Analysis of strategic motives for formation of alliances using total interpretive structural modelling

Harchitwan Kaur Lamba* and Sanjay Dhir

Department of Management Studies,
Indian Institute of Technology,
Delhi, Hauz Khas, New Delhi, India
Email: chitwanklamba@gmail.com
Email: sanjaydhir@dms.iitd.ac.in
*Corresponding author

Viput Ongsakul

NIDA Business School,
National Institute of Development Administration,
Bangkok, Thailand
Email: drviput@yahoo.com

Abstract: The aim of this study is to explore existing literature on strategic motives for the formation of alliances to map authors and determine co-citational links between the motives, identify the most studied motives and interpret the links between them. A list of 72 articles published in Scopus listed research journals was created after screening. Bibliometric analysis was conducted for both citation and co-citation analysis using RStudio and VOSViewer softwares, respectively. Following that, eight of the most explored motives were chosen and total interpretive structural modelling (TISM) was conducted and a model was developed to understand links between these motives. TISM showed hierarchical links between the motives of access to resources, technology transfer and, competitiveness. This study helps in learning how strategic motives affect one another and why, and to advance managers' decision-making process leading organisations into alliances.

Keywords: bibliometric analysis; strategic alliances; hierarchical modelling; motives; total interpretive structural modelling; TISM.

Biographical notes: Harchitwan Kaur Lamba is a Doctoral scholar in the area of Strategic Management at the Department of Management Studies at Indian Institute of Technology Delhi, India. She holds undergraduate and post graduate degrees in Commerce from University of Delhi and Panjab University, respectively. She has varied work experience teaching at undergraduate colleges at University of Delhi, and corporate experience working with small and medium business clients for AdWords at Google India. Her areas of interest include the strategic management, sharing economy and strategic alliances.

Sanjay Dhir is an Associate Professor and Chairperson, Strategic Management Area at the Department of Management Studies, Indian Institute of Technology Delhi. He is a Fellow (PhD) from the Indian Institute of Management Lucknow. He worked at Mahindra and Mahindra Ltd. for over three years. He has published several research papers in leading international journals including case studies at Richard Ivey School of Business distributed by Ivey and Harvard Business School, *Journal of Business Research, Technological Forecasting and Social Change*, and *International Business Review*. His research interests include strategic management, joint ventures, innovation management, management of change, implementation strategies, and international strategy.

Viput Ongsakul is the Dean at NIDA Business School, National Institute of Development Administration (NIDA), Thailand. He is currently serving as a Commissioner of the Securities and Exchange Commission (SEC). Also, he is an advisor affiliate at Center for Competitiveness at University of Fribourg, Switzerland. Through his teaching, consulting and research in the fields of competitiveness, business policy, sustainability, competitive strategy, operations, he has engaged in many consulting works to both public and private agencies. He obtained his Bachelor of Engineering from Chulalongkorn University, Thailand. He also received his PhD and MSc in Industrial Engineering/Operations Research from Texas Tech University, USA.

1   Introduction

Alliances have gradually gained relevance as a means of conducting operations across national borders (Nielson, 2003; Fadol and Sandhu, 2013; Gundolf et al., 2018). Increased globalisation and quick changes in the competitive environment are responsible for the rise in international inter-firm collaboration (Vaidya, 2004; Sambasivan et al., 2013). There is growing emphasis on the use of strategic alliances as a dominant form of business organisation pursued by firms across the globe (Tatoglu, 2000; Boateng and Glaister, 2003; Bai and O'Brien, 2008).

Strategic alliances not only help penetrate into new markets (Lasserre, 1999; Gassel and Pascha, 2000; Doz et al., 2000; Nielsen, 2003; Wang and Kess, 2006; Hyder and Abraha, 2014); but also facilitate development of new products and diversification of the business (Zineldin and Dodourova, 2005; Dong and Glaister, 2006; Heras, 2014; Van Gils and Zwart, 2009; Cavazos, 2013); achieving efficiency (Goetz and Shapiro, 2012; Martínez-Noya and Narula, 2018); exploit core competencies (Frankel and Whipple, 1996; Zineldin and Dodourova, 2005; Wigley and Provelengiou, 2011); transfer of management know-how (Rosegger, 1992; Sambasivan et al., 2013; Julian et al., 2004); achieve economies of scope (Kauser and Shaw, 2004; Heras, 2014); achieve economies of scale (Nisar et al., 2012; Dadzie et al., 2016); diversification or reduction of risk (Glaister and Buckley, 1996; Fahy et al., 1998; Ahmad and Kitchen, 2008; Ahmad, 2014; Blind and Mangelsdorf, 2016); learning from other firms (Jambulingam and Saxton, 2002; Hynes and Mollenkopf, 2008; Van Gils and Zwart, 2009; O'Dwyer and O'Flynn, 2005; Dong and Glaister, 2006; Pansiri, 2009; Martínez-Noya and Narula, 2018); and, increasing their share in the market (Kauser and Shaw, 2004; Van Gils and Zwart, 2009; Cavazos, 2013; Vaidya, 2004). Alliances also contribute in building the reputation of the business by allying with another firm (Ulas, 2005; Pansiri, 2009); gaining incentives from

host governments (Hagedoorn, 1993; Fahy et al., 1998; Ulas, 2005); reduction of innovation time (Hagedoorn, 1993; Gassel and Pascha, 2000; Hynes and Mollenkopf, 2008); achieving synergy (Vaidya, 2004; Johnson and Houston, 2000), and, increasing or leveraging the capital of another firm (Rosegger, 1992; Hung, 1994; Albers et al., 2005; Bayona et al., 2001; Chen and Glaister, 2006; Wigley and Provelengiou, 2011).

Research on alliances being formed has been taking place for decades; however, the literature suggests a lack of consolidation of the studies (Nippa and Reuer, 2019). A few articles were published that systematically review the extant literature on strategic alliances. However, there are no such review articles published on strategic motives for formation of alliances. As the literature on strategic alliances grows, there has only been a limited understanding of motives regarding their relationship. This study seeks to bridge this gap and help develop a more profound knowledge of motives for forming strategic alliances.

We endeavour to answer the following research questions in this study, which are the most cited and published authors working in the field of motives for alliance formation, which countries have published and cited the most studies in this field, which are the motives that are most researched across the literature of strategic alliances and lastly, what is the hierarchy that exists between these motives and what are the linkages between them.

This paper has been structured as follows. Section 1 introduced the study. Following that, Section 2 discusses the literature on the motives for alliance formation. Section 3 sets out the details of the methods used for this study. In Section 4, the results of the study have been presented. Following that, Section 5 discusses the findings. In Section 6, the limitations have been shared in addition to the future scope in the area. Finally, in Section 7, the conclusion has been summarised.

2   Literature review

Over the years, many businesses have entered new markets globally. Many of these organisations have used international strategic alliances as the means to enter these markets (Beamish, 1987; Calantone and Zhao, 2001; Lamba et al., 2020). While examining the motives for strategic alliance formation in developing nations, distinctions were seen between the relative importance of motives between home-country organisations and their foreign partners. The primary motives of the foreign partners from developed countries were market seeking, whereas the local partners from developing countries were concerned with the transfer of technology to scale production (Tatoglu and Glaister, 2000; Cave and Park, 2013).

A significant motive for entering into alliances with local partners is to conform to the restrictive policies of the local governments in the host nations (Grotenhuis and Kamminga, 2008; Pansiri, 2009). These restrictive policies could be with regard to ownership by foreign firms and limits on the investment made by them (Varadarajan and Cunningham, 1995), partnering with local organisations (Glaister and Buckley, 1996), meeting requirements for export (Tatoglu, 2000) or any other agreements that restrict the actions of the foreign organisation in their operations in the host country (Hung, 1994). Another motivation to ally with a local partner is to gain cultural familiarity (Ulas, 2005; Nielsen, 2010). Especially when there are several differences of culture between the

nation of origin of the organisations, it is essential to do so to successfully develop the market in the host country (Hung, 1994). In countries like China, these differences may appear minor initially, but they can create significant problems in the future (Dong and Glaister, 2006). Major brands such as Pepsi Co., KFC, and Mercedes-Benz entered the Chinese markets only to realise that their taglines and product names carried very different meanings in the local language. A cross-cultural managerial team with skills to overcome these cultural differences can be very helpful (Chen and Glaister, 2006; Ahmad, 2014).

The motives explored in the literature have been discussed as follows:

2.1   *Access to new markets*

As local markets mature and international competition increases, firms have to fight to maintain their market share in their product categories. To increase the customer base, firms have to enter new geographic markets (Tatoglu and Glaister, 2000). Firms looking to enter new markets prefer investing in economies with a comprehensive market size to take advantage of their assets (Dadzie et al., 2018).

Entering new countries and building a global presence can be costly, complex, and take time, especially for small as well as medium-sized businesses (Boateng and Glaister, 2003; Ulas, 2005). While there may not be any government-mandated barriers to entering a market, information and understanding of prospective customers, relationships with key suppliers and vendors hinder entry into a new market (Nielsen, 2003; Wang and Kess, 2006). Setting up a multi-national organisation comes with costs and can be very time-consuming (Glaister and Buckley, 1996).

Strategic alliances are a quick means of entering a foreign market, helping in the rapid expansion of business by utilising the joint resources of the partner companies (Doz et al., 2000; Boateng and Glaister, 2003; Bai and O'Brien, 2008; Nisar et al., 2012; Larimo and Nguyen, 2015). Partnering firms also save time by gaining speedy entry into new markets (Wigley and Provelengiou, 2011). Foreign partners often use the host firms' established channels of distribution and marketing, whereas the local partners understand the dynamic nature and demands of international markets (Duysters et al., 2007).

2.2   *Technology transfer*

When confronting the rise of new global challenges, rapid changes in technology, and progressively uncertain business conditions, organisations may form new connections (Wong and Wong, 1998; Siew-Phaik et al., 2013). Uncertainty in the business environment and the need to secure markets by creating obstructions have caused increases in strategic alliances (Sambasivan et al., 2013). Significant environmental factors impacting the formation of strategic alliances are rapidly changing economic conditions, developing technology, policy changes, and social changes.

The primary motivation for organisations in developing nations to form a strategic alliance with organisations in advanced nations is technology transfer (Beamish, 1987; Gassel and Pascha, 2000; Bai and O'Brien, 2008). The knowledge of partners, especially when it is complementary, can be combined for the development of new goods and services, existing R&D of a partner company can be utilised by the strategic alliance, and patents owned by one partner can jointly be used by the alliance (Tatoglu and Glaister,

2000). It is not just a simple transfer of technology or the sharing of patents; these contracts are of a long-term duration (Glaister and Buckley, 1996; Hamdani et al., 2017).

Technological motivation helps smoothen the process of supplying products (Zineldin and Dodourova, 2005). By partnering with an ally, one organisation can gain advantages in technical areas where it lacks expertise, leading to faster development of products, reduced lead time in manufacturing, and innovation (Wigley and Provelengiou, 2011). Technological motives are commonly observed in high technology industries: semiconductors, biotechnology, telecommunications, and computers; these industries are characterised by significant capital investment and rapid obsolescence of existing technology (Ulas, 2005; Zineldin and Dodourova, 2005).

2.3 Reduction of risk

Organisations form strategic alliances to diminish risk against uncertainty (Vaidya, 2004). Organisations from developed, primarily Western, countries form strategic business alliances to reduce business risks (Hamel et al., 1989; Hung, 1994). Large-scale projects can be taken up along with an alliance partner, as risks are shared (Tatoglu and Glaister, 2000; Boateng and Glaister, 2003; Nisar et al., 2012). The same amount of capital can be invested in a greater number of projects when a firm chooses to form a strategic alliance, as the risk of doing business is reduced (Varadarajan and Cunningham, 1995; Johnson and Houston, 2000; Ulas, 2005).

The potential of alliances to reduce the risks taken by each firm in the alliance centres on spreading costs and adapting to shorter item life cycles (Kauser and Shaw, 2004). By allying with a firm in a different country with a distinct product market, losses from a particular market can be counterbalanced by profits in others, lessening the overall level of risk of the partner (Bai and O'Brien, 2008); risk is also reduced by allowing the product portfolio to diversify, and by ensuring faster payback on the initial investment (Chen and Glaister, 2006).

Risks are not just business risks, they comprise legal risks, operation risks, and political and economic risks (Li et al., 2013). In developing nations such as China, with unstable policies and fast-changing laws, forming an alliance can help a foreign organisation mitigate the risk of investing in the country (Chen and Glaister, 2006).

In the case of low technology industries, risk can be maintained or limited, but in case of high technology industries, firms commonly use strategic alliances to reduce external risk, and thereby, mitigate failure rates (Li et al., 2013). In alliance agreements where the motivation is sharing of business risk, one partner is accountable for the routine operations of the business, whereas, the other partner takes responsibility for providing capital resources and risk absorption (Mariti and Smiley, 1983).

2.4 Sharing of costs

A strategic alliance is considered to be useful for the reduction of business costs; cost sharing is a vital part of risk reduction as lower costs would result in a lower risk of loss in case of failure of the enterprise (Hagedoorn, 1993; Boateng and Glaister, 2003; Albers et al., 2005). Costs can also be research and development costs, as well as distribution costs (Kauser and Shaw, 2004).

By forming an alliance, two or more organisations can share internal capabilities, in addition to resources, to take advantage of large-scale manufacturing, thereby curtailing the cost per unit of their goods (Boateng and Glaister 2003). Additionally, instead of manufacturing the same component in two different plants by the two partners, manufacturing could be shifted to the plant with lower costs, leading to further lowered production costs. By sharing the operational costs and costs of maintaining a strong distribution network, strategic alliances can reduce their costs (Kauser and Shaw, 2004).

Sharing costs becomes an important motive for strategic alliance formation when the cost of outsourcing becomes greater than the cost incurred when the same would be internalised (Vaidya, 2004). Shared operations can result in lower manufacturing costs and lower marketing costs due to shared sales force, joint distribution and/or, joint warehousing (Varadarajan and Cunningham, 1995). The generated cost savings can help in a quicker payback on investment (Zineldin and Dodourova, 2005; Wigley and Provelengiou, 2011).

2.5   Product development

Strategic alliances drive faster product development and help progress the improvement of existing products of firms (Wigley and Provelengiou, 2011; Islam et al., 2018). Collaborative relationships between organisations lead to relational rent, for instance, when two firms jointly produce new products and offer new services (Jones et al., 2010).

Due to various reasons ranging from deficient finances to limited technological resources, organisations form strategic alliances in production and R&D to develop and market new products (Jambulingam and Saxton, 2002; Sakakibara, 1997). These alliances can also be vertical, as cooperation with suppliers is vital to develop new products and ensure a steady supply (Rosegger, 1992).

Sharing of technology can also help the supply of products, leading to joint the development of new products (Zineldin and Dodourova, 2005). A partner's motivation could be to stretch the product line to improve the number of options available for clients (Wang and Kess, 2006). Strategic alliances comprise complex arrangements that are more contractual than licensing contracts, such as technology sharing or joint development agreements (Heras, 2014).

2.6   Competitiveness

Greater international competition implies that a firm can no longer remain competitive relying solely on its internal capabilities (Cavazos, 2013; Martínez-Noya and Narula, 2018). Competitive advantages could comprise forestalling competitors, impacting the structure of the industry and consequently, resulting in better competitors (Vaidya, 2004). Potential rivals can also be hindered by allying with a known competitor (Grotenhuis and Kamminga, 2008). For example, this can potentially be done by allying with a partner for their proprietary technology, blocking access to the technology by others, and consequently creating entry barriers for potential rivals (Nisar et al., 2012).

Additionally, by entering a market and attacking market rivals on their home turfs, a firm can reduce the competitive position of the competitor by distracting their resources and protect their place in their home country (Jambulingam and Saxton, 2002; Ulas, 2005). To maintain an organisation's market position, it may choose to cooperate with its

present rivals or firms that present a threat to them, to curb future competition and enhance its competitive position (Ulas, 2005; Dong and Glaister, 2006).

2.7 *Economies of scale*

As technology changes rapidly and costs of operating a business rise, it has become increasingly important for businesses to find economies of scale to ensure that their survival in the long run (Fahy et al., 1998; Kauser and Shaw, 2004; Dong and Glaister, 2006). Gaining economies of scale help organisations compete against their mutual rivals (Chen and Glaister, 2006), especially when their primary motivation is to diminish their costs by increasing their output (Nielsen, 2003).

When resources are pooled together in a strategic alliance, the partners can benefit from sharing resources and reduce their per unit cost of production, by learning from each other while being able to avoid the risks that are brought in with a merger (Tatoglu and Glaister, 2000; Boateng and Glaister, 2003, Idris and Tey, 2011).

When the motivation to enter a strategic alliance is economies of scale, the contract can include that one partner shall focus on production of certain parts of the products, whereas the other partner shall focus on production of the rest of the parts (Mariti and Smiley, 1983; Boateng and Glaister, 2003).

2.8 *Access to resources*

Strategic alliances allow organisations to fulfil their deficiency of resources (Ulas, 2005). Access can be to several kinds of resources, for instance, knowledge based resources, property based resources (Sambasivan et al., 2013). Access to the natural resources present in the host country is a significant location-specific motive.

Resource-seeking motives such as low cost labour and skilled labour as a motive to enter developing economies has been explored; oftentimes, foreign alliance partners agree with government organisations, resulting in even lower wage rates (Fahy et al., 1998; Boateng and Glaister, 2003). Organisations often seek low cost alternatives to save raw material costs (Ahmad and Kitchen, 2008).

Strategic business alliances are often based on the complementary nature of the resources of the partnering firms (Hung, 1994; Tatoglu, 2000; Albers et al., 2005; Nisar et al., 2012). The existence of this complementarity creates an interdependent relationship between the partnering firms (Siew-Phaik et al., 2013).

3 Methodology

3.1 *Bibliometric analysis*

The primary methodology selected for this study was systematic literature review using bibliometric analysis. While there are several databases that provide bibliometric information for publications in academia (Aref et al., 2018; Ramos-Rodríguez and Ruíz-Navarro, 2004), Scopus was selected as the database in our study. The scope of the search for the bibliometric analysis included not only 'motives of formation of strategic alliances', but also 'motives of joint venture formation', to ensure that important articles in this area are not excluded.

The scope of this search was restricted to published journal articles (Chabowski et al., 2013), editor notes, conference proceedings and book reviews, as well as books were not incorporated in the study.

The search command used was as follows – (TITLE-ABS-KEY (motive) AND TITLE-ABS-KEY (joint AND venture) OR TITLE-ABS-KEY (strategic AND alliance)) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SUBJAREA, "BUSI")). The Scopus search resulted in 131 documents, out of which 112 were published journal articles. After reviewing the 112 journal articles, only 72 were found to be relevant to the area of strategic motives. These articles formed the basis of this bibliometric analysis.

At present, research can be conducted more thoroughly and rapidly as hand-based techniques have been replaced by modern-day computing techniques (Ho and Hartley, 2016). The RStudio v1.1.463 software was used to compute frequency counts and analyse the citational data. Furthermore, co-citation was analysed with the help of the VOSViewer 1.6.10 software (de Castro and Frazzon, 2017).

3.2   Total interpretive structural modelling

While bibliometric analysis helps in gaining a quantitative understanding of the existing literature using various metrics, it does not delve into the content of each article in the sample. As a result, a secondary method was used: total interpretive structural modelling (Sushil, 2018; Singh et al., 2019; Jain et al., 2021).

To further understand individual motives of strategic alliance formation, the 72 journal articles extracted from the Scopus database were studied. A list of eight most commonly studied motives across these articles was created. Following this, a total interpretive structural model (TISM) model was developed, to understand the links and hierarchy between each motive (Sushil, 2012; Parameswar et al., 2019; Sharma et al., 2020; Singh et al., 2020). The steps mentioned in Figure 1 were followed to create this model.

4   Results

4.1   Bibliometric analysis

4.1.1   Citation overview

As presented in Figure 2, research in this area was first published in 1985. Articles continued to be published until 2018, with a steep fall in number of articles published between 2000 and 2004. This was followed by the highest number of articles published in a single year, seven, in 2005.

Tables 1 and 2 provide a capsulisation of the publications on this topic most cited in journals. Table 1 provides the all-time citation information, while Table 2 provides more recent information. The top 10 most cited publications have been authored by 21 scholars. This analysis helps us gain preliminary knowledge into the intellectual framework of the literature. In comparison, it is evident that five out of the top 10 most cited manuscripts of all time have been published recently.
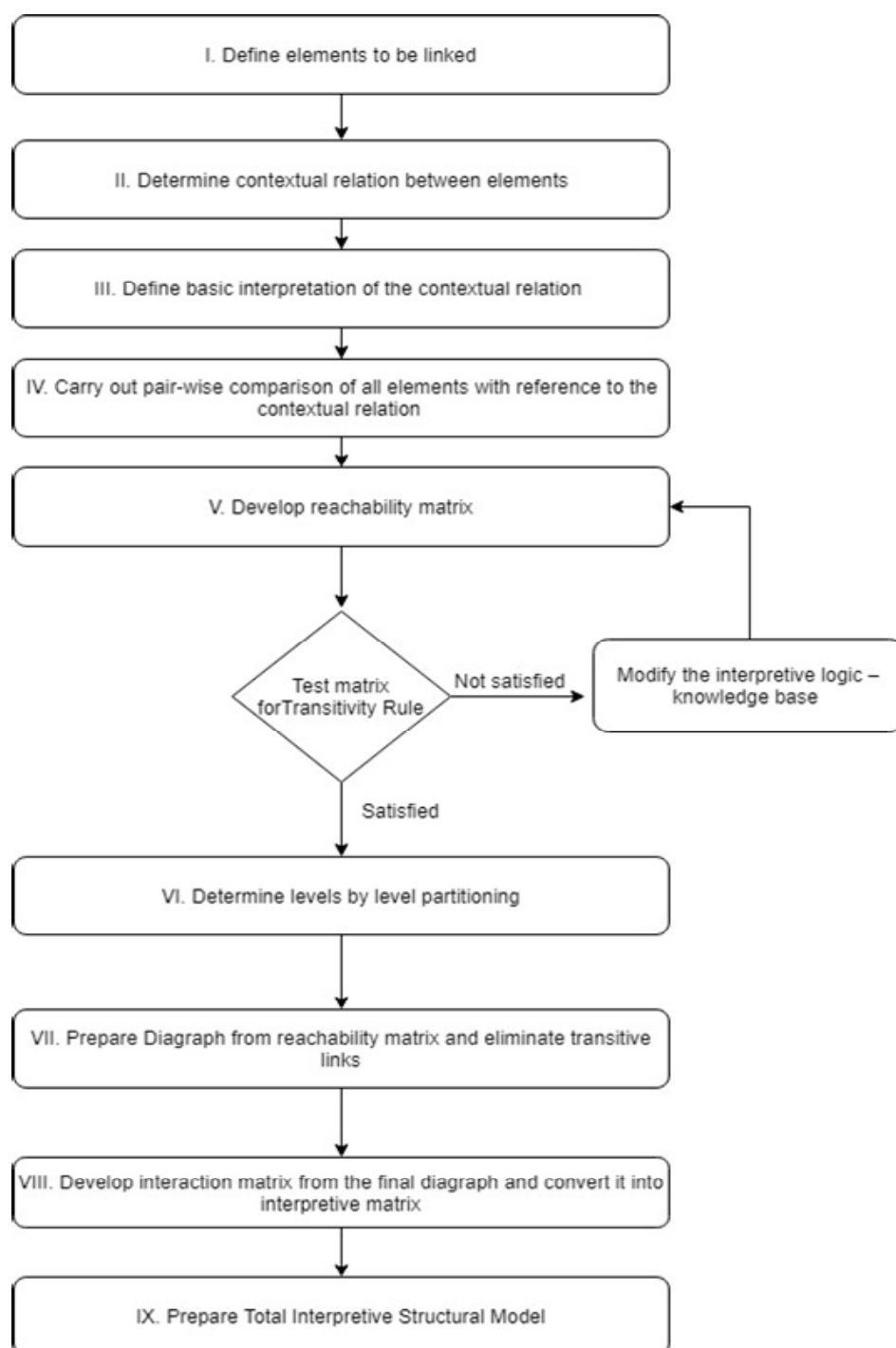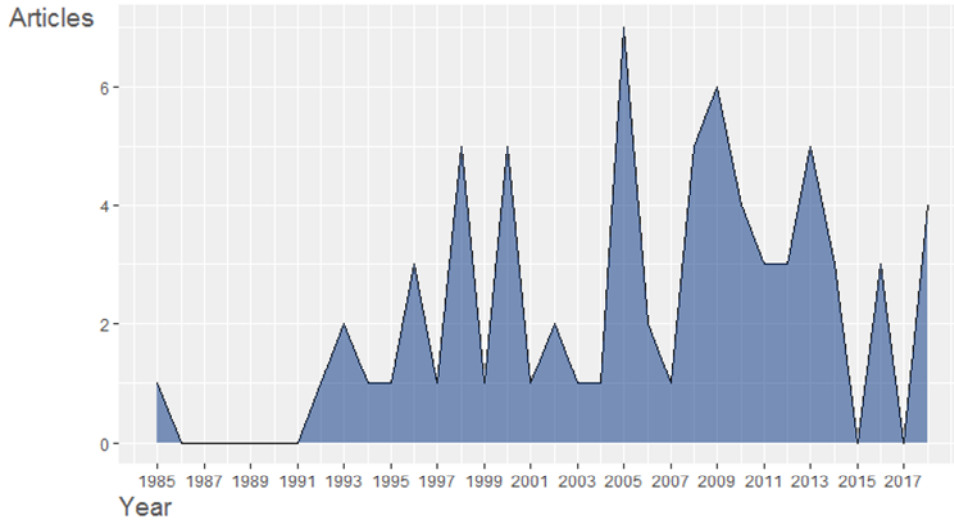
Figure 1 Steps in the process of total interpretive structural modelling

Figure 2   Annual scientific production of articles published in journals (see online version for colours)

Table 1   Most highly cited research articles published in journals

Rank	Publication	Source	Total citations	Total citations per year
1	Hagedoorn (1993)	*Strategic Management Journal*	1,203	48.12
2	Folta (1998)	*Strategic Management Journal*	342	17.10
3	Varadarajan and Cunningham (1995)	*Journal of the Academy of Marketing Science*	288	12.52
4	Glaister and Buckley (1996)	*Journal of Management Studies*	246	11.18
5	Doz et al. (2000)	*Strategic Management Journal*	243	13.50
6	Bayona et al. (2001)	*Research Policy*	213	12.53
7	Burgers et al. (1993)	*Strategic Management Journal*	184	7.36
8	Johnson and Houston (2000)	*Journal of Financial and Quantitative Analysis*	82	4.56
9	Chen et al. (2007)	*Journal of International Business Studies*	71	7.10
10	Dong and Glaister (2006)	*International Business Review*	61	5.08

Table 2 Most highly cited research articles published in journals in recent times

Rank	Publication	Source	Total citations
1	Doz et al. (2000)	*Strategic Management Journal*	243
2	Bayona et al. (2001)	*Research Policy*	213
3	Johnson and Houston (2000)	*Journal of Financial and Quantitative Analysis*	82
4	Chen et al. (2007)	*Journal of International Business Studies*	71
5	Dong and Glaister (2006)	*International Business Review*	61
6	Nielsen (2003)	*European Management Journal*	58
7	Boateng and Glaister (2002)	*International Business Review*	45
8	Sambasivan et al. (2013)	*International Journal of Production Economics*	43
9	Albers et al. (2005)	*Journal of Air Transport Management*	43
10	Nielsen (2010)	*Journal of Business Research*	41

Note: Publications from 2000 have been considered for this.

Figure 3 Citation analysis using countries as the unit of analysis (see online version for colours)
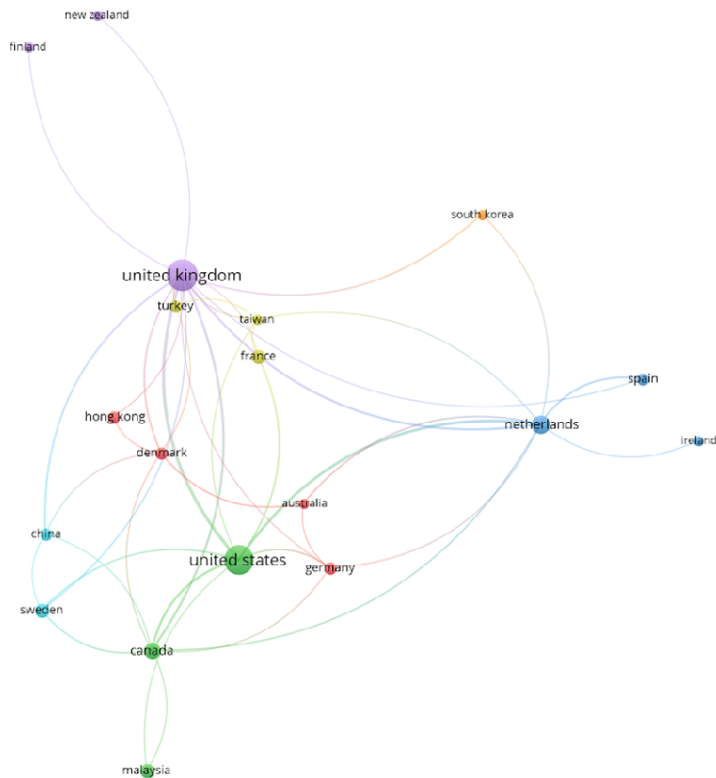
The most productive authors on the subject of motives are Keith W. Glaister, Bo Bernhard Nielsen and Ekrem Tatoglu. Glaister has co-authored seven articles focusing on different aspects of strategic alliance formation motives: motives and partner selection criteria (Tatoglu and Glaister, 2000; Chen and Glaister, 2006; Dong and Glaister, 2006); motives and characteristics such as partner nationality, relative partner size and form of strategic alliance (Glaister and Buckley, 1996; Tatoglu and Glaister, 1998) and motives and performance of strategic alliances (Boateng and Glaister, 2002). Nielsen has co-authored three manuscripts on the relationship between partner characteristics and motives (Nielsen, 2003; Nielsen and Gudergan, 2012) and strategic alliance formation motives and governance mechanisms (Nielsen, 2010). In addition, Tatoglu (2000) has co-authored three manuscripts: two previously mentioned journal articles co-authored with Glaister and another one focusing on strategic motivation and its relationship with nationality of the foreign partner.

In Figure 3, the citation links between 19 different countries are presented. Citations were from 26 countries; however, we restricted the minimum number of documents to at least two, to have a network showing relevant links. The top three countries where a large majority (71.9%) of the research was cited were the Netherlands, the USA and the UK. In addition, these countries had the maximum number of published manuscripts, although not in the same order.

4.1.2   Co-citation analysis

Using cited references as the unit of analysis, co-citation analysis was conducted. The minimum number of references for a cited article was considered as four. Of the total 4,056 cited references, 16 met the threshold. For each of the 16 cited references, the total strength of the co-citation links was calculated. A higher number of co-citations reflect that there is more shared data, and nearer proximity and fewer co-citations reflect that the manuscripts have less data in common (Figure 4).

Figure 4   Co-citation analysis (see online version for colours)
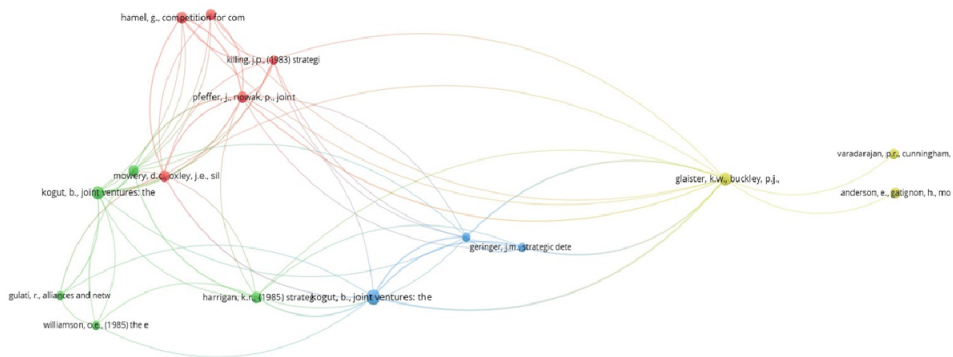
4.1.3   Keyword analysis

As suggested in Table 3, the most relevant keywords from the literature have been identified. If we exclude obvious keywords such as motives, alliances and strategic alliances, we can see the most widely used keywords in our dataset. This can assist in

determining the research direction in the area of motives. More relevant keywords are as follows: joint ventures, international joint ventures, partnership, performance and strategic management. Joint ventures, and in particular, international joint ventures are popular forms of strategic alliances; therefore, these are not unexpected keywords. Performance is a relevant keyword; it indicates that a large part of research on strategic alliance formation and alliance formation motives is focused on the actual performance of the strategic alliance.

Table 3   Most relevant keywords in the data

Number	Author keywords	Number of articles
1	Strategic alliances	18
2	Motives	8
3	Strategic alliance	7
4	Alliances	6
5	Joint ventures	6
6	Partnership	5
7	Performance	5
8	International joint ventures	4
9	Strategic management	4

4.2   Total interpretive structural modelling

Keyword analysis from the bibliometric data did not result in any conclusive results that indicate specific motives. This remained the case even when the number of keywords was extended to 60. As a result, hierarchical modelling of the motives was performed to understand the relationship between individual motives.

4.2.1   Step 1: determine the elements to be linked

The first step would be to identify the elements. The elements can be identified from established theories (for instance, grounded theory), from an understanding of the field, or from past studies (Wu et al., 2008). In this study, the elements have been identified from the literature. The top 8 most studied keywords from the set of the 72 articles have been selected as the elements to be linked (see Table 4).

Table 4   Most studied motives in the data

Number	Motive	Number of articles
1	Access to new markets	38
2	Technology transfer	29
3	Reduction of risk	25
4	Sharing of costs	24
5	Product development	21
6	Competitiveness	18
7	Economies of scale	17
8	Access to resources	16

4.2.2   Step 2: contextual relationship to be defined

The contextual relationships between different variables have to be defined to develop this structure (Ghobakhloo et al., 2018). Here, we define the individual relationships between all the motives, if they exist. For instance, motive 1 influences motive 3, i.e. access to new markets will reduce risk for a business; motive 8 influences motive 5, i.e., as access to resources is gained, new products can be developed using these resources.

4.2.3   Step 3: relationship interpretation

The third step is considered a distinct component of TISM as this gives it an edge over interpretive structural modelling (ISM) by explaining not only the nature of the relationship, but also the cause for which the relationship exists. For instance, how motive 1 influences motive 3 will help in extracting a more detailed understanding from the model.

4.2.4   Step 4: comparison being conducted pair-wise

An interpretive logic knowledge base has to be made in order to facilitate comparison of all the elements as pairs. Each comparison has to be responded with either a 'Yes', or a 'No'. For every answer that is a 'Yes' (Y), an interpretation has to be given for the same. Table 5 shows the interpretive logic – knowledge base (Yadav and Sushil, 2014; Sushil, 2018). For instance, it is checked if motive 7, i.e. economies of scale will affect motive 6 i.e., competitiveness. Since it does affect it, the response would be Y, and a logical explanation would be given for the same, i.e., when a firm achieves economies of scale, it is considered to be a high performing organisation; high performing organisations are considered to be more competitive than their counterparts.

Table 5   Interpretive logic-knowledge base

Motive	Paired comparison of motives	Y/N	Explanation for influence
M1–M2	Access to new markets will affect technology transfer	N	
M1–M3	Access to new markets will affect reduction of risk	Y	New markets will diversify existing risk
M1–M4	Access to new markets will affect sharing of costs	N	
M1–M5	Access to new markets will affect product development	Y	New markets to cater to
M1–M6	Access to new markets will affect competitiveness	Y	Greater market share
M1–M7	Access to new markets will affect economies of scale	Y	Production will increase
M1–M8	Access to new markets will affect access to resources	N	
M2–M1	Technology transfer will affect access to new markets	N	
M2–M3	Technology transfer will affect reduction of risk	N	
M2–M4	Technology transfer will affect sharing of costs	Y	Costs of R&D is reduced

Table 5 Interpretive logic-knowledge base (continued)

Motive	Paired comparison of motives	Y/N	Explanation for influence
M2–M5	Technology transfer will affect product development	Y	New products can be developed using shared technology
M2–M6	Technology transfer will affect competitiveness	N	
M2–M7	Technology transfer will affect economies of scale	N	
M2–M8	Technology transfer will affect access to resources	N	
M3–M1	Reduction of risk will affect access to new markets	N	
M3–M2	Reduction of risk will affect technology transfer	N	
M3–M4	Reduction of risk will affect sharing of costs	N	
M3–M5	Reduction of risk will affect product development	N	
M3–M6	Reduction of risk will affect competitiveness	Y	Lower risk makes a business more competitive
M3–M7	Reduction of risk will affect economies of scale	N	
M3–M8	Reduction of risk will affect access to resources	N	
M4–M1	Sharing of costs will affect access to new market	N	
M4–M2	Sharing of costs will affect technology transfer	N	
M4–M3	Sharing of costs will affect reduction of risk	Y	Lowered costs reduce risk of loss
M4–M5	Sharing of costs will affect product development	N	
M4–M6	Sharing of costs will affect competitiveness	Y	Shared costs imply higher profits
M4–M7	Sharing of costs will affect economies of scale	Y	As costs decrease, economies of scale are achieved
M4–M8	Sharing of costs will affect access to resources	N	
M5–M1	Product development will affect access to new market	Y	New products can help enter new markets
M5–M2	Product development will affect technology transfer	N	
M5–M3	Product development will affect reduction of risk	Y	New products diversify the existing business
M5–M4	Product development will affect sharing of costs	N	
M5–M6	Product development will affect competitiveness	N	
M5–M7	Product development will affect economies of scale	N	
M5–M8	Product development will affect access to resources	N	
M6–M1	Competitiveness will affect access to new market	N	
M6–M2	Competitiveness will affect technology transfer	N	

Table 5   Interpretive logic-knowledge base (continued)

Motive	Paired comparison of motives	Y/N	Explanation for influence
M6–M3	Competitiveness will affect reduction of risk	N	
M6–M4	Competitiveness will affect sharing of costs	N	
M6–M5	Competitiveness will affect product development	N	
M6–M7	Competitiveness will affect economies of scale	N	
M6–M8	Competitiveness will affect access to resources	N	
M7–M1	Economies of scale will affect access to new markets	N	
M7–M2	Economies of scale will affect technology transfer	N	
M7–M3	Economies of scale will affect reduction of risk	N	
M7–M4	Economies of scale will affect sharing of costs	N	
M7–M5	Economies of scale will affect product development	N	
M7–M6	Economies of scale will affect competitiveness	Y	Firms achieving economies of scale are high performing
M7–M8	Economies of scale will affect access to resource	N	
M8–M1	Access to resources will affect access to new markets	Y	Greater resources can affect production and the capacity to enter new markets
M8–M2	Access to resources will affect technology transfer	N	
M8–M3	Access to resources will affect reduction of risk	N	
M8–M4	Access to resources will affect sharing of costs	Y	Costs can be lowered with access to more efficient/cost effective resources
M8–M5	Access to resources will affect product development	Y	New products can be developed using resources
M8–M6	Access to resources will affect competitiveness	Y	Access to resources can improve performance
M8–M7	Access to resources will affect economies of scale	N	

4.2.5   Step 5: reachability matrix to be constructed and possible transitivity to be checked for

For every Y in the knowledge base, we enter 1, and for every N, we enter 0, in order to construct the reachability matrix. Once the reachability matrix has been constructed, we check for transitivity, i.e. if M1 affects M2, and M2 affects M3, then this means there is a transitive relationship between M1 and M3. To show the transitivity in the reachability matrix, we replace the 0 with 1*, where the * signifies transitivity.

Table 6 shows the reachability matrix and Table 7 indicates the final reachability matrix with transitivity.

Table 6 Reachability matrix

	M1	*M2*	*M3*	*M4*	*M5*	*M6*	*M7*	*M8*
M1	1	0	1	0	1	1	1	0
M2	0	1	0	1	1	0	0	0
M3	0	0	1	0	0	1	0	0
M4	0	0	1	1	0	1	1	0
M5	1	0	1	0	1	0	0	0
M6	0	0	0	0	0	1	0	0
M7	0	0	0	0	0	1	1	0
M8	1	0	0	1	1	1	0	1

Table 7 Reachability matrix with transitivity

	M1	*M2*	*M3*	*M4*	*M5*	*M6*	*M7*	*M8*
M1	1	0	1	0	1	1	1	0
M2	1*	1	1*	1	1	1*	1*	0
M3	0	0	1	0	0	1	0	0
M4	0	0	1	1	0	1	1	0
M5	1	0	1	0	1	1*	1*	0
M6	0	0	0	0	0	1	0	0
M7	0	0	0	0	0	1	1	0
M8	1	0	1*	1	1	1	1*	1

4.2.6 Step 6: level partitioning

In this step, we estimate the level of each element, to find out its placement in the hierarchy. The element on level one, i.e. at the top, will only have itself, and any other elements at the same level in its reachability set. Similarly, in its antecedent set, it will have itself, any strongly connected subset at the top and all the elements that reach the element from below. Consequently, the intersection between the antecedent and reachability sets would be the reachability set itself, placing an element at the top level. Subsequently, that element is eliminated, and this exercise is repeated until the levels for all elements are established. Tables 8-11 show the level partitioning of the reachability matrix, and Table 12 shows the levels of each element in TISM.

Table 8 Partitioning the reachability matrix into level I

Elements	Reachability set	Antecedent set	Intersection set	Level
M1	1, 3, 5, 6, 7	1, 2, 5, 8	1, 5	
M2	1, 2, 3, 4, 5, 6, 7	2	2	
M3	3, 6	1, 2, 3, 4, 5, 8	3	
M4	3, 4, 6, 7	2, 4, 8	4	
M5	1,3 , 5, 6, 7	1, 2, 5, 8	1, 5	
M6	6	1, 2, 3, 4, 5, 6, 7, 8	6	I
M7	6, 7	1, 2, 4, 5, 7, 8	7	
M8	1, 3, 4, 5, 6, 7, 8	8	8	

Table 9   Partitioning the reachability matrix into level II

Elements	Reachability set	Antecedent set	Intersection set	Level
M1	1, 3, 5, 7	1, 2, 5, 8	1, 5	
M2	1, 2, 3, 4, 5, 7	2	2	
M3	3	1, 2, 3, 4, 5, 8	3	II
M4	3, 4, 7	2, 4, 8	4	
M5	1, 3, 5, 7	1, 2, 5, 8	1, 5	
M7	7	1, 2, 4, 5, 7, 8	7	II
M8	1, 3, 4, 5, 7, 8	8	8	

Table 10   Partitioning the reachability matrix into level III

Elements	Reachability set	Antecedent set	Intersection set	Level
M1	1, 5	1, 2, 5, 8	1, 5	III
M2	1, 2, 4, 5	2	2	
M4	4	2, 4, 8	4	III
M5	1, 5	1, 2, 5, 8	1, 5	III
M8	1, 4, 5, 8	8	8	

Table 11   Partitioning the reachability matrix into level IV

Elements	Reachability set	Antecedent set	Intersection set	Level
M2	2	2	2	IV
M8	8	8	8	IV

Table 12   Levels of elements in TISM

Element	Motive	Level in TISM
M6	Competitiveness	I
M3	Reduction of risk	II
M7	Economies of scale	II
M1	Access to new markets	III
M4	Sharing of costs	III
M5	Product development	III
M2	Technology transfer	IV
M8	Access to resources	IV

4.2.7   Step 7: digraph development

The motives are arranged into levels graphically, as shown in the reachability matrix. The transitive relationships may not be included in the initial digraph. Only those transitive relationships that have essential relationships may be retained.

4.2.8 Step 8: Constructing the Interaction Matrix

All cells having entries '1' are explained with the appropriate interpretation as per the knowledge base. This final digraph is called the interaction matrix.

4.2.9 Step 9: the final model: TISM

The interpretive information as per the interaction matrix and data from the digraph are utilised to make the TISM. Interpretations taken from the cells of the interpretive matrix are entered alongside the links between the motives to show the final model. Both nodes and links are present in the TISM.

Figure 5 Total interpretive structural model of motives (see online version for colours)
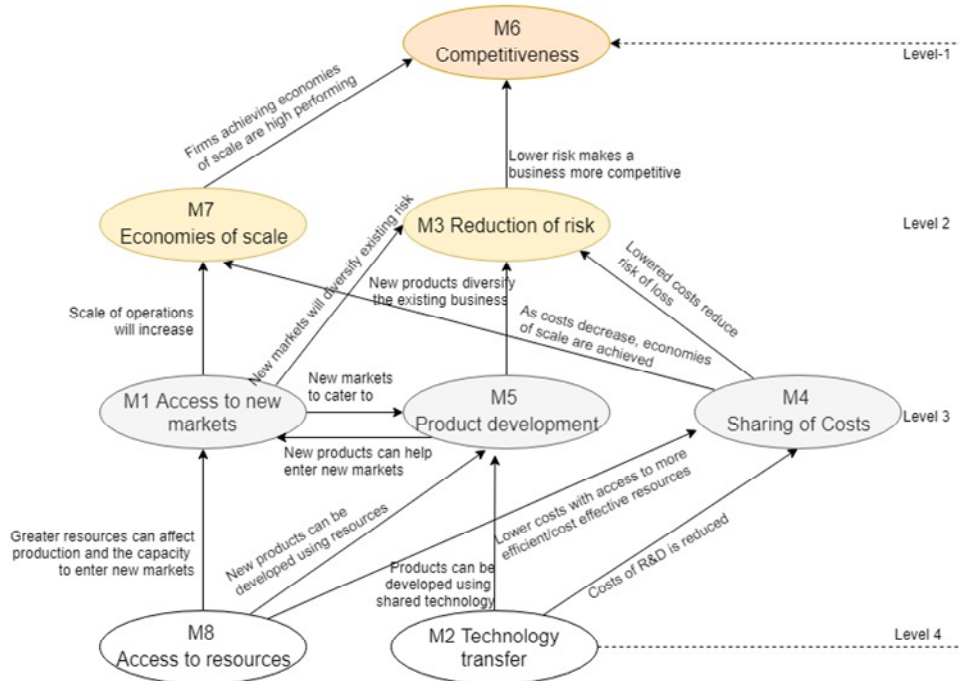
5 Discussion

The motives at the bottom of the model are the most important motives for forming alliances from an organisation's perspective (Figure 5). Access to resources and transfer of technology are the primary reasons for an organisation to enter into a strategic alliance. However, these motives have no direct links. From the perspective of a developing nation, technology transfer is a more important motive compared to that of a developed country. These two motives are the leading factors that affect both product development by giving access to materials and resources to the business and the technology to develop new products. Furthermore, it can be said that if the goal of a firm looking to form a strategic alliance is to improve competitiveness, then it should first focus on other

motives such as access to resources, economies of scale, sharing of costs, and reduction of risk, as these motives lead to competitiveness.

5.1   Path 1: Access to resources → access to new markets → economies of scale → competitiveness

Resource access leads to access to newer markets, as accessing more resources can affect production as well as the capacity to cater to new markets. After a firm gains access to new markets, the scale of operations of the firm would increase; this would directly impact economy of scale. Firms operating in higher economies of scale are considered to be higher performing, leading to achieving more competitiveness by the firm.

5.2   Path 2: Transfer of technology → product development → reduction of risk → competitiveness

Secondly, when technology is transferred between two organisations, new products can be created using the shared technology. This leads to the development of new products. Since new products diversify the product line and as a result, diversify the existing level of risk to the organisation, this would affect the motive of reduction of risk. A firm operating at a lower risk level is considered to more competitive in its industry.

5.3   Path 3: Transfer of technology → sharing of costs → reduction of risk → competitiveness

The third path identified starts from the transfer of technology which leads to shared technology being used by the two firms in the strategic alliance, leading to costs being shared. As costs are shared, the risk of loss in case of failure of business is reduced. In today's fast paced business world, a less risky firm is considered to be more competitive than its rivals; hence, reduction of risk directly increases the level of competitiveness of an organisation.

5.4   Path 4: Access to resources → sharing of costs → economies of scale → competitiveness

Lastly, the fourth path identified begins from access to resources. When an organisation gains access to more efficient resources, it can reduce its costs. When overall costs are reduced or shared, the alliance partners can achieve economies of scale. Finally, by being able to achieve economies of scale, the firm is considered to be high performing, thereby increasing its competitiveness.

For practitioners, the model presents important motives. Sharing of costs in strategic alliances helps an organisation reduce the working capital requirements and ultimately reduces the risk incurred by the organisation. This can also further increase the ability of the organisation to invest in other projects as it frees up financial resources and the risk appetite increases. Attaining economies of scale is also a relevant motive from a practitioner's perspective as it allows the organisation to increase their scale of operations and thereby reducing costs.

For policy makers, the model presents pertinent motives. Access to resources is relevant for policy makers as it presents opportunities for increased business in the

country due to the presence of resources not available in other countries. Resources can be in the form of naturally occurring resources in the country and also the availability of lost cost labour or high skilled labour. Access to new markets is also relevant for policy makers as it indicates the motivation for organisations to cross national boundaries and helps in the growth of the economy of the host country. Technology transfer is also a helpful motivation for policymakers as it allows new technology from more developed economies to enter a host country.

For researchers, the model discusses material motives. Access to resources is relevant as access to several distinct resources can be studied; resources can be in the form of raw materials, components and labour. Sharing of costs is also a material motive as several different costs can be studied within this motive: manufacturing costs, sales costs, marketing costs. Another relevant motive is reduction of risk; here, risks can be in the form of business and financial risk.

6   Limitations and future scope

Three major limitations can be seen. Firstly, the scope of this study has been narrowed only to the articles published in journals that are within the database of Scopus. Research articles that published work in the area of strategic alliances that are not on Scopus, or did not show up using the search queries could not have been included in this study. Editor notes, books, conference proceedings, book reviews, etc. have been excluded as well.

Secondly, while recently published work has been included in the analysis, the number of citations is not available for them. Hence, while it is possible that these works are fairly important and will be relevant for the future, this information would not be highlighted in this study.

Lastly, VOS viewer was used for co-citation analysis. Alternatively, other tools of network analysis could have been used (Chabowski et al., 2013). A popular method for measuring the same is multi-dimensional scaling (MDS).

In the future, the nature of the strategic alliances studied can be restricted to domestic alliances, or can be a mix of both domestic and international alliances. The study can be done for specific forms of strategic alliances for instance, joint ventures or R&D alliances. This study has been limited to eight motives; a further study with additional motives can also be taken up.

Subsequently, the direction in the relationship between motives could be studied by measuring polarity between them. It was also seen that there have been no longitudinal studies of strategic motives for forming alliances. It would be interesting to see how motives to enter an alliance change and develop over time. Hence, time series analysis of motives can be an area of research in the future.

7   Conclusions

It has been demonstrated over time that several contributions have been made in the field of motives for the formation of strategic alliances primarily from a few authors, published in specific strategy and management journals. Most work done in this field has been in the form of journal articles. There are few books published in this area.

This study includes 72 articles from 53 journals written by 135 authors with 3,755 citations. The key journals within which these journal articles were published were *Journal of Business Research*, *International Business Review*, *Journal of Global Marketing*, *European Business Review*, and *Strategic Management Journal*.

As suggested by the keyword analysis, the most used keywords in the field of strategic motives were – joint ventures, international joint ventures, partnership, performance, and strategic management. Citation analysis suggested that the most productive author in the area of motives is Keith W. Glaister of University of Leeds, followed by Bo Bernhard Nielsen of University of Sydney and Ekrem Tatoglu, of Ibn Haldun University, Istanbul.

The most cited articles of all time have been published by Hagedoorn in 1993, with 1203 citations; Folta in 1998, with 342 citations; followed by Varadarajan and Cunningham in 1995, with 288 citations. Since 2000, the most cited articles have been published by Doz et al. in 2000, with 243 citations; followed by Bayona et al. in 2001, with 213 citations; and Johnson and Houston in 2000, with 82 citations. The country with the most number of citations is Netherlands with 1241 citations, followed by the USA with 1,158 citations and the UK with 426 citations.

Taking into account multiple country publications, the country with the highest number of publications is the UK with 11, followed by the USA with 10 and Netherlands with 5.

This study provided a mechanism to study the relationship between motives in alliance formation using TISM methodology and data from the literature. As a result, we can understand the hierarchical relationship between them. It is argued that access to resources and technology transfer leads to access to markets, sharing of costs and product development. These motives further lead to reducing risk and achieving economies of scale, allowing the company to achieve its motive of gaining competitiveness.

This study attempts to advance the understanding of how and why specific strategic motives affect one another, to enhance the decision making of management driving organisations into alliances. For researchers studying strategic alliances and their formation, this research adds to our understanding into the motives of alliance formation, the interaction and interplay between these motives and the interpretation of the relationships between them.

References

Ahmad, S.Z. (2014) 'Partnering toward internationalization at four Arabian mobile telecom firms', *Global Business and Organizational Excellence*, Vol. 33, No. 6, pp.51–68.

Ahmad, S.Z. and Kitchen, P.J. (2008) 'International expansion strategies of Malaysian construction firms: entry mode choice and motives for investment', *Problems and Perspectives in Management*, Vol. 6, No. 3, pp.15–23.

Albers, S., Koch, B. and Ruff, C. (2005) 'Strategic alliances between airlines and airports – theoretical assessment and practical evidence', *Journal of Air Transport Management*, Vol. 11, No. 2, pp.49–58.

Aref, S., Friggens, D. and Hendy, S. (2018) 'Analysing scientific collaborations of New Zealand institutions using Scopus bibliometric data', *Proceedings of the Australasian Computer Science Week Multiconference*, Brisbane, pp.1–10.

Bai, Y. and O'Brien, G. (2008) 'The strategic motives behind firm's engagement in cooperative research and development', *Journal of Modelling in Management*, Vol. 3, No. 2, pp.162–181.

Bayona, C., Garc, T. and Huerta, E. (2001) 'Firms' motivations for cooperative R&D: an empirical analysis of Spanish firms', *Research Policy*, Vol. 30, No. 8, pp.1289–1307.

Beamish, P.W. (1987) 'Joint ventures in less developed countries: partner selection and performance', *Management International Review*, Vol. 27, No. 1, pp.23–37.

Blind, K. and Mangelsdorf, A. (2016) 'Technovation motives to standardize: empirical evidence from Germany', *Technovation*, Vols. 48–49, pp.13–24 [online] https://ideas.repec.org/a/eee/techno/v48-49y2016ip13-24.html.

Boateng, A. and Glaister, K. W. (2002). Performance of international joint ventures: evidence for West Africa', *International Business Review*, Vol. 11, No. 5, pp.523–541, DOI: 10.1016/s0969-5931(02)00035-5.

Boateng, A. and Glaister, KW. (2003) ''Strategic motives for international joint venture formation in Ghana', *Management International Review*, Vol. 43, No. 2, pp.107–128.

Burgers, W.P., Hill, C.W.L. and Kim, W.C. (1993) 'A theory of global strategic alliances: the case of the global auto industry', *Strategic Management Journal*, Vol. 14, No. 1, pp.419–432.

Calantone, R.J. and Zhao, Y.S. (2001) 'Joint ventures in China: a comparative study of Japanese, Korean, and US partners', *Journal of International Marketing*, Vol. 9, No. 1, pp.1–23.

Cavazos, C. (2013) 'Entering into strategic alliances: an empirical test of the direct and interaction effects of managers' attitudes, subjective norms, and perceived behavioral control', *Journal of Strategic Marketing*, Vol. 21, No. 1, pp.3–24.

Cave, A.H. and Park, B.I. (2013) 'Determinants of technology acquisition in international equity partnerships: an examination of international joint ventures and international acquisitions', *Journal for International Business and Entrepreneurship Development*, Vol. 7, No. 2, pp.93–115.

Chabowski, B.R., Samiee, S. and Hult, G.T.M. (2013) 'A bibliometric analysis of the global branding literature and a research agenda', *Journal of International Business Studies*, Vol. 44, No. 6, pp.622–634.

Chen, L.Y., Farris, G.F. and Chen, Y. (2007) 'Effects of technology cycles on strategic alliances', *Portland International Conference on Management of Engineering & Technology*, Portland, pp.5–9.

Chen, S-M. and Glaister, K.W. (2006) 'Taiwanese joint ventures in China', *Journal of Global Marketing*, Vol. 19, No. 2, pp.49–75.

Dadzie, S.A., Owusu, R.A., Amoako, K. and Aklamanu, A. (2018) 'Do strategic motives affect ownership mode of foreign direct investments (FDIs) in emerging African markets? Evidence from Ghana', *Thunderbird International Business Review*, Vol. 60, No. 3, pp.279–294, https://doi.org/10.1002/tie.21852.

de Castro, V.F. and Frazzon, E.M. (2017) 'Benchmarking of best practices: an overview of the academic literature', *Benchmarking: An International Journal*, Vol. 24, No. 3, pp.750–774.

Dhir, S. and Mital, A. (2013) 'Asymmetric motives in Indian bilateral cross-border joint ventures with G7 nations: impact of relative partner characteristics and initial conditions', *International Journal of Strategic Business Alliances*, Vol. 3, No. 1, pp.69–92.

Dong, L. and Glaister, K.W. (2006) 'Motives and partner selection criteria in international strategic alliances: perspectives of Chinese firms', *International Business Review*, Vol. 15, No. 6, pp.577–600, DOI: 10.1016/j.ibusrev.2006.09.003.

Doz, Y.L., Olk, P.M. and Ring, P.S. (2000) 'Formation processes of R&D consortia: which path to take? Where does it lead?', *Strategic Management Journal*, Vol. 21, No. 3, pp.239–266.

Duysters, G., Saebi, T. and Qinqin, D. (2007) 'Strategic partnering with Chinese companies: hidden motives and treasures', *Journal on Chain and Network Science*, Vol. 7, No. 2, pp.109–119.

Fadol, Y.Y. and Sandhu, M.A. (2013) 'The role of trust on the performance of strategic alliances in a cross-cultural context', *Benchmarking: An International Journal*, Vol. 20, No. 1, pp.106–128.

Fahy, J., Shipley, D., Egan, C. and Neale, B. (1998) 'Motives and experiences of international joint venture partners in Hungary', *Journal of Business & Industrial Marketing*, Vol. 13, No. 2, pp.155–165.

Folta, T.B. (1998) 'Governance and uncertainty: the trade-off between administrative control and commitment', *Strategic Management Journal*, Vol. 19, No. 11, pp.1007–1028.

Frankel, R. and Whipple, J.S. (1996) 'Alliance formation motives: a comparison of international perspectives', *The International Journal of Logistics Management*, Vol. 7, No. 2, pp.19–32.

Gassel, K. and Pascha, W. (2000) 'Milking partners or symbiotic know-how enhancement? International versus national alliances in Japan's biotech industry', *International Business Review*, Vol. 9, No. 5, pp.625–640.

Ghobakhloo, M., Fathi, M., Fontes, D. and Tan Ching, N. (2018) 'Modeling lean manufacturing success', *Journal of Modelling in Management*, Vol. 13, No. 4, pp.908–931.

Glaister, K.W. and Buckley, P.J. (1996) 'Strategic motives for international alliance formation', *Journal of Management Studies*, May, Vol. 33, No. 3, pp.301–332.

Goetz, C.F. and Shapiro, A.H. (2012) 'International journal of industrial organization strategic alliance as a response to the threat of entry: evidence from airline codesharing', *International Journal of Industrial Organization*, Vol. 30, No. 6, pp.735–747.

Grotenhuis, F. and Kamminga, P. (2008) 'Continuity and change in alliances, joint ventures , and mergers and acquisitions : a matter of cooperation or domination?', *International Journal of Entrepreneurship and Small Business*, Vol. 5 No. 2, pp.170–178.

Gundolf, K., Jaouen, A. and Gast, J. (2018) 'Motives for strategic alliances in cultural and creative industries', *Creativity and Innovation Management*, Vol. 27, No. 2, pp.148–160.

Hagedoorn, J. (1993) 'Understanding the rationale of strategic technology partnering : interorganizational modes of cooperation and sectoral differences', *Strategic Management Journal*, Vol. 14, No. 5, pp.371–385.

Hamdani, F., Ayed, L. and Boulanouar, B.W.A. (2017) 'The absorptive capacity as a key success factor in international strategic alliances: a study of Tunisian firms', *Journal for International Business and Entrepreneurship Development*, Vol. 10, No. 2, pp.138–155.

Hamel, G., Doz, L. and Prahalad, C.K. (1989) 'Collaborate with your competitors and win', *Harvard Business Review*, Vol. 67, No. 1, pp.133–139.

Heras, M.d.H.A. (2014) 'Building product diversification through contractual R&D agreements', *R&D Management*, Vol. 44, No.4, pp.384–397.

Ho, Y.S. and Hartley, J. (2016) 'Classic articles in psychology in the science citation index expanded: a bibliometric analysis', *British Journal of Psychology*, Vol. 107, No. 4, pp.768–780.

Hung, C.L. (1994) 'The use of strategic business alliances by Canadian companies in Asia Pacific: the use of strategic business alliances by Canadian companies in Asia Pacific', *Journal of Asia-Pacific Business*, Vol. 32, No. 4, pp.345–361.

Hyder, A.S. and Abraha, D. (2014) 'Marketing strategy in emerging market alliance: a longitudinal study', *Journal for International Business and Entrepreneurship Development*, Vol. 7, No. 4, pp.309–325.

Hynes, N. and Mollenkopf, D. (2008) 'Capturing strategic alliance outcomes: an analysis of motives, objectives and outcomes', *International Journal of Technology Management*, Vol. 43, Nos. 1–3, pp.194–211.

Idris, A. and Tey, L.S. (2011) 'Exploring the motives and determinants of innovation performance of Malaysian offshore international joint ventures', *Management Decision*, Vol. 49, No. 10, pp.1623–1641.

Islam, M., Hossain, A.T. and Mia, L. (2018) 'Role of strategic alliance and innovation on organizational sustainability', *Benchmarking: An International Journal*, Vol. 25, No. 5, pp.1581–1596.

Jain, M., Dhir, S. and Khoa, T. (2020) 'TISM modelling of social enterprise ecosystem: a study in Indian context', *Journal for Global Business Advancement*, Vol. 13, No. 5, pp.665–681.

Jambulingam, T. and Saxton, T. (2002) 'The impact of transaction structure, interfirm synergies, and motives on performance of interfirm transactions in the pharmaceutical industry', *Journal of Pharmaceutical Marketing and Management*, Vol. 15, No. 1, pp.73–95.

Johnson, S.A. and Houston, M.B. (2000) 'A reexamination of the motives and gains in joint ventures', *The Journal of Financial and Quantitative Analysis*, Vol. 35, No. 1, pp.67–85.

Jones, S.L., Fawcett, S.E., Fawcett, A.M. and Wallin, C. (2010) 'Benchmarking trust signals in supply chain alliances: moving toward a robust measure of trust', *Benchmarking: An International Journal*, Vol. 17, No. 5, pp.705–727.

Julian, C., Mueller, C., Wachter, R. and Van Deusen, C. (2004) 'Top management teams of international joint ventures in Thailand: the effects of heterogeneity on group processes and goal attainment', *Journal for International Business and Entrepreneurship Development*, Vol. 2, No. 1, pp.1–12.

Kauser, S. and Shaw, V. (2004) 'The influence of behavioural and organisational characteristics on the success of international strategic alliances', *International Marketing Review*, Vol. 21, No. 1, pp.17–19, https://doi.org/10.1108/02651330410522934.

Lamba, H.K., Meena, A., Srivastava, S. and Khoa, T.T. (2020) 'Unboxing Hulu: a tale of strategic alliance to survive in the sharing world', *Journal for Global Business Advancement*, Vol. 13, No. 3, pp.296–320.

Larimo, J.A. and Nguyen, H.L. (2015) 'International joint venture strategies and performance in the Baltic States', *Baltic Journal of Management*, Vol. 10, No. 1, pp.52–72.

Lasserre, P. (1999) 'Joint venture satisfaction in Asia Pacific', *Asia Pacific Journal of Management*, Vol. 16, pp.1–28, https://doi.org/10.1023/A:1015453301540.

Li, L., Qian, G. and Qian, Z. (2013) 'Do partners in international strategic alliances share resources, costs, and risks?', *Journal of Business Research*, Vol. 66, No. 4, pp.489–498.

Mariti, P. and Smiley, R.H. (1983) 'Co-operative agreements and the organization of industry', *The Journal of Industrial Economics*, Vol. 31, No. 4, p.437, DOI: 10.2307/2098340.

Martínez-Noya, A. and Narula, R. (2018) 'What more can we learn from R&D alliances? A review and research agenda', *BRQ Business Research Quarterly*, Vol. 21, No. 3, pp.195–212, DOI: 10.1016/j.brq.2018.04.001.

Nielsen, B.B. (2003) 'An empirical investigation of the drivers of international strategic alliance formation', *European Management Journal*, Vol. 21, No. 3, pp.301–322, DOI: 10.1016/s0263-2373(03)00043-4.

Nielsen, B.B. (2010) 'Strategic fit, contractual, and procedural governance in alliances', *Journal of Business Research*, Vol. 63, No. 7, pp.682–689.

Nielsen, B.B. and Gudergan, S. (2012) 'Exploration and exploitation fit and performance in international strategic alliances', *International Business Review*, Vol. 21, No. 4, pp.558–574, DOI: 10.1016/j.ibusrev.2011.07.001.

Nippa, M. and Reuer, J.J. (2019) 'On the future of international joint venture research', *Journal of International Business Studies*, Vol. 50, No. 4, pp.555–597.

Nisar, S., Boateng, A., Wu, J. and Leung, M. (2012) 'Understanding the motives for SMEs entry choice of international entry mode', *Marketing Intelligence & Planning*, Vol. 30, No. 7, pp.717–739, DOI: 10.1108/02634501211273823.

O'Dwyer, M. and O'Flynn, E. (2005) 'MNC-SME strategic alliances – a model framing knowledge value as the primary predictor of governance modal choice', *Journal of International Management*, Vol. 11, No. 3, pp.397–416.

Pansiri, J. (2009) 'Strategic motives for alliance formation in the travel sector of tourism Jaloni', *International Journal of Hospitality and Tourism*, Vol. 10, No. 2, pp.143–173.

Parameswar, N., Hasan, Z., Dhir, S. and Ongsakul, V. (2019) 'Factors that drive development of technological entrepreneurship in South Asia', *Journal for Global Business Advancement*, Vol. 12, No. 3, pp.429–448.

Ramos-Rodrígue, A.R. and Ruíz-Navarro, J. (2004) 'Changes in the intellectual structure of strategic management research: a bibliometric study of the *Strategic Management Journal*', *Strategic Management Journal*, Vol. 25, No. 10, pp.981–1004.

Rosegger, G. (1992) 'Cooperative strategies in iron and steel: motives and results', *International Journal of Management Science*, Vol. 20, No. 4, pp.417–430.

Sakakibara, M. (1997) 'Heterogeneity of firm capabilities and cooperative research and development: an empirical examination of motives', *Strategic Management Journal*, Vol. 18, No. 1, pp.143–164.

Sambasivan, M., Siew-phaik, L., Abidin, Z. and Choy, Y. (2013) 'Factors influencing strategic alliance outcomes in a manufacturing supply chain: role of alliance motives, interdependence, asset specificity and relational capital', *International Journal of Production Economics*, Vol. 141, No. 1, pp.339–351.

Sharma, D., Taggar, R., Bindra, S. and Dhir, S. (2020) 'Retailer responsiveness: a total interpretive structural modelling approach', *Journal for Global Business Advancement*, Vol. 13, No. 3, pp.336–358.

Siew-Phaik, L.G., Downe, A. and Sambasivan, M. (2013) 'Strategic alliances with suppliers and customers in a manufacturing supply chain', *Asia-Pacific Journal of Business Administration*, Vol. 5, No. 3, pp.192–214, DOI: 10.1108/apjba-11-2012-0077.

Singh, S., Haneef, F., Kumar, S. and Ongsakul, V. (2020) 'A framework for successful IoT adoption in agriculture sector: a total interpretive structural modelling approach', *Journal for Global Business Advancement*, Vol. 13, No. 3, pp.382–403.

Singh, S., Sinha, S., Das, V.M. and Sharma, A. (2019) 'A framework for linking entrepreneurial ecosystem with institutional factors: a modified total interpretive structural modelling approach', *Journal for Global Business Advancement*, Vol. 12, No. 3, pp.382–404.

Sushil (2012) 'Interpreting the interpretive structural model', *Global Journal of Flexible Systems Management*, Vol. 13, No. 2, pp.87–106.

Sushil (2018) 'How to check correctness of total interpretive structural models?', *Annals of Operations*, Vol. 270, pp.473–487, [online] https://link.springer.com/article/10.1007/s10479-016-2312-3#citeas.

Sushil (2018) 'Interpretive multi-criteria valuation of flexibility initiatives on direct value chain', *Benchmarking: An International Journal*, Vol. 25, No. 9, pp.3720–3742.

Tatoglu, E. (2000) 'Western joint ventures in Turkey: strategic motives and partner selection criteria', *European Business Review*, Vol. 12, No. 3, pp.137–147, DOI: 10.1108/09555340010371809.

Tatoglu, E. and Glaister, K.W. (1998) 'An analysis of motives for western FDI in Turkey', *International Business Review*, Vol. 7, No. 2, pp.203–230, DOI: 10.1016/s0969-5931(98)00006-7.

Tatoglu, E. and Glaister, K.W. (2000) 'Strategic motives and partner selection criteria in international joint ventures in Turkey', *Journal of Global Marketing*, Vol. 13, No. 3, pp.53–92, DOI: 10.1300/j042v13n03_04.

Ulas, D. (2005) 'Motives and partner selection criteria for formulation of IJVs in high-technology industries in Turkey', *Problems and Perspectives in Management*, Vol. 3, pp.10–21.

Vaidya, S. (2004) 'International joint ventures: an integrated framework', *Journal of International Business and Entrepreneurship Development*, Vol. 2, No. 1, pp.71–77.

Van Gils, A. and Zwart, P.S. (2009) 'Alliance formation motives in SMEs', *International Small Business Journal*, Vol. 27, No. 1, pp.5–35.

Varadarajan, P.R. and Cunningham, M.H. (1995) 'Strategic alliances: a synthesis of conceptual foundations', *Journal of the Academy of Marketing Science*, Vol. 23, No. 4, pp.282–296.

Wang, L. and Kess, P. (2006) 'Partnering motives and partner selection: case studies of Finnish distributor relationships in China', *International Journal of Physical Distribution and Logistics Management*, Vol. 36, No. 6, pp.466–478.

Wigley, S.M. and Provelengiou, A-K. (2011) 'Market-facing strategic alliances in the fashion sector', *Journal of Fashion Marketing and Management: An International Journal*, Vol. 15, No. 2, pp.1361–2026.

Wong, M.M.L. and Wong, M.M.L. (1998) 'Motives of Hong Kong-Japanese international joint ventures in retailing', *International Journal of Retail and Distribution Management*, Vol. 26, No. 1, pp.4–12.

Wu, C., Lin, C. and Lin, Y. (2008) 'What forms of the bancassurance alliance model is customers' preference?', *Journal of Modelling in Management*, Vol. 3, No. 3, pp.207–219.

Yadav, N. and Sushil (2014) 'Total interpretive structural modelling (TISM), of strategic performance management for Indian telecom service providers', *International Journal of Productivity and Performance Management*, Vol. 63, No. 4, pp.421–445.

Zineldin, M. and Dodourova, M. (2005) 'Motivation, achievements and failure of strategic alliances', *European Business Review*, Vol. 17, No. 5, pp.460–470, DOI: 10.1108/09555340510620357.