Interfirm resource integration in destination contexts

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Abstract

In a co-producing tourism destination context, interdependent firms providing the destination product need to coordinate their relationships to achieve resource integration. We focus on two key dimensions of resource integration: (1) interfirm resource complementarity and (2) adaptation of activity structures. Survey data from tourism firms at Norwegian mountain destinations show that both resource complementarity and adaptation of activity structures are a function of trust, authority-based governance, and interfirm learning. Trust and learning have overall stronger effects on resource integration than authority-based governance, in particular on the development of resource complementarity. Authority-based governance has a significant effect on the adaptation of activity structures and a borderline significant effect on resource complementarity.

Keywords: Co-production, Resource complementarity, Activity adaptation, Trust, Authority, Interfirm learning

Introduction

A prevailing view of tourism destination research sees individual firms as part of an extended co-producing context. In essence, a destination's 'competitiveness is necessarily a function of how successfully their constituent components work together to deliver the tourism product' (Fyall, Garrod, & Wang, 2012, p. 10). The co-produced destination product that the tourist experiences 'is reliant upon the quality and efficiency of complementary businesses such as accommodations, attractions, retail outlets, etc.' (Wang & Fesenmaier, 2007, p. 869), yet the resources required to provide it are dispersed across organizational boundaries (Camisón et al., 2016; Kallmuenzer, Kraus, Peters, Steiner, & Cheng, 2019; Rodriguez-Diaz & Espino-Rodriguez, 2008). Recent research points to the importance of local coordination efforts to achieve resource integration between different destination actors (Mackellar & Nisbet, 2017; Sainaghi, De Carlo, & d'Angella, 2019), but we have limited knowledge of which factors contribute to it.

Responding to this research gap, we study potential carriers of interfirm resource integration among tourism firms operating in a co-producing destination context. We define interfirm resource integration as an interactive process through which the firms involved combine their resources and capabilities for mutual purpose and benefit. This definition has two key aspects. First, the co-producing context requires interfirm *complementarity* in resource endowments. Second, the co-producing context requires allocating the resources to productive, value-creating *activities*. Hence, we study interfirm resource integration in terms of (1) developing interfirm complementarity and (2) the adaptation of interfirm activity structures.

We take the perspective that non-market governance mechanisms (Heide, 1994) promote resource integration. Non-market governance mechanisms allow for both informal socially based mechanisms and formally shared organizational mechanisms to promote

resource integration (Beritelli, 2011; Beritelli, Bieger, & Laesser, 2007; Czernek, Czakon, & Marszałek, 2017; Sainaghi et al., 2019; Volgger & Pechlaner, 2014). In addition, we argue that interfirm learning promotes resource integration (Becerra, Lunnan, & Huemer, 2008; Chen, Tsou, & Ching, 2011; Gummesson & Mele, 2010; Mackellar & Nisbet, 2017). Resource integration depends on a shared understanding of the total product that individual tourism firms co-produce to serve their customers. Thus, we address in this study how non-market governance mechanisms and interfirm learning promote resource integration in a co-producing tourism destination context.

The study contributes to the tourism destination literature, which emphasizes that firms are strongly dependent on successful interfirm collaboration and resource integration to co-produce destination products efficiently (Cortese, Giacosa, & Cantino, 2018; Fyall et al., 2012; Haugland, Ness, Grønseth, & Aarstad, 2011; Melián-González & García-Falcón, 2003; Rodriguez-Diaz & Espino-Rodriguez, 2008). Recent case-based research suggests that understanding governance issues to achieve resource integration in a destination context is important (Czernek et al., 2017; Sainaghi et al., 2019). In particular, we provide empirical evidence on the role and relative importance of social trust-based and organizational authority-based governance mechanisms for achieving resource integration. Furthermore, by taking an interfirm, dyadic level, we contribute to the literature on destination governance, which has largely focused on destination level governance issues (Beritelli, 2011; Beritelli et al., 2007; Farmaki, 2015; Volgger, Herntrei, Pechlaner, & Pichler, 2018). The study also provides new knowledge to the literature on interfirm learning, as we have limited knowledge about how the concept induces resource integration in a tourism destination context (Camisón, Forés, & Boronat-Navarro, 2017; Sanz-Ibáñez, Lozano, & Anton Clavé, 2019; Saxena, 2005; Wang & Fesenmaier, 2007).

Despite the increasing body of knowledge studying resource integration (Chen et al., 2011; Dyer, Singh, & Hesterly, 2018; Gummesson & Mele, 2010; Jaakkola & Hakanen, 2013; Peters, 2016; Vargo & Lusch, 2016; Wittmann, Hunt, & Arnett, 2009), much of the literature remains conceptual or is based on a limited number of cases. Moreover, resource complementarity is insufficiently explored in a co-production context (Ennen & Richter, 2009). Our study empirically tests and compares key drivers of both dimensions of resource integration, not tested simultaneously in previous research. By studying non-market governance mechanisms and interfirm learning as potential drivers of resource integration, we respond to broader calls for research to increase our knowledge of how governance mechanisms affect resource integration (Kleinaltenkamp et al., 2012; Lusch, Vargo, & Tanniru, 2010).

Theory

Co-production and dyadic resource integration

Although a destination per se represents a co-producing context, Longjit and Pearce (2013, p. 165) find that when complementary activities 'are co-ordinated, integrated or collaborative this is generally limited to a series of formal or informal dyadic relationships rather than a comprehensive destination-wide approach'. More generally, the question remains 'how and how well individual components collaborate in the destination' (Fyall et al., 2012, p. 11).

From the viewpoint of individual firms, it is important to strengthen capability development and develop interfirm relations to complement internal resources and enable efficient activity structures. From the collective point of view, it is important to develop and sustain specialization between individual firms and promote integration to exploit distributed resources. These issues underscore the importance of understanding how firms continuously develop and adjust their roles in a co-producing context through relationship management.

We address the question of capability development by discussing resource complementarity and specialization between individual firms through activity adaptation.

Resource complementarity

Individual firms' resource endowments may potentially represent greater value if used in conjunction compared to using each firm's resource endowments in isolation (Dyer & Singh, 1998). This is a core characteristic of interfirm resource complementarity, and particularly in co-producing the destination product (Mackellar & Nisbet, 2017; Sainaghi et al., 2019). According to Järvensivu and Möller (2009, p. 654), 'the roles that different actors in a network can adopt depend on their resources and capabilities'.

In line with Sarkar, Echambadi, Cavusgil, and Aulakh (2001, p. 360), we conceptualize resource complementarity 'as the extent to which each partner brings in unique strengths and resources of value to the collaboration'. They suggest that in enhancing the competitive viability of a relationship, complementarity is of critical importance as it determines the idiosyncratic resource combination the partners can act on to pursue shared goals. Furthermore, resource complementarity implies some strategic symmetry between the partner firms as they both contribute unique resources.

Activity adaptation

The concept of activity structure emerges from the division of labour between firms in industrial systems (Dubois, 1998; Stigler, 1951). Firms perform a range of different activities to produce outcomes, and individual activities are interrelated in activity chains (Dubois, 1998). For instance, melting and forming steel or cooking and serving a meal represent individual activities that are related in a chain. Thus, a co-producing activity structure represents the aggregate set of activities required to produce a particular end product,

including activities that cut across organizational boundaries. Activity structures are important for efficient co-production, as resources interact across firm boundaries (Baraldi, Proença, Proença, & de Castro, 2014; Dubois & Fredriksson, 2008). Research points to the importance of activity chains that cut across individual actors to improve co-producing relationships (Ness, Aarstad, Haugland, & Grønseth, 2014), including the role of sport events to promote destination development (Mackellar & Nisbet, 2017). Consequently, activity adaptation between firms, or change in interfirm activity structures directed toward particular partner firms, becomes critical for the deployment of complementary resources to achieve efficient co-production.

Relationship governance and resource integration

When destination actors establish co-producing relationships, traditional market governance based on pricing becomes insufficient. Governance based on trust and organizational principles (authority) become important mechanisms (Beritelli et al., 2007; Czernek et al., 2017). Different governance structures (i.e., the institutional context for exchange) rely on different mechanisms; markets rely on pricing, hierarchies on authority, and trust and norms are important in hybrid forms (Adler, 2001). While these mechanisms come from distinct institutional arrangements, they are *commonly combined and operate in conjunction* within collaborative relationships. Thus, in co-production, trust (a social mechanism) and authority (an organizational mechanism) become important (Bradach & Eccles, 1989; Heide, 1994; McEvily, Perrone, & Zaheer, 2003; Stinchcombe, 1985). In reality, interfirm relations 'embody and rely on varying degrees of trust and hierarchical authority' (Adler, 2001, p. 216). According to McEvily et al. (2003, p. 92), authority 'solves the problem of coordinating action in the face of interdependence', as it handles power relations and decision-making rights between the parties (Adler, 2001; McEvily et al., 2003). Trust and authority are

important since they provide a basis on which relationship management can be exercised (Czernek et al., 2017; Fink & Kraus, 2007; Ness et al., 2014; Volgger & Pechlaner, 2014). We will now discuss how these two non-market governance mechanisms may influence resource complementarity and activity adaptation.

Trust

We focus on benevolence-based trust, which concerns positive expectations that the partner will not take advantage of the other actor or intentionally damage the other actor's interests (Muthusamy & White, 2005). In tourism research, Beritelli (2011, p. 624) finds that 'in order to increase cooperation or launch collective action, planners must pay attention to previously installed bonds of trust and understanding among actors'. Czakon and Czernek (2016) address the importance of trust-building in deciding whether to enter into network coopetition and show that benevolence-based trust-building through third-party legitimization and reputation effects are important drivers. Czernek et al. (2017) find that trust is an important mechanism as a basis for collaborative relationships between Polish tourism firms, and Mackellar and Nisbet (2017) find that when trust formation took place between a local event organization and local businesses, it strengthened the overall destination network. However, the role of trust in relation to resource integration is predominantly lacking in empirical research.

Dyer and Singh (1998, p. 671) argue that trust-based governance 'establishes norms and expectations about appropriate behavior' and is likely to promote the combination of complementary and strategic assets. Qualitative research supports the argument. Uzzi (1997) finds that co-producing relationships benefit from trust. At the firm level, trust reduces haggling and monitoring costs; it increases access to resources, and enhances the exchange of difficult to price resources. At the network level, Uzzi (1997) observes investments, complex adaptations, and Pareto improvements. Jaakkola and Hakanen (2013, p. 57) find 'that trust

and rapport among actors facilitate the integration of especially more intangible, operant resources.' Laaksonen, Pajunen, and Kulmala (2008) find that goodwill trust and resource interdependency are closely associated; over time, they co-evolve in cyclical patterns, and increasing trust enables increasing interdependency. Furthermore, trust and fine-grained information sharing are related, and Ness (2009) shows that as goodwill trust increases, information sharing becomes more open, detailed, and focused on mutual opportunities. Hence, trust is an important 'lubricant' in developing resource complementarity as it is likely to reduce the fear of opportunism and increase the likelihood that firms will pursue opportunities from sharing and pooling resources.

Hypothesis 1a. As benevolence-based trust in a co-producing dyad increases, resource complementarity increases.

While resource complementarity is a relational characteristic, firms need to use the resources operationally. Thus, we extend the argument and suggest that trust will be positively associated with activity adaptations. Adaptation of activities across firm boundaries represents an attempt to improve role relationships and exploitation of the dyad's idiosyncratic resource combination (Mackellar & Nisbet, 2017; Sainaghi et al., 2019). However, such resource interaction also increases vulnerabilities and the potential for opportunism, as partner-specific idiosyncrasies are likely to have inferior rent-potential in alternative relations and are vulnerable to exploitation by the partner firm (Czakon & Czernek, 2016; Rokkan, Heide, & Wathne, 2003). However, as firms increasingly believe that the partner will not intentionally harm their interests, this will promote activity adaptation.

Hypothesis 1b. As benevolence-based trust in a co-producing dyad increases, activity adaptation increases.

Authority

Elements of authority are commonly built into contracts and informal interfirm agreements (Bradach & Eccles, 1989). Stinchcombe (1985, p. 126) observes that a 'structure with legitimate authority, with a manipulable incentive system, with a method of adjusting costs, quantities, and prices, with a structure for dispute resolution, and with a set of standard operating procedures, looks very much like a hierarchy, very little like a competitive market. Yet all these features of hierarchy are routinely obtained by contracts between firms.' Furthermore, Day (1995, p. 299) argues for giving relationships 'a formal status, with well-defined authority, responsibilities, and decision process', to promote sustained idiosyncrasy.

Empirical research suggests that authority has important functions. Woods and Hecker (2013) find in a case study that adjustments in both firm and interfirm routines and systems facilitate resource integration and operations in a preferred supplier constellation. Ness and Haugland (2005) show how authority elements are implemented into a long-term relationship and enable subsequent development of roles. Furthermore, Ouchi and Bolton (1988, p. 14) find that problems arising from uncertainty and complexity in joint R&D projects are remedied by 'the close and intimate supervision of a commonly agreed upon hierarchy'. Such arrangements can involve oversight committees, joint working groups, shared rules and procedures, and assignment of decision rights (Heide, 1994; Kallmuenzer, Strobl, & Peters, 2018; Ness, 2009; Olsen, Haugland, Karlsen, & Husøy, 2005).

Beritelli (2011) compared the influence of formal contractual and informal relational mechanisms on cooperation in a European Alpine destination and finds that relation-based mechanisms significantly promote cooperation. Czernek et al. (2017) find that informal trust-based and formal contractual governance (including rules, regulations, formalization, and roles) are of importance for cooperation between tourism firms in Poland. Furthermore, these two governance mechanisms are complementary, they serve different functions, and they have

different origins. Sainaghi et al. (2019, p. 533) studying new product development processes in Livigno, Italy, find that informal governance partly becomes formalized through installing a shared Skipassfree Committee that worked on 'simple organizational mechanisms' as it was perceived as beneficial for implementation at the interorganizational level. Mackellar and Nisbet (2017) find similar patterns.

Implementation of authority mechanisms will usually be weaker across firm boundaries than within firms. However, common ways to imitate hierarchy in interfirm relations is using a formal contract and/or drafting informal documents such as memos describing work processes, minutes from meetings addressing responsibilities, and communication protocols. Such agreements assign responsibilities, form role relations, address decision-making, and provide standard operating procedures to improve interactions across firm boundaries (Mayer & Argyres, 2004; Ness, 2009). These mechanisms are likely to improve the understanding of resource complementarity, as this form of shared bureaucracy is typically based on the partners' combined resources and the shared interests they allow to pursue. For example, procedures can be useful in developing joint routines, and joint routines can increase the partners' knowledge about each other's work practices, which can further promote the development of resource complementarity. Furthermore, firms often have capabilities that extend their current operational scope (Brusoni, Prencipe, & Pavitt, 2001; Grant & Baden-Fuller, 2004), and the process of establishing authority mechanisms might make inherent and tacit aspects more salient to promote complementarity. In a situation with weak or no authority mechanisms, these benefits are likely to be fewer.

Hypothesis 2a. As the use of authority mechanisms in a co-producing dyad increases, resource complementarity increases.

Furthermore, we also expect that making use of authority-based governance will promote activity adaptation and improve the operational aspects related to resource interaction in activity structures. Research on governance and contractual processes suggests that firms over time adapt operations and that such a change takes place in the presence of authority mechanisms. Mayer and Argyres (2004), in a case study, describe how two firms in the computer industry over time issued and updated a contractual supplement; a statement of work that provided authority mechanisms to the governance framework. It further guided operational specificity as updates were usually based on experiences from working together. Similar findings are reported in other case studies, and show that establishing an authority structure to ease interaction can promote both radical and incremental operational activity adaptation over time (Ness, 2009; Ness & Haugland, 2005).

Hypothesis 2b. As the use of authority mechanisms in a co-producing dyad increases, activity adaptation increases.

Interfirm learning and resource integration

Access to a partner's resources, knowledge, and capabilities is an important motivational factor for firms entering into alliances and relationships. Gudergan, Devinney, Richter, and Ellis (2012) find in a study of non-equity alliances that complementary capabilities indirectly influence alliance performance through their effects on the competitive capability of the alliance. However, combining partners' resources, knowledge, and competencies to realize joint value creation requires each firm to learn how the partner's resources can be linked to the firm's existing resources (Wittmann et al., 2009). We, thus, argue that identifying and developing resource complementarity requires interfirm learning. Interfirm learning involves access to and transfer of knowledge between the parties, as well as the development of new

and shared knowledge in the alliance (Becerra et al., 2008; Liu, 2018; Muthusamy & White, 2005).

In a study of learning dynamics in alliance constellations, Woods and Hecker (2013) find that during the initiation of the constellation, the partners started making sense of the constellation and how it would operate. Learning was related to how the constellation could compete, operate, promote itself, and cooperate to realize benefits. Important dimensions involved learning about the different partners, task definitions, and success criteria for the constellation's performance. Woods and Hecker (2013, p. 171) describe how relationships evolved as the partners experienced the need for a new collaborative strategy and new constellation design 'to better accommodate the interdependent positions' to jointly improve their performance. Jaakkola and Hakanen (2013, p. 57) find that firms 'could benefit from extensive, joint ideation and problem solving among a broad range of actors in a solution network, as that facilitates the development of new resource constellations that have a higher value potential'. Learning to execute joint activities in a co-producing context is complex and should be given attention since such learning is likely to influence the ability to exploit complementarity (Bouncken, Pesch, & Kraus, 2015; Lusch et al., 2010).

Grant and Baden-Fuller (2004) argue that alliance partners with complementarities can exploit excess capacity in knowledge resources without transferring knowledge between the parties. Instead, they can coordinate and achieve efficient knowledge integration across organizational boundaries by providing access to knowledge across firms. Furthermore, firms can direct their learning focus towards their particular area of expertise rather than the expertise area of the partner. Thus, it enables increased and sustained specialization between firms, which provides a basis for sustaining complementarity. Taken together, we suggest that a likely outcome of interfirm learning is the development and exploitation of resource complementarity.

Hypothesis 3a. As the interfirm learning in a co-producing dyad increases, resource complementarity increases.

Interfirm learning reflects operational knowledge, rich in tacit knowledge embedded in routines (Zhang, Xiao, Gursoy, & Rao, 2015). Such routines are important for efficient adaptation and change, as they generate deep operational knowledge and experiences that are beneficial for improving processes (Feldman & Pentland, 2003; Holmqvist, 2004). Research on interfirm learning suggests that operational change is a result of behavioural learning (Levitt & March, 1988). Ariño and de la Torre (1998) and Doz (1996) find that execution of negotiated commitments in alliances induces adjustments to success criteria and reevaluation. Furthermore, Uzzi (1997) finds that learning improves the allocative efficiency of resources and complex adaptation for co-producing firms.

Interfirm roles are likely to develop and change due to resource interactions across firms (Abrahamsen, Henneberg, & Naudé, 2012; Zhang et al., 2015). Therefore, practices related to the integration of resources in itself can become a resource for change (Archpru Akaka & Chandler, 2011), and interfirm learning processes will likely promote activity adaptation (Berghman, Matthyssens, & Vandenbempt, 2012; Woods & Hecker, 2013).

Hypothesis 3b. As interfirm learning in a co-producing dyad increases, activity adaptation increases.

Figure 1 summarizes the theoretical arguments and illustrates the hypotheses.

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Research methods

Empirical setting and data collection

We tested the hypotheses in a regional Norwegian context and selected nine mountain destinations with varying degrees of collaboration and coordination. The region has a long-standing tourism history, and the destinations have traditionally been attracting most people during the winter season, primarily for skiing and outdoor activities. However, in recent years the region has developed more (primarily nature-based) attractions during the summer season, partly supported by public sector policies. They attract both domestic and international guests, are family-friendly, but they also offer adventurous experiences (e.g. downhill biking, ice climbing). In addition to transportation firms, accommodation providers, restaurants and bars, the destinations have a variety of activity providers, sport equipment stores, and museums. Service providers maintain infrastructure, provide convenience to second-home owners, and offer consulting for tourism and businesses. Public sector agencies take an active role as framework providers aiming to support the industry. The region represents an ecosystem of tourism-related actors.

We identified all organizations at the destinations on public record and manually screened the list to identify firms operating in the tourism industry (lodging, restaurants, activity providers, etc.). Then we crosschecked against the destinations' websites and finally had the lists reviewed by local experts for accuracy. We called all the 568 identified firms, and 325 firms agreed to participate in an online survey. We asked each firm to identify a representative who was particularly knowledgeable about the firm's collaborative relationships, and these key informants received an e-mail with a link to an electronic questionnaire. Respondents were to choose one firm they were currently cooperating with, and most of the questions were related to this partner. After reminders, we received 72 complete and usable responses.

Measures

We primarily applied established measurement scales using seven-point Likert-type rating scales anchored by 'strongly disagree' and 'strongly agree' for all dependent and independent variables. Table 1 gives an overview of all measures.

Three items based on Sarkar et al. (2001) measured interfirm resource complementarity. As we could not find previously tested scales measuring activity adaptation in co-production, we generated three items based on the domain of the construct in this study, following Churchill (1979). Four items based on Muthusamy and White (2005) measured benevolence-based trust. Authority was measured by three items adapted to the co-producing context based on Sande and Haugland (2015) and Lusch and Brown (1996). In addition, we developed a fourth item reflecting the use of joint working groups. For interfirm learning, we used four items based on Muthusamy and White (2005) and added two items reflecting the transfer of tacit knowledge based on Becerra et al. (2008). We control for relationship duration measured as the number of years the relationship had existed.

Data analysis and findings

Assessment of the measurement model

We tested the measurement model using SmartPLS 3 (Ringle, Wende, & Becker, 2015). PLS is a structural equation method designed for estimating common factor models and is preferred due to the small sample size and model complexity. Furthermore, we apply an untested scale for activity adaptation, and PLS estimates a less restricted model, which is suitable for this explorative dimension of the study (Henseler et al., 2014).

The measurement model was evaluated by (1) internal consistency reliabilities, (2) convergent validity of measures associated with each variable, and (3) discriminant validity between variables and items (Henseler, Hubona, & Ray, 2016; Hulland, 1999). Table 2 shows descriptive statistics and Table 3 shows correlations. To assess internal consistency reliability, we inspect Cronbach's alpha and composite reliability and observe that all are well above the conventional 0.7 cut-off value, indicating good internal consistency.

We assessed convergent validity by inspecting the average variance extracted (AVE), as well as individual item loadings. AVE values for all variables are well above the conventional 0.5 cut-off value. Furthermore, Hair, Ringle, and Sarstedt (2011) recommend that outer loadings for individual items should preferably exceed 0.7. Table 2 shows strong loadings for all items, except for item A4 (0.685). However, the deviation is marginal, and we keep the item for content validity reasons. We conclude that the indicators are internally consistent and that convergent validity is satisfactory.

We assessed discriminant validity by examining the extent to which each latent variable is distinct (Hair, Hult, Ringle, & Sarstedt, 2017). Specifically, we inspected the Heterotrait-Monotrait (HTMT) ratios and the Fornell-Larcker criterion (Hair et al., 2011; Henseler, Ringle, & Sarstedt, 2015). Table 4 reports the HTMT ratios, and we observe that all values are below 1, and even below the stricter cut-off value of 0.85 (Voorhees, Brady, Calantone, & Ramirez, 2016). We also inspected the squared correlation between variables and their respective AVE (Fornell & Larcker, 1981). Table 5 shows satisfactory values for discriminant validity between the variables, as all off-diagonal squared correlations are

consistently lower than the AVE. In sum, the results show satisfactory reliability and validity for the measurement model.

Structural model and hypothesis testing

We tested the hypotheses using SmartPLS (bootstrapping). The structural model was assessed by inspecting R² (explained variance), path coefficients, t-values, p-values, and effect sizes. In addition, we inspect the standardized root mean residual (SRMR) to assess the approximate model fit. The results are presented in Table 6.

We observe that the explained variance is high for both dependent variables. The SRMR is satisfactory (values less than 0.10 are considered to be good; for discussions, see Hu and Bentler (1998), Henseler et al. (2014), and Henseler et al. (2016)). Effect sizes quantify how substantial effects are, and values of 0.15 and 0.35 are considered as medium and large, respectively (Cohen, 1988; Hair, Hollingsworth, Randolph, & Chong, 2017).

Table 6 shows that all hypotheses receive significant empirical support, except for H2a, which receives borderline significant support. Relationship duration as a control variable has non-significant effects.

Keeping in mind that item A4 related to authority showed a weaker loading than the other items, and not used in previous studies, we excluded it and re-ran the analysis. The SRMR of the revised model dropped below the conservative cut-off point of 0.8 to 0.7, which indicates a better model fit. R2 slightly improved for both dependent variables (ResCompl

0.622; ActAdapt 0.595), and both composite reliability and Cronbach's alpha improved for authority (to 0.949 and 0.919 respectively). The revised model returned a stronger effect of authority on activity adaptation (0.274, t 2.497, p 0.013, f2 0.156), and further returned an improved, and, now, significant effect on resource complementarity (0.186, t 2.093, p 0.037, f2 0.077), supporting H2a. The effect of the other independent variables remained essentially stable.

Concluding discussion

Discussion of the results

In this study, we show that both interfirm non-market governance and interfirm learning promote resource integration in a co-producing context. In particular, our results show that both dimensions of non-market governance, trust and authority, play important roles and seem to complement each other as mechanisms that can be used to realize resource integration.

Trust has a significant effect on resource integration; in particular on complementarity, but also on activity adaptation. Authority shows a partly borderline significant effect on complementarity and a significant effect on activity adaptation. Activity adaptation reflects the development of specialized roles between the cooperating firms, organization of joint activities, and changing of internal work processes. These activities should be suitable for management by regulations, rules, and procedures. Discovering and realizing resource complementarity, on the other hand, is primarily governed by trust and less by authority. These findings give credibility to the claim that different governance mechanisms operate in conjunction and have different functions for managing relationships.

Furthermore, interfirm learning is also an important factor in realizing resource integration. We argue that interfirm learning enables the firms to have a more in-depth understanding of each other's resources and capabilities and that this, in turn, will make it

easier to discover, develop, and utilize resource complementarities and adapt their activity structures accordingly. The results show that interfirm learning has strong effects on both resource complementarity and activity adaptation, which underlines the importance of ongoing learning processes between firms to achieve resource integration.

Theoretical implications

We suggest two different dimensions of resource integration as particularly important. First, we argue that resource complementarity is not only a condition and a basis for forming relationships but more importantly, a relationship characteristic that needs to develop over time. Second, we argue that resource complementarity is not only important per se in coproduction but equally important is the deployment of these resources in activity structures to improve resource allocation. While both resource complementarity and activity structures have received attention in interfirm research, they are rarely addressed simultaneously as two dimensions of resource integration. Our study suggests that both dimensions are important and can be explained as a function of non-market governance and learning. Furthermore, the findings support a dynamic view arguing that complementarity can be developed through ongoing processes and that firms make adaptations as they interact (Edvardsson, Kleinaltenkamp, Tronvoll, McHugh, & Windahl, 2014; Peters, 2016).

The literature has called for research that takes mutual interdependence, relational characteristics, governance, and cross-boundary dimensions into account (Baraldi et al., 2014; Kleinaltenkamp et al., 2012; Lusch et al., 2010). By addressing governance and learning, and their effects on resource integration, we respond to these calls. As we focus on two dimensions of resource integration, we not only address complementarity per se but also address activity adaptation, as resources are allocated in value-creating processes linking inter- and intra-organizational activities. While trust-based governance has received ample

attention, it is less explored in relation to resource integration. Furthermore, we lack knowledge about the effects of authority-based governance in relation to resource integration. This study offers theory and data that address the relative importance of these two forms of non-market governance for achieving resource integration in a co-producing context. Finally, we also explore the importance of interfirm learning processes in relation to resource integration, as learning in a network context is in need for further research (Peters, Pressey, & Johnston, 2017; Woods & Hecker, 2013). Interfirm learning is often addressed conceptually, but rarely studied empirically as a driver of resource integration, and this study shows that learning is important for achieving resource integration.

Managerial implications

Co-production is a complex task, as it requires efficient resource integration across firm boundaries that needs to match with intra-organizational resources and activities. Many firms simultaneously collaborate and compete within a co-producing context, and their individual and collective competitiveness depend partly on the extent to which they achieve resource integration. This requires that all firms develop specialized roles that complement the roles of other firms, as well as allocating and deploying these resources in joint activity structures. First, managers need to develop an understanding of resource integration that awards attention to both dimensions.

Second, the study provides insight into the ways relationship management can contribute to resource integration and in particular, the importance of governance mechanisms. Governance in co-producing contexts deviates from traditional market governance. Managers should seek to develop trust relations, both at the individual and firm-to-firm level. Furthermore, authority mechanisms should be consciously developed as a management tool to govern interfirm relationships. Authority gives structure, procedures, and

shared routines to the collaborative process. Finally, managers should develop governance mechanisms that can operate in combination, as this provides more flexibility for efficient relationship management.

Third, information sharing, knowledge access and transfer, and interfirm learning are important for resource integration. Although learning can be hard to achieve and outcomes difficult to predict, learning about partners is important for developing complementarities and fine-tuned activity adaptations. It goes for both explicit knowledge that is easy to communicate and for tacit knowledge acquired through socialization processes. Managers should create meeting places and interfaces between the firms to facilitate interaction that can promote interfirm learning.

Further research directions and limitations

Co-producing arrangements are pervasive in a variety of different sectors and industries, such as ports (ships/freight, internal transport, customs, police and port authorities, etc.) and marine clusters, airports (airport authorities, police, customs, airlines, security, internal transport, tax-free shops, catering, cleaning, etc.), large construction projects (builders, architects, engineering firms, craftsmen, etc.), biotech, software applications, and more. Such co-producing groups of firms compete with similar entities in the (international) marketplace (Gomes-Casseres, 2003). The results of this study are promising as we have identified key factors promoting resource integration, and we encourage future studies to investigate if similar effects can be identified in other co-producing contexts. Co-producing contexts can also involve coopetition, and further research might explore this issue.

The current study has addressed non-market governance and learning as drivers of resource integration. Further research should look for additional drivers of resource integration that are not considered in this study. One potential way to do this is by using

fuzzy-set qualitative comparative analysis to analyse other potential configurations of factors leading to resource integration (Kraus, Ribeiro-Soriano, & Schüssler, 2018). While we have chosen the dyad as the level of analysis, future research can also address triads and clustered structures. For instance, studies can address how resource integration at the dyadic level affects triadic structures or vice versa.

Studies on destination networks can focus on different dimensions and levels, and this study focuses on firms and dyads. Destination networks can also provide opportunities for studying micro-processes emerging in clusters of both individuals and small firms as they start developing integration processes and include social functions at both the individual and community levels. Furthermore, future studies should take institutional contexts and non-profit actors more explicitly into account, as well as exploring the dynamic processes of resource integration (Fuglsang & Eide, 2012; Ness, Fuglsang, & Eide, 2018).

Finally, the different performance implications of resource integration is also an area in need of more knowledge. This study has focused on the supply-side of co-production, and further research should, in addition, explore in what ways the tourists, as resourceful co-creators of experiences, integrate their resources with the supply side, and how this might affect performance and value creation for the involved parties (Navarro, Andreu, & Cervera, 2014; Prebensen, Vittersø, & Dahl, 2013).

Three limitations of this study are the number of observations, one single industry, and the study's cross-sectional design. We encourage future research on interfirm resource integration in co-producing contexts to access a higher number of observations, study other industries, and favourably use longitudinal research designs.

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Declarations of interest

None.

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Table 1. Measurement scales

Resource complementarity (RC) Both firms needed each other's resources to accomplish the goals of the cooperation. The combination of our knowledge, competence and resources and our partner's knowledge, competence, and resources was significant in performing the cooperative tasks. Resources brought into the venture by each firm were very valuable for the other. RC3 Activity adaptation (AA) Our firm and our partner have developed clear and specialized roles in this cooperation. AL1 During the time we have collaborated, we have found new ways to organize joint activities. AL2 As a result of this cooperation, we have over time changed our internal work processes. AL3 Trust (T) While making important decisions, the partner firm is concerned about our company's welfare. The partner firm would not knowingly do anything to hurt our company. T2 Our firm's needs are important to the partner firm. T3 The partner firm looks out for what is important to our firm in the cooperation. Authority (Au) Rules (agreements) and regulations have been developed for most issues in this cooperative relationship. In the day-to-day management, both parties emphasize following the rules and procedures we have arrived at together. Our contract or agreement precisely defines the responsibilities of each party. In this collaboration there is extensive use of joint working groups or joint organization of A3 activities. AL Interfirm learning (IL) Our firm has learned to jointly execute marketing, product development, and production operations with this partner. Uur firm has gained new techniques, competencies, or technologies with the partner. IL2 Our firm has gained new techniques, competencies, or technologies from this partner. IL4 We regularly visit each other's facilities and observe onsite how operations are conducted. IL5 Both we and the partner have learned much from the direct contact between our firms. RD1 Relationship duration (RD)	Variables and items	
The combination of our knowledge, competence and resources and our partner's knowledge, competence, and resources was significant in performing the cooperative tasks. Resources brought into the venture by each firm were very valuable for the other. **RC3** **Activity adaptation** **Activity adaptation** **Activity adaptation** **Auxing the time we have developed clear and specialized roles in this cooperation. **During the time we have collaborated, we have found new ways to organize joint activities. **AA2** **AA3** **Trust** **Trust** **(T)** **While making important decisions, the partner firm is concerned about our company's welfare. **T1** The partner firm would not knowingly do anything to hurt our company. **T2** **Our firm's needs are important to the partner firm. Ta authority (Au) **Rules (agreements) and regulations have been developed for most issues in this cooperative relationship. **In the day-to-day management, both parties emphasize following the rules and procedures we have arrived at together. **Our contract or agreement precisely defines the responsibilities of each party. In this collaboration there is extensive use of joint working groups or joint organization of activities. **A1** **Interfirm learning** **Interfirm has learned to jointly execute marketing, product development, and production operations with this partner. **Our firm has gained new techniques, competencies, or technologies with the partner. **Our firm has gained new techniques, competencies, or technologies from this partner. **Our firm has developed new ideas or skills because of our cooperation with this partner. **Our firm has developed new ideas or skills because of our cooperation with this partner. **IL2* **Our firm has developed new ideas or skills because of our cooperation with this partner. **IL2* **Our firm has developed new ideas or skills because of our cooperation with this partner. **IL4* **We regularly visit each other's facilities and observe onsite how operations are cond	Resource complementarity (RC)	
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		IL6
	Relationship duration (RD)	
	The number of years the partners had cooperated.	RD1

Table 2. Descriptive statistics

Item	Mean	StDev	Loadings	Cronbach's α	Composite reliability	Average variance extracted
RC1 RC2 RC3	4.083 4.236 4.528	1.809 1.791 1.675	0.866 0.901 0.875	Resource Complementarity 0.856	0.912	0.776
AA1 AA2 AA3	3.958 4.167 3.222	1.925 1.795 1.669	0.847 0.891 0.828	Activity adaptation 0.817	0.891	0.732
T1 T2 T3 T4	3.889 5.264 4.444 4.264	1.752 1.472 1.747 1.691	0.819 0.802 0.902 0.904	Trust 0.879	0.918	0.736
A1 A2 A3 A4	3.750 3.931 3.347 3.250	2.087 1.967 2.122 1.984	0.899 0.903 0.898 0.685	Authority 0.868	0.912	0.725
IL1 IL2 IL3 IL4 IL5 IL6	3.583 3.361 3.083 3.750 3.750 4.069	1.793 1.718 1.862 1.913 1.854 1.751	0.892 0.873 0.831 0.892 0.767 0.906	Interfirm learning 0.930	0.945	0.743
RD1	11.819	9.459	1			

Table 3. Correlations

	Trust	Authority	InterLearn	RelDur	ResCompl
Authority	0,393				
InterLearn	0,649	0,466			
RelDur	0,107	0,168	0,189		
ResCompl	0,701	0,496	0,685	0,226	
ActAdapt	0,622	0,550	0,693	0,116	0,658

Table 4. HTMT Ratio (Discriminant validity)

	Trust	Authority	InterLearn	RelDur	ResCompl
Authority	0,452				
InterLearn	0,711	0,521			
RelDur	0,127	0,185	0,190		
ResCompl	0,804	0,568	0,752	0,244	
ActAdapt	0,731	0,653	0,788	0.126	0,776

Table 5: Squared correlations and average variance extracted (bold)

	Trust	Authority	InterLearn	RelDur	ResCompl	ActAdapt
Trust	0,736					
Authority	0,154	0,725				
InterLearn	0,421	0,217	0,743			
RelDur	0,011	0,028	0,036	1		
ResCompl	0,491	0,246	0,469	0,051	0,776	
ActAdapt	0,386	0,303	0,480	0,013	0,433	0,732

Table 6. Results

		Resource complementarity		Activity adaptation
Trust	H1a	0.419*** (4.271) p 0.000 f ² 0.259	H1b	0.255* (2.275) p 0.023 f² 0.089
Authority	H2a	0.167 (1.829) p 0.068 f ² 0.055	H2b	0.264* (2.376) p 0.018 f ² 0.127
Interfirm learning	НЗа	0.317** (2.755) p 0.006 f ² 0.135	Н3ь	0.412*** (3.502) p 0.001 f ² 0.211
Relationship duration		0.093 (1.146) p 0.252 f ² 0.021		-0.033 (-0.498) p 0.618 f ² 0.002
R ² R ² Adjusted N		0.615 0.592 72		0.585 0.560 72

 $[\]overline{****} \ p < 0.001, *** \ p < 0.01, ** \ p < 0.05; SRMR \ 0.085; t-values in parenthesis; f² Effect size$

Figure 1. Theoretical model

