, etc. In the second phase, Loose Coupling in Angel Networks, preliminary network structures were introduced to connect the demand and supply sides of early-stage investment, reducing transaction costs and information asymmetry and also playing an educational role in the early investment market. In the third phase, Tight Coupling in Angel Alliance, we enter a more rigorous organisation. In addition to maintaining the characteristics of BA early-stage investment, it also has a systematic investment decision collective, ample resources to find cases and manage post-investment, and better investment benefits. Therefore, it also gives rise to the research direction of early-stage investment organisation.

In addressing the development of early-stage investment organisation, this study uses the meta-organisation theory for analysis and discussion. We classify Sohl’s categories of BA organisations based on the trajectory of our previous early-stage investment research. We categorise BA organisations into three types of meta-organisations: collaboration in individual angels, loose coupling in angel networks, and tight coupling in angel alliance.

This study further discusses different stages of BA organisations through the three perspectives that impact the fundamental nature of an organisation: authority, motivation and participation, governance and coordination. Upon rigorous examination of three distinct meta-based angel organisations, it becomes evident that the modalities of collaboration among angel investors are undergoing a nuanced evolution in response to the shifting environmental landscape. Concurrently, this evolution engenders diverse paradigms of governance and coordination. Such insights furnish both investors and entrepreneurial teams with an enriched analytical lens for delving into the intricacies of early-stage investment. Possible directions for future research include whether the development to a meta-organisational angel group will lose the essence of BAs, or develop into a formal organisation, or adapt to local conditions.

In conclusion, this study provides a comprehensive overview of past early-stage investment literature through the use of MPA. In terms of theoretical contributions, we expand the concept of meta-organisation. By differentiating the strengths and weaknesses of the basic characteristics of an organisation, we present the concept of meta-organisation more comprehensively. Specifically, we compare the basic organisational features and their operation and development in three types of meta-organisations: collaboration, loose coupling, and tight coupling. Moreover, we highlight the importance of meta-organisation in the field of angel investment.

This study identifies three patterns of BA meta-organisation based on two dimensions of meta-organisation and traces the evolution of BA organisations at different stages using the trajectory of MPA. As for practical contributions, this research not only delineates the development of BA organisations into three stages, but also provides a reference for angel investors at different developmental stages on how to manage their interactions with other stakeholders. This includes how entrepreneurs can fundraise from different BA organisations and how VC can establish fundraising elevators with different types of BA organisations, thereby fostering a healthy entrepreneurial ecosystem.

By synthesising these insights, this study provides a more coherent account of the thematic evolution of BA research, clarifies its organisational transformation through a meta-organisation perspective, and enhances its relevance for both scholarly inquiry and practical application.

5.2 Research limitations and future research directions

This study faces several limitations that provide avenues for future research. First, the reliance on the SSCI and SCIE databases within Web of Science restricts the coverage of the bibliometric analysis. Each bibliographic database has its own biases, and classic articles or emerging journals may not be indexed. Expanding the data sources to include Scopus, Google Scholar, or ProQuest could yield more comprehensive results. Second, while MPA offers a systematic and quantitative approach to mapping knowledge trajectories, the interpretation of its outcomes remains influenced by the researcher's perspective. Employing cross-review by multiple scholars or blind coding procedures in future studies could mitigate this subjectivity. Third, the current analysis is predominantly quantitative, depending on bibliometric and citation network methods. The integration of qualitative approaches, such as in-depth interviews and case studies, would enrich the contextual understanding of the trajectories identified by MPA and serve to validate its findings.

Another limitation arises from the potential dilution of the original essence of BAs as they evolve into more structured meta-organisations, such as BANs and syndicates. Institutionalisation may weaken their personal motivations, informal governance, and hands-on involvement. Future studies should therefore examine how this shift affects non-financial motivations, including experiential support, mentorship, and personal satisfaction. Finally, the study does not systematically compare regional variations in angel investing practices and organisational forms, which are shaped by local institutional frameworks, cultural norms, and policy environments. Cross-country comparative research or in-depth single-country fieldwork could shed light on how local conditions influence the evolution of BA meta-organisations.

Declarations

All authors declare that they have no conflicts of interest.

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