


## Article

# Sequential Alliance Portfolios, Partner Reconfiguration and Firm Performance

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**Abstract:** This study develops multi-dimensional partner reconfiguration strategies and addresses how they affect firm performance in a series of alliance portfolios by applying the dynamic sustainable perspective. Using data collected from 565 fund product alliance portfolios initiated by 61 Chinese fund firms during a five-year period from 2007 to 2011, the empirical results indicate that both dropping active partners and adding new ones will reduce firm performance. By contrast, reintroducing previous partners will increase firm performance. The average tie strength of the last alliance portfolio moderates the influences of partner reconfigurations on firm performance. Specifically, it negatively moderates the effect of dropping active partners and positively moderates the effect of adding new partners. However, its moderating effect on the influence of reintroducing previous partners is insignificant. These findings have positive theoretical and practical significance for firms pursuing sustainable development by clarifying when and how partner reconfiguration strategies influence firm performance.

**Keywords:** alliance portfolio; partner reconfiguration; average tie strength; firm performance

## 1. Introduction

As the competitive environment has become fiercer, ensuring a continuously satisfactory level of performance has become crucial for the survival and sustainability of firms [1]. Scholars studying firm alliances contend that, due to limited resources and capabilities, access to external resources plays an important role for firm performance [2,3], and increasingly argue that excellent performance is not achieved through the success of one particular alliance but through the joint effect of the overall portfolio of collaborations [4,5]. Alliance portfolios enable the development of new capabilities and new products through various resource inputs and thereby, are beneficial to firm performance [6,7]. Accordingly, recent research suggests that the composition of an alliance portfolio, in particular with respect to partner configuration, is a critical strategic issue for firm performance [8,9].

However, these studies on configuration of the alliance portfolio and firm performance have usually taken a cross-sectional perspective. That is, the static structural characteristics of partners in a single alliance portfolio have been considered [7,10]. In fact, firms often repetitively build multiple alliance portfolios over time. As changes occur in the external or internal environment, firms continuously re-structure the partner composition of their alliance portfolio based on the last alliance portfolio [8,11]. Previous work has found that alliance partners frequently undergo significant change over a firm's life [12,13]. Due to the need for complementary partner resources and stable cooperative relationships, a partner may enter the alliance portfolio or leave it. Thus, these cross-sectional studies on static partner configuration are limited in their power to explain how firms pursue sustainable excellent performance by continuously changing partners, which may influence cooperative resources and relationships. To bridge this research gap, by linking the alliance portfolios of a firm that develop, we

study how firms reconfigure alliance portfolio partners from the perspective of dynamic sustainability and test the theoretical predictions of performance consequences.

In sum, the study addresses the following research question: How does a firm ensure sustainable excellent performance through partner reconfiguration strategies in a series of alliance portfolios? We firstly developed three dimensions of the partner reconfiguration strategies based on a dynamic view of partnerships from a recent study on partner selection [8,11]. Namely, we consider (1) active partner outflow, or dropping partners from the last alliances; (2) new partner inflow, to include partners with which the firm has no previous collaboration experience; and (3) previous partner inflow, or reintroducing partners with which a firm has previous collaboration experience but stopped at some time, and explored their impacts on firm performance. Moreover, we further checked the boundary condition of the average tie strength of the last alliance portfolio, which influences the effectiveness of partner reconfiguration strategies. We found that active partner outflow and new partner inflow reduce firm performance, yet if previous partners are reintroduced, performance improves. The average tie strength of the last alliance portfolio negatively moderates the effect of active partner outflow and positively moderates the effect of new partner inflow. However, its moderating effect on previous partner inflow on firm performance is insignificant.

This paper makes the following contributions. Firstly, the study analyzed the relationships between partner reconfigurations and firm performance from the dynamic sustainable perspective. Extant studies on alliance network partners and firm performance have taken a cross-sectional perspective, which ignores continuous partner composition changes that firms implement to sustainably pursue excellent performance. We advance this body of research by exploring how benefits provided by alliance portfolios are dependent on the alliance partners and their evolution over time.

Secondly, based on the dynamic partnerships, the study extends our current understanding of dimensions of partner reconfiguration in alliance portfolios. Previous research on strategic alliance dynamics has identified dropping active partners and introducing outside partners as two common reconfiguration approaches [8,11]. However, the reconfiguration approach can be considered in a more detailed way. By investigating whether firms and selected partners have collaborated previously, we specify three alliance reconfiguration strategies, namely active partner outflow, new partner inflow and previous partner inflow. Hence, we contribute to partner reconfiguration research by proposing three more subtle dimensions, heretofore overlooked in much of the alliance portfolio research, and uncover their effect mechanisms influencing firm performance.

Finally, the study considers the boundary condition of the average tie strength of the last alliance portfolio that influences the effectiveness of partner reconfigurations. Prior studies have seldom examined the previous collaborative conditions under which partner reconfiguration is most effective for firm performance. The study deems that the last alliance partnership attributes will moderate the relationship between partner reconfiguration and firm performance, which further demonstrates the importance of the dynamic sustainable perspective in alliance portfolio research by emphasizing the foundations of partner reconfigurations.

As the empirical setting, we consider open-ended fund distribution alliances among fund firms and banks in China. To sell their products, fund firms collaborate with multiple banks, which have rich access to individual and institutional investors. After the distribution of a fund product, fund firms often reconfigure their existing alliances before starting to distribute new fund products. Thus, this context reveals firms' partner reconfiguration activities on firm performance, making it an ideal setting for our study. We first advance conceptual understanding and propose hypotheses of how partner reconfigurations affect firm performance. We then introduce our empirical methodology and results. Finally, we interpret and conclude our findings. Figure 1 shows the conceptual model.

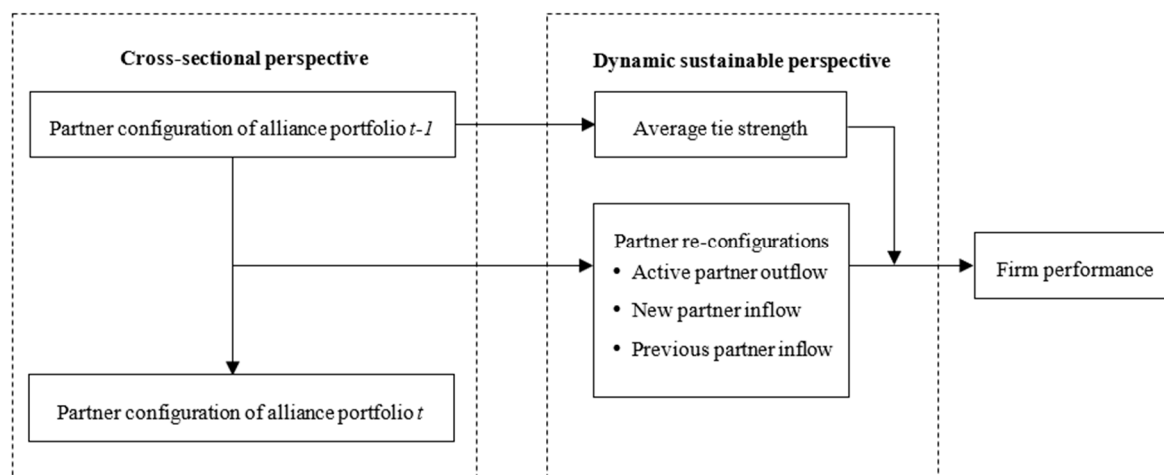


Figure 1. Conceptual model.

## 2. Theoretical Background and Research Hypotheses

### 2.1. Literature Review: Alliance Partner Selection and Reconfiguration

Over the past decades, scholars have analyzed how firms select alliance partners and the performance consequences of these partner selection behaviors. Seminal works have focused on alliance formation with a single partner and its influence on performance from a variety of theoretical perspectives, such as the resource-based view [14], social capital [15], institutional theory [16], transaction cost theory [17], outside options [18], and signaling [19]. However, these studies, taking a single alliance perspective, generally overlook the interdependencies among multiple partners [5]. Hence, some scholars have suggested to analyze firm's partner selection behaviors through an alliance portfolio perspective, that is, the alliance composition of multiple partners at the time of founding [20]. Subsequently, scholars have begun to pay attention to the partner types, partner resources, partnerships, and partner configurations of the alliance portfolio, as well as their influences on firm performance [21–24].

However, recently some scholars have criticized this approach to alliance portfolio research for being limited to a static, cross-sectional perspective which ignores network sustainability dynamics [25]. These scholars have argued that the firm usually repeatedly forms alliance portfolios [26]. In order to sustainably maintain competitiveness, firms constantly modify their last alliance network to form a new alliance network [8]. Thus, the understanding of network outcomes is incomplete and potentially flawed without an appreciation of the genesis and evolution of the underlying network structures [25]. Hence, researchers have been increasingly investigating alliance dynamics, including the post-formation evolution of alliance partners [27–29]. This work firstly focused on the termination of alliance partnerships [30,31]. Then, some scholars began to integrate two measures of partner reconfigurations, including dropping active partners or allying with outside partners [8]. Thus, the possible antecedents of these alliance partner reconfigurations, including the relative importance of the alliance [32], resource compatibility between partners [33], the bright side and dark side of embedded ties [34,35], attractiveness of outside options [18], and power asymmetry [36] have been investigated. The literature provides important clues as to why alliance reconfiguration occurs, and what factors make its occurrence more likely. However, researchers often treat alliance reconfiguration as a dependent variable, without looking beyond that to study its effects [37].

To address the limitation, Bakker [8] firstly investigates how alliance partner reconfigurations, including partners' entry into or exit from an alliance portfolio, affect the unplanned termination of projects. Research predicts that partner reconfiguration will introduce two mechanisms by which changes in an alliance portfolio might affect firm performance. On the one hand, alliance partner reconfiguration may lead to changes in the resource flows within an alliance portfolio. On the

other hand, alliance partner reconfiguration is likely to disrupt established cooperation routines. Although the research provides in-depth insights in understanding partner reconfiguration, it has not empirically investigated the performance implications of partner reconfiguration [8]. Moreover, it is necessary for future research to identify partner reconfiguration strategies in more detail, from the dynamic sustainable perspective.

## 2.2. *The Performance Consequence of Alliance Partner Reconfiguration*

Based on Bakker's [8] work, we analyze how partner reconfigurations influence firm performance from the dynamic sustainable perspective. Compared to existing research that usually considers dropping active partners and introducing outside partners as two common reconfiguration approaches, we further subdivide introducing outside partners as two dimensions according to whether the firm and its outside partners have pre-existing collaboration experience. Finally, we identify three alliance reconfiguration strategies, namely active partner outflow, new partner inflow, and previous partner inflow. In this section, we will explore the influence of these three alliance reconfiguration strategies on firm performance and propose research hypotheses.

We expect that these three partner reconfiguration strategies will impact firm performance through two mechanisms, that is, resource flow and disruption of established cooperation routines, and in different ways. Active partner outflow considers a firm dropping some existing partners from the most recent alliance portfolio when it forms a new alliance portfolio. We expect that active partner outflow is negatively associated with firm performance. First, due to the resource flow mechanism, when partners depart, an alliance portfolio loses access to resources such as the skills, capabilities, or tangible assets of the exiting partner [8,38]. Access to these may have been the very reason for the collaboration in the first place [39]. All else being equal, losing access to required resources is likely to reduce firm performance.

Second, active partner outflow will undermine existing partners' cooperation routines [40]. On the one hand, as the collaborative patterns have already been established in the most recent alliance portfolio, the exit of some partners will lead to the absence of members to implement these cooperation routines [41], which will render some interactions among partners invalid. In order to ensure the completion of alliance work, firms need to negotiate with the remaining partners to re-design the cooperation routines, which increases their time cost and alliance management cost [10]. On the other hand, an increase in departing partners means the firm has a strong motivation to adjust the existing network, the remaining partners will worry about whether the expected future cooperation between themselves and the firm can be maintained [40]. The worry reduces the trust and reciprocity of the remaining partners to the firm, which further affects their cooperative willingness and resource input. Not all of these influences are conducive to the firm performance. For now, we formulate our first hypothesis as follows:

**Hypothesis 1.** *Active partner outflow will exhibit a negative relationship with firm performance.*

New partner inflow occurs when a firm builds relationships with which it has no previous collaboration experience [42]. We expect new partner inflow will negatively influence firm performance. First, from a resource flow perspective, although external new partners bring novel and non-redundant resources into the alliance portfolio [12], the acquisition and utilization of these resources are challenges for the firm [42]. On the one hand, the novel and non-redundant resources possessed by the new partner may not match the existing resources of the alliance portfolio in the short term [43]. On the other hand, a firm needs to spend time and energy to utilize these new resources for obtaining the relevant benefits [14]. Therefore, the introduction of new partner resources by a firm has certain risks and uncertainties [42], which may not enable the firm to achieve good performance results and may even increase costs in the short term. All of these will reduce the firm performance.

Second, from the perspective of cooperation routines, partners in the existing alliance portfolio may view new partner inflow as a threat to their established positions. According to resource dependence theory [44], when new partners are introduced, existing partners may interpret the move as the firm's attempt to obtain critical resources from alternative sources [37]. Thus, they may begin to worry about diminished power and a decreased capacity to demand the value created through the collaboration [45]. When the expected benefits gained from the collaboration diminish, existing partners' trust of focal firms may diminish too. Moreover, the entry of new partners affects existing collaboration rules and the way firms interact with existing partners, so the interdependence between firms and existing partners may shift due to new partner inflow [46]. Slotting new partners into existing portfolios might hinder cooperative efficiency. Thus, forming alliances with new partners not only requires the new partners to fit into existing collaboration rules, but also demands existing partners adapt to the new status quo [8]. In this process, existing partners and new partners may have some cooperation conflicts, and the firm may need to spend time and energy to coordinate them, which is detrimental to firm performance. Based on the above analysis, we propose Hypothesis 2:

**Hypothesis 2.** *New partner inflow will exhibit a negative relationship with firm performance.*

Previous partner inflow refers to when a firm reintroduces partners with which it has previous collaboration experience but stopped collaboration at some time. We expect that previous partner inflow is positively associated with subsequent firm performance. First, from a resource flow perspective, previous partner inflow means that the alliance portfolio has access to external resources. Due to the previous cooperation between the firm and these partners, the firm is familiar with the partner, thus it can select partners that are suitable for the new alliance portfolio [47], so as to achieve resource complementarity. Moreover, based on the previous cooperation information, the risk of the utilization of external resources is low [48]. The firm can quickly integrate the inflow resources with the existing resources, and thereby enhance firm performance.

Second, from the perspective of cooperation routines, there is a common cooperation experience between the firm and previous partners, so they can establish certain common action rules, such as communication channels and cooperation interaction modes [49]. On the one hand, based on the cooperative experience, the firm grasps previous partners' information, such as resources and capabilities. When considering the entry of previous partners, the firm can select those partners that match the current alliance portfolio to reduce future conflicts [34]. On the other hand, based on the previous cooperative experience, the firm and previous partners can negotiate and communicate well for problem solving, and reduce the time and energy costs of alliance management [50]. Accordingly, we propose:

**Hypothesis 3.** *Previous partner inflow will exhibit a positive relationship with firm performance.*

### 2.3. The Moderating Effect of the Average Tie Strength of the Last Alliance Portfolio

In the process of building alliances, due to the existence of inertia and transfer costs, firms often cooperate with previous partners to establish strong ties [47,51]. These repeated strong ties enable firms to gain access to some bright-side effects. On the one hand, the strong ties of an alliance portfolio indicate that firm and alliance partners have developed deeply and utilized the resources of both parties [35]. On the other hand, based on repeated partnerships, the two sides have formed trust and established common behavioral norms, which are conducive to reducing the costs of cooperation, resource sharing and continuous cooperation [52].

Along with these benefits, strong ties may also have some dark-side effects. First, relying on repeated strong ties may create collective blindness and prevent considerations of new external resources [53]. Secondly, repeated exchanges with known partners may not be as effective as expected in deterring opportunistic behaviors [34]. Trust may reduce partners' opportunism, but it also could



diminish firms' monitoring of their partners [53]. Over long-term interactions, partners obtain deep knowledge about each other's cost structures and weaknesses, so they could take advantage of this privileged knowledge for their own gain.

Based on the above theoretical principles, we will separately analyze different partner reconfiguration strategies to explore their effects on firm performance under the different average tie strengths of the last alliance portfolio.

For active partner outflow, from the perspective of resource flow, when the average tie strength of the last alliance portfolio is high, it means that there are repeated interactions between the firm and partners. In the process of repeated exchanges, the firm and its partners will invest time and energy to develop, exchange, and share resources [48]. On the one hand, the firm and its partners will form a proprietary investment in the process of resource development, such as specific investment of fixed assets and human resources [46]. On the other hand, repeated partnerships will create some tacit resources, such as implicit knowledge [54]. When the alliance portfolio partners leave, it means that the outflow partners may take away some of the proprietary investment or tacit resources that are necessary for the alliance portfolio's tasks. On the contrary, when the average tie strength of the last alliance portfolio is low, the firm's investment in the last alliance portfolio is limited, and the proprietary assets or tacit resources are not formed as much in the alliance portfolio. Thus, the loss of resources from partner outflow is not large. Therefore, as the average tie strength of the last alliance portfolio increases, the active partner outflow is more likely to lose important resources, which in turn will reduce firm performance.

From the perspective of cooperation routines, when the average tie strength of the last alliance portfolio is high, it means that stable cooperation mechanisms and interaction modes exist between firm and partners [50]. At the same time, trust and reciprocity generated by repeated partnerships further promote cooperation between them [55]. When a partner withdraws from the alliance portfolio, there is an absence of members implementing the cooperation mechanisms and interaction modes which made the original mechanisms stable, and rules lose their effectiveness. At the same time, the active partner outflow damages the relational assets such as trust and reciprocity existing in the last alliance portfolio. When a partner leaves the alliance portfolio, the remaining partners are likely to be concerned about the continuity of the future cooperation. They may be in a wait-and-see state and reduce cooperation investment, which reduces firm performance. On the basis of these arguments, we offer Hypothesis 4 as follows:

**Hypothesis 4.** *Active partner outflow decreases firm performance more when the average tie strength of the last alliance portfolio is high than when it is low.*

In terms of new partner inflow, from the perspective of resource flow, when the average tie strength of the last alliance portfolio is high, bringing new partners into existing strong tie network means that the firm implements an ambidextrous strategy [56]. On the one hand, strong ties mean that the firm and the partners in the last alliance portfolio have deeply exploited their resources through repeated interactions [48]. These exploitations generate some valuable resources including specialized investments and relational assets. On the other hand, new partner inflow brings external, non-redundant resources into a strong tie network [20]. These diverse resources have complementary effects with each other and reduce the risk of alliance cooperation. By contrast, when the average tie strength of the last alliance portfolio is low, the exploitation of resources can be considered to be unsatisfactory. If the firm continues to introduce external new resources, it will amplify the risks and uncertainties of new resource development.

From the perspective of cooperation routines, when the average tie strength of the last alliance portfolio is high, it means that the last alliance portfolio has formed stable and mature cooperation mechanisms and interaction modes [52]. These existing mechanisms and rules are not easily damaged by new entry partners. At the same time, the new partners entering the portfolio can quickly adapt to

the cooperation of alliance networks because of the clear cooperation mechanisms and action rules as guidance. The entry of new partners can also fine-tune the alliance rules to a certain extent without changing the original alliance rules, making the cooperation mechanisms and interaction modes of existing networks flexible and more likely to adapt to the external environment. On the contrary, when the average tie intensity of the last alliance portfolio is low, the cooperation mechanisms and interaction modes are in a very unstable state. The new partner inflow will easily lead to the change of the existing rules and the redistribution of power in the new alliance portfolio. Thus, a firm needs to invest more to manage uncertainty and conflicts between partners, which is detrimental to firm performance. Therefore, we propose:

**Hypothesis 5.** *New partner inflow decreases firm performance less when the average tie strength of the last alliance portfolio is high than when it is low.*

For previous partner inflow, due to the previous partnerships, the firm has grasped the resource information of these previous partners [34], and the utilization of resources is simpler due to previous cooperation. When the average tie strength of the last alliance portfolio is high, from the perspective of the resource flow, the existing and externally introduced resources are all available for exploitation [57], which makes the alliance network extremely short of new, non-redundant and undeveloped resources. On the contrary, when the tie strength of last alliance portfolio is low, there are a certain number of new resources in the alliance portfolio. At this time, the previous partner inflow is complementary to the existing resources, ensuring that balance is maintained between exploitative and explorative resources.

From the perspective of cooperation routines, when the average tie strength of the last alliance portfolio is high, it means the last alliance portfolio has formed stable and mature cooperation mechanisms and action modes. Due to past cooperation experience, previous partners are familiar with the firm's management ways, so they can seamlessly connect the cooperation mechanism and interaction mode into the existing alliance portfolio and further stabilize and strengthen them. At the same time, previous partner inflow releases the signal that the firm likes to choose partners they have worked with before [51], which is conducive to strengthening the trust between existing partners and the firm. On the one hand, these situations lead to relationships becoming over-embedded and rigid cooperation modes may develop within the alliance portfolio, which cannot change flexibly with the environment [58]. On the other hand, the strengthening of trust may lead to the lack of supervision and control mechanisms, making partners prone to speculative behavior [34]. On the contrary, when the average tie strength of the last alliance portfolio is low, the cooperation mechanism and interaction mode are in a very unstable state. The previous partner inflow can help stabilize the existing cooperation mechanism and interaction mode, and further strengthen the relational mechanisms such as trust. Accordingly, we propose:

**Hypothesis 6.** *Previous partner inflow increases firm performance less when the average tie strength of the last alliance portfolio is high than when it is low.*

Table 1 summarizes the above six hypotheses.

### 3. Methods

#### 3.1. Empirical Setting and Data

Our empirical setting is the Chinese open-ended fund market, which began in 2001. After nearly 20 years of development, the open-ended fund market has become a major force in China's fund market, accounting for more than 90% of the total fund shares. Launching open-ended fund products is thus a key business obligation for Chinese fund firms, enabling them to attract individual and institutional investors to enlarge capital scale. In order to achieve sustainable development, fund firms need to continuously issue new fund products. As fund firms in China generally lack the capability of

self-selling, commercial banks are primary distributors of these products in China as they can leverage their ample access to individual and institutional investors. According to a report by Hexun Finance, in 2011, approximately 60% of open-ended funds were distributed by commercial banks [59]. Thus, to ensure the successful establishment of new funds, fund firms need to select suitable banks to form the distribution alliance portfolio at the time of founding and constantly reconfigure the banks in their subsequent alliance portfolios. Thus, this setting provides a suitable empirical context for our study on the relationship between partner reconfigurations and fund firm performance.

**Table 1.** Summary of Hypotheses.

Main Effects		Dependent Variable	Effect Prediction
H1	Active partner outflow	Firm performance	Negative
H2	New partner inflow	Firm performance	Negative
H3	Previous partner inflow	Firm performance	Positive
Moderating Effects		Dependent Variable	Effect Prediction
H4	Active partner outflow $\times$ Average tie strength of the last alliance portfolio	Firm performance	Negative
H5	New partner inflow $\times$ Average tie strength of the last alliance portfolio	Firm performance	Positive
H6	Previous partner inflow $\times$ Average tie strength of the last alliance portfolio	Firm performance	Negative

We selected a five-year period, from 2007 to 2011, to collect data for the empirical tests. Open-ended funds became a popular investment instrument in China in 2007, following a bull market in 2006 that allowed the open-ended funds to produce very high returns for investors. In turn, total shares of open-ended funds increased dramatically, from about 700 billion in 2006 to 3 trillion in 2007. After 2007, the scale of the open-ended fund market grew more stably. The total shares of open-ended funds fluctuated around 2–3 trillion from 2007 to 2011. Moreover, before 2007, fund firms rarely publicly published information about open-end fund products. Therefore, it is very difficult to obtain fund project data from before 2007. In addition, between 2007 and 2011, the fund types remained stable, including monetary, equity, bond, and balanced funds. After 2011, fund firms began to launch some innovative types, such as the “listed open-ended fund,” prompting significant changes in the distribution patterns. Furthermore, after 2011, though banks remained crucial fund distributors in China, their importance declined in the face of the rapid development of Internet distribution platforms. Specifically, in 2011, approximately 60% of open-ended funds were distributed by banks, whereas this proportion dropped to 55% in 2012 and to 42% in 2013 [59]. Because the declining importance of bank distribution lowers the importance of partner selection decisions, we chose not to collect data after 2011.

These data came from several sources. First, for the partner selection information, we scanned the official websites of the fund firms and carefully read each new fund’s prospectus or selling announcement. Thus, we could identify the banks selected as distributors in a specific fund launch. Second, we obtained data on the fund firms’ age, size, type, firm performance, and fund manager teams (FMT) from the database of GTA Information Technology Co. Limited, a professional firm that provides information about financial markets, industries, and companies in China [60,61]. We also gathered data on the banks’ size and age from their official websites. Overall, our data cover 565 samples from 61 fund firms, after we exclude missing data.

### 3.2. Measures

**Dependent variable.** Our research on firm performance is at the firm task level. Fund share is the most important indicator for evaluating the results of new fund issuance. In the open-end fund



market, the higher the shares of a new fund, the better the performance the firm achieves. Hence, we measure firm performance as the value of distributed fund shares for the new fund launch.

**Independent variable.** The measures of alliance reconfiguration strategies are based on how the fund firm adjusts the bank distributors it uses for a new fund product in time  $t$  relative to those used for the last new fund product in  $t - 1$ . We used ratio measures of alliance reconfiguration strategies.

**Active partner outflow** indicates the ratio of partners that were selected as distributors at  $t - 1$  but were not selected at  $t$  to the total number of partners at  $t - 1$ . **New partner inflow** is measured by the ratio of partners selected as distributors for the new fund  $t$ , which had no previous collaboration experience with the fund firm  $n$  to the total number of partners at  $t$ . **Previous partner inflow** is measured as the ratio of partners selected as distributors of the new fund  $t$ , which have some previous collaboration experience with the fund firm  $n$  but were not distributors of the last new fund in  $t - 1$  to the total number of partners at time  $t$ . Consider the following example for further clarity. Suppose a fund issued by fund firm  $n$  in  $t - 1$  has three bank distributors, A, B, and F. When the fund firm issues a new fund  $t$ , it selects five bank distributors, A, B, C, D, and E. Banks C and D have no previous collaboration experience with the fund firm  $n$ . Bank E collaborated with the fund firm  $n$  previously, but the relation was terminated some time before  $t - 1$ . In this case, we identify two new partner inflows (C and D), one previous partner inflow (E), and one active partner outflow (F). Active partner outflow is  $1/3$ , new partner inflow is  $2/5$  and previous partner inflow is  $1/5$ .

**Moderating variable.** We capture the average tie strength of the last alliance portfolio as the average number of times the fund firm collaborates with partners selected to distribute a fund product in  $t - 1$  [62]. First, for each fund firm, we check its historical bank selection data from 2001 to 2011. Second, we count the total number of collaborations of the fund firm with each bank selected as a distributor of its fund product in  $t - 1$ . Third, we calculate the average tie strength as the average number of collaborations of the fund firm with its bank distributors for the fund product launched in  $t - 1$ . Imagine, for example, that when a fund firm issues its fund product in  $t - 1$ , it uses three bank distributors, A, B, and C. From the first fund issued to the launching time of the fund product in  $t - 1$ , the fund firm collaborated with A in fund distribution three times and with B six times, but it has no previous collaboration experience with C. According to our measure, the average tie strength is  $3 = (3 + 6 + 0)/3$ .

**Control variables.** A series of factors related to markets, bank distributors, fund projects, and fund firms serve as controls in the data analysis.

**Market-level factors.** Prior research suggests that market competition drives firms' strategic behaviors [63], so we control for the effects of market competition. We used the fund firms' total fund assets as the proxy of their market share, and calculated market competition using the Herfindahl index of the prior quarter [64].

**Partner-level attributes.** We controlled for partnership size, which was measured as the number of partners in the fund launch. Because the resources and legitimacy possessed by existing partners affect firms' partner selection decisions [65], we controlled for the size and age of the banks, which were selected as partners in the fund distribution. For each bank, we measured the log total assets to assess size [20], then calculated the mean total assets for all banks. Bank age referred to the number of years between a bank's incorporation year and the year of the new fund launch [47]. We used the average age of all bank partners as the control variable.

**Fund-level attributes.** We accounted for the attributes of fund management teams (FMT). Specifically, with a four-point scale, we measured individual fund managers' educational level (1 = high school, 2 = bachelor, 3 = master, 4 = doctor) and then controlled for average FMT education level. We also note FMT working experience, measured as the average time FMT members have spent as fund managers. Finally, we constructed dummies to control for the effects of the fund types, including the equity fund, bond fund, monetary fund, and balanced fund.

**Fund management firm-level attributes.** We included key demographic information of each fund management firm; specifically, its size and age. Firm size was the logged value of total assets in the

prior quarter [20]. Firm age was the number of years between the firm's incorporation and the time of the fund launch [47]. To account for the influence of state-owned equity, we controlled for the proportion of state-owned shares in fund firms [66]. The characteristics of the firm's top management team (TMT) and CEO also affect firms' strategic decisions [67], so we controlled for the effects of fund management firms' TMT size [68], which is the number of senior executives before the new fund launch. We also added a series of CEO variables to account for CEOs' effect [69]. First, we constructed a dummy variable for CEO international experience, which takes the value of 1 if the CEO studied or worked outside China, and 0 otherwise. Second, as CEOs may be selected internally, from parent firms, or externally, we also constructed a CEO origin variable to reflect the degree of external origin (1 = internally, 2 = from parent firms, 3 = externally). We also controlled for the CEO's educational level (1 = high school, 2 = bachelor, 3 = master, 4 = doctor).

Finally, we accounted for possible time effects on firm performance [70]. In addition, as the performance of fund issuance is significantly affected by the season, we also included a control for the season as a dummy variable [71].

### 3.3. Analytical Methods

We formed panel data based on each fund firm and its repeated alliance portfolios for new fund launches. However, there may be problems of heteroscedasticity and autocorrelation due to the possible correlations between the sequential alliance portfolios. Random- and fixed-effect panel estimation models have biases for the estimation of data affected by these problems [72]. As the feasible general least squares (FGLS) method handles autocorrelation and heteroscedasticity well [73], we implemented the FGLS method to analyze the data, which means applying the "xtgls" order with the "panel (he)" option in STATA 14. We constructed the estimation model below.

$$P_{i,t} = \alpha + \beta_1 \times A_{i,t} + \beta_2 \times N_{i,t} + \beta_3 \times O_{i,t} + \beta_4 \times T_{i,t-1} + \beta_5 \times A_{i,t} \times T_{i,t-1} + \beta_6 \times N_{i,t} \times T_{i,t-1} + \beta_7 \times O_{i,t} \times T_{i,t-1} + \delta \times Control_{i,t} \quad (1)$$

$P_{i,t}$  is designated as firm performance, which the distributed fund shares in new fund  $t$ .  $A_{i,t}$  is the degree of active partner outflow in new fund  $t$ .  $N_{i,t}$  is the degree of new partner inflow in new fund  $t$ .  $O_{i,t}$  is the degree of previous partner inflow in new fund  $t$ .  $T_{i,t-1}$  is the average tie strength of the last alliance portfolio in new fund  $t - 1$ .  $Control_{i,t}$  are control variables and  $\alpha$  is the constant term.

## 4. Results

### 4.1. Main Results

Table 2 contains a summary of the descriptive statistics. Following Aiken and West (1991) [74], we mean-centered the predictor variables before generating interaction terms. A variance inflation factor test reveals values well below 10, implying that multicollinearity is not a problem for our coefficients.

Table 3 shows the results of the FGLS analysis. The baseline Model 1 contains the control variables. Model 2 adds the main effects of active partner outflow. Model 3 adds the main effects of inflow strategies including new partners and previous partners. Models 4 and 5 reveal the moderating effect of the average tie strength of the last alliance portfolio. As the correlation coefficient of average tie strength between two consecutive alliance portfolios is high (0.909), we do not control for the average tie strength of the current alliance portfolio.

**Table 2.** Descriptive statistics and correlations.

Variable	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
01 Performance																				
02 Active partner outflow	−0.047																			
03 New partner inflow	0.091	−0.028																		
04 Previous partner inflow	0.083	0.088	−0.081																	
05 Market competition	−0.396	−0.018	−0.320	−0.013																
06 Average tie strength	−0.175	0.195	−0.545	0.117	0.530															
07 Last average tie strength	−0.120	0.093	−0.326	0.226	0.511	0.909														
08 Partnership size	−0.035	−0.250	−0.211	0.066	0.336	0.395	0.443													
09 Bank age	−0.025	−0.045	0.002	−0.056	−0.024	−0.117	−0.161	−0.499												
10 Bank size	−0.198	0.138	−0.228	−0.051	0.286	0.235	0.129	−0.446	0.601											
11 FMS education	−0.011	−0.125	−0.018	0.034	0.040	0.007	0.020	0.065	−0.064	−0.020										
12 FMS working experience	0.033	0.040	−0.020	0.109	0.006	0.132	0.159	−0.054	0.070	0.081	−0.075									
13 Firm age	−0.056	0.148	−0.390	0.259	0.333	0.632	0.604	0.566	−0.334	−0.059	0.022	0.109								
14 Firm size	0.216	0.002	−0.186	0.144	0.212	0.517	0.550	0.569	−0.313	−0.198	0.028	0.083	0.635							
15 Firm ownership	0.048	−0.091	−0.033	0.014	−0.056	0.070	0.066	0.065	0.034	0.014	0.073	0.034	0.139	0.134						
16 TMT size	0.014	0.074	−0.178	0.101	0.122	0.272	0.252	0.264	−0.085	0.000	−0.001	0.053	0.443	0.321	0.073					
17 CEO international experience	−0.084	−0.022	0.063	−0.052	−0.084	−0.186	−0.186	−0.078	0.003	−0.019	−0.047	−0.020	−0.248	−0.178	−0.141	0.054				
18 CEO education	0.037	0.022	−0.014	0.037	0.012	0.149	0.177	0.114	−0.184	−0.076	0.031	0.061	0.286	0.214	−0.107	0.047	−0.119			
19 CEO origin	−0.082	0.001	0.156	−0.023	−0.090	−0.206	−0.189	−0.212	0.048	−0.038	0.099	0.027	−0.130	−0.306	−0.048	−0.021	−0.003	−0.031		
20 Time effect	−0.413	0.127	−0.460	0.022	0.799	0.695	0.639	0.322	−0.011	0.393	0.016	0.012	0.395	0.116	−0.101	0.154	−0.084	0.016	−0.095	
Means	21.074	0.157	0.142	0.114	0.963	5.260	4.834	10.864	23.744	28.864	2.050	1.373	7.025	24.158	0.712	21.627	0.256	2.229	1.596	12.434
S.D.	1.08	0.177	0.216	0.145	0.003	2.744	2.628	5.132	5.409	0.358	0.540	1.278	3.174	1.156	0.212	3.788	0.437	0.665	0.847	5.484

Notes: n (firms) = 61; n (observations) = 565; all correlations greater than |0.084| are significant at  $p < 0.05$ ; all correlations greater than |0.107| are significant at  $p < 0.01$ .

**Table 3.** Results of feasible general least squares (FGLS) analysis.

	Model 1	Model 2	Model 3	Model 4	Model 5
Active partner outflow (AO)		−0.407 (0.182) *		−0.564 (0.219) **	
New partner inflow (NI)			−1.215 (0.204) ***		−0.733 (0.273) **
Previous partner inflow (PI)			0.497 (0.219) *		0.663 (0.233) **
Last average tie strength (LATS)				−0.032 (0.023)	−0.003 (0.023)
AO × LATS				−0.188 (0.075) **	
NI × LATS					0.234 (0.095) **
PI × LATS					−0.109 (0.083) †
Market competition	−140.956 (23.767) ***	−148.721 (24.403) ***	−113.037 (23.524) ***	−142.303 (24.095) ***	−101.588 (23.860) ***
Average tie strength	−0.031 (0.024)	−0.027 (0.024)	−0.052 (0.024) *		
Partnership size	−0.002 (0.011)	−0.015 (0.013)	−0.001 (0.011)	−0.023 (0.014) †	0.003 (0.011)
Bank age	−0.002 (0.008)	−0.003 (0.008)	−0.007 (0.008)	−0.002 (0.009)	−0.007 (0.009)
Bank size	0.093 (0.164)	0.030 (0.165)	0.106 (0.162)	−0.083 (0.172)	0.070 (0.166)
FMS education	−0.041 (0.060)	−0.050 (0.059)	−0.049 (0.056)	−0.064 (0.062)	−0.038 (0.057)
FMS working experience	0.009 (0.028)	0.003 (0.028)	0.010 (0.027)	−0.002 (0.028)	0.004 (0.027)
Firm age	−0.030 (0.020)	−0.030 (0.020)	−0.037 (0.020) †	−0.019 (0.021)	−0.042 (0.021) *
Firm size	0.342 (0.054) ***	0.351 (0.056) ***	0.335 (0.052) ***	0.373 (0.055) ***	0.288 (0.054) ***
Firm ownership	−0.173 (0.148)	−0.198 (0.142)	−0.309 (0.148) *	−0.187 (0.154)	−0.304 (0.153) *
TMT size	0.015 (0.010)	0.015 (0.010)	0.014 (0.010)	0.015 (0.010)	0.015 (0.010)
CEO international experience	−0.270 (0.079) ***	−0.277 (0.079) ***	−0.345 (0.076) ***	−0.272 (0.079) ***	−0.349 (0.075) ***
CEO education	0.010 (0.052)	0.002 (0.052)	0.007 (0.050)	0.004 (0.052)	−0.017 (0.051)
CEO origin	−0.061 (0.042)	−0.068 (0.043)	−0.076 (0.042)	−0.065 (0.043)	−0.068 (0.042)
Time effect	−0.023 (0.018)	−0.018 (0.018)	−0.048 (0.017)	−0.014 (0.017)	−0.058 (0.018)
Intercept	21.508 (0.228) ***	21.458 (0.228) ***	21.836 (0.225) ***	21.395 (0.221) ***	22.033 (0.230) ***
Wald R <sup>2</sup>	448.53 ***	591.88 ***	2014.48 ***	369.77 ***	891.36 ***

Notes: n (firms) = 61; n (observations) = 565; numbers in parentheses are standard errors; fund type dummies and season dummies are included; †  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; one-tailed tests for hypothesized and two-tailed tests for control variables.

In H1 and H2, we predicted that active partner outflow and new partner inflow will both exhibit a negative relationship with firm performance, whereas previous partner inflow will exhibit a positive relationship with firm performance, as predicted in H3. Model 2 (Table 3, Model 2,  $\beta = -0.407$ ,  $p < 0.05$ ) and Model 4 (Table 3, Model 4,  $\beta = -0.564$ ,  $p < 0.01$ ) indicate that the active partner outflow has a significantly negative impact on firm performance. The results affirm H1. In addition, we found a negative, significant impact of new partner inflow on firm performance (Table 3, Model 3,  $\beta = -1.215$ ,  $p < 0.001$ ; Model 5,  $\beta = -0.733$ ,  $p < 0.01$ ) and a positive, significant effect of previous partner inflow on firm performance (Table 3, Model 3,  $\beta = 0.497$ ,  $p < 0.05$ ; Model 5,  $\beta = 0.663$ ,  $p < 0.01$ ), in support of both H2 and H3.

With regard to the moderating effect hypotheses, we predicted that the negative effect of active partner outflow would be stronger for the last alliance portfolio with strong average tie strength. The effect was negative and significant (Table 3, Model 4,  $\beta = -0.188$ ,  $p < 0.01$ ), providing support for H4. Furthermore, we predicted a positive moderating effect of the average tie strength of last alliance portfolio on the relationship between new partner inflow and firm performance, which means that H5 is supported (Table 3, Model 5,  $\beta = 0.234$ ,  $p < 0.01$ ). However, the moderating effect of the average tie strength in the last alliance portfolio on the relationship between previous partner inflow and firm performance is insignificant (Table 3, Model 5,  $\beta = -0.109$ ,  $p < 0.1$ ). Thus, our result does not support H6.

#### 4.2. Robustness Checks

We undertook additional analyses to check the robustness of our findings. First, we measured three dimensions of partner reconfigurations as the count of partners, and all results support our hypotheses. Thus, similar results are obtained from using the ratio as well as the count of partners as independent variables. This provides strong support for the robustness of our findings.

Second, our data comprise information about the new funds, nested in different fund firms, which violate the assumption of the independence of observations at the fund level and thus, produce biased estimates of the coefficients. To account for this, we used the hierarchical linear model (HLM) technique, as has been widely recommended for analyzing nested data [75]. We conducted normal two-level regression analyses for the effects of alliance reconfiguration strategies on firm performance. The first level pertains to observations of new funds from 2007 to 2011. In the level 1 equation, the coefficients are estimated as fixed effects (i.e., assumed to be the same across firms and groups). The intercept of the level 1 equation is allowed to vary randomly at the second level, which pertains to individual funds. This specification takes into account the potential for unobserved heterogeneity among funds and fund firms. The results were nearly the same, except that the effect of new partner inflow on firm performance became insignificantly negative ( $\beta = -0.285$ ,  $p > 0.1$ ).

Finally, we performed a Heckman correction to assess whether endogeneity influenced the effects of alliance partner reconfiguration on firm performance using the two-step procedure suggested by Shaver (1998) [76] and Hamilton and Nickerson (2003) [77]. Specifically, we first ran two regressions in which partner reconfiguration (partner outflow and partner inflow) is the dependent variable (the selection model) and obtained the inverse Mills ratio from those equations. Then, we added these to a probit regression of firm performance (the outcome model). In the outcome model, the two instrumental variables that were found to be unrelated to firm performance and that were used to calculate the inverse Mill's ratio [76] were excluded. These were the variables for market uncertainty and the total number of banks in the market. We found that the results for the effect of partner outflow and partner inflow on firm performance are robust.

Table 4 shows these robustness results. Model 1 and Model 2 are results where the dependent variable is the count of partners; Model 3 and Model 4 are results of the hierarchical linear model; Model 5 and Model 6 are results including the inverse Mill's ratio.



**Table 4.** Results of robustness analysis.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Active partner outflow (AO)	−0.033 (0.020) *		−0.340 (0.207) *		−0.534 (0.257) *	
New partner inflow (NI)		−0.064 (0.025) **		−0.285 (0.382)		−0.715 (0.273) **
Previous partner inflow (PI)		0.063 (0.024) **		0.781 (0.293) **		0.646 (0.233) **
Last average tie strength (LATS)	−0.025 (0.023)	−0.022 (0.024)	−0.018 (0.019)	0.008 (0.022)	−0.033 (0.023)	−0.004 (0.024)
AO × LATS	−0.013 (0.008) *		−0.247 (0.085) **		−0.189 (0.076) **	
NI × LATS		0.029 (0.009) ***		0.248 (0.135) *		0.240 (0.095) **
PI × LATS		−0.010 (0.006) †		−0.144 (0.099) †		−0.115 (0.083) †
Market competition	−141.208 (24.548) ***	−101.536 (23.961) ***	−117.185 (26.304) ***	−98.713 (27.434) ***	−140.690 (24.320) ***	−100.748 (23.874) ***
Average tie strength						
Partnership size	−0.011 (0.012)	0.004 (0.012)	−0.017 (0.012)	0.002 (0.011)	−0.023 (0.014) †	−0.001 (0.012)
Bank age	−0.001 (0.009)	−0.004 (0.009)	0.010 (0.011)	0.000 (0.012)	−0.002 (0.009)	−0.007 (0.009)
Bank size	−0.045 (0.170)	0.051 (0.164)	−0.226 (0.198)	−0.063 (0.193)	−0.082 (0.172)	0.054 (0.166)
FMS education	−0.061 (0.062)	−0.022 (0.057)	−0.019 (0.069)	−0.006 (0.070)	−0.063 (0.062)	−0.028 (0.057)
FMS working experience	−0.004 (0.028)	0.017 (0.027)	−0.010 (0.003)	0.007 (0.029)	−0.002 (0.028)	0.003 (0.027)
Firm age	−0.019 (0.021)	−0.040 (0.020) *	−0.023 (0.023)	−0.047 (0.027) †	−0.019 (0.021)	−0.039 (0.021) †
Firm size	0.356 (0.056) ***	0.329 (0.055) ***	0.343 (0.061) ***	0.271 (0.069) ***	0.370 (0.056) ***	0.293 (0.054) ***
Firm ownership	−0.178 (0.152)	−0.281 (0.150) †	−0.203 (0.201)	−0.262 (0.201)	−0.182 (0.156)	−0.298 (0.152) *
TMTs size	0.015 (0.010)	0.015 (0.010)	0.009 (0.017)	0.011 (0.017)	0.015 (0.010)	0.015 (0.010)
CEO international experience	−0.279 (0.079) ***	−0.298 (0.074) ***	−0.251 (0.078) **	−0.305 (0.079) ***	−0.275 (0.079) ***	−0.349 (0.075) ***
CEO education	0.002 (0.053)	−0.014 (0.050)	−0.028 (0.068)	−0.036 (0.070)	0.009 (0.053)	−0.015 (0.051)
CEO origin	−0.059 (0.043)	−0.059 (0.042)	−0.058 (0.047)	−0.053 (0.046)	−0.068 (0.043)	−0.072 (0.042) †
Time effect	−0.018 (0.017)	−0.052 (0.017) **	−0.028 (0.019)	−0.052 (0.019) **	−0.014 (0.017)	−0.057 (0.018) ***
Inverse Mill's ratio					−0.006 (0.062)	−0.054 (0.050)
Intercept	21.464 (0.225) ***	21.939 (0.228) ***	21.184 (0.115) ***	21.303 (0.129) ***	21.400 (0.222) ***	22.025 (0.230) ***
Wald R <sup>2</sup>	364.67 ***	1760.37 ***			377.15 ***	2130.45 ***
Deviance			1561.149 *	1551.283 **		

Notes: n (firms) = 61; n (observations) = 565; numbers in parentheses are standard errors; fund type dummies and season dummies are included; †  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; one-tailed tests for hypothesized and two-tailed tests for control variables.

## 5. Discussion

### 5.1. Contributions

This study examines the effects of three partner reconfiguration strategies on firm performance. We found that active partner outflow and new partner inflow reduce firm performance; yet previous partner inflow improves it. The average tie strength of the last alliance portfolio negatively moderates the effect of the active partner outflow and positively moderates the effect of new partner inflow. However, its moderating effect on the effect of previous partner inflow is insignificant. These findings highlight the three main contributions of this study.

First, our study extends the alliance portfolio literature by taking a dynamic perspective of sustainable development. Given most of the previous research usually has taken a cross-sectional perspective to check static partner composition of the alliance portfolio on performance outcomes [22,56], we focus on how changes in the partner composition, when partners enter the alliance portfolio or leave it, influence firm performance. Recent studies have demonstrated that, based on external or internal environmental changes, firms tend to adjust alliance partners over time [20,54], yet little is known about how these partner reconfiguration strategies influence firm performance. Our results demonstrate that partner reconfiguration strategies have a significant influence on firm performance, which can likely be explained by the dynamic mechanisms of resource flow and cooperation routine changing. This study highlights the importance of sustainable development of partner networks, and further clarifies which reconfiguration strategies are beneficial for sustainable firm performance.

Second, our study develops a multidimensional perspective of partner reconfiguration strategies. Prior studies already indicated that dropping active partners and introducing outside partners are two common reconfiguration approaches [8]. Based on a more detailed dynamic sustainable view, we further consider introducing outside partners as new partner inflow (no previous collaboration experience) and previous partner inflow (whereby the partner entering the portfolio has previous collaboration experience). We then theorize that the three partner reconfiguration strategies trigger resource flow and cooperation routine changing that explain their associations with firm performance. This multi-dimensional perspective allows us to deeply understand how firms develop partner reconfiguration strategies based on established alliance portfolios and how these strategies affect firm performance. Thereby, we contribute to the theoretical foundation of knowledge of the relationship between alliance portfolio reconfiguration and firm performance.

Third, this study develops the ability to consider a range of boundary conditions, which were mostly limited to the internal and external environment of a single alliance portfolio. By taking a dynamic sustainable perspective, we analyze how the characteristics of the last alliance portfolio, specifically the average tie strength of partners, moderates the relationship between partner reconfiguration strategies and firm performance. Previous studies have focused on the impact of alliance partnerships on partner selection of subsequent alliances [47,51], yet few studies have explored whether the characteristics of previous alliances will affect how subsequent partner selection influences performance outcome. This study suggests that the average tie strength of the last alliance portfolio affects how the partner reconfiguration strategies change the resource flow and cooperation routine, and thus further influence firm performance. The results firstly demonstrate that the average tie strength of the last alliance portfolio is the boundary condition for the effectiveness of the three partner reconfiguration strategies. More importantly, the results further show that without considering the characteristics of previous alliance portfolio, a fragmented discussion on how the partner selection strategy affects performance may occur and results may be biased. This finding underscores the importance of taking a dynamic sustainable perspective in analyzing partner selection in alliances.

### 5.2. Limitations and Further Research Directions

This study is subject to several limitations that suggest research directions. First, the measurement of firm performance in this paper is mainly based on objective data. Although the objective data

may reduce the deviation in data measurement and reflect the performance outcome more truly, it may not measure some implicit performance outcomes. Another common data measurement method is questionnaires, by which scholars can measure some subjective performance measures, such as collaborative efficiency and evaluation of firm managers. Therefore, in future research, interested scholars may try to conduct diversified measurement of firm performance by means of questionnaire, to verify the conclusion of the theory proposed in this paper.

Second, the paper identifies the partner reconfiguration strategies from the perspective of dynamic partnerships. However, the classification of partner reconfiguration strategies may have other perspectives, such as the resource-based view [38], region-based view [16], etc. Subsequent research may explore other possible classifications of partner reconfiguration strategies and verify their impacts on firm performance.

Third, this study used the average tie strength of the last alliance portfolio as the boundary condition. However, we believe that there are some other characteristics of the last alliance portfolio, which will influence the effects of partner reconfigurations on firm performance. Future research may explore these characteristics of the last alliance portfolio, such as partner resource, partner type and partner location, and verify the theoretical logic of this article.

Finally, we used open-ended fund product distribution alliances in China as our empirical setting. This setting has several advantages, in terms of examining how partner reconfigurations affect firm performance, but we still need to test if our findings hold in other contexts. China is undergoing significant institutional transitions, so relation-based rules are important in Chinese firms' alliance management practices [78]. Additional research might focus on other institutional environments to verify the generalizability of our findings.

## 6. Conclusions

We have tried to address a theoretical limitation that the existing studies of alliance portfolios and performance outcomes usually have, that is, they have been limited to a cross-sectional perspective. By taking a dynamic sustainable perspective, we enhanced the level of detail of the categorization of partner reconfiguration strategies and analyzed how these partner reconfigurations influence firm performance. We find that active partner outflow and new partner inflow reduces firm performance, yet previous partner inflow improves it. The average tie strength of the last alliance portfolio negatively moderates the effect of active partner outflow and positively moderates the effect of new partner inflow. The results provide valuable insights for both researchers and practitioners. From a scientific perspective, this study demonstrates the importance of dynamic sustainability in examining the relationship between alliance portfolios and firm performance by checking three partner reconfiguration strategies. From a pragmatic perspective, this study suggests that not all partner reconfiguration strategies will improve firm performance when a firm needs to change partners and the effect of reconfigurations will depend on the foundational characteristics of the last alliance portfolio. In conclusion, practitioners should implement partner reconfiguration strategies carefully, based on environments and the situation of the last alliance portfolio.

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