

## Article

# Does Trust Affect Antecedents of Inter-Organizational Governance Mechanisms and Elicit Successful Collaboration via Innovation? An Empirical Study from a Market-Oriented Economy in Vietnam

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**Abstract:** This study aims to examine the relationships between trust and the structure of inter-organizational governance mechanisms (IGMs), what factors of IGMs and trust affect innovation, and how their effects lead to Successful Inter-organizational Collaboration (SIC) through innovation in the tourism industry. A questionnaire survey was conducted to collect responses from 423 tourist firms from March to September 2022 in Vietnam. We applied partial least squares structural equation modeling (PLS-SEM) analysis to determine the path coefficients among these latent constructs. The results reveal that the role of trust is significant in shaping an organization's behavior to create IGMs and innovation. IGMs directly impact innovation and SIC, as well as also indirectly affecting innovation variables. This study provides new insights into the literature on tourism regarding trust, IGMs, innovation, and SIC. The results can guide indispensable strategies that tourist firms can use to improve the outcomes of tourism sectors in terms of long-term collaboration.

**Keywords:** innovation; inter-organizational collaboration; trust; tourism sectors; COVID-19



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## 1. Introduction

Inter-organizational collaboration (IC) was established in Vietnam in 1946. Vietnamese organizations have engaged in IC since a call made by President Ho Chi Minh; various economic units were subsequently formed that joined dyadic relationships, joint ventures, networks, and alliance relationships in 63 provinces in Vietnam. As expected, the strategy of the government is to develop the tourism industry as an important economic industry [1]. In 1981, the World Tourism Organization (WTO) accepted the tourism industry of Vietnam as a sector-specific member of the WTO. In 1989, the tourism industry of Vietnam also became a member of the Pacific Asia Tourism Association (PATA). With this policy, the Vietnamese tourism industry successfully became a critical economic area in PATA. Moreover, many tourist firms started their businesses following government strategies, and tourist firms cooperate through JATA, ASTA, and PATA with 800 partners in over 50 countries [2]. The tourism industry thus far welcomed 25 million domestic tourists and 8.9 million international tourists, and the tourism sector accounts for 9.2% of GDP [3]. These achievements can be attributed to the large efforts made by all stakeholders in tourism firms and sectors. In 2020, the tourism industry suffered greatly, though tourism since changed, and tourists increased their demand for the facilities and services of the tourism industry [4]. The COVID-19 pandemic had a severe impact on the tourism industry worldwide, and

Vietnam implemented travel restrictions and lockdown measures to control the spread of the virus; many hotels, resorts, restaurants, tourist attractions, transportation companies, and tourist firms were forced to close or suspend operations, which resulted in a significant drop in tourism revenue and job losses because there were no visitors [5]. At that point, 90 to 95% of tourist firms had to suspend their operations [5]. Al-Omouh et al. [6] pointed out that COVID-19 created a risky and disorderly business environment and threatened the long-term survival of organizations, as well as the sustainability of business networks.

Previous studies paid attention to collaboration and innovation research as a potential protector that may lead organizations to overcome the risks, problems, and uncertain environments caused by the COVID-19 pandemic, thereby allowing their businesses to continue to develop [6–9]. According to Gölgeci and Kuivalainen [7], this adaptive behavior for organizations offers an innovative path to gain knowledge and ideas in network relationships, thus striving for growth and survival through new methods of operation to overcome the effects of the COVID-19 pandemic in all fields [6,7]. The impacts of the COVID-19 pandemic produced many challenges for organizations in all industries, and the pandemic forced organizations to sense and respond innovatively to find new ways to survive [6,10]. Based on innovation, organizations can achieve better business methods, using advanced and supportive technology from their partners to achieve SIC [6,7,11]. In addition, organizations can utilize the availability of skills from their partners to learn appropriate technological processes to produce new products or launch new services [12]. There is little research that combines innovation and SIC [6,13,14]. In a study by Uddin et al. [14], the authors developed a synthesis co-ordinating mechanism theory by combining supply network theory and transaction cost economics. The results showed that the hybrid relational context has a positive correlation with capabilities and methods and leads to efficiency in inter-organizational cost management; a weak point is that this study did not explore the indirect influences among these factors. Moreover, Yeh et al. [15] suggested that inter-organizational trust did not have a direct or significant impact on regenerative innovation and failed to predict the relationship between trust and regenerative innovation; however, they found a positive impact of relationship trust on regenerative innovation through the mediation of stakeholders' environmental awareness factors.

In addition, Ali et al. [16] integrated international joint venture management mechanisms based on social exchange theory (SET) and transaction cost theory (TCT) to understand the methods that improve the performance of management mechanisms; they found that trust, communication, and culture were anchored by SET and had a positive effect on improving performance. TCT is the lens of structural mechanisms, and their results also found that there were no positive effects among these structural mechanisms when they used TCT to explore performance. Based on the previous studies discussed above, we find that the results remain negative and non-significant, and another weak point is that these studies did not investigate the combined role of social and structural mechanisms in reducing opportunism and enhancing the performance of collaboration [16]. Based on the previous studies, their results are a springboard for our research on tourist firms. To fill this gap, this study identifies the relationship between inter-organizational trust and SIC through the mediation of innovation and IGMs [16,17]. In this study, we combine TCT and SET to understand the role of trust, IGMs, innovation, and SIC in tourist firms [16,18]; this study, thus, attempts to answer the following research questions:

RQ1. To what extent does trust affect IGMs among tourist firms and their suppliers?

RQ2. To what extent do IGMs and trust affect innovation and SIC among tourist firms and their suppliers?

RQ3. To what extent do innovation and IGMs mediate the relationship between trust and SIC among tourist firms and their suppliers?

This study needs to be conducted because of the lack of research on the phenomenon of innovation and SIC in tourist firms in the context of Vietnam; this research identifies the influence of inter-organizational trust, IGMs, and innovation in understanding the behavior of tourist firms and their suppliers based on the elements that drive the success

of inter-organizational collaboration. The second contribution is that our study fills a gap present in previous studies by exploring the relationship between factors of IGMs and SIC via innovation, which was not examined in previous studies [14–19]. Finally, SIC is the main solution used to improve and solve the issues caused by the COVID-19 pandemic that affected the tourism industry in Vietnam; based on the results of this study, managers in the tourism sector can change their activities and build new strategies to develop tourism. This research contributes to both the theoretical and practical implications for managers in the tourism sector, as well as to future research. The following sections of this article present the theoretical groundwork of the SIC model. In the next section, we propose the hypotheses and conceptual framework. Next, we elaborate on the research methodology and research design and present the data analysis and findings. Finally, we present the contributions, implications, and limitations of the study to direct further research.

## 2. Literature Review and Hypotheses Development

### 2.1. Social Exchange Theory and Transaction Cost Theory

In this research stream, we used two theories—transaction cost theory (TCT) [18,20] and social exchange theory (SET) [16,21–23]—to understand IC. TCT shapes the choice of governance structure in collaboration [16,23], while SET shapes inter-organizational behavior, viewing the actions of individuals as voluntary and motivated by the benefits that they are expected to derive from other actors or partners [21,22]. SET argues that collaboration occurs because the organizations perceive a mutual benefit from the exchange in resources, information, goods, and services [16,21,22]. Collaborating organizations can develop both trust and reciprocity, which can create long-term relationships that enhance communication and co-ordination in achieving IC [16,23]. Based on previous studies, we assume that SET is an important theory used to study the relationships between organizations and that it contributes to building a theory of trust [24]. Assumptions regarding SET are that the organizations set up the exchange relationships to gain access to scarce resources and achieve their goals in the exchange relationships, with collaboration based on the expectation of receiving benefits in return from other parties [16,23]. It focuses on relational characteristics within the ongoing collaborations between partners, as well as emphasizing the importance of inter-organizational trust and communication as effective social mechanisms of inter-organizational governance [23].

TCT argues that organizations participate in IC because it is cost-effective and minimizes transaction costs, market transactions costs, search costs, monitoring costs, and negotiation costs [18,20]. It also posits that organizations perform the exchanges of materials, physical capital resources, and goods with the expectation of positive economic results, as well as performing the reciprocal interactions to pursue not only self-interest but also mutual benefits in the exchange relationships [20]. The assumptions of TCT are that organizations enter IC to minimize transaction costs when they interact together. The other assumption of TCT is that it increases operating efficiency by enabling co-ordination, frequency of interaction, and carry out commitments [14,18,20]. IC can gain success when firms use frequent communication as a key strategy to achieve efficient, professional, and risk-sharing goals in an uncertain environment, while TCT can keep the transaction costs low when firms apply frequency of interaction as the complementary outlook to TCT [18,20,25].

In the study by Ali et al. [16], who pointed out that SET emphasizes the importance of trust, communication [24], and cultural adaptation, it significantly improved international joint ventures' performance by measuring the parent firms' satisfaction, which it based on the overall performance, profitability, market share, and achieving their mutual goals that set high standards for international joint ventures. The SET and TCT enhance our understanding of the impact of inter-organizational trust, IGMs, and innovation function in driving SIC: TCT focuses on the structural design of SIC and emphasizes the importance of inter-organizational commitment [25,26], co-ordination mechanisms [14,19,27], frequency of interaction [14,28], and effective structural mechanisms for IGMs, whereas SET focuses

on the characteristics within the ongoing relationships between partners and emphasizes the importance of inter-organizational trust [14,16,23], communication [14,16,23,26] and innovation [6,12,15,29] as effective social mechanisms of collaboration management. Rarely, the studies combined two theories to investigate the underlying management mechanisms; these theories can promote SIC in tourism firms. The study is relevant in advancing the understanding of collaboration management mechanisms that improve the performance of inter-organizational networks [30]. Drawing on TCT and SET, this current study extended previous studies by conducting an empirical investigation of the SIC model to identify the impact of IGMs, including communication, commitment, co-ordination, frequency of interaction, trust, and innovation among tourist firms and their suppliers [6,12,14–16,23,26,29,30].

## 2.2. Successful Inter-Organizational Collaboration (SIC)

The concept of SIC considers how the participants in IC fulfill the mutual objectives and become satisfied with the outcomes of exchange relationships [18]. Saukko et al. [31] viewed IC as being like the actions between different actors, which are based on implementing the mutual goals, competitive advantage, and profits that are the main elements required to achieve organizational success. In general, Saukko et al. [31] defined IC terms in different disciplines, referring to it as the collaboration between organizations that facilitate the accomplishment of organizational goals and effective performance. In addition, Roehrich et al. [32] defined the structure of IC, basing it on the characteristics of organizations, business patterns, origins, reasons to engage in IC, and the outcomes of exchange relationships; these partnerships were established in different forms, such as alliances, networks, and dyadic relationships. Consequently, the organizations engage in the collaborative interactions and activities to improve the competitive advantage of firms. Similarly, Binder [33] stated that the organizations particularly obtain benefits when they are engaged in alliances, networks, clusters, or memberships of IC; these networks enable the focal firms to access and exchange information and materials, and they combine internal and external resources [32]. The IC can only exist and be successful when two or more firms exchange resources based on trust and commitment, a high frequency of interaction to implement the exchange resources in collaborations, and rational collaborations that may occur temporarily or be maintain long-termed, which depend on the organization carrying out commitments and achieving their mutual objectives [34]. SIC was established when organizations collaborated with other firms to overcome uncertain environments, share scarce resource, and share risks in the networks. The relationship performance refers to the satisfaction with the outcomes [13], which involve achieving mutual goals effectively, and overall satisfaction with the performance that they experienced after establishing relationships with partners.

Raza-Ullah and Angelos Kostis [13] found five indicators to measure the inter-organizational relationship performance in terms of producing expected outcomes, developing high-quality solutions, generating revenue, earning customer referrals, achieving competitive advantage over other firms, and reducing time required for launching new products or services to market. In the same vein, Palmatier et al. [18] conducted a comparative longitudinal analysis of exchange relationships in B2B relationships in the US, the results of which found that commitment and trust positively affect relational outcomes, while frequency of interaction and communication have highly significant positive effects on trust in terms of increasing total sales, sales growth, cooperation, benefit expectations, capability to implement the objectives, and high integrity [18,25,35]. For Binder [33], trust reinforces social relationships and represents a theoretical mechanism to explain IGMs. However, it is rarely used in tourism research as a theoretical foundation, with the notion of trust leaning towards the exchange relationships and their impact on the performance of collaborations; thus, trust is an important factor to examine as a new area of tourism research. Moreover, Binder [33] highlighted the social interactions among tourism sectors, finding that six main constructs, including trust, commitment, interactivity, honesty, open communication, and reciprocity, affect the networks, explaining the roles of members who

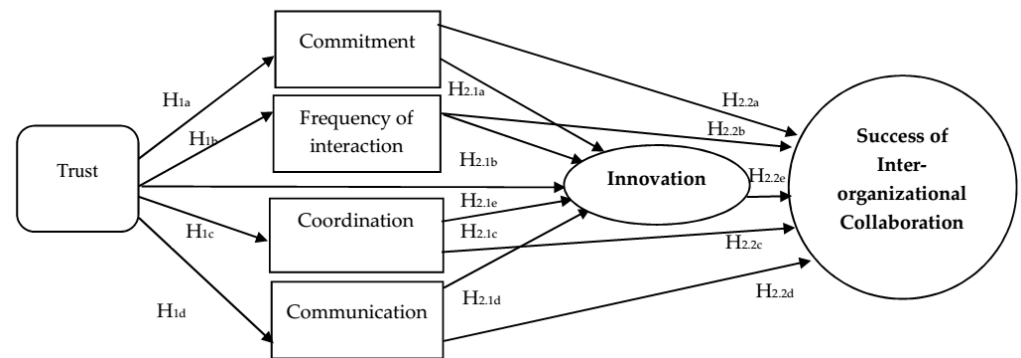
keep promises and carry out their commitment to their tasks. In the same vein, Denicolai et al. [36] mentioned that the trust factor in IC is a key factor driving knowledge acquisition, knowledge sharing [37], and innovation [33,38]. This study highlights the role that inter-organizational trust plays as a fundamental innovation element to better understand SIC [33]. The study of Hall et al. [39] developed the items used to measure IC based on a willingness to work together, share information, share resources, achieve collective goals, invest in the relationship, and share resources; these items were also used to evaluate SIC.

### 2.3. Innovation

A considerable amount of the literature was published on innovation. These studies [6,7,40] defined innovation plays as an important factor that is a fundamental element of inter-organizational partnerships [6,7]. The concept of innovation is defined as a crucial dynamic capability for survival, such as when the organizations react to unforeseen environmental up growth and handle risks, and it presents challenges in both the short and long term [41,42], while IC is recognized as a characteristic that can impact innovation factors. The SET approach considers the role that innovation factors play as an outcome of collaborative knowledge exchanges, sharing information, and the participation of partners, who are in conditions of interdependence. Similarly, Pinto [43] found that when the organizations experience high-level complex situations (i.e., the COVID-19 pandemic), the organizations will attempt to collaborate and co-ordinate the work of their partners to gather capabilities and knowledge to explore innovative solutions to counter the unpredictable changes. Innovation is based on the social networks of relationships, as it emphasizes the importance of patterns, expectations, and beliefs. These elements promote interactive collaboration and co-ordination for achieving their mutual benefits [6,40].

Therefore, innovation is a fundamental factor that drives the collaborative and collective activities, and it can contribute to enhancing the continuous development of dynamic capabilities of the exchange relationships in the organizations [6]. Al-Omouh et al. [6] confirmed the role that innovation factor played as a dependent variable in networks used to maintain organizational sustainability in the unprecedented COVID-19 pandemic in Jordan. Based on the collaborative viewpoint, previous studies argued that the organizations become or carry out innovation when they can create a level of trust [15]; co-ordination [6,40]; communication to share information, resources, tasks, and knowledge; solve problems; learn; and generate valuable complex ideas and plans, which lead to the innovation of the organization [20]. Previous studies postulated a significant association between innovation and IC, yet there is still a gap in our understanding of the role of IGMs in creating innovation factor during times of turbulence and high instability in market demand. While extensive research found the role that IGMs play as a collaborative mechanism to improve the dynamic capabilities of firms in normal conditions, there is a lack of the empirical evidence to examine whether IGMs generated innovation under the pressure of the COVID-19 pandemic [44]. The investigations that used an empirical study to analyze the role that innovation plays as an independent variable, mediation variable, dependent variable also failed to provide this evidence; thus, this study identifies the relationships between trust and innovation, IGMs and innovation, and innovation and SIC, as well as the indirect effects of IT on SIC as mediation of innovation and IGMs; the results of this study will solve the problems caused during the period in which the firm's organizational survival was threatened by the crises caused of COVID-19 pandemic. Moreover, a recent study of Shen et al. [45] explored the consumer behavior: these scholars confirmed that the consumer's priorities and decisions always experience fluctuation and high demand, while the customers often change their demand to force the organizations supplying them to create innovations based on support from the relational networks created with business partners and other organizations [6]. In addition, Perez-Luno et al. [11] stated that the SET posits that the characteristics of innovation play a central role in IGMs related to tacit knowledge, leading to an increase in SIC [6].

According to Perez-Luno et al. [11], the SET implies that innovation factor does not only require the members of collaboration to participate in the networks of the relationship structure mechanisms, but also involves trust, commitment, and the cohesiveness inherent in the inter-organizational relationships, which need a high co-ordination in applying technology to reduce transaction costs. Perez-Luno et al. [11] stated that these factors are not enough to identify the innovation factor in the networks of the relationship structure; thus, the researcher needs to expand more elements in future, particularly in the dynamic and unpredictable environment of the tourism industry [6,11,46,47]. This current study adds more elements to identify the relationship between innovation and communication factors [14,26]. Flavio Tiago et al. [48] suggested using frequency of interaction factor [14,28,39] to explore the relationship among the factors. A communication mechanism enhances the innovation model and SIC model to access collective ideas and enable information sharing among the partners, while it must also be adequate and timely, as communication among partners is invaluable in establishing innovative ideas in exchange relationships [49]. According to Elia et al. [50], the organizations based in collaboration, co-ordination mechanism, and connections among member networks aim to generate, refine, and develop innovative ideas that can be transformed into successful ventures [6]. Based on the discussion above, this study proposes the hypothesis shown in Figure 1.



**Figure 1.** Conceptual framework and proposed hypotheses.

#### 2.4. Inter-Organizational Governance Mechanisms (IGMs)

The antecedents of IGMs remain under-researched in respect to IC [31,51]. The study of Oliveira and Lumineau [52] suggested that further research is needed to explore which antecedents of IGMs affect the activities in IC behavior [31,52]. The question is how trust-based collaborative relationships can be realized, and extensive research is, therefore, required to understand how to achieve SIC. The literature on IC emphasizes that all of the members of the networks undertake the work that is related to each other through communication mechanisms [39], stresses the importance of trust mechanisms [53,54], explains how trust mechanisms control balance of the organizations [31,55], promotes the innovation of the organizations [56], and develops co-ordination mechanisms for the organization of mutual benefits [6,39]. In addition, it represents a growing a stream of research that aims to understand SIC by examining collaboration management mechanisms [16,23].

##### 2.4.1. Commitment

Ashnai et al. [25] defined the concept of commitment as the level of desire deployed to maintain the sustainable partnership required to conduct business and that achieves the mutual goals; here, the members of IC are willing must accept sacrifices in the short-term relationship to maintain a long-term relationship, as well as believe in a sustainable collaboration [18]. Similarly, Saha and Banerjee [57] claimed that when the inter-organizational collaboration was carried out via both formal and informal methods to develop exchange networks, the behavior of organization shaped and strengthened the network ties, promoted commitment towards the collaboration and carrying out their duties, and increased trust among partners, thus allowing the members of IC to acquire the necessary resources [6].

Chen et al. [58] carried out an empirical study into an online shopping environment, revealing that commitment factor was viewed as a form of cooperation and exchange when customers trust the ongoing relationships with firms. This commitment was based on the past interactions among the partners that were seen as favorable activities, and it continued to shape the future actions of IC, was based on the belief in the exchange relationships, and was a significant way to sustain this relationship between customers and firms in the long term. The results highlighted two measurement scales used to measure commitment factor: calculative and effective commitment. Previous studies used commitment factor as an independent variable to examine the effect of commitment on successful exchange relationships [19], focusing on dimensions such as a commitment to support services and continue to use the partners' products, loyalty to this supplier, a willingness to make long-term investments to retain this supplier, and maintaining a long-term alliance with this supplier [25]. A study by Andreu et al. [59] reported that commitment factor directly affects trust towards the IC, with this influence leading to a relational quality, i.e., the higher the level of trust in the relationship, the greater the level of commitment to achieving success through it; however, this hypothesis was not supported by the study of Andreu et al. [59], and it was rejected. In relationship marketing, Morgan and Hunt [35] succeeded in establishing the roles that inter-organizational commitment and trust factors play regarding the mediation variables in B2B relationship models of supply chain management [18]. TCT was applied to explore the effects of the exchange relationships, explaining clearly and equally that TCT grounded on the trust factor managed a lower stress among partners, and TCT showed both trust and commitment towards the exchange relationships, as well as flexibility and adaptability in uncertainty environment; thus, trust and commitment can greatly decrease the monitoring and transactions costs [20]. Based on the literature review that we discussed above, we can identify the inconsistent results, such as the fact that there are negative, neutral, and positive significant [18,25,35] and non-significant statistics [59], as well as the fact that no testing of the relationship was performed among these factors, i.e., an indirect affect [18,19,25,35]. Perez-Luno et al. [11] implied that further research is needed to examine innovation generation, because it not only supports the partners' desire to engage in IC and choose the appropriate network collaboration mechanisms, but also the need to involve commitment mechanisms in the inter-organizational relationships to achieve the mutual goals [25]. In the same vein, Hardwick and Anderson [46], in their study, found co-ordination mechanisms, technology, and transaction costs that were not enough to understand the collaborative innovation in dynamic and unpredictable environments, such as the COVID-19 pandemic [6,47]. In a hybrid relational context, Uddin et al. [14] considered the behavior of members in inter-organizational collaboration to share specific assets and strategic information with each other in collaboration networks. They also design new products and development businesses to gain mutual competitive advantage of IC, and are willing to share their resources with members of the networks. These relationships are based on bilateral commitments and must remain stable for a long term, while commitment also retains the trust required to carry out their tasks to achieve the mutual benefits of the structure mechanisms. Commitment mechanisms operate in collaboration to identify the effective interaction manner and required innovative technology [14,60]. We hypothesize there is a relationship between inter-organizational trust and commitment, and we posit that trust affects commitment, leading to innovation and SIC. We supposed this hypothesis because there still exists a disagreement on how trust and commitment perspectives are implemented in Vietnamese tourism, whether they can affect innovation and SIC, and the roles that they play as key independent, mediating, and dependent variables of trust, innovation and SIC. Therefore, drawing on the TCT, we proposed the hypothesis shown in Figure 1.

#### 2.4.2. Co-Ordination

The complex environment creates a demand for higher co-ordination among organizations to complete tasks and activities, such as build plans, schedule services, and support

partner' products [19], and it clearly led to the effects of performance on collaboration [19]. In chronic care management, Flieger et al. [27] revealed that co-ordination mechanisms refer to the characteristics of partners' behavior, which integrate and align the activities to gain knowledge required to build new products; it also achieves the mutual goals involved in the collaboration. In the 1980s, Narus and Anderson defined the concepts of co-ordination as the process that shows that participants look to work with organizations that can meet mutual goals with high effort, and that it expects all partners to carry out their tasks and duties with the highest degree of co-ordination [61]. The study of Mariani [62] confirmed the items used to measure co-ordination in IC, such as carrying out the programs, effectively co-ordinating activities with partners, building a plan for new services, and scheduling booking services (e.g., the reservation, sale products, marketing). The organizations are willing to share resources (e.g., products, services, business information, and physical facilities) in collaboration, as well as the tasks and activities within the transaction, leading to reduced transaction costs [20].

Some studies found that a main element in the inter-organizational governance mechanisms is the co-ordination factor, which affects relationships between the members of the networks in management mechanisms [31,63]. Another study also showed that a successful collaboration occurred when partners exchange information, effectively co-ordinate supply chain management, and the members are willing to share resources, such as technology, people, and business information [39]. Inter-organizational trust appears to increase co-ordination and innovation in the collaboration; in turn, these factors facilitate successful business outcomes from inter-organizational collaboration. In the literature, the recent work of Howard et al. [64] drew a distinction of co-ordination function, which presents the interplay between the partner's roles and the relational modes of co-ordination governance mechanisms. The co-ordination function emphasizes delineation of the partners' roles and responsibilities for sharing information and holding joint meetings to solve the problems in IC [32,65], whereas the co-ordination mechanisms create prevalent knowledge from the networks, using patronage to develop the trust in IC [32,66]. This process increases the likelihood of resolving conflicts quickly between organizations, being a type of trust developed over time that could inform the level of collaborative completeness [32,66]. Based on the literature and previous studies discussed above, because of a lack of research to identify the relationship between trust and co-ordination and co-ordination and innovation, the direct and indirect relationship between co-ordination and SIC is unknown. Therefore, it needs to be explored via these hypotheses. In the same vein, Raza-Ullah and Angelos Kostis [13] pointed out that co-ordination mechanisms' intensity primarily enhanced performance of collaborative relationships, since co-ordination mechanisms allowed the organizations to find both collaborative and competitive advantages [13]; the collaborative advantage was achieved when the organizations engaged in the complex challenges that affect a large-scale opportunity through pooling and sharing resources, whereas competitive advantage is pursued through maximizing the productive value of the organizations' resources, leading it to strive consistently and remain ahead of the competition. For the collaborative advantage, the resources are committed over time, while the competitive advantage simultaneously develops the new products and technologies of IC [13]. We posited that inter-organizational co-ordination has a positive effect on innovation, and co-ordination directly and indirectly affects SIC. The co-ordination of resources is the lifeline for most organizations and partners in an uncertain environment. The structure of co-ordination is a key factor of IC [6], and it needs stable and flexible social networks among all members in collaboration in the uncertain environment. Co-ordination can lead to the effectiveness of IC that is based on the members' efforts and accept the implementation of innovation with extensive relational resources, as well as the organizational assets required to support common interests and increase the value of effective co-ordination [6,67]. This study proposed the hypothesis shown in Figure 1.



### 2.4.3. Communication

Recent research indicates that information sharing, level, and type, as well as frequency of information exchange and communication channels, are the key factors that enhance the quality of collaboration factors [39]. Many researchers argued that communication mechanisms are complex factors and called for an additional study into the underlying mechanisms that lead to performance of IC, particularly when the organizations transfer their business information to their partners, as it needs a clearly communication channel to be sent; thus, IC is a key means of increasing communication in the relationships [39]. In the study of Turker [28], who defined the concept of communication as the processing of information, the information can be understood and exchanged between two or more people or organizations, and it was treated as a variable that may impact the nature of relationships. Moreover, the study by Mohr and Spekman [34] defined the importance of communication by stating that “the more efficient the communication between partners, the more successful the relationship will be”. In addition, Modi and Mabert [68] found that the root causes of the problems in business based on poor communication between exchange relationships because of the limited investment in communication channels stemmed from the organizations not correctly sending data or business information to the receivers or partners in IC [69]; these scholars proved there is a positive and highly significant correlation between communication and IC. A quantitative study by Morgan and Hunt [35] defined inter-organizational communication is a forerunner of the belief-and-earned trust system that developed effective communication in the exchange relationships, i.e., the more effectively communication is managed, the more effective the collaboration. The dimensions that measure communication include reliability, timeliness, and frequency [34]. Later, the exchange relationships achieved benefits based on communication effectiveness [70]. Therefore, communication should be investigated with regard to IC. Uddin et al. [14] stated that the organizations share a strategic business and business information with their partners in IC to build a new product and develop an effective business. A quantitative study by Ali et al. [16] described how the effects of communication influence collaboration, and stated it communication a key social mechanism in exchange relationships. Ali et al. [16] defined the concept of communication as both formal and informal sharing of meaningful information, and the organizations must share it in a timely manner among members of an inter-organizational collaboration. Similarly, the nature of communication between partners in collaboration refers to the operational information in exchange relationships; the sharing of additional strategic business information is necessary for running the organizations and achieving their mutual goals [14]. Moreover, Ali et al. [16] defined the communication channels of the exchange relationships with partners as open and diverse, involving aligning the partners’ perceptions and expectations to share information and resources on time [14].

The study by Ali and Larimo [23] offer a different perspective to analysis of communication in IC: they found that communication refers to the transference of knowledge between partners in an accurate and timely manner [14]. They highlighted the benefits of communication, as it also decreases confusion and resolves problems among partners in exchange relationships, it promotes close ties the exchange relationships [14]. Communication is also transparent as it decreases the opportunism and transaction costs in IC [14], and it drives the partnerships to succeed in doing business, ensuring that they achieve the desired internal processes and the external market positions [14,23]. Many studies proceed to find the relationship between communication and trust; the results show the positive and significant role of trust, as it adjusts the partners’ expectations and awareness, reduces the mistakes they make during business, promotes the close ties to shape trust between partners, and can lead to effective co-ordination between partners [24,35]. The communication channels are the key items that drive the IC to success [39]. Some researchers argue that communication is a complex factor, and additional research into the underlying mechanisms of communication in SIC is required [14,16,35,71]. Therefore, the best communication among partnerships in collaboration can increase with a higher SIC [16]. In

a joint venture, Ali and Nguyen [71] found that the inter-organizational communication had significant positive effects on international joint venture performance. Therefore, we posited that inter-organizational communication has a positive effect on innovation, and it can directly and indirectly affect SIC (see Figure 1).

#### 2.4.4. Frequency of Interaction

Hall et al. [39] defined the concept of frequency of interaction as the frequency of information exchange and as a type of information sharing; it is a key element that can increase collaboration [39]. Some researchers argue that frequency of interaction is a complex factor and call for additional research into the underlying frequency of interaction mechanisms in collaboration relationships that can enhance innovation and drive performance of IC, particularly when the focal firms transfer their documents or business information to the partners or frequently contact each other via email, phone, internet, virtual meetings; these items are key indicators used to evaluate the frequency of interaction factor in collaboration relationships [39]. Depending on the type of communication channels used to show the frequency of interaction among organizations using technology software, a high frequency of interaction increases information flow and effective co-ordination and facilitates organizational collaboration to reduce the expenditures required to operate organizations in IC [39]. Moreover, the governance structures of IC created through the mechanism's frequency of interaction consist of both formal and informal mechanisms that facilitate the negotiation and execution of the work and the transfer of business information that is related to that project, i.e., the action of frequently sending information to partners to make clear everything involved in the business, as well as reduces transaction costs [31]. SET is at the core of these elements, including closeness, trust, reciprocity, and frequency of interaction, describing the quality of the exchange relationships [31,33]. Furthermore, Turker [28] stated that frequency of interaction is the fundamental indicator of communication structure; therefore, the organizations must often interact with each other to send products and share business information, and the results of frequent interaction among firms can contribute to developing a long sustainable business, as well as increasing the value of the businesses involved in the exchange relationships. Frequent interaction also increases the degree of belief in IC. According to Schmidt and Kochan [72], the dimensions used to measure the frequency of interactions in an exchange relationship emphasized the partners' shared benefits, with frequent contact between organizations, achieving their objectives, and reducing existing tension. Gupta and Govindarajan [73] added new dimensions to measure the frequency of interaction as "face to face meetings, through email, over the telephone, through ad hoc formal memos". Based on the literature review, as discussed above, the frequency of interaction is associated with exchange relationships; thus, we suppose the hypothesis that there is a positive relationship between frequency of interactions and innovation, while the frequency of interaction affects direct and indirect SIC among tourist firms and their suppliers. Therefore, we suppose the hypothesis shown in Figure 1.

#### 2.4.5. Trust toward IGMs, Innovation, and SIC

In an inter-organizational collaboration context, the concepts of trust were defined as the level of belief placed in partnerships by members of the focal firms [33,74]. Trust has a positive effect of the exchange relationships, and the organizations engage in IC to gain the scarce resources from the partners via collaboration. Inter-organizational trust refers to the partner's expectations, their beliefs in the parties' willingness to develop exchange relationships based on reliability, fairness, and goodwill [16]. Similarly, Ali et al. [16] had success in finding the role of trust, defining it as a key premise of the SET [75]. Trust enhance international joint ventures' performance by decreasing cooperative costs and increasing cooperative benefits simultaneously [16,75]. Many researchers reveal that trust is a key factor in exchange relationships that leads to IGMs, and the firms believe in the partner's innovation process [18,25,35]. Inter-organizational trust focuses on the focal

organizations' beliefs in the level of honesty and the degree of goodwill from the other firms [76]. Inter-organizational trust is defined as the reliability of the partner's capability to supply the promised services and facilities [25,35,74]. Ashnai et al. [25] viewed inter-organizational trust factor as the expectations of continuity; a certain belief was shaped before the organizations carried out their commitment to perform their duties or tasks in collaboration, and the presence of trust facilitates the development of commitment toward the exchange relationships [18,25]. Mutual trust acts as a vital character in an exchange relationship, leading to the partners building commitment and maintaining long-term orientation in exchange relationships [14,25].

According to Zaheer et al. [74], the perspectives of inter-organizational trust is defined as the belief in fostering the members of collaboration to work together to reach mutual goals [18,25,34]; these scholars found five indicators to measure trust, which were mutual trust, keeping promises, speaking truthfully, fulfilling commitments exactly as specified, and providing clear benefits. To better understand the mechanisms of inter-organizational trust and its effects, trust was used as an informal guarantee to minimize the transaction costs [20], such as bargaining, discussing the price, and agreeing fees for making a new contract [13]; the focal firms used trust as a factor to predict future interactions in collaborations, finding that it also enhanced the carrying out of commitments to partners and maintaining a long term inter-organizational relationships [18,76]. An empirical study of Yeh et al. [15] provided three measurement scales that have a positive significant impact on IC: the items use to measure inter-organizational trust include task fulfillment, honesty, and trustworthiness, and the results revealed that when the focal firms experienced, greater belief exists in interpersonal and inter-organizational organizations, which drive to accelerate the exchange relationships between people and organization; therefore, trust speeds up the building of further trust among members of a collaboration. In addition, Mariño-Romero et al. [76], when considering the hospitality industry, highlighted six measurement scales that measure inter-organizational trust, including keeping promises, honesty, offering quality services, feeling a sense of security and guarantee, taking care customers' demand, and the belief at a hotel that their customers are important factor that affect direct hotel performance, causing firms to develop a long-term collaboration with their customers. Raza-Ullah, Angelos Kostis [13] found that multiple factors lead to successful IC: their research findings emphasized the importance of developing trust for organizations [77]. Trust is defined as the confidence and the positive expectations regarding the partner's performance of a contract and commitment to carry out their duties [18,19,25]. Trust is also an efficient relationship that helps an organization to cope with risks, tensions, and uncertainties from their partner's behavior [25,34,35]. Trust was built based on the confidence in events occurring as all parties expected [18,19,25]. When the organizations need to share resources and information and leverage each other's knowledge and new ideas to achieve mutual goals, the organizations engaged in effective collaboration can achieve more effective business performance. Thus, communication, frequency of interaction, coordination, commitment, and innovation are the main factors that link trust to enhancing IC performance [18,19,25,34,35]. Mariño-Romero et al. [76] argued that the indicators that measure trust to evaluate customers' satisfaction and loyalty based on their belief in the services of the hotel provide a sense of security to customers, as the customer believes in the hotel, which offers a high-quality service to the customers, and its promise to continue serving them with a high-quality guarantee, which shows the hotels willingness take care well their customer's interests. Moreover, the hotels show their responsibility when they carry out their promises with the customers, as it shows that they are honest with their customers. In the same vein, Uddin et al. [14] found the indicators of trust based on faithful execution of promises were important to tourism business-related activities, as by fulfilling their obligations, the members of IC can extract value from their partners and achieve new methods of operation. They can apply the appropriate process technologies to produce new products based on innovative collaboration [6,7,11,12].

Considering all these evidence-based studies from the literature, a conceptual framework was developed to understand and explain SIC (see Figure 1). It includes TCT and SET as the lens for this research model. Each of these theories provides a unique perspective on how the factors, including trust, communication, co-ordination, commitment, and frequency of interaction, may increase innovation and enhance SIC to influence the formation and maintenance of collaboration, and these theories were used to guide empirical research in tourist firms. Considering all evidence, it seems that inter-organization trust may partake in shaping the behavior of organizations into IGMs. However, as we discussed, the antecedents of IGMs may be important in driving innovation and SIC. Therefore, the relationship between trust and SIC may be indirect when innovation and IGMs are considered. Thus, we developed seven hypotheses as follows:

**H<sub>1</sub>**. *Trust has a positive impact on antecedents of IGMs (commitment—H<sub>1a</sub>; frequency of interaction—H<sub>1b</sub>; co-ordination—H<sub>1c</sub>; communication—H<sub>1d</sub>).*

**H<sub>2.1</sub>**. *Antecedents of IGMs (commitment—H<sub>2.1a</sub>; frequency of interaction—H<sub>2.1b</sub>; co-ordination—H<sub>2.1c</sub>; communication—H<sub>2.1d</sub>; trust—H<sub>2.1e</sub>) have positive impacts on innovation.*

**H<sub>2.2</sub>**. *IGMs (commitment—H<sub>2.2a</sub>; frequency of interaction—H<sub>2.2b</sub>; co-ordination—H<sub>2.2c</sub>; communication—H<sub>2.2d</sub>; innovation—H<sub>2.2e</sub>) have a positive impact on SIC.*

**H<sub>3.1</sub>**. *Innovation mediates the link between antecedents of IGMs (commitment—H<sub>3.1a</sub>; frequency of interaction—H<sub>3.1b</sub>; co-ordination—H<sub>3.1c</sub>; communication—H<sub>3.1d</sub>; trust—H<sub>3.1e</sub>) and SIC.*

**H<sub>3.2</sub>**. *Antecedents of IGMs (commitment—H<sub>3.2a</sub>; frequency of interaction—H<sub>3.2b</sub>; co-ordination—H<sub>3.2c</sub>; communication—H<sub>3.2d</sub>) mediate the relationship between trust and SIC among tourist firms and their suppliers.*

**H<sub>3.3</sub>**. *Antecedents of IGMs (commitment—H<sub>3.3a</sub>; frequency of interaction—H<sub>3.3b</sub>; co-ordination—H<sub>3.3c</sub>; communication—H<sub>3.3d</sub>) mediate the relationship between trust and innovation among tourist firms and their suppliers.*

**H<sub>3.4</sub>**. *Both Innovation and IGMs (commitment—H<sub>3.4a</sub>; frequency of interaction—H<sub>3.4b</sub>; co-ordination—H<sub>3.4c</sub>; communication—H<sub>3.4d</sub>) mediate the relationship between trust and SIC among tourist firms and their suppliers.*

### 3. Research Design

#### 3.1. Measures

In the first phase, a comprehensive search for relevant literature was conducted. The literature search relied on Tier 1 (Elite, A Star and A) scientific databases from John Wiley and Sons, Sage, JSTOR, Springer Link, Routledge, InderScience, Emerald Insights, Taylor and Francis, Elsevier, and Science Direct. These databases covered a number of inter-organizational relationship theories of collaboration related to this research topic. The researchers started with the identification of relevant keywords, such as “trust”, “inter-organizational trust”, “IRs”, “co-ordination”, “commitment”, “communication”, “innovation”, and “frequency of interaction”, as well as search strings, before combining these keywords with “OR” and “AND”. These keywords were discussed with the research team and three experts in the tourism field. The final procedure led to seven keywords based on models from previous studies (see Figure 1).

In the second phase, the rationale used to choose the measurement scales to build a questionnaire of this study was based on the values of Cronbach’s Alpha for each items measure being greater than 0.7 in previous studies; these measures of reliability were deemed adequate by Hair et al. [78]. In total, 7 constructs were chosen with 42 indicators in this research. A questionnaire was built based on existing measurement scales adopted from

previous studies with the following factors: six items for SIC were adopted from Raza-Ullah and Angelos Kostis [13], and Uddin et al. [14]; six items were adopted from [6,7,12,56] to measure the innovation factor; six items used to measure trust were adopted from Morgan and Hunt [35], Ashnai et al. [25], Mbango and Mmatli [26], Yeh et al. [15], Uddin et al. [14], and Ali et al. [16]; six items to measure commitment were adopted from Ashnai et al. [25], Uddin et al. [14], Mbango and Mmatli [26], and Chen et al. [58]; six items to measure frequency of interaction towards collaboration were adopted from Turker [28], Hall et al. [39], and Uddin et al. [14]; six items to measure co-ordination towards collaboration were adopted from Medina-Munoz and García-Falcón [19], Mariani [62], Flieger et al. [27], and Raza-Ullah and Angelos Kostis [13]; and six items to measure communication towards collaboration were adopted from Mbango and Mmatli [26], Uddin et al. [14], Flavio Tiago et al. [48], and Ali et al. [16].

There were two main parts of the questionnaire: part one measured the respondents' evaluation of different SIC, innovation, trust, and IGM factors, while the second part collected demographic data. These data included firms' ages, number of employees, positions, locations, conflict resolutions, and number of years of cooperation with suppliers, all of which affect trust, IGMs perception, and innovation with SIC. All of the items of the constructs were adapted from previous studies, such as Raza-Ullah and Angelos Kostis [13], Refs. [6,7,15,25,26,58,62] to augment the content validity.

In the third phase, to validate the research model, we conducted a pre-test to check the valid content of a draft questionnaire with researchers and experts to discover whether the selected factors and measurement scales were suitable in Vietnamese context; thus, we invited seven experts, including three empirical lecturers in the tourism field, one manager of travel companies, one deputy manager, and two R & D staff, to confirm the measurement scales for the seven factors used in this research model. They evaluated the predictive indicators and seven potential factors in the SIC model; after that, the researcher took the feedback from seven experts to modify a drafted questionnaire, allowing us to make improvements to the questionnaire where necessary to revise it based on their feedback, such as removing some errors (phrases, ambiguous words, etc.). Secondly, the researcher revised a drafted questionnaire based on seven experts' feedback. Thirdly, we made sure that the content and structure of questionnaire were cohesive and controlled for bias. Therefore, the measurement scales were carried out by the other person, and we conducted a second pre-test with 13 staff and managers to re-evaluate the questionnaire and measure how long it would take someone to finish a questionnaire with 42 indicators, in which it was established that 42 items were used to measure 7 constructs in SIC model. Fourthly, a final questionnaire contained well-established measures that were consistent with the previous studies and placed in Vietnam context, in which we employed 42 measures of 7 factors in a SIC model, and the instrument was used to evaluate each of the constructs using "5-point Likert-scale" instrument, equivalent to "strongly disagree, disagree, neutral, agree and strongly agree respectively" [79] We then sent a questionnaire to the respondents of travel firms based in Vietnam.

### 3.2. Sampling Strategies and Data Collection

The target population in this study included on senior managers of travel companies (managers, deputy managers, as well as chiefs and deputy chiefs of sales and marketing), because they can offer rich information related to the research objectives [80]. The first criterion selected for the target population stated that the organizations was engaged in inter-organizational relationships with other tourism sectors (e.g., hotels, motels, taverns, guest house, restaurants, transport companies, and tourist attractions) for at least one or two years. The second criterion was that they must voluntarily join this research. The third criterion was that their organizations were located in Vietnam. We used convenience sampling and snowball sampling techniques to collect data [81].

Regarding sample size of data collection in this study, some scholars suggested that a minimum subject-to-item ratio of at least 5:1 was required in EFA [82]. The conceptual

framework of our study has seven factors, with six indicators for each factor (42 items); thus, the minimum number of respondent items for this study was 220 cases ( $42 \times 5$ ).

The quantitative data were collected through two ways: the first way was an online survey through the Google Form tool, using which the link of questionnaire was sent via email informants, the Viper and Zalo apps, and the self-administered questionnaire [80]; and the second way involved directly sending hard copies of questionnaires to the participating Vietnamese travel companies. For the 500-question questionnaire sent to the tourist firms, the final data received 423 complete response from participants; there were 77 uncompleted questionnaires because those informants skipped over some items. The final valid dataset contained 423 completed questionnaires (from 140 online respondents and 283 hard copy respondents) dated from March 2022 to September 2022. Table 1 presents the profile of respondents.

**Table 1.** Statistical characteristics of the sample information (N = 423).

Categories	Items	No of Samples	Percentage (%)
Firm age	<2 years	33	7.8
	2–5 years	158	37.4
	5–10 years	148	35.0
	>10 years	84	19.9
No. of employees	<10	125	29.6
	10–50 (less than)	217	51.3
	51–100 (less than)	25	5.9
	>100	56	13.2
Position	Director	45	10.6
	Deputy director	37	8.7
	Sales and marketing manager	71	16.8
	Manager of tour operations	32	7.6
	R&D supervisor	238	56.3
Conflict resolutions	Joint problem solving	401	94.8
	Asking a third party	5	1.2
	Domination	10	2.4
	Do nothing	7	1.7
Firm location	Southern provinces	297	70.2
	Central provinces	126	29.8
No. of years of cooperation with the suppliers	<2 years	51	12.1
	2–5 years	188	44.4
	5–10 years	123	29.1
	>10 years	61	14.4

### 3.3. Analysis

The main methodology in this study is quantitative analysis. The partial least square approach is simpler and provides an opportunity to analyze the data greater detail. The quantitative approach was mainly applied with exploratory factor analysis, consisting of reliability and convergent validity analysis; the structural model was then assessed. We utilized PLS-SEM using SmartPLS version 3.0 to evaluate the research model [82]. There is a two-step approach to analyzing the collected data [82]. For the first step, we evaluated the measurement model by identifying the reliability and validity of the measurements. At the second step, we focused on identifying the potential relationship between these constructs, i.e., the structural model was assessed with the appropriate results of the measurements in this research model, as well as the significance and effects of path coefficients. Hair et al. [78] stated that “PLS is used for prediction-oriented research that aims to maximize the explained variance of dependent variables and can be used if less rigid theoretical

backgrounds are available". A non-parametric bootstrapping approach was used with 2000 replications [78,82].

#### 4. Data Analysis and Results

Partial least square structural equation modelling (PLS-SEM) was used to analyze 423 tourist firms, applying the social exchange and collaboration theories to develop the theoretical framework of SIC, which is a complex model that explores the relationships between these constructs. PLS-SEM is assumed an appropriate approach technique for this research [78], stating that "the use of PLS-SEM in co-variance-based structural equation modelling in nascent empirical research focused on the theory's exploration". This current research model is a relatively complex conceptual framework model, as it consists of seven constructs (commitment, frequency of interaction, co-ordination, communication, trust, innovation, SIC, and several categories of the sample information). Using SmartPLS version 3.0 [78,83] to assess the reflective constructs that investigate the proposed research framework, we estimated the measurement scales and structural equation model, before analyzing the general research model.

##### 4.1. Measurement Model Results

In the first stage, we assessed the convergent validity and consistency reliability of each indicator, Hair et al. [82] suggested that "the reliability and validity of the measurement model should be evaluated first". The composite reliability (CR) was used to evaluate the reliability of the scale, and the average variance extracted (AVE) was used to evaluate the convergence validity of the scale. In Table 2, we present CR ranging from 0.864 to 0.909, indicating that the measurement model in this study had a high internal consistency and could support constantly and consistently the sample situation, which is in line with the findings of Hair et al. [82], who suggested that CR with a 0.6 threshold was accepted. The AVE values ranged from 0.679 to 0.689 for each factor, which was also in line with Hair et al.'s findings [78], which pointed out that the AVE values with a threshold of 0.5 or higher is acceptable; these results indicated that all constructs reflect the model of high levels of internal consistency reliability and the convergent validity, being the primary methods used to assess internal consistency and reliability. The Cronbach's Alpha values that were greater than 0.7 were considered to have appropriate reliability based on the measured constructs provided by Hair et al. [78]; in this study, Cronbach's Alpha values ranged from 0.763 to 0.880, indicating that the research model has good structural reliability [82]. The factor loading values ranged from 0.675 to 0.876, thus being above the 0.6 threshold for all 32 research questions [82], indicating that all 32 measurement questions had good convergent validity. However, Hair et al. [82] pointed out that the factor loading less than 0.60 threshold should be excluded; in our study, ten indicators were excluded (SIC4, innovation2, innovation4, innovation5, trust1, trust3, commitment1, commitment3, frequency of interaction3, and communication2) because the factor loading values for these indicators were less than 0.60 (see Table 2).

##### 4.2. Discriminant Validity

After the measurement scales' reliability and convergent validity were accepted, we assessed the discriminant validity of variables. We used the criteria established by Fornell and Larcker [84] to evaluate discriminate validity via the square root of AVEs, with each latent variable being greater than the correlation coefficient among other constructs, as well as used to establish discriminant validity; the latent variables also well established the discriminant validity. As stated by Hair et al. [82], the loadings of an indicator should be higher than the loadings of all its cross loadings. Table 3 presents the results of discriminant validity, with the square root of AVE values of seven constructs being bigger than the correlation coefficient among other constructs. The results supported all constructs, which ranged from 0.767 to 0.824, indicating the strong discriminate validity of the variables [78,84].

**Table 2.** Results of reliability and validity analyses.

Variables and Items	Factor Loadings
Success of inter-organizational collaboration (SIC) (AVE = 0.623, CR = 0.892, Cronbach's Alpha = 0.847)	-
SIC1—We felt more powerful and confident in this market share.	0.768
SIC2—We improved productivity and profits and reduce costs.	0.812
SIC3—We were legitimated and accepted by the tourism market after joining the IC.	0.714
SIC5—We had more opportunities to frequently cooperate with other businesses.	0.792
SIC6—Overall, our goal for economic development met expectations.	0.852
Innovation (AVE = 0.679, CR = 0.864, Cronbach's Alpha = 0.763)	-
Innovation 1—We became more agile in launching new products and services that meet the market needs.	0.786
Innovation 3—We established new methods of operation to compete with competitors.	0.807
Innovation 6—We gained more tacit knowledge and technological know-how from our suppliers.	0.876
Inter-organizational Trust (AVE = 0.677, CR = 0.893, Cronbach's Alpha = 0.841)	-
Trust 2—We trusted our suppliers' competence and abilities, as well as motives for having a relationship with our firm.	0.789
Trust 4—We trusted our suppliers' values and experiences in this business sector.	0.839
Trust 5—We trusted our suppliers to improve the innovation capability in the business.	0.821
Trust 6—Overall, we highly trust our suppliers.	0.840
Inter-organizational commitment (AVE = 0.679, CR = 0.894, Cronbach's Alpha = 0.842)	-
Commitment 2—We gained strong sense of loyalty to and enthusiasm for the relationships with these suppliers.	0.795
Commitment 4—We dedicated enough resources to maintain a stable relationship with the suppliers who had a long-term orientation.	0.822
Commitment 5—We always tried to improve management and develop a relationship with these suppliers.	0.849
Commitment 6—Overall, we continued a relationship with suppliers to identify the effective interaction manner and innovative technologies.	0.829
Frequency of interaction towards collaboration (AVE = 0.588, CR = 0.877, Cronbach's Alpha = 0.824).	-
Frequency of interaction 1—We contacted each other via email, phone, virtual meetings, etc.	0.675
Frequency of interaction 2—We supported each other with other services (marketing, training staff, customer care, etc.).	0.806
Frequency of interaction 4—We booked/reserved services from our suppliers.	0.772
Frequency of interaction 5—We gave business information to each other (provided information included facilities, services, tourism products, etc.).	0.748
Frequency of interaction 6—Overall, we frequently maintained contact via both formal and informal methods.	0.826
Co-ordination towards collaboration (AVE = 0.625, CR = 0.909, Cronbach's Alpha = 0.880)	-
Co-ordination 1—Our activities with the suppliers were well co-ordinated.	0.799
Co-ordination 2—We planned and scheduled for services deliveries from our suppliers.	0.738
Co-ordination 3—We often met and discussed all issues related to the relationships with our suppliers.	0.735
Co-ordination 4—We supported our suppliers whenever and/or whatever they asked for it.	0.814
Co-ordination 5—Our suppliers supported us whenever and/or whatever we asked for it.	0.805
Co-ordination 6—Overall, we were satisfied with the co-ordination of these relationships.	0.848
Communication towards collaboration (AVE = 0.646, CR = 0.901, Cronbach's Alpha = 0.862)	-
Communication 1—Communication was complete and timely.	0.711
Communication 3—Communication was accurate and extensive communication.	0.830
Communication 4—Communication was transparent and focused on interactive sense-giving and sense-making processes.	0.790
Communication 5—Communication was open and diverse in both online and offline modes.	0.803
Communication 6—Overall, we were satisfied with the communication in the relationships.	0.876



**Table 3.** Discriminant validity coefficients.

	1	2	3	4	5	6	7
(1) Commitment	0.824						
(2) Communication	0.687	0.804					
(3) Co-ordination	0.710	0.748	0.791				
(4) Frequency of interaction	0.451	0.451	0.506	0.767			
(5) Innovation	0.608	0.651	0.643	0.432	0.824		
(6) SIC	0.625	0.651	0.669	0.484	0.764	0.789	
(7) Trust	0.714	0.674	0.692	0.428	0.596	0.581	0.823

### 4.3. Structural Model Results

#### 4.3.1. Testing Predictive Power of Structural Model

To assess the model fit, we determined the predictive relevance model through the analyzed variance measurement [85,86]. Moreover, the model fit was determined through the incorporation of the R square magnitude of dependent variables. The  $R^2$  values were between 0 and 1, with the higher values exhibiting a good explanatory based on the rules for model evaluation developed by Hair et al. [82]. R square values for endogenous latent variables in the structural model were as follows: 0.75 for substantial, 0.50 for moderate, and 0.25 for weak values. Consequently, in this study, the R square value was 0.510 for commitment, indicating that 51% of the variation in commitment has moderate values in terms of predicting the accuracy for trust. Next, the R square value was 0.479 for co-ordination, indicating that 47.9% of the variation in co-ordination had moderate values in terms of predicting the accuracy for trust. The R square value was 0.455 for communication, indicating that 45.5% of the variation in communication had moderate values in terms of predicting the accuracy for trust. Next, the R square value was 0.183 for frequency of interaction, indicating that 1.38% of the variation in frequency of interaction had weak values in terms of predicting the accuracy for trust. Moreover, the R square was 0.511 for innovation, indicating that 51.1% of the variation in innovation had moderate values in terms of predicting the accuracy for communication, co-ordination, trust, commitment, and frequency of interaction. Finally, the R square value was 0.658 for SIC, indicating that 65.8% of the variation in SIC had substantial values in terms of predicting the accuracy for communication, co-ordination, innovation, commitment, and frequency of interaction; this result was in line with those of previous studies [82].

#### 4.3.2. Testing Predictive Relevance

To obtain ( $Q^2$ ) cross-validated redundancy measures for each construct, we used a blindfolding process carried out in PLS to estimate the indicators of underlying constructs. The resulting  $Q^2$  values were larger than zero [82,87], indicating that the independent constructs had predictive relevance for the dependent construct under consideration. The current study attained 0.341 for commitment, 0.289 for communication, 0.292 for co-ordination, 0.104 for frequency of interaction, 0.337 for innovation, and 0.403 for SIC [82,87] for the average cross-validated redundancy. Therefore, the research model exhibited acceptable fit and high predictive relevance.

#### 4.3.3. Hypotheses Testing—Direct Effects

The non-parametric bootstrapping procedure was used to test the proposed hypotheses and estimate the significance of the effect of path coefficients with 2,000 replications [78] using SmartPLS 3.0 [83]. The path coefficient standardized  $\beta$ , T values, and significance levels ( $\rho$ ) were used to evaluate the structural model of this study [82] via PLS-SEM [78,82]. Table 4 presents the results of testing the hypotheses from the PLS analysis. As predicted in  $H_1$ , trust has a positive impact on IGMs among tourist firms and their suppliers. All the path coefficients were significant  $H_1$  ( $H_{1a}$ ,  $H_{1b}$ ,  $H_{1c}$ ,  $H_{1d}$ ); therefore, the analysis provided support to hypothesis  $H_1$  by verifying where significance levels of  $p < 0.01$  existed [82]. For

this reason, the results indicated that relationships that occur between inter-organizational trust and the IGMs in tourism industry cannot be dissociated (see Table 4).

**Table 4.** Summary results of path coefficients and hypothesis testing.

Hypotheses	Direct Effects Model	$\beta$	T-Value	$\rho$ -Value	Results
H <sub>1a</sub>	Trust → Commitment	0.714	25.462	0.000	Supported
H <sub>1b</sub>	Trust → Frequency of interaction	0.428	8.430	0.000	Supported
H <sub>1c</sub>	Trust → Co – ordination	0.692	21.545	0.000	Supported
H <sub>1d</sub>	Trust → Communication	0.674	19.952	0.000	Supported
H <sub>2.1a</sub>	Commitment → Innovation	0.145	2.008	0.045	Supported
H <sub>2.1b</sub>	Frequency of interaction → Innovation	0.085	2.089	0.037	Supported
H <sub>2.1c</sub>	Co – ordination → Innovation	0.202	2.882	0.004	Supported
H <sub>2.1d</sub>	Communication → Innovation	0.271	4.244	0.000	Supported
H <sub>2.1e</sub>	Trust → Innovation	0.133	2.094	0.036	Supported
H <sub>2.2a</sub>	Commitment → SIC	0.100	1.909	0.056	Rejected
H <sub>2.2b</sub>	Frequency of interaction → SIC	0.102	2.903	0.004	Supported
H <sub>2.2c</sub>	Co – ordination → SIC	0.155	2.562	0.010	Supported
H <sub>2.2d</sub>	Communication → SIC	0.096	1.650	0.099	Rejected
H <sub>2.2e</sub>	Innovation → SIC	0.498	9.626	0.000	Supported

As predicted in H<sub>2.1</sub>, IGMs have a positive impact on innovation among tourist firms and their suppliers. All of the path coefficients were significant H<sub>2.1</sub> (H<sub>2.1a</sub>, H<sub>2.1b</sub>, H<sub>2.1c</sub>, H<sub>2.1d</sub>, and H<sub>2.1e</sub>); therefore, the analysis provided support to hypothesis H<sub>2.1</sub> that verified where significance levels were at the  $p < 0.05$  level [82]. These results indicated the discrete roles that the IGMs and trust play as the direct predictors of innovation variables, as well as how these factors act as the important antecedents in tourist firms' establishment of innovation; thus, these factors cannot be dissociated (see Table 4).

As predicted in H<sub>2.2</sub>, innovation and IGMs have positive impacts on SIC among tourist firms and their suppliers. Only three the path coefficients—H<sub>2.2</sub>(H<sub>2.2b</sub>, H<sub>2.2c</sub>, H<sub>2.2e</sub>)—were supported and verified at significance levels of  $p < 0.05$  [82], with the exception of commitment and communication, which did not lead to SIC (H<sub>2.2a</sub> and H<sub>2.2d</sub> were not significant;  $p > 0.05$ ) [82]. Therefore, H<sub>2.2a</sub> and H<sub>2.2d</sub> were not supported, with 423 tourist firms believing that commitment and communication did not play roles as critical antecedents leading to SIC; these factors can be dissociated and act as independent variables of different values. Therefore, H<sub>2.2</sub> was supported in part (see Table 4).

#### 4.3.4. Mediation Analysis

Table 5 presents the mediation variables of IGMs and innovation in the SIC model. As predicted in H<sub>3.1</sub>, innovation mediates the link between IGMs and SIC among tourist firms and their suppliers. All of the path coefficients were significant and positive indirect effects of IGMs, leading to SIC through the mediation of innovation H<sub>3.1</sub> (H<sub>3.1a</sub>, H<sub>3.1b</sub>, H<sub>3.1c</sub>, H<sub>3.1d</sub>, H<sub>3.1e</sub>), were supported, and hypothesis H<sub>3.1</sub> was verified where significance levels were  $p < 0.05$  [82] (see Table 5).

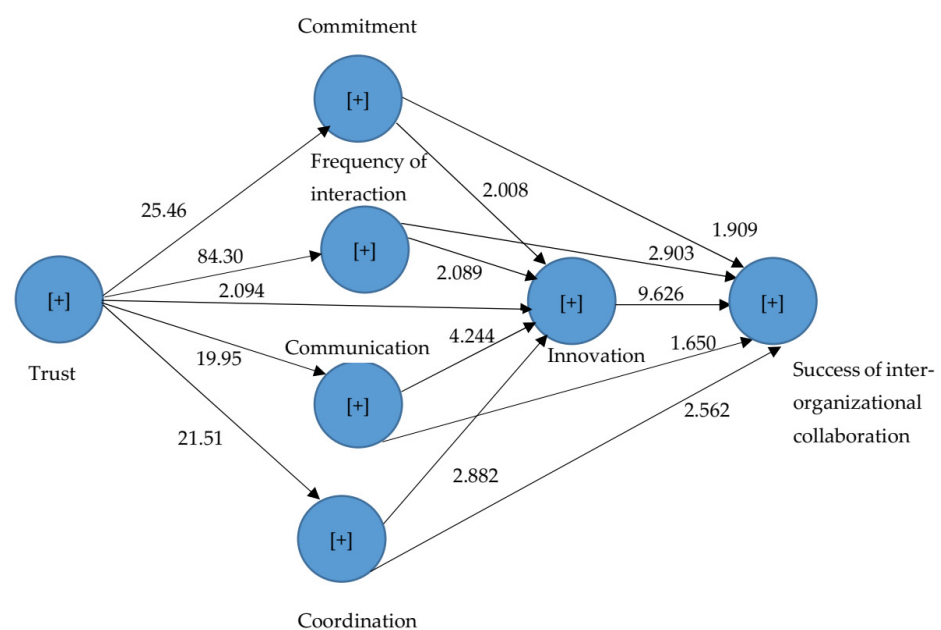
As predicted in H<sub>3.2</sub>, IGMs mediate the link between trust and SIC among tourist firms and their suppliers. Only two of the path coefficients that were significant and positive indirect effects of trust and SIC through the mediation of IGMs H<sub>3.2</sub> (H<sub>3.2b</sub>, H<sub>3.2c</sub>) were supported, except for H<sub>3.2a</sub> and H<sub>3.2d</sub>, which were not significant ( $p > 0.05$ ). Therefore, H<sub>3.2a</sub> and H<sub>3.2d</sub> were not supported; therefore, hypothesis H<sub>3.2</sub> is verified in part with significance levels of  $p < 0.05$  [82] (see Table 5).

**Table 5.** Summary results of mediated effects.

Hypothesis	Mediated Effects	$\beta$	T Values	$\rho$ -Value	Results
H <sub>3.1a</sub>	Commitment → Innovation → SIC	0.072	1.970	0.049	Supported
H <sub>3.1b</sub>	Frequency of interaction → Innovation → SIC	0.042	2.041	0.041	Supported
H <sub>3.1c</sub>	Co – ordination → Innovation → SIC	0.101	2.746	0.006	Supported
H <sub>3.1d</sub>	Communication → Innovation → SIC	0.135	3.764	0.000	Supported
H <sub>3.1e</sub>	Trust → Innovation → SIC	0.066	2.047	0.041	Supported
H <sub>3.2a</sub>	Trust → Commitment → SIC	0.071	1.877	0.061	Rejected
H <sub>3.2b</sub>	Trust → Frequency of interaction → SIC	0.044	2.610	0.009	Supported
H <sub>3.2c</sub>	Trust → Co – ordination → SIC	0.108	2.545	0.011	Supported
H <sub>3.2d</sub>	Trust → Communication → SIC	0.064	1.624	0.105	Rejected
H <sub>3.3a</sub>	Trust → Commitment → Innovation	0.103	2.010	0.045	Supported
H <sub>3.3b</sub>	Trust → Frequency of interaction → Innovation	0.036	1.922	0.055	Rejected
H <sub>3.3c</sub>	Trust → Co – ordination → Innovation	0.140	2.827	0.005	Supported
H <sub>3.3d</sub>	Trust → Communication → Innovation	0.183	4.225	0.000	Supported
H <sub>3.4a</sub>	Trust → Commitment → Innovation → SIC	0.052	1.968	0.049	Supported
H <sub>3.4b</sub>	Trust → Frequency of interaction → Innovation → SIC	0.018	1.897	0.058	Rejected
H <sub>3.4c</sub>	Trust → Co – ordination → Innovation → SIC	0.070	2.700	0.007	Supported
H <sub>3.4d</sub>	Trust → Communication → Innovation → SIC	0.091	3.789	0.000	supported

As predicted in H<sub>3.3</sub>, IGMs mediate the relationship between trust and innovation among tourist firms and their suppliers. Only three path coefficients were significant and had positive indirect effects on trust and innovation through the mediation of IGMs. H<sub>3.3</sub> (H<sub>3.3a</sub>, H<sub>3.3c</sub>, H<sub>3.3d</sub>) were supported, except for H<sub>3.3b</sub>, which was not significant ( $p > 0.05$ ). Therefore, H<sub>3.3b</sub> was not supported, meaning that the hypothesis H<sub>3.3</sub> is verified in part where significance levels were  $p < 0.05$  [82] (see Table 5).

As predicted in H<sub>3.4</sub>, both innovation and IGMs mediate the relationship between trust and SIC among tourist firms and their suppliers. Only three of the path coefficients were significant and had positive indirect effects on trust and SIC through the mediation of both innovation and IGMs. H<sub>3.4</sub> (H<sub>3.4a</sub>, H<sub>3.4c</sub>, H<sub>3.4d</sub>) were supported, except for H<sub>3.4b</sub>, which was not significant ( $p > 0.05$ ). Therefore, H<sub>3.4b</sub> was not supported; thus, the hypothesis H<sub>3.4</sub> was verified in part where significance levels were  $p < 0.05$  [82] (see Table 5). For the results of path coefficients for the SIC model, see Figure 2.



**Figure 2.** Results of Structural Equation Model.

## 5. Discussion and Conclusions

### 5.1. Discussion

The current study succeeded in investigating an empirical study to identify the role of inter-organizational trust in creating IGMs and innovation and improving SIC during the COVID-19 pandemic in the tourism industry in Vietnam. Furthermore, this study succeeded in examining the mediation role of IGMs and innovation to explore a cause-effect relationship between trust and SIC. This study explored the IGMs by applying two theories—transaction cost theory (TCT) and social exchange theory (SET)—to understand the relationship between trust and SIC through the mediation of innovation and IGMs. This investigation was based on the analysis of 423 data items collected from the respondents at tourist firms in Vietnam.

The first research question in this research was as follows: does trust affect the antecedents of IGMs ( $H_1$ ) among tourist firms and their suppliers. This study found that inter-organizational trust has a significant and direct positive affect on all antecedents of IGMs (commitment- $H_{1a}$ , frequency of interaction- $H_{1b}$ , co-ordination- $H_{1c}$ , communication- $H_{1d}$ ), establishing the strong ties between tourist firms and their partners based on trust, with the results showing that trust is a critical factor that shapes IGMs (commitment, frequency of interaction, co-ordination, and communication) in exchange relationships. The results are in line with Binder [33], who emphasizes that inter-organizational trust opens communication and reciprocity to increase the network members' mutual fulfillment of promises. Scholars found that trust between partners affected the co-ordination function of relational governance, with roles and responsibilities for sharing information and solving problems in collaboration [65], as well as creating a common knowledge structure, which aids in the enhancement of competence and trust [66]. In the same vein, Denicolai et al. [36] mentioned that trust in IC is a key driving force behind knowledge acquisition, with knowledge sharing leading to innovation [33,37,38]; these scholars emphasized that inter-organizational trust is a fundamental and insightful element that increases SIC through the mediation of innovation [6,12,33,56].

The second research question in this study sought to determine antecedents of IGMs that affect innovation ( $H_{2.1}$ ), with IGMs affecting SIC among tourist firms and their suppliers. In this study, the antecedents of IGMs (commitment- $H_{2.1a}$ , frequency of interaction- $H_{2.1b}$ , co-ordination- $H_{2.1c}$ , communication- $H_{2.1d}$ , and trust- $H_{2.1e}$ ) were found to cause innovation, confirming that establishing strong ties between tourist firms and their suppliers through the interactions of IGMs is a critical construct of collaboration that leads to innovation. The results in this study agree with previous studies [6,12,13,29]. The study indicated that trust is a key mechanism that drives knowledge acquisition, knowledge sharing [37], and innovation within the organizations, which is consistent with previous studies [33,38]. In the study of Raza-Ullah, Angelos Kostis [13] found that the relationship between inter-organizational trust and innovative performance lead to increased product development, and that competition can lead organizations to foster innovation from their partners by sharing resources, risks, and costs of innovation with their partners. Another important finding is that communication positively affects innovation; in line with previous studies [14,33], this study indicated that the characteristics of communication in collaboration not only influence the possibility and willingness to share information and resources timely, adequately, and transparently [14], but also make the information and communication channels with suppliers more open and diverse. These elements could potentially be exploited to drive innovation [33]. One interesting finding is that co-ordination is the most significant and positive affect innovation, with this study supporting evidence from previous studies [6,43]. During the COVID-19 pandemic, Pinto [43] concluded that co-ordination is an important factor in handling complex situations and that organizations strive to co-ordinate with their partners to align activities, resources, and goals between collaborating partners to explore innovative solutions [6]. In addition, trust has great significant and direct effect on innovation; this finding broadly supported the work of other studies in this area that linked trust with innovation [13,33,36,37]. However, this outcome

is contrary to that of Wen-Chih Yeh et al. [15], whose study failed to predict the relationship between trust and regenerative innovation, stating that inter-organizational trust had no direct and significant impact on regenerative innovation [15].

Another finding is that the antecedents of IGMs affect SIC ( $H_{2.2}$ ) among tourist firms and their suppliers; this study found that three of the five factors (frequency of interaction- $H_{2.2b}$ , co-ordination- $H_{2.2c}$ , innovation- $H_{2.2e}$ ) have significant positive relationships and directly affect SIC, with these results being in line with previous studies [14,19,34,39,54]. Consistent with TCT and SET results found in earlier research, Haaskjold et al. [54] argued that improved IC between members and customers reduces transaction costs based on frequency of interaction [39]. In their results, the quality of communication, frequency of information exchange, and communication channels are particularly key collaboration driving factors. Due to the uncertainty of the COVID-19 pandemic, the organizational efficiency in collaboration because of changing orders and reaction frequency required contact via formal and informal methods [14], with this approach seen to significantly influence the level of collaboration and reduce transaction costs [20]. Moreover, SET emphasizes the exchange in resources, information, knowledge, and services between organizations to achieve their goals and objectives [6,14,67]; this requires, however, a certain level of co-ordination from the collaborating organization to share resources and information [54] related to planning and scheduling for services deliveries to the suppliers [6,14,67], as well as often meeting and discussing all issues related to the relationship [19,27,62]. In particular, during the unprecedented COVID-19 pandemic, Al-Omouh et al. [6] found that collaborative innovation led to organizational sustainability, and the results showed that innovation plays a role in recovery from the COVID-19 pandemic, which was an unprecedented crisis [67]. Finally, what is surprising is that the findings did not detect any evidence of commitment ( $H_{2.2a}$ ) or communication ( $H_{2.2d}$ ) in explaining SIC, which did not reach a significant point and affect SIC. However, Suprpto et al. [88] proved there were positive significant affects on communication and management commitment between organizations, leading to collaboration [88]. One possible explanation is that all participants in collaboration considered that communication and commitment did not directly relate to SIC. However, truthfully, it emphasizes both communication and commitment mechanisms that increase SIC through other factors. This finding shows that commitment and communication cannot increase SI; therefore, commitment and communication did not become effective governance mechanisms to increase SIC among tourist firms and their suppliers.

For the third research question, this study sets out with the aim of assessing the importance of the mediation variables of innovation and IGMs in identifying the relationship between trust and SIC among tourist firms and their suppliers. Firstly, the results verified and completely supported  $H_{3.1}$  ( $H_{3.1a}$ ,  $H_{3.1b}$ ,  $H_{3.1c}$ ,  $H_{3.1d}$ ,  $H_{3.1e}$ ). Innovation variable is a main mediating variable in the causal link between IGMs and SIC among tourist firms and their suppliers, the outcomes of which are in line with previous studies [6,44,47]. Al-Omouh et al. [6], who conducted an empirical study to explore social capital in the guise of innovation in preserving sustainability organizational survival during the COVID-19 pandemic, found social that capital requires high levels of trust, which plays a pivotal role in reducing transaction costs and increasing information flow, as well as enhancing business survival rates [6,47], the commitment to strong networks and the organization frequency of interaction by transferring information, and resources in networks, thus strengthening conditions and increasing survival rates related to collaboration through innovation [47].

Secondly, this study proved the cause-and-effect roles of mediating variables of IGMs on trust and SIC among tourist firms and their suppliers. The results are partly verified, and  $H_{3.2}$  ( $H_{3.2b}$ ,  $H_{3.2c}$ ) was completely supported, which is in line with [14,28,39]. However, in this study, trust did not affect SIC through commitment ( $H_{3.2a}$ ) or communication ( $H_{3.2d}$ ) in this context. This finding is contrary to previous studies [25,58], which suggested that mutual trust performed a vital role in creating an exchange relationship to build

commitment to and long-term orientation in collaboration [14]; trust is a main factor in enhancing communication in negotiations to create exchange relationships [13].

Thirdly, this study proved the cause-and-effect roles of mediating variables of IGMs regarding trust and innovation among tourist firms and their suppliers. The results are partly verified and (H<sub>3.3a</sub>, H<sub>3.3c</sub>, H<sub>3.3d</sub>) were completely supported, which is in line with [14,33]. As Binder [33] found, the level of trust existent in collaboration through communication, co-ordination, and commitment leads to innovation in the focal firms; trust also affects commitment, interactivity, honesty, and open communication, and must be based on reciprocity to enable the innovation process [37,38]. However, in this study, trust did not affect innovation through frequency of interaction (H<sub>3.3b</sub>) in this context. Therefore, a further study with more focus on trust–innovation relationships based frequency of interaction is required to determine this causal relationship in other fields.

Finally, the objective of this study was to identify both innovation and IGMs that mediate the relationship between trust and SIC among tourist firms and their suppliers. One interesting finding is that trust affects SIC via commitment-innovation (H<sub>3.4a</sub>). This result, therefore, proves, albeit with caution, that innovation and IGMs are main key mediating variables that explore the relationship between trust and SIC. The findings filled the gaps to explore the extent of the association between these factors. This work contributes to existing knowledge and the tourism literature related to trust and SIC via innovation-IGMs. It also provides new evidence of both mediating variables of innovation and IGMs, as well as these factors' roles in cause–effect relationships, including independent variables, mediating variables, and dependent variables. However, there is no influence of trust and SIC on both frequency of interaction and innovation (H<sub>3.4b</sub>), though this finding's reliability may be somewhat limited by the perceptions of and evaluations from the participants who did not take part in enhancing SIC.

## 5.2. Practical Implications

This study provides the managers of tourist firms and sectors with some practical inter-organizational governance mechanisms to react positively under pressure from the crises caused by COVID-19 pandemic.

Firstly, based on the results of this study, inter-organizational trust is the main factor that improves inter-organizational governance mechanisms; therefore, managers should invest time and money to gain and improve them, ensuring that the tourist firms achieve SIC through IGMs and trust. The tourist firms and their suppliers should understand the current difficult conditions, and they need to co-ordinate and improve values used in shaping trust in exchange relationships, which can be very difficult to adapt in response to changes. One useful strategy is stabilizing the tourism sector in an uncertain environment by diversifying products and making them suitable for evolving markets and the COVID-19 pandemic; this certainly cannot happen without understanding the problems and taking the appropriate action immediately. The present is the time best-suited to developing inter-organization relationships among travel companies and their partners, ensuring that they adapt to the new opportunities and challenges involved in connecting with other parties and establishing trust based on co-ordination, frequency of interaction, communication, and the implementation of mutual goals.

Secondly, the empirical findings in this study provide a new understanding of how to use IGMs to collect ideas, resources, and new methods, as well as openly share information and knowledge, thus leading to innovation. Based on these findings, the tourist firms and sectors should invest in manufacturing innovation to improve the effectiveness of tourism products and increase the capability of organizations to improve production fields. Therefore, the tourist firms should invest more money to bring new technology and new processes into manufacturing. Through innovation, the tourist firms can quickly bring new tourism-related products onto the market to obtain sustainable competitive advantages. Through innovation, tourist firms can increase the speed with which launched products enter the market, making it easier to contact customers and suppliers through new

technology and software. Thereby, innovation increases performance efficiency, reduces transaction and production costs, and reduces the scale of operations.

In addition, the tourist firms and sectors should execute management innovation, including management innovation on product systems, customers, and markets. Therefore, the managers implement the changes in an organization's structure and collaboration, as well as in its administrative procedures, and the tourist firms should recruit staff with high levels of education by opening courses to train staff about information technology, as well as to improve their skills and knowledge so that they meet the job requirements in the new situation and apply technology to digital transformation. Digital transformation is a prerequisite for recovery and restructuring of tourism sectors. This process helps tourist firms and their suppliers cut down on human resource costs, quickly access and exploit small groups and retail customers, renovate the educational program, and foster new managers, staff, and scientific researchers to apply modern techniques, skills, and management principles in the tourism industry, as well as to apply scientific and technical knowledge to analysis of customer demand. Furthermore, the tourism industry applied innovation to minimize difficulties caused by the COVID-19 pandemic, using digital transformation to manage business operations and enhance marketing. However, this approach also needs the support of the government and policy makers to ensure that innovation improves entry, exit, and transit procedures for tourists, creating favorable conditions to attract tourists to our country.

This is the first study to examine associations between trust and SIC through the mediation of IGMs and innovation. Therefore, innovation is a key mediating factor that helps tourist firms, as well as Vietnam's wider tourism industry, respond flexibly and quickly to the changing demand of tourists and an uncertain environment. The organizations use innovation to apply new technologies to develop the tourism industry. Therefore, the tourist firms and sectors execute service innovation with a focus on improving the quality of tourism services and achieving customer satisfaction through innovative service strategies, such as after-sales services, decreasing rates of airplane transport, improving the quality and diversification of tourism products (unique and attractive products), and creating attractive destinations to gain a sustainable competitive advantage and lead to SIC. Finally, the tourism industry needs to innovate to meet the post-COVID-19 context by reducing prices and creating value and interesting experiences, thereby stimulating the tourists' desire to travel. In addition, it is necessary to renew the old destinations and add value high-quality services to attract tourists to return. Tourist firms are the pioneers and face the requirement of changing to fit new needs and regulations. Therefore, the tourist firms need to react quickly, because the activities required to restore and develop tourism are transforming in parallel with the implementation of epidemic prevention and control, ensuring safety for society. The findings of this study may help practitioners to explore insights regarding management mechanisms of network and SIC models in different fields.

### *5.3. Limitations and Future Research*

There are some limitations in this study. Firstly, this study only involved collecting quantitative data via conducting surveys for one side of tourist firms. Therefore, this issue may limit the generalizability of our findings by only focusing on the perspectives of the one side. Secondly, we collected data using both online and offline surveys; the online survey may have some limitations that lead to our data being inadequate. Thirdly, we could not reach the potential participants in northern Vietnam; thus, the results of data collection did not follow our plan and strategy. Therefore, another useful strategy would be to conduct a survey including participants ranging from the south to the north of Vietnam. Fourthly, the dimensions of this study were based on previous studies, gathering dimensions from one side to form the dyadic relationship between manufacturers and buyers. Therefore, the findings may lead to creation of the weak points in identifying the inter-organizational collaboration between tourism sectors; thus, in the future, research design should include

concepts, perspectives, and ideas from both sides to enable cross-validation of the effects of control mechanisms.

In future research, researchers should spend more time collecting data through face-to-face surveys to increase the validity of data rate and the response rate. The research could expand on more theories and add more factors to predict the relationships between these constructs of collaboration in different fields, because the inter-organizational collaboration currently focuses on the exchange relationships between tourist firms and hotels, restaurants, transportation firms, and tourist destinations in network relationships that are embedded in Vietnam. Therefore, to deeply understand the dynamics of the inter-organizational collaboration related to trust, IGMs, innovation, and SIC, researchers should examine these relationships using a longitudinal data, as well as use mixed, experimental, and qualitative methods to explore the concepts and perspectives of SIC from the perspectives of interviewees, which enables them to fully examine the dynamics of these complex relationships. Researchers should also use qualitative methods (i.e., in-depth interviews or focus groups) to assess tourist firms and other tourism sectors to find insights about these constructs, as this approach may enhance the knowledge and in-depth understanding of the different perspectives influencing these factors. Moreover, this model can be used to explore other fields as agriculture field, food and beverage field, garment field, etc. Further research can also identify past unsuccessful collaborations to identify the reasons why they were unsuccessful.

#### 5.4. Conclusions

In this study, using a database of 423 tourist firms that engaged in the inter-organizational collaboration in Vietnam, we determined key issue in IGMs: innovation literature tourism that explains whether trust affects IGMs, the factors influencing IGMs and how trust affects innovation, and how their effects lead to successful inter-organizational collaboration (SIC) through innovation in tourism industry. The second aim of this study was to examine the mediating role of IGMs and innovation on the relationship between inter-organizational trust and successful inter-organizational collaboration. The findings from this study make several contributions to current literature. Firstly, it was confirmed that the transaction cost and social exchange theories understand SIC. Moreover, TCT shapes the choice of governance structures in collaboration, including co-ordination, commitment, and frequency of interaction, while SET shapes inter-organizational behavior, focuses on relational characteristics within ongoing collaborations between partners, and emphasizes the importance of inter-organizational trust and communication as effective social mechanisms of inter-organizational governance. The second contribution of this study is finding that inter-organizational trust positively affects directly IGMs; this new understanding should help to improve predictions of the impact on inter-organizational trust and communication, commitment, co-ordination, and frequency of interaction in the tourism industry. The results also provide empirical evidence regarding the governance mechanisms discussed in the tourism literature. The study's third contribution is that our analysis results show that there is positive relationship between trust, IGMs, and innovation between tourist firms and their suppliers. Moreover, this study also found that IGMs and innovation have a positive effect on SIC. Lastly, this paper is the first study to investigate the role of mediating IGMs in innovation by examining associations between inter-organizational trust and SIC that positively influence this linkage. Overall, this study suggests that IGMs and innovation play important roles in enhancing trust and SIC.

**Author Contributions:** K.N.M. proposed the research framework and, together with P.T.M.N., was involved in data collection and processing; P.T.M.N. analyzed the data and wrote the article; P.N.D.N. contributed to the submission and editing of the article. All authors have read and agreed to the published version of the manuscript.

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