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Actor Participation and its Impact on Financial Performance of Organisations

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Department of Management & Marketing

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To My Parents

Declaration

This is to certify that

i) the dissertation comprises only my original work toward the degree of Doctor of Philosophy except where indicated in the Preface,

ii) due acknowledgement has been made in the text to all other material used,

iii) the dissertation is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Date_*30 April 2019*__ Signature_______________________________

Dissertation Abstract

This dissertation explores the phenomenon of Actor Participation (AP), which involves outsourcing core business activities before, during or beyond creation and/or consumption of product/service offerings to multiple actors such as existing or prospective consumers, the public or crowd. Although AP is intended to create a competitive advantage for the firm, there is little understanding of the various forms AP can take, its strategic design and its effects on financial performance. The aim of this dissertation is to enhance the overall understanding of AP by answering four main research questions:

1) What are the core dimensions of AP that help classify its different forms?

2) What are the organisational capabilities fundamental to successful AP and do they vary based on the core dimensions?

3) How does AP affect the financial performance of organisations and are particular forms superior to others in this respect?

4) How do different organisational capabilities facilitate the financial success of AP?

This dissertation includes two papers. In the first paper, a conceptual model to address research questions 1 and 2 is developed. In this conceptual model, three core dimensions are proposed that help in the classification of AP: *Transactional Intensity, Tangibility of Contributions,* and *Interaction Intensity.* Recognition of these dimensions not only reflects the different ways organisations can practice AP but also provides a foundation for determining the organisational capabilities necessary for exercising AP. In the second-half of the paper, the organisational capabilities associated with the core dimensions of AP are explored and a second

classification model is proposed, which relates organisational capabilities to different forms of AP.

The second paper is an empirical research that investigates the final two research questions. The impact of AP on the financial performance of organisations across multiple industries is examined based on its core dimensions. Findings across two studies using primary and secondary data suggest that those forms of AP that rely on the integration of the intellectual contributions of actors have a positive impact on financial performance. Further, an analysis of the role of organisational capabilities on the financial success of AP finds that three organisational capabilities – R&D, technology and strategic flexibility – mediate the transformation of intellectual contributions into financially superior outcomes. Additionally, results suggest that investment in capabilities such as strategic flexibility and ethical interaction capability increase when organisations focus on specific dimensions of AP.

Overall, this dissertation suggests that AP can take place in various forms, for which organisations need to invest in certain organisational capabilities to ensure effective performance. It adds to the emerging marketing concepts of customer participation and value co-creation by facilitating a comprehensive understanding of the AP phenomenon. A thorough investigation of AP provides a useful blueprint for its strategic design and for predicting potential challenges for the implementation of the strategy. The theoretical and practical implications of this dissertation, as well as future research directions, will be discussed in detail.

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List of Abbreviations

AP ……………………………………………	Actor Participation
AVE…………………………………………	Average Variance Extracted
B2B…………………………………………	Business-to-Business
B2C…………………………………………	Business-to-Consumer
CB-SEM……………………………………	Covariance-based Structural Equation Modelling
CMB………………………………………..	Common Method Bias
CR………………………………………….	Composite Reliability
CRM……………………………………….	Customer Relationship Management
CRSP……………………………………….	Centre for Research in Security Prices
GVKEY…………………………………….	Global Company Key
IT……………………………………………	Information Technology
NPD…………………………………………	New Product Development
NASDAQ…………………………………..	National Association of Securities Dealers Automated Quotations
NYSE……………………………………….	New York Stock Exchange
PLS-SEM…………………………………..	Partial Least Square – Structural Equation Modelling
PRL………………………………………….	Proportional Reduction in Loss reliability
RBV………………………………………….	Resource-based View
RA……………………………………………	Research Assistant
R&D…………………………………………	Research and Development
SIC…………………………………………..	Standard Industrial Classification
VIF…………………………………………..	Variance Inflation Factor
WOM……………………………………….	Word-of-mouth

Rationale and Overview of the Dissertation

"Uber, the world's largest taxi company, owns no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. Airbnb, the world's largest accommodation provider, owns no real estate. Something interesting is happening!"- (Tom Goodwin, 2015).

A large number of organisations are embracing the intellectual and non-intellectual resources of their existing and prospective consumers, or even members of the public before, during and after creation and/or consumption of their product/service offerings. This phenomenon, which I refer to as *Actor Participation* (AP) has been successfully implemented by many organisations such as LEGO, IKEA, Uber, Facebook and Airbnb, among others. Although AP continues to gain prominence and acceptance as an important strategic driver of business performance, there is still a lack of research comprehensively outlining what AP is and the variety of forms it can take. For example, the organisations mentioned above and their diverse business models demonstrate that AP can be implemented in various forms, which the extant literature refers to using a mix of terms, sometimes interchangeably. These include 'co-creation' (e.g., Heidenreich, Wittkowski, Handrich & Falk, 2014), 'co-production' (e.g., Etgar, 2008), 'customer engagement' (e.g., Brodie, Hollebeek, Juric & Ilic, 2011) and so on. This disparate use of terminologies has led to conceptual confusion and a lack of clarity as to what, exactly, AP is (Mustak, Jaakkola & Halinen, 2013; Ranjan & Read, 2016).

Further, research has yet to determine whether specific forms of AP produce better financial outcomes for organisations than others. Existing studies have primarily investigated the psychological and behavioural implications of AP for actors (e.g., Bendapudi & Leone, 2003; Heidenreich et al., 2014; Ramani & Kumar, 2008). There is limited understanding of the consequences of AP, particularly in terms of financial benefits for organisations. A few studies have explored the organisational implications of AP, but only in narrowly framed contexts, such as business-to-business (B2B) (e.g., Fang et al., 2008; Tuli et al., 2007), or in specific forms, such as participation in innovation and new product/service development (e.g., Carbonell et al., 2009; Chen et al., 2011; Chen et al., 2017). Considering examples such as Facebook, Uber and Airbnb, this paper emphasises that AP can take many forms in business-to-consumer (B2C) markets and in business activities beyond innovation. Thus, more research is needed to understand which forms of AP in B2C markets produce better (or worse) financial performance.

The last notable shortcoming in the research is a lack of understanding regarding the type of organisational capabilities required to overcome the operational challenges of AP and to translate AP initiatives into optimal financial performance. Existing organisational capability portfolios have been dedicated to AP in B2B markets (e.g., Tuli et al., 2007), have been specific to a particular form of AP, such as participation in product/service innovation (e.g., Hosseini et al., 2017; Kazadi et al., 2016), or have been too broad, such as capabilities related to service-dominant logic (e.g., Madhavaram & Hunt, 2008). It is vital to identify organisational capabilities that are fundamental to AP and determine whether managers should invest in different organisational capabilities to ensure financial success.

The aim of this dissertation is to address these important research shortcomings. First, it is important to gain a deeper understanding of the AP concept. Doing so will not only allow recognition of the different forms in which AP can be implemented but also provide the foundation to investigate the financial performance implications of, and the essential organisational capabilities needed for, those forms. Overall, four key research questions are considered in this dissertation: *1)* What are the core dimensions of AP that classify its different forms? *2)* What are the organisational capabilities fundamental to successful AP and do they vary based on the core dimensions? *3)* How does AP affect the financial performance of organisations? *4)* How do organisational capabilities facilitate the financial success of AP?

These four questions are addressed across the two papers in this dissertation. The first paper focuses on the conceptual development of AP and explores the core dimensions that determine the different forms in which it can be manifested. These core dimensions of AP that help classify its different forms are: *Transactional Intensity, Tangibility of Contributions,* and *Interaction Intensity.* 'Transactional Intensity' refers to the extent to which AP takes place *during* or *outside* sale and/or consumption of product/service offerings. If AP takes place during sales and/or consumption of the organisation's offering, the transactional intensity would be high (i.e., Transactional) whereas if it takes place outside and beyond sales and consumption of products/services, the intensity would be low (i.e., non-transactional). '*Tangibility of Contributions*' refers to the type of resource actors contribute during participation, and can be either *Intellectual* (knowledge and skills), which are quite intangible, or can involve more tangible resources that are *Non-intellectual* (labour and personal possessions). The '*Interaction Intensity*' refers to the format and scale of interactions among actors and the organisation, which is classified as *Dyadic* or *Network.* The former includes two-way interactions between the organisation and actors, while the latter extends to interactions among actors as well. Using the three core dimensions and their sub-types, a three-dimensional framework, a 2 x 3 x 2 matrix is created. This model highlights different forms of AP such as customisation, idea/design contests, peer-to-peer services etc.

The conceptual paper also introduces a series of organisational capabilities associated with the core dimensions of AP that are required to overcome the operational challenges of AP and facilitate implementation. These capabilities can also be assigned to three categories, *Actor, Process* and *Leadership and Management.* The 'actor' category reflects capabilities that deal with recognition, motivation and interaction of valuable actors and establishing a sustainable relationship with them. The 'process' category includes capabilities that facilitate execution of AP through the exchange and transformation of actors' contributions. The 'leadership and management' category involves expertise required for decision-making, governance and control of AP. Several propositions are made in this conceptual paper. For example, it is emphasised that organisational capabilities vary based on the dimensions of AP. More specifically, *process-related* capabilities play a pivotal role in the implementation of AP strategy. Of all the process-related capabilities, technology is the most prominent. Besides technological capabilities, ethical interaction and relationship management capabilities are also of high importance for AP strategy, as they are associated with the majority of the core dimensions.

The second paper in this dissertation empirically addresses the final two research questions. Specifically, the impact of AP on the financial performance of organisations as well as the organisational capabilities that facilitate financially successful AP are investigated. The financial performance implications of different forms of AP are examined by focusing on the core dimensions across two distinct studies using primary and secondary data. The first study focuses on secondary data of a sample of 110 public organisations across various industries. Inter-rater reliability technique (through the recruitment of three research assistants) is used to gather data about the AP strategy of the organisations. Financial performance data for the organisations in the sample were also extracted from Compustat and the Center for Research in

Security Prices (CRSP) databases. The second study further examines the financial performance implications of AP through the collection of primary data from over 300 organisations in the US. Additionally, it explores organisational capabilities, proposed in the first conceptual paper, and their role in the financial success of AP. Multiple regression analysis was used to investigate the impact of AP on financial performance across both studies. To test the mediating role of organisational capabilities, Partial Least Square Structural Equation Modelling is employed.

Overall, this research confirms that the intellectual contributions of actors have a positive impact on financial performance. Specifically, those forms of AP that focus on the integration of actors' knowledge and skills produce financially superior outcomes. The second study further reveals that the three organisational capabilities of R&D, technology and strategic flexibility also facilitate the transformation of intellectual contributions into an optimal outcome. Also, results show that investments in other capabilities increase when organisations focus on other dimensions of AP. For instance, ethical interaction capability becomes essential when organisations rely on actors' non-intellectual contributions (i.e., physical effort/labour and tangible resources). Similarly, ethical interaction capability is found to be critical when AP takes place beyond sales or consumption (i.e., non-transactional AP).

This dissertation is structured in three sections. The first two sections comprise papers 1 and 2 respectively, followed by a number of appendices. The third and final section includes the overall conclusion of the dissertation, highlighting the key findings, theoretical and practical implications and future research directions.

1. Paper I: Towards a Classification of Actor Participation

Abstract

Researchers and practitioners have largely embraced the importance of Actor Participation (AP). Many organisations, such as LEGO and IKEA, use the intellectual and non-intellectual resources of not just their consumers but also the public. While many believe that AP can yield a competitive advantage for organisations, the inter-relationships and distinctions among its different forms are still unclear. Further, research remains unclear on whether these different forms also vary based on the organisational capabilities required for their implementation. This conceptual paper aims to enhance the understanding of AP and provide an inclusive and detailed classification of its different types as well as the essential underlying organisational capabilities. The authors achieve this in two stages. First, they introduce three core dimensions of AP: *transactional intensity, tangibility of contributions,* and *interaction intensity,* which together reflect the distinct ways AP can be exercised. Second, they provide a capability portfolio, which associates a series of fundamental capabilities with the three core dimensions. The authors contribute to the customer participation and value co-creation research domains by adding to the conceptual clarity of AP.

Keywords: *Actor participation, Value co-creation, Core-dimensions, Organisational Capabilities*

1.1 Introduction

Incorporation of consumers and their resources in business processes is increasingly undertaken by organisations and has become a source of competitive advantage. We refer to this strategy as *Actor Participation* (AP). AP takes place when existing or prospective consumers, as well as the public or 'crowd' (Dong & Sivakumar, 2017; Svensson & Grönroos, 2008) contribute *intellectual* (knowledge and skills) and/or *non-intellectual* (labour and personal possessions) resources during or beyond *creation* and/or *consumption* of products/services. Organisations ranging from start-ups to large corporations have realised the significance of AP and attempted to leverage actors' resources in various ways. For example, LEGO uses creative consumer ideas to develop new LEGO sets, Facebook relies on users for generation and distribution of content, IKEA outsources assembly and transportation of its furniture to buyers, and Airbnb relies on the crowd to rent out their properties to create its hospitality service. These examples demonstrate that AP can be implemented in multiple forms, which extant literature has referred to using a range of terms: *co-creation, co-production, customer participation, customer engagement* etc.

The mixed use of such terms has led to conceptual confusion in this research domain, with some studies using the labels interchangeably without sufficient clarification on what exactly AP is (Mustak, Jaakkola, & Halinen, 2013; Ranjan & Read, 2016). Additionally, recent research (Dong & Sivakumar, 201d7; Ranjan & Read, 2016) has associated the conflicting and inconsistent empirical findings on the effect of AP to its conceptualisation. For example, some studies have associated AP with positive outcomes, such as greater satisfaction (Chan, Yim, & Lam, 2010), increased sales (Eisingerich, Auh, & Merlo, 2014) and faster development speed (Fang, 2008), whereas others have found negative effects, such as lower satisfaction (Bendapudi & Leone, 2003; Haumann, Güntürkün, Schons, & Wieseke, 2015). We further highlight that such conceptual confusion, as well as the mixed results in the literature, are attributable to a lack of clarity about what AP is. Therefore, in this paper, we aim to provide a thorough understanding of AP.

While integrating actors into core business activities has merit, a limited understanding of the strategic building blocks required can reduce or even destroy the value for organisations. Levi Strauss & Co., for example, ended its customised jeans program, *Original Spin*, due to a misalignment between this AP strategy and existing resources. The organisation did not have the resources and capabilities to deal with the diversity and heterogeneity of customers' designed jeans, which led to increased operational costs and an unstable business model (Piller, 2004). Likewise, Kraft Foods Australia experienced a nationwide backlash after organising a naming contest for its popular Vegemite spread (Gebauer et al., 2013); the winning name failed to represent the iconic image and integrity of the product, which led consumers to engage in negative word-of-mouth (WOM) regarding the brand. Example to the contrary includes such companies as Facebook, IKEA, and Airbnb, which have been successful not only in integrating actors' intellectual (Facebook) and non-intellectual contributions (IKEA and Airbnb) but also in understanding the essential organisational capabilities for AP, such as the use of technology. To this end, given the potential risk associated with AP, it is important for organisations to have a proper understanding of AP. First, they must recognise the key elements required in the design of an AP strategy and its various forms. Second, organisations should identify and prioritise the fundamental resources and capabilities for AP. Last, managers can make informed decisions by establishing a better alignment between AP strategy and investment in capabilities. This paper emphasises that identification of core dimensions of AP not only facilitates a greater understanding of its strategic breadth, but also allows organisations to identify the key areas of weakness and avoid poor performance (Karpen, Bove, & Lukas, 2012).

In this article, we aim to enhance the understanding of AP by presenting a theoretical framework that advances two research questions: (1) What are the core dimensions that delineate AP? (2) What capabilities are fundamental for the implementation of AP and, more importantly, do they vary based on different dimensions? We address these questions, first, by reviewing concepts related to AP across a range of research domains: technology-based services (Heidenreich, Wittkowski, Handrich, & Falk, 2014; Magnusson, 2009), open innovation (Alexy, Criscuolo, & Salter, 2011; Chesbrough, 2006), customer citizenship and voluntary behaviour (Bettencourt, 1997; Eisingerich et al., 2014), joint and self-production (Bendapudi & Leone, 2003; Chan et al., 2010), and customer engagement and involvement (Brodie & Hollebeek, 2011; Brodie, Hollebeek, Juric, & Ilic, 2011).

Following a comprehensive review of the literature, we identify a series of characteristics that could be potentially considered as the conceptual dimensions of AP. We then narrow these characteristics down based on those that have the highest potential in capturing various forms of AP. As a result, we propose three core dimensions: the *transactional intensity, tangibility of contributions,* and *interaction intensity*. 'Transactional Intensity' distinguishes the context in which AP takes place and can be further broken down to *transactional* or *non-transactional*. 'Tangibility of Contributions' refers to the type of resource actors contribute during participation, which can be classified as *intellectual* or *non-intellectual*. Last, the 'Interaction Intensity' specifies the format and scale of interactions between the organisation and actors during AP. It distinguishes interactions based on whether they occur in a *dyadic* or a *network* form. These dimensions and their extended classifications are explained fully later in this article.

To address the second research question, we conduct another comprehensive review of literature on capabilities related to AP or concepts associated with it, such as service-dominant logic (Karpen et al., 2012; Ngo & O'Cass, 2009), interaction and customer orientation (Chen, Li, Evans, & Arnold, 2017; Ramani & Kumar, 2008), relationship marketing (Reinartz, Krafft, & Hoyer, 2004), and industrial collaborations for customised solutions (Macdonald, Kleinaltenkamp, & Wilson, 2016; Tuli, Kohli, & Bharadwaj, 2007). We create a pool of AP-related capabilities that we classify under three categories, *Actor*, *Process* and *Leadership and Management.* We then narrow down and prioritise organisational capabilities based on their association with the three core dimensions of AP. We posit that organisational capabilities and their importance vary based on the core dimensions of AP. We propose that process-related capabilities, such as technology and absorptive capacities, are of the highest importance for the implementation of AP and are particularly linked with the two dimensions of transactional intensity and tangibility of contributions. As for actor and leadership and management categories, we suggest that relationship management and ethical interaction capabilities are vital for successful AP. Specifically, we contend that relationship management capability is highly associated with the interaction intensity dimension. Ethical interaction capability is of high significance when organisations are making decisions related to the transactional intensity of AP as well as tangibility of actors' contributions.

Our contribution to the AP literature is both theoretical and practical. From a theoretical perspective, we add value to the domain of customer participation and value co-creation by enhancing the understanding of AP and its conceptual breadth. This is facilitated by classifying AP based on the three core dimensions drawing from a wide range of research domains. We distinguish our classification from the literature, as there is a lack of a comprehensive framework of AP. Relatively few attempts have been made to classify AP (Frow, Payne, & Storbacka, 2011;

Grönroos & Voima, 2013; Mustak et al., 2013; O'hern & Rindfleisch, 2010; Piller, Ihl, & Vossen, 2010; Ranjan & Read, 2016). While these studies provide a good starting point, they share the shortcoming of being focused on the classification of AP in specific contexts, such as innovation and new product development (NPD) (O'hern & Rindfleisch, 2010; Piller et al., 2010). By focusing on specific facets of AP, prior research has led to a mature but isolated and dispersed understanding of AP.

Two recent studies have made the first scholarly effort at looking at AP in an exhaustive manner. Ranjan and Read (2016) were the first to define *value co-creation* as an umbrella concept comprising two categories, *co-production* and *value-in-use*. However, their classification distinguishes AP based on only one dimension. The second and more recent study, that of Dong and Sivakumar (2017), extended Rajan and Read's (2016) study by focusing on co-production (referred in the study to as customer participation). Although both these classifications offer valuable insights, they still do not capture the nuances of AP. Detailed recognition of the dimensions of AP is crucial to gaining a holistic understanding of this strategy and its distinct but inter-related forms. Furthermore, a thorough understanding of AP can improve the consistency of findings in empirical assessments of the concept. Identification of the core dimensions of AP provides the foundation for determining the underlying organisational capabilities fundamental for AP. This leads to the second contribution of this study.

Our classification of organisational capabilities essential for AP extends prior research by suggesting that capabilities vary based on different circumstances of AP. The classification provides detailed insight into linking specific organisational capabilities to different forms of AP. The scholarly advances in this field remain largely unexplored. Most of the literature has focused on new capabilities that organisations develop by transforming actors' contributions through the

AP process (Carbonell, Rodríguez-Escudero, & Pujari, 2009; Fang, 2008). Very few studies have acknowledged that certain organisational capabilities are required to successfully execute AP in the first place, and even these studies have focused on service-dominant logic[1] (Karpen et al., 2012; Madhavaram & Hunt, 2008) or narrowly chosen perspectives on AP such as innovation (Hosseini et al., 2017; Kazadi, Lievens, & Mahr, 2016). As such, existing capability frameworks do not cater to the peculiarities of AP. Our classification of key AP capabilities will address this notable research gap.

From a practical perspective, our classification provides a guideline for managers in assessing whether and in what form AP is suited for their organisation. Managers can distinguish various forms of AP and gain an understanding of how to design and implement them. Our organisational capability framework can be used as a blueprint for planning an AP strategy that will yield a competitive advantage. We also guide managers on the type of organisational capabilities they need to prioritise and invest in for successful implementation of AP. Managers can use the capability portfolio to see below the visible surface of AP and focus on the long-term development of fundamental resources to ensure sustainable growth and profitability. Without a thorough understanding of AP and its building blocks, organisations may fail to foresee the pitfalls of integrating external actors into their business.

In the next section, we provide a comprehensive investigation into the AP concept and related literature followed by identification of its core dimensions. We then create a matrix of these dimensions that highlights various forms of AP. Next, we review organisational capabilities related to AP and complement our initial three-dimensional model with a second framework that highlights fundamental capabilities associated with the three core dimensions of

[1] A concept related to AP

AP. Finally, we provide an in-depth discussion of research and managerial contributions, as well as future research directions.

1.2 Theoretical Background

1.2.1 Actor Participation Concept

The literature on AP is voluminous. The evolution of the concept began with consumers' roles in the provision of physical effort or labour in service delivery and self-service offerings (Lovelock & Young, 1979) and was extended to actors' roles in expending intellectual effort (Kohler, 2015; Storbacka, Brodie, Böhmann, Maglio, & Nenonen, 2016) – see Table 1.1.

The abundance of terminology – customer participation (Chan et al., 2010; Eisingerich et al., 2014; Fang, Palmatier, & Evans, 2008), co-production (Auh, Bell, McLeod, & Shih, 2007; Etgar, 2008), customer participation in co-production (Bendapudi & Leone, 2003; Troye & Supphellen, 2012), co-creation (Heidenreich et al., 2014; Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010), customer engagement (Brodie et al., 2011; Van Doorn et al., 2010), customer involvement (Carbonell et al., 2009), and interaction orientation (Gruner & Homburg, 2000; Ramani & Kumar, 2008) used across the literature has created a conceptual confusion in this field (see Appendix A for a complete list of terms and definitions used in extant literature). For example, in one study 'customer participation' is used to refer to involuntary consumer roles in the joint production of services (Chan et al., 2010), while another study uses the same term to refer to voluntary consumer behaviour (Eisingerich et al., 2014). Similarly, Hoyer et al. (2010) use the term 'co-creation' to refer to consumers' participation in innovation and NPD, while

Heidenreich et al. (2014) use the same term to refer to consumers' role in customisation of products and services.

Table 1.1: Evolution of Actor Participation Concept and Literature

Concepts and Literature	Exemplary Studies
Customer contribution of physical effort and labour in service delivery	(Lengnick-Hall, 1996; Mills, Chase, & Margulies, 1983); (Kelley, Donnelly Jr, & Skinner, 1990; Mills & Morris, 1986)
Self-service	(Bateson, 1985; Dabholkar & Bagozzi, 2002; Lovelock & Young, 1979; Meuter & Bitner, 1998)
Lead user methods	(Lilien, Morrison, Searls, Sonnack, & Hippel, 2002; Von Hippel, 1986)
Market and customer orientation	(Kohli, Jaworski, & Kumar, 1993; Narver & Slater, 1990; Sheth, Sisodia, & Sharma, 2000)
Customer citizenship behaviour	(Bettencourt, 1997)
Open innovation	(Chesbrough, 2003 and 2006)
Customisation	(Etgar, 2008; Piller, Moeslein, & Stotko, 2004; Piller & Müller, 2004)
Customer and actor engagement	(Brodie et al., 2011; Van Doorn et al., 2010; Verhoef, Reinartz, & Krafft, 2010)
Value co-creation	(Prahalad & Ramaswamy, 2000; Ranjan & Read, 2016; Vargo & Lusch, 2004)
Shared consumption and economy	(Benoit, Baker, Bolton, Gruber, & Kandampully, 2017; Cova & Dalli, 2009)

Other recent studies have acknowledged this confusion in the use of labels and its impact on conceptualisation (Mustak et al., 2013; Ranjan & Read, 2016). Ranjan and Read (2016) were the first to shed light on the conceptual confusion present in the literature by justifying *value co-creation* as an overarching concept that incorporates all forms of participation and collaboration among customers and organisations (e.g., innovation, customisation, self-service, collaborative consumption etc.). Dong and Sivakumar (2017) extend Ranjan and Read's (2016) work by stating that *customer participation* is the proper concept and terminology, as this term has been the most used in marketing over a long run. Although the authors introduce customer participation as an inclusive concept, they still distinguish it from customer innovation and customer engagement concepts. The authors provide several key reasons supporting their assertion. First, the term captures customers' involvement in processes related to both good-dominant and service-dominant logic (Vargo & Lusch, 2016), which has been one of the factors contributing to conceptual confusion (Ranjan & Read, 2016). Second, it does not include the connotation of 'co' – as in co-production and co-creation – that is another source of confusion over whether interactions are between the organisation and the consumer or only among consumers. Third, the term 'customer participation' is more inclusive in its ability to embrace all forms of product/service interactions.

While the majority of the literature has used the term *consumer* or *customer*, considering them as the main participants, we propose that 'actors' is a more accurate term (Akaka & Chandler, 2011; Hollebeek, Srivastava, & Chen, 2016; Storbacka et al., 2016). Not all participants are necessarily consumers. For example, Uber drivers are actors drawn from the general crowd or public who wish to make extra money with their automobiles and are mainly considered as partial employees of the organisation rather than consumers. Likewise, people who participate in idea/design contests may not purchase any of the organisation's offerings but are still important players in this strategy. Participants can, therefore, range from existing or prospective consumers to members of the public or crowd. Another notable point is that, although some researchers have argued that the terminology and conceptual boundaries of different forms of AP should be separate, we argue that a more holistic approach to conceptualising this phenomenon requires theoretical rigour. More importantly, it sets a proper foundation for identification and introduction of core dimensions of AP to facilitate making distinctions between various forms of AP (Ranjan & Read, 2016). Against this background, we use and prefer the term *Actor Participation*. We follow and extend the advances made by Dong and Sivakumar (2017) and Ranjan and Read (2016) to conclude that 'actor participation is a better term for the purposes of this research because it captures all the resource exchange and value-creating activities between organisations and actors in business-to-consumer (B2C) markets.[2]

In the following section, we review the most relevant classifications of AP in the literature, before developing our classification model through the identification of the core dimensions of AP.

1.2.2 Existing Classifications of Actor Participation

We reviewed classification models provided across a wide variety of relevant research areas, such as customer participation, open innovation, customer involvement in NPD, and value co-creation. Table 1.2 provides a detailed and direct comparison of existing classifications along with the dimensions used in each model. Dimensions such as the *degree of autonomy and*

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[2] AP strategy in business-to-business (B2B) context is different from B2C and is primarily based on contracts and formalised agreements, hence, is not the focus of this study.

openness (O'hern & Rindfleisch, 2010; Piller et al., 2010), *degree of interaction* (Piller et al., 2010) and *stages of participation* (Frow et al., 2011; Grönroos & Voima, 2013) have been highlighted more frequently in studies. Other dimensions, such as the *reason for participation* (Nuttavuthisit, 2010) and the *degree of technology utilisation* in service design and delivery (Bolton & Saxena-Iyer, 2009), have also been addressed in classifications. A few studies in the innovation and NPD context have also distinguished between *solicited* and *unsolicited* AP[3] (Nuttavuthisit, 2010; Zwass, 2010). As mentioned previously, the majority of these classifications have focused on specific contexts, such as AP in innovation and NPD, rather than a more comprehensive and integrative scope. A comprehensive delineation of AP is, therefore, still at the stage of early development, if not entirely lacking (Grönroos & Voima, 2013).

[3] Solicited refers to when the organisation has initiated and asked actors to participate whereas unsolicited involves initiatives that are not triggered by the organisation and participation is self-driven and motivated by actors (Alexy et al., 2011).

Table 1.2: Review of Classifications factors for Actor Participation and Allied Concepts

Characteristics used to classify AP	**Dong and Sivakumar, 2017**	**Frow et al. (2011)**	**Grönroos and Voima (2013)**	**Mustak et al., 2013**	**Nuttavuthisit (2010)**	**O'hern and Rindfleisch (2010)**	**Piller et al. (2010)**	**Piller, Vossen, and Ihl (2012)**	**Ranjan and Read (2016)**	**Youjae and Gong, 2013**	**Zwass (2010)**
Type of information								✓			
Type of value created			✓	✓				✓	✓		
Type of consumer autonomy						✓					
Type of customer input											
Type of participant	✓										
Degree of consumer autonomy							✓				✓
Management of AP											
Context/Nature of participation	✓									✓	
Scope of interaction							✓				
Stages of innovation/product/service creation process or value-chain		✓	✓				✓				
Reason for participation					✓						
Solicited vs. unsolicited					✓						✓

A few studies have classified AP based on the *type of value created*, namely value-in-exchange and value-in-use (Grönroos & Voima, 2013; Mustak et al., 2013; Ranjan & Read, 2016). The distinction between the two relies on whether participation takes place for the creation of the core offering (i.e., value-in-exchange) or creation of the consumption value (i.e., value-in-use). The former, which Ranjan and Read (2016) refer to as co-production, includes a variety of activities involving direct or indirect collaboration with consumers for production and delivery of offerings. The latter entails participation activities that are required for consuming the offering and creating a personalised consumption experience, which leads to the creation of value-in-use (Grönroos & Voima, 2013). For example, value-in-use is derived when people learn how to use, repair and maintain a product (Ranjan & Read, 2016). While Ranjan and Read's (2016) study was the first advance in providing a comprehensive classification framework and makes a notable contribution to this research domain, the concept of co-production is used in a rather flexible way. For example, the study classifies customisation, self-design, participation in NPD, and self-service offerings as co-production. We argue later in this paper that such activities are still different from one another in terms of the transactional intensity, the tangibility of actors' contributions, and the intensity of interactions between the organisation and actors.

Dong and Sivakumar (2017) extended Ranjan and Read's (2016) framework by introducing a typology of customer participation, differentiating it from customer innovation and engagement. The authors used the two dimensions of *who* and *what* to introduce three types of customer participation. The 'who' dimension reflects the type of participant. It distinguishes whether the participation activity can be performed only by customers or can be done by the organisation as well. The 'what' dimension distinguishes situations in which participation is critical for service provision from those in which it is optional. Based on these two dimensions, the authors introduce three types of customer participation.[4]

While Dong and Sivakumar's (2017) study has been the latest to shed light on the conceptual confusion in this research domain, their classification differentiates customer participation from concepts such as customer innovation or engagement and, hence, does not capture the nuances across all different forms of AP. We suggest that it is possible to look at AP as a comprehensive phenomenon, without limiting it to a specific context (such as innovation or co-production). We pursue this by demonstrating that AP can be classified based on more than two dimensions, which can better explain its conceptual breadth. More specifically, a combined version of the perspectives used by Ranjan and Read (2016) and Dong and Sivakumar (2017) will lead to an exhaustive classification of AP. Dong and Sivakumar's (2017) typology focuses on two-way interactions between the organisation and customers; we extend our model to participants other than customers (i.e., actors can be members of the public or crowd). Furthermore, we integrate other forms of AP that involve exchanges among different actors and occur beyond the organisation–actor dyad. Therefore, our research builds on the two mentioned recent classification frameworks and covers further nuances by (1) introducing the three core dimensions of AP, and (2) considering AP as an overarching umbrella concept.

In the following section, we identify and introduce the three core dimensions of AP. We discuss how we arrive at these dimensions and define each dimension through a detailed articulation of its sub-types. Then, we combine the core dimensions and their respective sub-

[4] *Mandatory customer participation* refers to activities for which customer participation is essential for the service to be produced or delivered. The authors provide examples such as customer's presence for a haircut or participation in setting up the home computer and Internet network. *Replaceable customer participation* involves those activities where the customer's role is critical for provision of the service but can also be performed by the organisation. For example, customers can substitute employees in a car wash or filing tax returns. *Voluntary customer participation* refers to those activities that are not aimed for production or delivery of services but rather for their improvement. An example of this would be provision of reviews to speed up the Internet setup process.

types to create a classification model, a 2 x 3 x 2 matrix that facilitates differentiation of all the various forms of AP.

1.3 Core Dimensions and Classification Model of Actor Participation

1.3.1 Core Dimensions

After the identification of relevant research areas that have discussed AP and concepts associated with it (summarised in Table 1.1), we conducted a structured search for the relevant articles using various databases. The databases were queried using keyword string searches such as (1) ‘co-creation’ (2) ‘Customer Participation’ (3) ‘Co-production’ (4) ‘Customer Engagement’ (5) ‘Customer Interaction’ (6) ‘Open Innovation’ (7) ‘Customer Involvement’ (8) ‘Customer Citizenship’ (9) ‘Customer Participation in New Product Development’ (10) ‘Customer Integration’, etc. The search strings were also combined using ‘AND, OR’ commands in the keyword search.

After a systematic review of this literature, we came up with a series of characteristics[5] that could potentially form the conceptual dimensions of our classification. Then, to provide a parsimonious classification, we refined and reduced these dimensions (Table 1.3) based on their fit and ability in capturing variations across different forms of AP as well as consultations with academic and professional experts in this area. For example, we excluded “*ownership of the outcome”,* as it is very specific to AP in the innovation and NPD context and is not generalisable to other forms of AP (Appendix B). Similarly, we removed the “*type of value”* due to being too

[5] Inclusive but not limited to the items outlined in Table 2; see Appendix B for an extended list of characteristics.

broad and not properly distinguishing between different forms of AP. Consequently, we kept dimensions that could commonly define the differences across all the forms of AP. Our final selected dimensions address three fundamental aspects of AP: (1) the context in which AP occurs, (2) the type of resource or input being exchanged and contributed by actors during participation, and (3) the format and scale of interactions during AP.

In the following section, we introduce each core dimension and its components.

Table 1.3: Core Dimension of Actor Participation

Factor	Definition	Exemplary Studies
Transactional intensity	1. Transactional 2. Non-transactional	(Bettencourt, 1997; Dong, 2015; Eisingerich et al., 2014; Jaakkola & Alexander, 2014)
Tangibility of contributions	1. Knowledge and skills *(Intellectual contributions)* 2. Labour *(Non-intellectual contributions)* 3. Tangible resources *(Non-intellectual contributions)*	(Breidbach & Maglio, 2016; Hoyer et al., 2010; Nambisan & Baron, 2009; Ngo & O'Cass, 2009)
Interaction intensity	1. Dyadic 2. Network	(Chan et al., 2010; Merz, He, & Vargo, 2009; Mustak et al., 2013)

1.3.1.1 Transactional Intensity of Actor Participation

'Transactional intensity' relates to the context in which actors engage with the organisation. Engagement with the organisation can occur either during or outside the transaction process. We classify this dimension as *transactional* or *non-transactional*. Transactional AP occurs during the sale and/or consumption of product/service offerings. Actors' participation is usually necessary for transactional AP for completion of tasks and actors are primarily participating in pursuit of their own interests rather than in a supplementary role to help the organisation (Dong, 2015). Actors' performances are primarily defined and guided by the organisation (Heidenreich et al., 2014; Ranjan & Read, 2016) to maintain the quality of offerings. Actors' roles in technology-based (e.g., ATMs, online shopping etc.), Internet-based (Facebook, LinkedIn etc.) services as well as do-it-yourself (DIY) offerings (e.g., IKEA) are all examples of transactional AP. In addition, modern strategies that offer peer-to-peer (P2P) services such as Uber, Airbnb and Alibaba are examples of business models based entirely on transactional AP. It is notable that P2P business models are two-sided (Kohler, 2015) and have two sets of actors, the seller/provider side as well as a buyer/user side. The participation of all these actors is aimed towards the creation and delivery of the service offering. Although the organisation in such P2P services has an intermediary role and provides the platform, it still plays a key part in dictating the rules and regulations that should be followed by all actors.

AP can also be implemented outside transactions. Non-transactional AP occurs outside the sale and/or consumption of offerings and actors' roles are always voluntary, self-driven and discretionary in nature (Bolton & Saxena-Iyer, 2009; Brodie et al., 2011; Dong, 2015). Participation in non-transactional AP is supplementary; actors are not playing the role of a consumer per se but, rather, are trying to help the organisation. Actors usually participate in non-transactional AP for monetary and non-monetary rewards (Füller, 2010). Monetary rewards are typically offered in idea/design contests, while non-monetary rewards derive from actors' social and psychological values. Social rewards may include engaging with the organisation's brand, bonding and socialising with peer participants or gaining social status and recognition (Etgar, 2008; Holbrook, 2006). Psychological rewards result from actors' participation experience and include enjoyment, fun, self-fulfilment, self-efficacy and confidence (Füller, 2010; Lusch, Brown, & Brunswick, 1992; Yim, Chan, & Lam, 2012). Concepts associated with non-transactional AP have been studied within customer citizenship (Bettencourt, 1997; Eisingerich et al., 2014; Rosenbaum & Massiah, 2007), relationship marketing, customer engagement (Brodie, Ilic, Juric, & Hollebeek, 2013; Van Doorn et al., 2010) and open innovation (Chesbrough, 2006) literature. Idea or design contests, product/service support discussion forums, self-cleaning of fast-food trays after a meal, and creating positive WOM are all examples of non-transactional AP (Bettencourt, 1997; Nambisan & Baron, 2009). A summary of some of the literature on transactional and non-transactional AP is provided in Table 1.4.

Table 1.4: Literature related to Transactional Intensity of Actor Participation

Transactional Intensity of AP	Examples of AP	Exemplary Studies
Transactional	Product/service customisation; booking tickets; use of self-service technologies; provision of information in professional services, etc.	Auh et al. (2007); Bitner, Booms, and Mohr (1994); Chan et al. (2010); Heidenreich et al. (2014) Hibbert, Winklhofer, and Temerak (2012); Kohler (2015); Lovelock and Young (1979); Sharma, Conduit, and Hill (2014); Yim et al. (2012); etc.
Non-transactional	Participation in innovation or NPD; distribution of word of mouth; promoting the organisation and its brand; engagement in online/offline brand communities; provision of constructive feedback and suggestions; idea/design contests; unsolicited advice, etc.	Alexy et al. (2011); Bettencourt (1997); Bolton (2011); Chang and Taylor (2016); Cui and Wu (2016); Eisingerich et al. (2014); Fang et al. (2008); Jaakkola and Alexander (2014); Kellogg, Youngdahl, and Bowen (1997) ; Rosenbaum and Massiah (2007); Van Doorn et al. (2010); etc.

1.3.1.2 Tangibility of Contributions of Actors

One of the prominent factors distinguishing various forms of AP is the type of resources actors contribute during participation. These resources are classified as *intellectual* and *non-intellectual*. Intellectual contributions are highly intangible and include *information*, *knowledge* and *skills*, while non-intellectual contributions include *labour* or *physical effort* and *tangible objects* such as personal possessions, equipment etc. (Dong, 2015; Etgar, 2008; Hoyer et al., 2010). Knowledge and skills can be associated with the product/service offering or its promotion, consumption, technology, the market, and even competitors (Hunt, 2004; Nambisan & Baron, 2009; Ngo & O'Cass, 2009). Some studies have categorised information and knowledge into *need* and *solution,* which organisations may lack internally (Chang & Taylor, 2016; Nambisan, 2002; Piller et al., 2010). ‘Need’ information and knowledge incorporate problems, latent needs, preferences, motivation and decision-making processes of the market, which are communicated through ongoing interactions with the organisation (Blazevic & Lievens, 2008; Nambisan, 2002; Piller et al., 2010). Information and knowledge in form of solutions deal with the transformation of need information into feasible solutions (Piller et al., 2010; Piller, Vossen, & Ihl, 2012; Poetz & Schreier, 2012). Actors’ expertise and skills, which are domain-specific and acquired through prior experience, training, education etc., contribute to the provision of solutions (Blazevic & Lievens, 2008). Such skills and expertise may be graphic design, technical, numerical, IT or technological, analytical and so on (Dong, 2015). Organisations value actors’ knowledge and skills, as they contribute to the creation of dynamic capabilities and are a great source of competitive advantage (Blazevic & Lievens, 2008; Lusch, Vargo, & O’Brien, 2007; Prahalad & Ramaswamy, 2013).

Labour, a non-intellectual contribution, is provided in situations where AP replaces the organisation's workforce or employees' basic physical tasks for delivery of product/service offerings (Dong, 2015; Zwick, Bonsu, & Darmody, 2008). Actors expend time and effort to minimise the costs of the organisation as well as their own (Fang, 2008). Examples include the provision and use of technology-based services such as ATMs, and self-check-in and -out kiosks at airports and supermarkets. In some more recent forms of AP (e.g., peer-to-peer services such as Uber), actors provide labour in return for income, thus entirely replacing the organisation's workforce. By outsourcing labour and physical effort to actors, organisations are able to reduce their operational costs and in turn offer lower prices on the market (Etgar, 2008; Mills & Morris, 1986). IKEA is a good example, where consumers can buy stylish home furniture at lower prices in return for their participation role in transportation and assembly. Uber is another example, having disrupted the taxi industry by offering lower prices than local taxis. The organisation has reduced its costs to a minimum by owning no automobiles and outsourcing the entire process to the crowd who like to make extra money with their automobiles. On the other hand, consumers – i.e., taxi riders – also save time and money by using Uber's app to request a ride at their preferred location.

Tangible objects are another type of non-intellectual contribution that actors may provide during the AP process. These can include equipment, inventory or any other object that can become an asset to the organisation (Agrawal & Rahman, 2015; Arnould, Price, & Malshe, 2006). Such tangible contributions can be personal possessions owned or created by actors, which they either sell, share or rent out in the AP process (Benoit, Baker, Bolton, Gruber, & Kandampully, 2017; Dong & Sivakumar, 2017). Uber, Gumtree (owned by eBay), Etsy, Alibaba, Airbnb and crowd-funding platforms such as Kickstarter are all examples in which actors provide equipment (e.g., automobiles), inventory (e.g., auctioned products), assets (e.g., property) or financial support, which are all essential resources for delivery of the organisations' offering. A summary of the literature addressing the different contributions of participants during AP is provided in Table 1.5.

Table 1.5: Literature related to Tangibility of Actors' Contributions

Tangibility of Contributions	Examples of AP	Exemplary Studies
Knowledge and skills (Intangible)	Information provision in NPD; Information provision in service delivery; Customer design skills; Provision of technical knowledge; Suggestions regarding marketing and production strategy, etc.	Chan et al. (2010); Chang and Taylor (2016); Dong (2015); Franke and Schreier (2010); Haumann et al. (2015); Nambisan and Baron (2009); Ngo and O'Cass (2009); Piller et al. (2012); Troye and Supphellen (2012); etc.
Labour and physical effort (Semi Tangible)	Customers' role in do-it-yourself products; Assembling products; Self-delivery or pick up of products; Customers' role in fast-food restaurants, self-check-in/out kiosks, etc.	Bendapudi and Leone (2003); Dong (2015); Etgar (2008); Fitzsimmons (1985); Hoyer et al. (2010); Heidenreich et al. (2014); Fitzsimmons (1985); Meuter, Ostrom, Roundtree, and Bitner (2000); Zwick et al. (2008)
Tangible Possessions (Highly Tangible)	Provision of tangible resources such as personal possessions, funding	Agrawal and Rahman (2015); Arnould et al. (2006); Benoit et al. (2017); Dong and Sivakumar (2017); Jaakkola and Alexander (2014); Madhavaram and Hunt (2008); Van Doorn et al. (2010)

1.3.1.3 Interaction Intensity of AP

The interaction intensity of AP refers to the format and scale of interactions that occur between and among the actors. These can be in a *dyadic* or *network* form. Dyadic AP is primarily a two-way interaction between the organisation and actors. This interaction can take the form of one-to-one (between the organisation and an individual) or one-to-many (between the organisation and several actors). Examples include financial and professional services where the actor (client) and the organisation (financial institution) discuss the problem and jointly decide on possible solutions (Auh et al., 2007; Chan et al., 2010). Network AP moves beyond the mere two-way interaction and can also take place among actors in addition to interactions with the organisation (Merz, He, & Vargo, 2009; Mustak et al., 2013). Content generation on social network/media platforms such as Facebook, Twitter, YouTube, as well as idea/design contests, are examples of network AP. Furthermore, peer-to-peer services, which are typically *triadic* (including the organisation as the platform provider, a peer service provider and a peer service seeker) are also a type of network AP (Benoit et al., 2017). It is also notable that some examples of network AP can take place independently of any involvement by a certain organisation or brand – examples include spreading positive WOM as well as open source software development such as Linux. A summary of the literature highlighting dyadic and network AP is provided in Table 1.6.

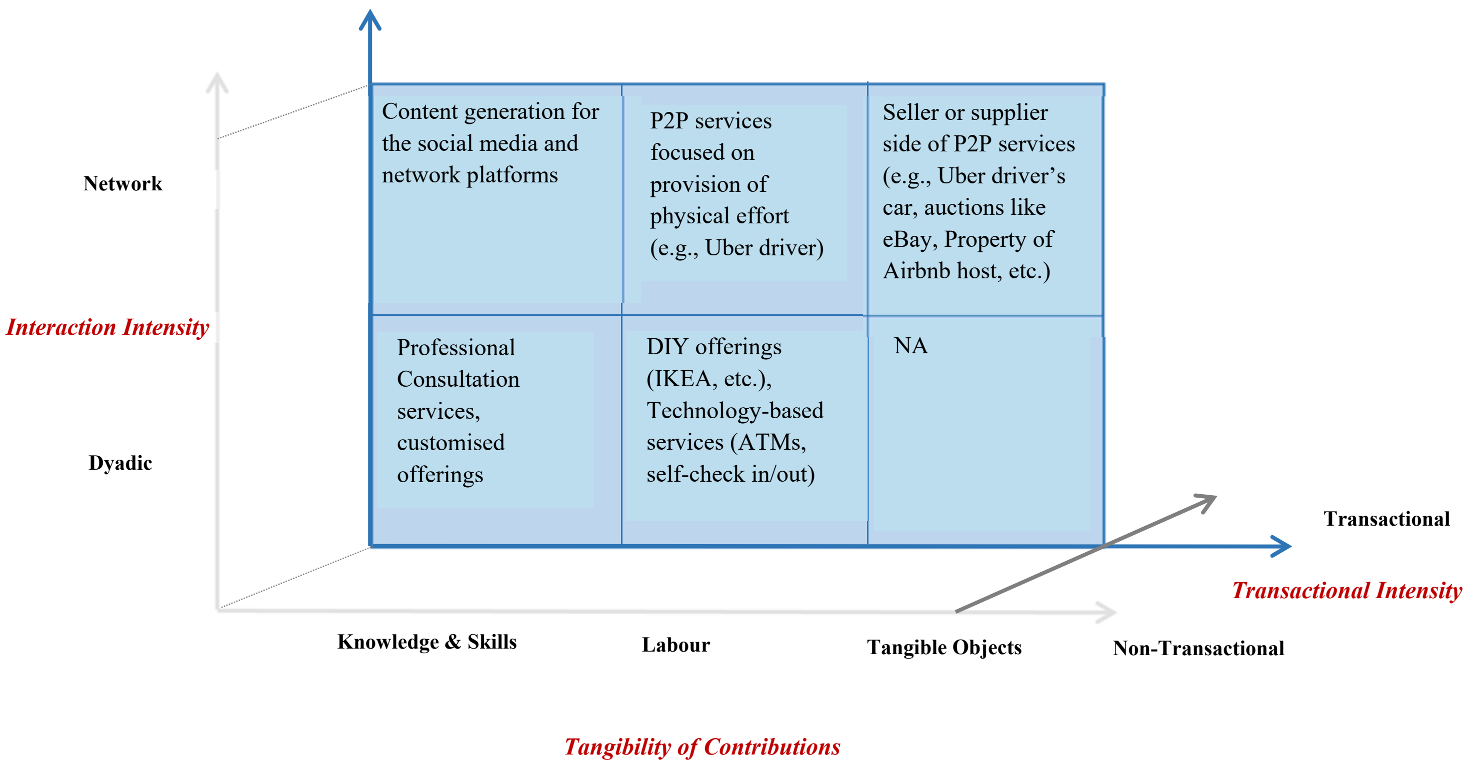
Table 1.6: Literature related to Interaction Intensity of Actor Participation

Interaction Intensity of AP	Examples of AP	Exemplary Studies
Dyadic	Two-way interactions during customisation, consultation in professional services, product design; technology-based services, etc.	Auh et al. (2007); Bitner, Faranda, Hubbert, and Zeithaml (1997); Chan et al. (2010); Etgar (2008); Heidenreich et al. (2014); Troye and Supphellen (2012); Dabholkar and Bagozzi (2002); Meuter et al. (2000); Ramani and Kumar (2008)
Network	Networked interactions in brand communities, peer-to-peer services, open innovation, etc.	Adjei, Noble, and Noble (2010); Bardhi and Eckhardt (2012); Chesbrough (2006); Gebauer, Füller, and Pezzei (2013); Kohler (2015); Nenonen and Storbacka (2010); Schau, Muñiz Jr, and Arnould (2009); Merz et al. (2009); Luo and Toubia (2015)

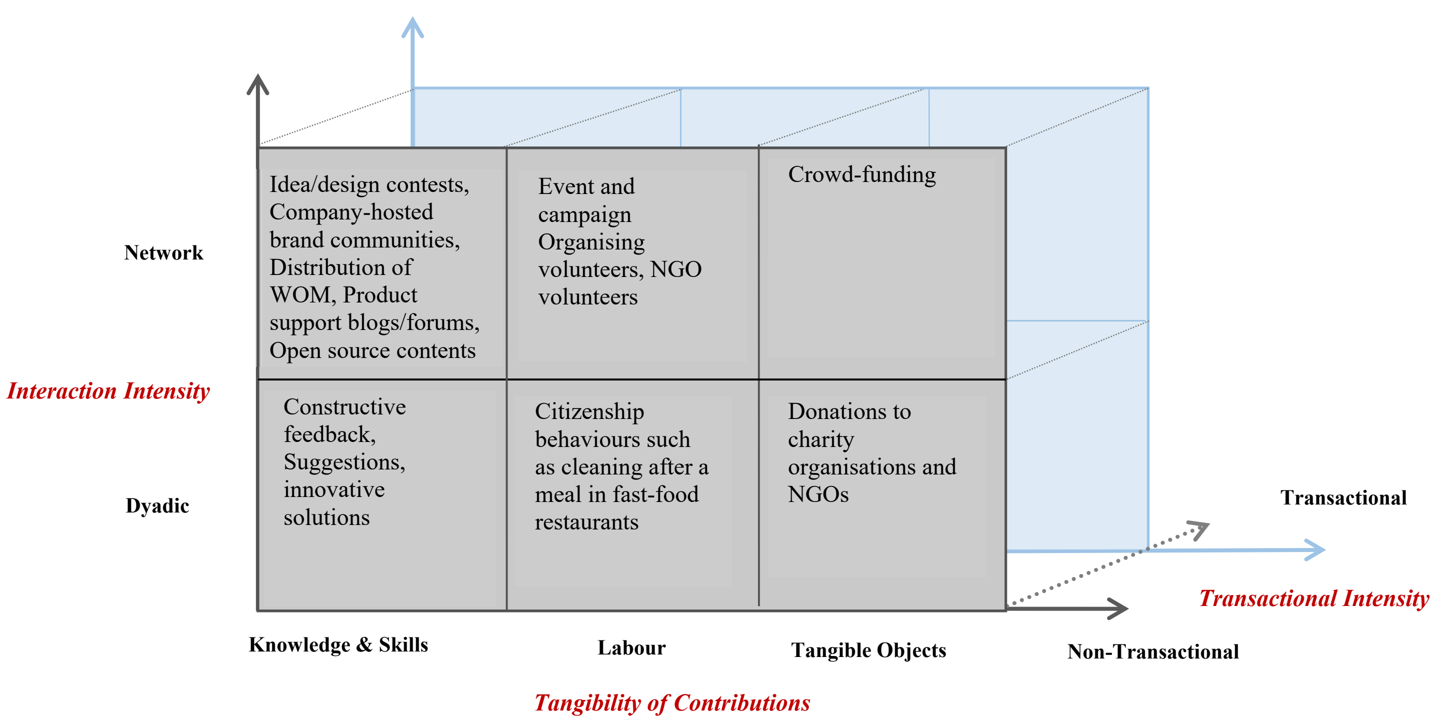
1.3.2 Actor Participation Classification Model

Based on the combination of the three core dimensions, we introduce a classification model, a 2 x 3 x 2 matrix, distinguishing different forms of AP on a three-axis graph (**Figure 1.1**). For ease of interpretation, the model is simplified into two-dimensional graphs, where the first dimension (Transactional Intensity) is presented separately in each graph. **Figure 1a** represents all the transactional forms of AP, varying based on the other two dimensions, tangibility of contributions and interaction intensity of AP. **Figure1b** represents all the non-transactional forms of AP, varying based on the other two dimensions. It is notable that organisations may implement and engage more than one form highlighted in each cell, or even across cells of the model.

Figure 1.1: Classification of Actor Participation



1a: Classification based on transactional AP



1b: Classification based on non-transactional AP

In the following section, we address the final research question of our study, which focuses on the organisational capabilities essential for the implementation of AP. Recognition of these capabilities is fundamental for optimal allocation of resources to AP strategy and ensuring sustainable competitive advantage and performance.

1.4 Organisational Capabilities for Actor Participation

In this section, we draw from the resource-based view (RBV) and dynamic capability theories to identify organisational capabilities that are fundamental for AP. More importantly, we explore whether and how the importance of such capabilities differs based on the core dimensions of AP. Finally, consistent with the classification matrix in the previous section, we propose a model demonstrating the organisational capabilities required for each form of AP.

Organisational capabilities are complex bundles of skills and knowledge-based resources that allow organisations to deploy their resources and assets to gain a competitive advantage (Capron & Hulland, 1999; Day, 1994). RBV (Barney, 1991) argues that capabilities stem from collections of resources that are valuable, rare, inimitable and non-substitutable (VRIN) and which enable long-term superior performance. RBV considers capabilities, particularly dynamic capabilities, as important organisational assets and resources (Wade & Hulland, 2004). Dynamic capability theory concentrates on organisational processes that gain, integrate, reconfigure and release resources to create value and long-term advantage in turbulent environments (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). We use RBV and dynamic capability theories as a guideline for exploring organisational capabilities required for AP (Kohtamäki & Rajala, 2016; Zhang, Jiang, Shabbir, & Du, 2015).

Although an underlying motivation for using AP is to add actors' competencies to the organisation's portfolio of capabilities (Chen et al., 2017), the fact that execution of AP itself requires certain capabilities should not be overlooked (Harrison, Bosse, & Phillips, 2010). In fact, miscalculated application of AP can harm rather than benefit the organisation. Research has shown that the integration of various actors may divert organisational goals and pose challenges such as inconsistent communication, misinterpretation, conflict etc. (Waligo, Clarke, & Hawkins, 2014). Also, many organisations fail in managing the transition from doing everything in-house to allocating parts of the business to actors (Enkel, Gassmann, & Chesbrough, 2009; Van de Vrande, De Jong, Vanhaverbeke, & De Rochemont, 2009). For example, Henkel launched a package design contest for its Pril dishwashing detergent, which led to the submission of negative ideas due to the company's lack of governance during the contest (Gebauer, Füller, & Pezzei, 2013; Verhoef, van Doorn, & Beckers, 2013). On the other hand, Threadless.com, a platform for design contests, has developed a large community of designers using good relationship management and ethical interaction capabilities. This community rates and scores designs weekly and ensures fair selection of winners, who are rewarded with cash and receive royalties on the sale of their designs.

Against this background, we emphasise the importance of an alignment between an organisation's capabilities and the type of AP it practices. In the following section, we aim to identify critical capabilities for AP and understand how they are associated with the three core dimensions of transactional intensity, tangibility of contributions and interaction intensity of AP. We begin with a comprehensive review of existing research related to organisational capabilities across various research domains, such as interaction orientation, co-production, relationship marketing, customer orientation etc.

1.4.1 Review of literature on organisational capabilities related to Actor Participation

It is worth noting that the majority of research has focused on the expertise that *actors* need to have to participate successfully (Auh & Menguc, 2007; Chen, Tsou, & Ching, 2011). Less research has been dedicated to the capabilities that organisations need to possess or to build for implementation of AP. More attention has been dedicated to how actors' resources add value to and enhance current organisational capabilities or facilitate developing new ones (Chen et al., 2017; Fang, 2008). In other words, organisational capabilities have by and large been investigated as consequences of AP (Preikschas et al., 2017). For example, several studies found that organisations will learn to develop better and faster service recovery expertise by engaging external actors (Dong, Sivakumar, Evans, & Zou, 2014; Roggeveen, Tsiros, & Grewal, 2012).

After a comprehensive analysis of the literature on organisational capabilities related to AP and associated concepts (see Appendix C), three main shortcomings can be identified. First, most of the existing research concentrates on capabilities in narrower contexts, such as innovation or customisation (Hosseini et al., 2017; Saldanha, Mithas, & Krishnan, 2017; Ulaga & Reinartz, 2011). Second, is that majority of the literature discusses organisational capabilities pertaining to industrial collaborations (Macdonald et al., 2016; Preikschas et al., 2017; Tuli et al., 2007), with less attention paid to B2C markets. Third, some studies examine capabilities related to AP in single industries, such as pharmaceutical and health care (Kazadi et al., 2016; Sharma, Conduit, & Hill, 2014); therefore, their recommendations are not generalisable to all industries.

Of all the existing studies, four have applied a more holistic outlook to organisational capabilities required for AP (Karpen et al., 2012; Madhavaram & Hunt, 2008; Ngo & O'Cass, 2009; Ramani & Kumar, 2008). For example, Madhavaram and Hunt (2008) and Ngo and O'Cass (2009) focus on the classification of organisations' intangible resources in relation to service-dominant logic. Madhavaram and Hunt (2008) however, explore and classify capabilities in service-dominant logic rather than specifying the actual capabilities. Ngo and O'Cass (2009) introduce three groups of capabilities but do not associate them with different forms of AP. Ramani and Kumar (2008) introduce the concept of interaction orientation as a combination of four inter-related capabilities that facilitate engagement of customers in both B2B and B2C markets. Last, Karpen et al. (2012) develop a portfolio of six strategic capabilities that together constitute a service-dominant logic orientation. Although the study by Karpen et al. (2012) is by far the most comprehensive framework of capabilities, their focus is on service-dominant logic, which, albeit related, it is different from our conceptualisation of AP.

While these recent studies provide valuable insights, they neither capture nuances nor specify whether capabilities vary based on different facets of AP. For example, we aim to understand whether and how the capabilities crucial to exchanging knowledge and skills are different from those needed to exchange labour and tangible resources. Further, it would be interesting to explore how capabilities for conducting idea/design contests or creating brand communities can differ from those necessary for creating peer-to-peer service platforms. On another note, our analysis of extant research shows an overlap of some capabilities across different studies. For example, several capabilities, such as relational interaction and empowerment, are common to the three studies of Karpen et al. (2012); Ramani and Kumar (2008) and Sharma et al. (2014) (see Appendix C for more details). We suggest that the underlying reason for these overlaps can be explained by understanding the association between core dimensions of AP and organisational capabilities. To this end, we present a portfolio of capabilities relative to the three core dimensions. We do this by drawing from our literature review as well as the literature on market and customer orientation, relationship marketing and industrial collaboration.

To derive the capability framework, we followed a two-phase method. In the first phase, we conducted a structured literature review to compile existing knowledge on AP capabilities. We did a structured search for the relevant articles using various databases with keywords such as ‘co-creation capabilities AND/OR expertise’, ‘value co-creation capabilities AND/OR expertise’, ‘customer participation capabilities AND/OR expertise’, ‘co-production capabilities AND/OR expertise’, ‘crowdsourcing capabilities AND/OR expertise’, ‘customer engagement capabilities AND/OR expertise’, ‘customer involvement OR collaboration capabilities AND/OR expertise’ etc. After a comprehensive review of the literature, we created a pool of all the potential organisational capabilities related to AP. We then grouped these capabilities into three main categories of *actor*, *process* and *leadership and management* (see Appendix D). The *actor* category includes all the capabilities that deal with the ability to recognise valuable actors, motivate their engagement and establish a sustainable relationship with them. The *process* category encompasses all the capabilities that support the execution of AP strategy, exchange and transformation of resources into an optimal outcome. The *leadership and management* category reflects the expertise required for strategic decision-making, governance and control of AP at all levels in the organisation.

In the second phase, we refined and validated these items in a review process with experts from academia and industry to identify those capabilities suited for AP, particularly our proposed dimensions. In the following section, we present the fundamental capabilities based on each core dimension of AP. We follow this by providing a classified three-dimensional model consistent with the one in the previous section.

1.4.2 Classification of Organisational Capabilities Fundamental to Actor Participation

In this section, we extend our AP classification framework in the previous section by introducing organisational capabilities critical to each core dimension. This framework facilitates identifying organisational capabilities that are required for specific forms of AP, such as customisation, peer-to-peer service platforms, idea/design contests etc.

1.4.2.1 Transactional Intensity of AP: Transactional & Non-transactional

As mentioned previously, transactional AP occurs during sale or consumption and actors' participation is essential for the successful completion of the task. Therefore, ensuring an error-free process where actors can participate and complete the activity correctly is vital (Dong & Sivakumar, 2017; Lusch & Vargo, 2014). The organisation must define the rules and procedure of the activity and guide participants through the process. As this is a *process*-related challenge, organisational capabilities related to the process of AP, in particular, *technological*, as well as *failure recovery*, become important.

Technological capabilities are organisations' ability to develop and use various technologies (Zhou & Wu, 2010). Technological capabilities can play a critical role in transactional AP by allowing organisations to design a mechanism that processes, governs and controls actors' inputs and performance. For example, Airbnb has systems in place to check the identity and authenticity of hosts as well as guests in order to establish trust among all participants. Facebook, on the other hand, has been constantly under fire in recent years for not having the technologies in place to detect and prevent the creation of false, violent or other harmful content (Solon, 2016). Therefore, technological capabilities play an important role in facilitating an effective AP process.

Another key organisational capability for transactional AP is the ability to support and recover situations where actors make errors or unexpected problems occur. In fact, research has shown that actors have higher expectations when they are expending intellectual and/or physical effort in their participation role (Bendapudi & Leone, 2003; Heidenreich et al., 2014). Organisations should, therefore, be capable of fast recovery from problems that are likely to occur during transactional AP. For example, Airbnb has partnered with insurance company Lloyd's of London, which covers all hosts and their properties for claims of up to US$1 million if any damage occurs (Airbnb, 2017). Facebook, however, was facing problems again in 2017 for its delayed or lack of response to users' problems. This led the organisation to hire and allocate 3000 more people to focus on users' problems and complaint reports (Pham, 2017).

Non-transactional AP refers to strategies that integrate actors outside and beyond the sale and/or consumption of product/service offerings. Non-transactional AP primarily occurs before or after sale/consumption stages, where actors participate voluntarily. Therefore, motivating such voluntary behaviours of actors and encouraging them to contribute resources can be a difficult task for organisations. This challenge is related to actors' motivation and psychological attributes; thus, organisations need to invest in and develop *actor-related* capabilities, such as relationship management. A similar challenge would be the consumers' perception of organisational opportunistic behaviour and feelings of being exploited for the organisation's self-interest (Bettencourt, 1997; Etgar, 2008). This challenge is related to organisations' culture, transparency and good practice for which *management and leadership* capabilities, such as ethical interaction, become vital.

Relationship management capabilities are actor-focused systematic processes that manage relationship initiation, maintenance and termination (Reinartz et al., 2004). They involve deep analysis of actors, their behaviour, and needs, which foster organisations to maximise value-creating interactions with actors and develop collaborative relationships (Reinartz et al., 2004; Zhang et al., 2015). Investment in and adoption of relationship management capabilities to recognise and understand valuable actors is vital for non-transactional AP. This is especially the case for AP in B2C markets, where attracting valuable actors becomes more challenging due to their distrust of corporations and their financial goals (Kazadi et al., 2016; Mitrega, Forkmann, Ramos, & Henneberg, 2012). Building extensive relationship management and networking capabilities play a pivotal role in gaining actors' trust and developing a value-creating relationship with them. Relational capabilities facilitate the creation of emotional bonds and connections with actors, which encourages them to proactively exchange valuable resources with the organisation (Pansari & Kumar, 2017).

Ethical interaction capability is a management-related capability that becomes critical during non-transactional AP. Ethical interaction capability refers to the organisation's ability to treat consumers and other stakeholders in a fair and non-opportunistic manner (Karpen et al., 2012). An ethical interaction with actors during non-transactional AP ensures sustainable practice and long-term benefit (Ertimur & Gilly, 2012). Existing literature on value co-creation and service-dominant logic emphasises the importance of transparency in interactions with participants. Prahalad and Ramaswamy (2004a) consider transparency one of the building blocks of successful AP. We also propose that ethical interaction capability is of even higher importance for non-transactional AP, as actors are primarily participating for the organisation's benefit rather than their own (Dong & Sivakumar, 2017; Nuttavuthisit, 2010). For the sustainable success of non-transactional AP, organisations should be consistently honest and open about the risks and benefits affecting actors during participation. Otherwise, AP initiatives may create a sense of manipulation and exploitation of actors (Abela & Murphy, 2008). The significance of trust has also been addressed in B2B and channel relationship literature (Geyskens, Steenkamp, & Kumar, 1998; Gounaris, 2005), given such interactions are also based on the exchange of various resources. However, actors are even more vulnerable in B2C markets and particularly during non-transactional AP, because interactions are not based on contractual agreements. At the same time, considering the ubiquitous availability of information, actors are more capable of detecting unfair and misleading organisational behaviour, and hence have become more litigious, which further supports the need for ethical interaction capability.

Another important aspect of ethical interaction capability is incentive mechanisms for non-transactional AP. While some actors participate in such activities without expecting anything in return – primarily because they are advocates and fans of the brand – organisations often need to provide incentives or a reward not only to motivate but to encourage future engagement (Harmeling, Moffett, Arnold, & Carlson, 2017; Kumar et al., 2010). A proper incentive system can not only increase the quality of actors' contributions (e.g., provision of more accurate knowledge) (Füller, 2010) but may also enhance the corporate or brand image (Ertimur & Gilly, 2012). An example of this can be seen in LEGO's successful LEGO IDEAS contests, a competitive platform for users to submit their creative LEGO set designs to be turned into commercially available sets. LEGO not only recognises the winner as the creator of the product but also offers royalties on sales of the manufactured set (LEGO, 2017). Threadless.com is another platform which enhanced its reputation and community of designers in 2015 by increasing the royalties of actors from 20% to paying them the full difference between the base and retail price (Threadless, 2015). These examples further demonstrate that organisations must possess ethical interaction capabilities to be able to enhance and sustain the success of non-transactional AP.

1.4.2.3 Tangibility of Contributions: Intellectual & Non-intellectual

As mentioned previously, actors contribute intellectual resources such as knowledge and skills in two ways: need and solution-based. The former deals with existing or future problems in the market and the latter deals with potential solutions. The exploitation of these resources involves several challenges for organisations, the basic one being collection and retention of large amounts of data, which organisations have more or less overcome with the use of advanced technologies and IT systems (Nambisan, Lyytinen, Majchrzak, & Song, 2017).

A second challenge is the recognition of the value of actors' intellectual input, while a third challenge is transforming these inputs into useful resources, otherwise referred to as 'stickiness'. The stickiness of information and knowledge is associated with the costs and expenditure required to transform that information into a viable form (Von Hippel, 1994). When the difficulty and costs are low, the stickiness is also low and vice versa. Market information is considered to have high stickiness due to the subjective nature of individuals' needs and preferences (Piller, Moeslein, & Stotko, 2004). Further, it is suggested that many individuals have difficulty in expressing their needs and problems. Other approaches to processing information, such as activities that integrate existing or prospective consumers into the design or customisation of product/service offerings, may have lower stickiness due to the processing of the input in a more specific context (Piller et al., 2004).

Once valuable inputs are identified, a further challenge can be their heterogeneity. Although the selected intellectual inputs may be of high quality, they can be different in nature and, thus, difficult to apply to the organisation's business. This can be even more challenging if the organisation's business and internal culture are relatively standardised and less open to change. We suggest that all the aforementioned challenges are associated with the process as well as the management of AP. Hence, *process-related* capabilities, such as absorptive capacity, as well as *management and leadership-related* capabilities, such as strategic flexibility, become critical.

Absorptive capacity is regarded as the key capability for dealing with stickiness challenges in the AP process (Kazadi et al., 2016). An organisation's absorptive capacity is its ability to recognise, filter, and assimilate valuable external information and to apply it to commercial purposes (Cohen & Levinthal, 1990). Therefore, absorptive capacity assists organisations in reducing the stickiness of large-scale information and transforming it into a resource that can be applied in other organisational contexts. Information technology (IT) is one form of absorptive capacity that facilitates the exchange of intellectual resources between the organisation and actors (Breidbach & Maglio, 2016; Joshi, Chi, Datta, & Han, 2010). Sophisticated use and application of IT enable the storage and processing of a large amount of intellectual input. Advanced use of IT can also assist in the implementation of formal (e.g., focus groups) and informal (e.g., online brand communities) interactions among actors and the organisation (Hosseini et al., 2017). A good IT infrastructure enhances governance and control of interactions, which can even prompt further exchange of intellectual resources (Grover & Kohli, 2012).

R&D capabilities are another common form of absorptive capacity (Hosseini et al., 2017). R&D and analytic capabilities are vital for effective execution of knowledge- and skill-intensive forms of AP (Dong & Sivakumar, 2017). They allow organisations to discover patterns of incoming information and transform them into useful knowledge. Further, they assist organisations in analysing how such knowledge can be incorporated into viable solutions. R&D capabilities also play a vital role in organisations' learning process and agility. Strong R&D expertise contributes to organisations' ability to comprehend and absorb the input and utilise it in innovative ways at a faster pace (Kozlenkova, Samaha, & Palmatier, 2014; Sharma et al., 2014).

Finally, we propose that incorporation of actors' knowledge and skills requires organisations to apply strategic flexibility across organisational levels. The literature on B2B participation emphasises the importance of flexibility and openness in organisational structure and culture, and for its strategy for maximising the value of AP (Coviello & Joseph, 2012; Cui & Wu, 2016; Nambisan, 2002). As mentioned before, actors' knowledge and skills are heterogeneous and may not be consistently applicable in all business areas, especially if internal processes are standardised. We propose that investing in and developing strategic flexibility during AP allows organisations to take better advantage of actors' intellectual resources. It creates more opportunities for heterogeneous resources to be used across different areas of the business by adapting them to change.

As mentioned previously, actors expend labour and physical effort in situations where they replace employees' basic physical tasks. Outsourcing labour to actors is regarded as one of the ways in which organisations can minimise their operational costs (Etgar, 2008; Mills & Morris, 1986). Actors must follow certain guidelines and instructions provided by the organisation to successfully complete the tasks. As such, the most prominent challenge for the implementation of labour-intensive AP can be motivating actors' participation and assuring them of fair treatment (Meuter, Bitner, Ostrom, & Brown, 2005). Earlier studies have suggested several ways in which organisations can motivate contribution of labour. The first is to openly communicate the benefits of engaging in such activities (Meuter, Ostrom, Roundtree, & Bitner, 2000). Actors' decision to participate can be significantly influenced by the benefits (e.g., enjoyment, time-saving, monetary rewards, self-fulfilment etc.) they associate with the participation task (Dabholkar, 1996; Etgar, 2008). A second way is to ensure low complexity and clarity of actors' roles (Meuter et al., 2005; Schneider & Bowen, 2010). If actors believe that they are incapable of performing a task they will not engage in it, even if the perceived benefits are high (Meuter et al., 2005; Seltzer, 1983).

Against this background, we conclude that the abovementioned challenges are related to both the *management* and *process* of AP. *Ethical interaction* and *technological* capabilities, in particular, become crucial. As employees are replaced by actors without any prior training, organisations are responsible for guiding their performances properly and ensuring their safety and wellbeing. For example, IKEA provides a comprehensive manual for the assembly of its furniture to reduce the complexity of the task; if consumers lose the manual, they can search and find it on IKEA's website. Alternatively, IKEA also offers a delivery service at an extra cost, with the furniture assembled for consumers. We suggest that, through the ethical interaction capability, organisations not only communicate the risks and benefits of participation but can also ensure that actors have a proper understanding of their role (Albinsson, Perera, & Sautter, 2016; Karpen et al., 2012).

Technological capability is another key tool for facilitating governance and clarity of actors' performance in labour-intensive tasks. Many organisations have increasingly incorporated technology into their service interactions to allow actors to replace employees or sales force (Meuter et al., 2005; Meuter et al., 2000). For example, self-checkout kiosks in supermarkets or retail stores are programmed to let consumers quickly check out their groceries. At the same time, they are designed (e.g., by measuring weights) to minimise consumers' opportunistic behaviours. Another example of the proper use of technology is the city car-sharing service (Bardhi & Eckhardt, 2012). Companies such as Hertz allow actors to pick up cars in different spots across the city by arranging everything online, without any interaction with employees. As a result, proper use of technology enables error-free and supervised outsourcing of labour to actors.

Tangible resources are provided when actors contribute, share, sell or rent out a kind of personal possession, as in the cases of Airbnb, Etsy, eBay etc. As these resources become an integral part of the business, they are considered as assets of an organisation. As such, one of the notable challenges in such interactions becomes governance and control of the exchanged tangible resources. Organisations need to certify compliance and quality of such resources with industry standards. In addition, as with labour-intensive AP, organisations need to assure actors of fair treatment. Thus, organisations face difficulties related to the *process* as well as *management* of AP. We propose that, as with labour resources, *technological* and *ethical interaction capabilities* facilitate the integration of tangible resources.

Advanced use of technological capabilities enhances governance of actors' tangible resources by setting up processes that control and monitor their quality standards. For example, Etsy has designed its platform in a way that allows users to mark shops or sellers who are committing intellectual property infringements. Its system also keeps a record of the infringement reports of each seller; if these reports reach a certain point, the organisation shuts down that shop (Etsy, 2017). Likewise, ethical interaction capability is of importance for the exchange of tangible resources. Organisations should ensure that actors have a clear perception of the risks and benefits involved in the process and are rewarded fairly for the contribution of their personal possessions. Otherwise, the use of tangible resources will not only be unsuccessful but may also cause actors to associate organisations' initiatives with opportunistic behaviour.[6]

1.4.2.4 Interaction Intensity: Dyadic & Network

'Dyadic' dimension refers to two-way interactions that occur exclusively between organisations and actors. Unlike AP in B2B markets, there is a considerable distance between actors and the organisation for AP in B2C markets (Hoyer et al., 2010). Such distance may be further increased by the existence of intermediaries, such as retailers (depending on the industry), creating a challenge for organisations that focus on dyadic AP. This is especially the case given that organisations that focus on in-depth two-way communication with actors need to reciprocate each individual's input (Eisingerich et al., 2014; Etgar, 2008). Therefore, organisations need to have expertise in understanding actors, their needs, behaviour etc. as well as to possess the tools

[6] It is worth mentioning, that other capabilities may be essential depending on the exact nature of the business that adopts tangible resources. For example, eBay and Etsy have strong partnerships with distribution organisations for speedy delivery of orders. However, such capabilities are very case-specific and out of scope of our study. We focus on capabilities that are specific to the core dimensions of AP and are generalisable across various forms of AP.

to effectively manage interactions (Mustak, Jaakkola, Halinen, & Kaartemo, 2016). Another challenge is catering to actors' heterogeneous preferences and requirements during dyadic interactions (Auh et al., 2007; Franke, Keinz, & Steger, 2009; Hoyer et al., 2010). Organisations must incorporate a flexible culture in their operations to overcome this challenge. These challenges are respectively related to actors as well as leadership and management of organisations. We suggest that the two capabilities of *relationship management* and *strategic flexibility* become vital for the successful implementation of a dyadic AP strategy.

Relationship management capabilities incorporate an interactive orientation, which enables organisations not only to focus on actors and their individual input but to also tailor their communications (Kumar, Ramani, & Bohling, 2004; Ramani & Kumar, 2008). Possession of this capability is a pre-requisite for establishing any relationship with actors, especially those that are built on exchanging different types of resources (Sharma et al., 2014). In fact, while AP may initiate a relationship between the organisation and actors, it does not necessarily persist or turn into a valuable one (Peppers & Rogers, 2016). Deep social and emotional ties with actors are required for mutual problem solving and exchange of valuable resources (Madhavaram & Hunt, 2008). Organisations need interactive capabilities to create and sustain meaningful dialogue with actors. Unlike traditional relationship management processes, which are organisation-driven, individuals cannot be treated as commodities forced into interactions during AP. Rather, organisations must embrace a more actor-oriented strategy and allow actors to initiate the interaction. As Karpen et al. (2012) note, organisations also need to provide a platform through which actors can engage in AP tasks at their desired rate and frequency. This way, actors show more satisfaction and willingness to continue their participation (Ramani & Kumar, 2008). Through proper use of relational capabilities, organisations can build rapport and gain actors' trust and willingness to exchange intellectual and non-intellectual resources (Karpen et al., 2012; Schneider & Bowen, 2010). Therefore, we propose that *relationship management* capability is an essential element of successful dyadic AP.

As organisations have an in-depth focus on actors and their heterogeneous resources during dyadic AP (i.e., knowledge, skills, labour and tangible), the entire supply chain and operational resources of organisations need to be sufficiently flexible (Madhavaram & Hunt, 2008). Managers need to develop a flexible culture across all levels of the organisation (Teece et al., 1997). Strategic flexibility facilitates readjustment and reallocation of new and existing resources to cater to personalised interactions with actors (Cui & Wu, 2016; Zhou & Wu, 2010). Furthermore, engaging in deep two-way interactions with actors requires organisations to give away a certain amount of control and increase the autonomy of actors (Bendapudi & Leone, 2003; Prahalad & Ramaswamy, 2004b). Granting more autonomy and giving active roles to actors demand significant modifications in power structures and application of flexibility. We, therefore, posit that *strategic flexibility* capability equips organisations to successfully implement dyadic AP.

'Networks' involve interactions not only between actors and the organisation but also between actors and other actors. A notable difficulty with this strategy is arranging mechanisms that facilitate and process large-scale interactions in an extensive network of actors. We suggest that this challenge is related to the *process* of AP and, thus, *technological* capabilities become useful. Besides the technical requirements of network AP, another challenge is fostering relational connections among actors. Exchange of resources among actors in network AP, to some extent, relies on social ties (Benoit et al., 2017). Organisations need to also consider mechanisms that reinforce relationship building and the creation of trust among actors. This challenge is associated with *actors* and thus *relationship management* becomes essential in the proper execution of network AP.

Most organisations implement and administer network AP online through the use of advanced technology. Application of proper technological tools in network AP allows organisations to effectively embed governance procedures and ensure successful interactions among actors. For example, peer-to-peer services such as Uber, Airbnb and Amazon not only have advanced algorithms in place to link actors with each other but also have formalised mechanisms that control and sustain the quality of interactions against organisational standards.

The success of network AP rests on interaction and collaboration of a large matrix of actors and the creation of mutual trust between them. Mechanisms should be put in place to develop open communication among actors. As with dyadic AP, strong relationship and interaction management capabilities play a pivotal role in establishing the bond among actors so that they are willing to exchange resources with one another (Etgar, 2008).

A summary of all the capabilities fundamental for AP based on the core dimensions is provided in Table 1.7. Overall, it can be concluded that *process-related* capabilities play a pivotal role in the implementation of AP strategy. More specifically, it can be suggested that, of all the process-related capabilities, technology is of principal importance. It can also be suggested that technological, ethical interaction and relationship management capabilities are similarly of high importance for AP strategy, as they are associated with the majority of core dimensions. Nevertheless, other capabilities are more dependent on the dimension of AP and the challenges relevant to that dimension.

Table 1.7: Summary of organisational Capabilities fundamental for AP

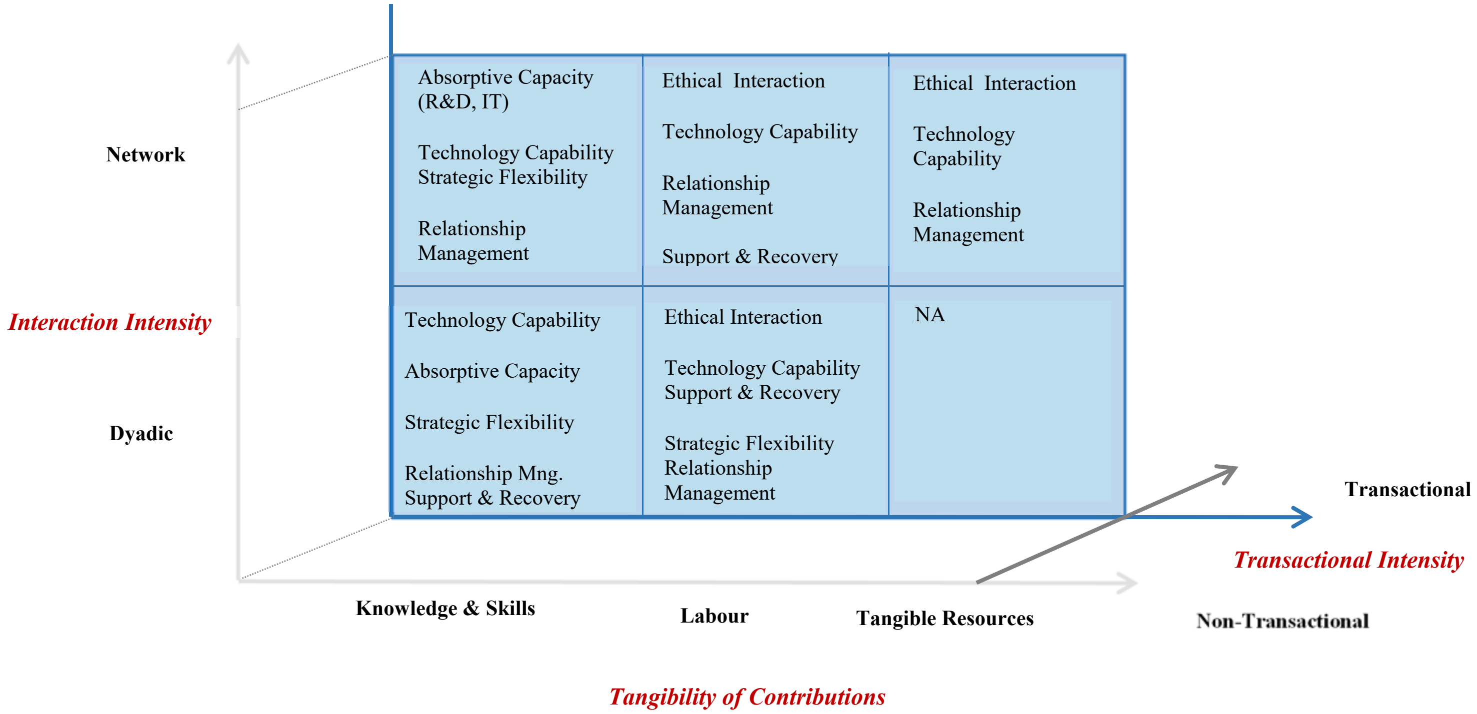
Transactional Intensity		Tangibility of Contributions			Interaction Intensity	
Transactional	Non-transactional	Knowledge & Skills	Labour	Tangible Resources	Dyadic	Network
-Technological *(Process)* -Failure recovery *(Process)*	-Relationship Management *(Actor)* -Ethical Interaction *(Leadership & Management)*	- Absorptive Capacity: R&D; IT *(Process)* -Strategic flexibility *(Leadership & Management)*	-Technological *(Process)* -Ethical Interaction *(Leadership & Management)*	-Technological *(Process)* -Ethical Interaction *(Leadership & Management)*	-Strategic flexibility *(Leadership & Management)* -Relationship Management *(Actor)*	-Technological *(Process)* -Relationship Management *(Actor)*

In the following section, we present a second model equivalent to the 'actor participation classification model' outlined in the previous section. This model distinguishes all the fundamental organisational capabilities associated with the different forms of AP. Then we discuss the theoretical and practical implications of this research, followed by recommendations for future research.

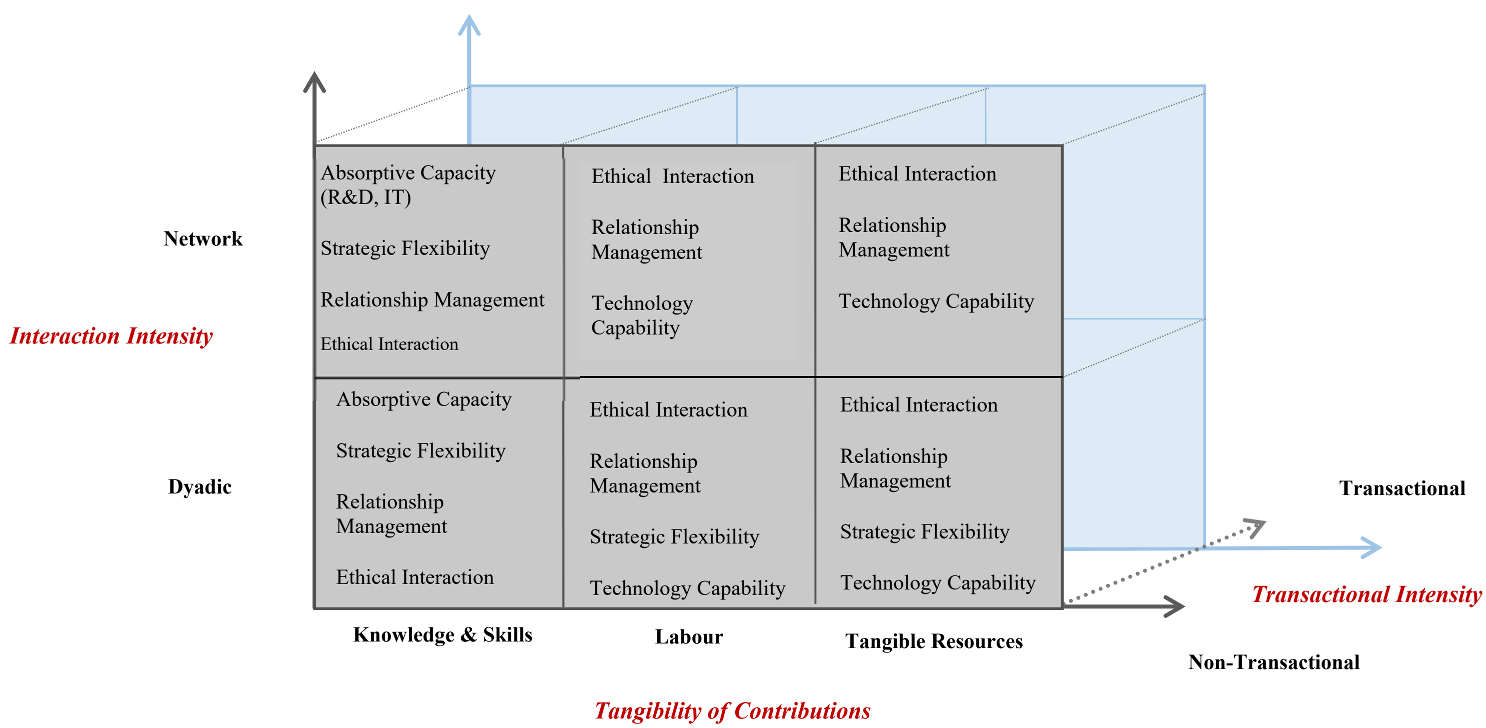
1.4.3 Classification Model of Dynamic Capabilities for Actor Participation

Based on the combination of the organisational capabilities required for each dimension of AP, we introduce a second classification model, a 2 x 3 x 2 matrix, distinguishing organisational capabilities on a three-axis graph (**Figure 1.2**). **Figure 2a** presents organisational capabilities for AP on the transactional level varying along the other dimensions; **Figure 2b** shows capabilities for non-transactional AP varying along the other two dimensions. This model is consistent with the 'actor participation classification model' and introduces fundamental capabilities for different forms of AP. For example, customisation requires strong strategic flexibility and technological capabilities, while peer-to-peer services need ethical interaction, failure recovery and technological capabilities.

Figure 1.2: Classification of organisational capabilities for AP practices



2a: Organisational capabilities classified primarily on Transactional AP



2b: Organisational capabilities classified primarily on Non-transactional AP

1.5 Discussion

1.5.1 Theoretical Contributions

This conceptual paper makes an important theoretical contribution to the domain of customer participation and value co-creation. We provide a holistic view of AP and add value to the literature through two steps. First, we advance the concept of AP by introducing its three core dimensions. These dimensions facilitate a broader understanding of AP as they incorporate the different forms of AP organisations may exercise. Second, drawing from RBV and dynamic capability theories, we provide a detailed classification of the organisational capabilities fundamental to the successful implementation of AP. For each core dimension, we introduce a set of critical capabilities organisations must possess or invest in to gain a competitive advantage. Below, we discuss these key theoretical contributions in detail.

We distinguish our study from previous research, which has largely focused on more specific aspects of AP, such as participation in NPD or in the delivery of services. We, in contrast, conceptualise AP as an overarching umbrella phenomenon and specify its three core dimensions, transactional intensity, tangibility of contributions, and interaction intensity of AP. These dimensions capture the nuances of AP by reflecting respectively the context in which AP takes place (transactional and/or non-transactional), the type of resource actors contribute (intellectual and/or non-intellectual) and the scale and format of interactions between organisations and actors (dyadic and/or network). Thus, this specification considers AP as an inclusive concept that accommodates all activities involving the participation of existing or prospective consumers (e.g., customisation; self-services etc.) and members of the public or crowd (e.g., crowd-sourced and peer-to-peer services, etc.). It can be concluded that AP incorporates co-production, co-creation, and customer engagement concepts, but not vice versa. AP is consistent with the emerging marketing concept of value co-creation (Ranjan & Read, 2016), in that it involves all the interactive and resource-exchanging activities between the organisation and actors that ultimately lead to the joint creation of value.

The classification of AP based on three core dimensions also has two notable advantages. As mentioned previously, considering the mixed empirical findings in prior research regarding outcomes of AP (Dong & Sivakumar, 2017; Ranjan & Read, 2016), our proposed dimensions provide future empirical studies with a guide for fine-tuned measurement and examination of the concept. It is believed that an underlying reason for the conflicting findings in the literature may be due to a lack of clarity in AP and its conceptual boundaries (Dong & Sivakumar, 2017). Given that our proposed core dimensions fully embrace the nuances of AP, their integration with the existing measurements of AP in the literature creates a coherent and robust foundation for the empirical analysis of AP and its outcomes.

The second advantage of our core dimensions is that they provide a premise for recognition of organisational capabilities essential for AP. Extant research regarding the association between organisational capabilities and various forms of AP has been scarce. Existing capability portfolios have been either dedicated to AP in B2B markets (Tuli et al., 2007), or have been quite specific, suited to a particular dimension of AP such as non-transactional AP (Hosseini et al., 2017; Kazadi et al., 2016), or have been too generic, such as capabilities related to the service-dominant logic (Madhavaram & Hunt, 2008). Therefore, existing portfolios do not associate capabilities with different forms of AP. We emphasise that each dimension of AP calls for relatively different organisational capabilities. We identify these important capabilities and introduce a portfolio that outlines organisational capabilities suited to each core dimension. This adds value to the customer participation and value co-creation by associating each form of AP with the organisational capabilities that are critical to organisational success.

1.5.2 Managerial Contributions

From a practical perspective, our core dimensions assist managers in recognising and differentiating various forms of AP and their strategic design. Our classification facilitates implementation of AP by allowing managers to make informed decisions regarding allocation of resources. The core dimensions of AP alert managers to the measures they need to take into account before and during implementation. These include important decisions such as the type of actors to engage with, the design of the interaction process, the formalisation mechanisms, the incentive systems to use and the type of capabilities to build. For example, selection of an unsuitable group of actors (those who are not motivated enough or lack the necessary knowledge or expertise) for non-transactional AP would not only yield an ineffective outcome but would also result in a waste of resources. Another example would be that while some forms of AP, such as idea contests, are best implemented via online technologies, other forms, such as the provision of customised solutions in professional services, are better performed through face-to-face interactions. Furthermore, some forms of AP, especially those that are transactional, require greater formalisation and control than others. Similarly, some forms of AP require different incentives or stronger rewards than others. Our proposed model will equip managers with a blueprint for planning their AP strategy.

Our organisational capability framework will also enable managers to identify the operational details of the AP strategy. Organisations need careful configuration of resources and capabilities to ensure efficient and effective use of this type of strategy. Considering that organisations can adopt several forms of AP simultaneously, they need to align their investments in existing or new organisational capabilities with the selected forms of AP, given that, as we have demonstrated, each form of AP may call for different capabilities. It is difficult and unrealistic for organisations to optimise a large set of capabilities all at once, as they may demand different financial and non-financial resources. Therefore, the ability to prioritise organisational capabilities according to the intended AP strategy would be valuable. Our capability model narrows this research gap by exploring the capabilities fundamental to each dimension of AP. In addition, differences in organisations' performance could be traced back to their strength and weaknesses in the capabilities used for the implementation of AP. Our proposed capability portfolio may also explain some of the underlying reasons organisations witness conflicting performance results after application of AP. Using our capability model, managers can identify areas of weakness and allocate resources accordingly to ensure superior financial returns.

1.5.3 Research Limitations and Future Directions

Our classification model of AP primarily focuses on the breadth of AP – i.e., various forms in which it can be practised. Further research might be beneficial to build on our classification of AP by also adding a 'degree' dimension to further distinguish various forms of AP by their depth, not just their breadth. For example, it would be interesting to identify how transactional AP differs from non-transactional AP in the magnitude and intensity of interactions between organisation and actors and to identify which dimensions of AP demand higher or more frequent interactions between the organisation and actors. Another potential limitation of our study is the number of core dimensions used in our classification. As the creation of a model beyond three dimensions complicates visualisation and comprehension, we have limited our framework to three dimensions. While this distinguishes our research from the extant literature, which classifies models based on only one or two dimensions, it might be fruitful to investigate other characteristics of AP that can also be used as dimensions.

Given the scarcity of empirical studies examining the organisational implications of distinct forms of AP, research dedicated to analysing individual effects of each form of AP would be extremely valuable. In fact, there is a lack of knowledge regarding the financial and non-financial implications of AP forms. It would be useful to compare and contrast the benefits of each form of AP in terms of providing a competitive advantage. Empirical research is also needed to validate and confirm our organisational capability propositions. Future research can investigate whether organisational capabilities and their importance are consistent with our model or whether other capabilities are more essential for AP.

In addition, as mentioned previously, some forms of AP, such as peer-to-peer services, may demand additional capabilities that have not been included in our portfolio. For example, although eBay and Etsy have strong partnerships with distribution organisations for the speedy delivery of orders, other peer-to-peer services, such as Uber and Airbnb, do not require such a capability. Such case-specific capabilities are out of scope for our study and have not been taken into account. We only focus on capabilities that are fundamental to the core dimensions of AP and generalisable across various forms of AP. However, future research could benefit from a detailed investigation of capabilities that are essential for specific forms of AP.

Finally, it would also be fruitful to create a capability framework, one that classifies actors' capabilities and competencies based on the core dimensions, to complement our capability portfolio. In other words, it would be interesting to understand what expertise actors need to have to engage in different forms of AP. Prior research has examined actors' skills for participation in specific forms of AP. such as NPD (Blazevic & Lievens, 2008; Chen et al., 2011) or customisation of product/service offerings (Auh et al., 2007; Dahl & Moreau, 2007; Tuli et al., 2007). A more comprehensive investigation of actors' skills essential for successful participation would provide valuable information. In particular, such knowledge could inform organisations of the strategic design of AP, as they can maintain an alignment between the type of AP they intend to exercise and actors who are expected to participate.

1.6) Appendices

Appendix A:

Table A1: Concepts and terminologies related to AP

Term used	Study	Context
Customer participation	(Chan et al., 2010)	Co-production of professional financial services, Customisation
Customer participation	(Eisingerich et al., 2014)	Customer voluntary behaviour/performance, Customer citizenship behaviour
Customer participation	(Fang et al., 2008)	Participation in innovation and NPD
Customer participation	(Fang, 2008)	Participation in innovation and NPD
Customer participation: - Participation as producer - Participation as designer	(Dong, 2015)	Co-production, self-service, customisation, co-design
Customer participation in co-production	(Bendapudi & Leone, 2003)	Customisation, joint production
Customer participation in co-production	(Troye & Supphellen, 2012)	Self-production, customer production, DIY
Co-production	(Etgar, 2008)	Customisation, self-service, co-design, Participation in innovation and NPD
Co-production	(Auh et al., 2007)	Co-production of professional financial services, Customisation
Customer co-creation	(Heidenreich et al., 2014)	Customisation, TBSs/self-service, Service recovery
Consumer co-creation	(Hoyer et al., 2010; O'hern & Rindfleisch, 2010)	Participation in innovation and NPD

Customer engagement	(Brodie et al., 2011; Gebauer et al., 2013; Jaakkola & Alexander, 2014; Van Doorn et al., 2010)	Customer brand engagement behaviors, Participation in innovation and NPD, recommendation and WOM; C2C interactions
Customer involvement	(Carbonell et al., 2009)	Participation in innovation and NPD
Customer interaction	(Gruner & Homburg, 2000)	Participation in innovation and NPD
Interaction orientation: - Customer concept - Interaction response capacity - Customer empowerment - Customer value management	(Ramani & Kumar, 2008)	Market/customer orientation, Co-design and customisation
Customer empowerment	(Fuchs, Prandelli, & Schreier, 2010)	Participation in innovation and NPD
Customer empowerment	(FüLler, MüHlbacher, Matzler, & Jawecki, 2009)	Participation in innovation and NPD
Prosumption	(Xie, Bagozzi, & Troye, 2008)	Co-production; Value-in-use
Customer voluntary performance: -Loyalty (Customer as a promoter of the org.) - Cooperation (Customer as a human resource) - Participation (Customer as a consultant)	(Bettencourt, 1997)	Customer voluntary behaviour/performance; Customer citizenship behaviour; Customer recommendation and WOM; Service co-production
Value co-creation	(Vargo & Lusch, 2004)	Value co-creation, value-in-use, value-in-exchange
Value co-creation	(Ranjan & Read, 2016)	Value co-creation, co-production, Participation in innovation and NPD, value-in-use
Open innovation	(Chesbrough, 2006)	Customer/user innovation; Participation in innovation and NPD
Crowdsourcing	(Howe, 2006)	Participation in innovation and NPD;
Collaborative Consumption	(Benoit et al., 2017)	
	(Xia & Suri, 2014)	Creation/design of products (e.g., designing weight-loss meal plans).

Appendix B:

Table B1: Collected list of actor participation characteristics used to form core dimensions

Characteristics	Definition	Papers
Type of participants	Can range from organisations, customers, potential customers, business customers, suppliers, members of the community or society, governments, education or research institutions, and even competitors.	(Chan et al., 2010; Fang, 2008; Fang et al., 2008; Frow, Nenonen, Payne, & Storbacka, 2015; Jaakkola & Alexander, 2014; Mustak et al., 2013)
Type of resource	Type of resource contributed to participation. We classify it into two main categories of *Intellectual* and *Physical.* Intellectual is further broken down into *Knowledge/Information* and *Skills/competencies.* Physical resources also include *Physical effort or labour* and *Physical objects* such as assets, equipment, inventory, etc.	(Agrawal & Rahman, 2015; Hoyer et al., 2010; Nambisan & Baron, 2009; Ngo & O'Cass, 2009)
Customer role	The role the customer/participant plays during the participation process. Various roles have been identified in the literature; such as partial employee, consultant, promoter, etc.	(Agrawal & Rahman, 2015; Bettencourt, 1997; Dong, 2015; Fang, 2008; Nambisan, 2002)
Nature of participation role	The participation activities are considered as an *extra role* to the organisation and its processes and customers participate *free-willingly* and *voluntarily*. This is contrary to *in-role* participation where customers have to participate in order to create and derive both exchange and use value out of the offering.	(Bettencourt, 1997; Dong, 2015; Eisingerich et al., 2014; Hibbert et al., 2012; Jaakkola & Alexander, 2014; Mittal & Sawhney, 2001)

Course of interaction	The direction of the interaction, which demonstrates the initiator of the interaction. Is the interaction organisation -to-customer, customer-to-organisation, or customer-to-customer?	(Adjei et al., 2010; Alexy et al., 2011; O'hern & Rindfleisch, 2010; Zwass, 2010)
Intensity of interaction	Interactions are categorised into dyadic and network. In dyadic interaction, participation activities are between customers and the organisation whereas in the network it is among a large group of stakeholder such as peer customers, potential customer, other organisations, etc.	(Chan et al., 2010; Merz et al., 2009; Mustak et al., 2013)
Temporal distance of outcome and/or consumption	The time gap between the actual time of participation taking place and the final output/outcome of the participation, which can vary across different types of participation.	(Balasubramanian, Peterson, & Jarvenpaa, 2002; Heinonen et al., 2013; Troye & Supphellen, 2012)
Motivation	*Extrinsic* and *Intrinsic* are two main types of motivation that induce participation of customers. Extrinsic motivation is task and objective oriented where customers participate in the pursuit of a goal, which is of an *Economic* nature. Intrinsic motivation is not task-oriented and is about appreciating the experience of an activity for its own sake. It is therefore of *Social* and/or *Psychological* nature.	(Etgar, 2008; Füller, 2010; Hibbert et al., 2012; Yim et al., 2012)
Value receiver	The primary beneficiary of the participation process. Although all of the participants benefit from the process, sometimes one party may receive a higher value compared to rest of the participants.	(Nuttavuthisit, 2010)
Balance of power	Who dominates the participation process, the organisation or customers?	(Coviello, Brodie, & Munro, 1997)

Ownership of outcome	Who owns the outcome and output of the participation process? Who has the right and ownership of intellectual property, the organisation or customers?	(Alexy et al., 2011; Chesbrough & Appleyard, 2007; Hoyer et al., 2010; Kohler, 2015; Wadeisa & Sada, 2015)
Frequency of participation	Can be discrete of continuous	(Carbonell et al., 2009; Frow et al., 2015)
Type of value	Value-in-exchange or value-in-use.	(Grönroos & Voima, 2013; Mustak et al., 2013; Ranjan & Read, 2016)
Solicited vs. unsolicited participation *or* sponsored vs. autonomous participation		(Alexy et al., 2011; Nuttavuthisit, 2010; Zwass, 2010)

Appendix C:

Table C1: Extant literature on organisational capabilities related to actor participation

Capabilities	Studies	Context
Propose 5 potential capabilities for the supplier organisation: - Contingent hierarchy - Documentation emphasis - Incentive externality - Customer interactor stability - Process articulation	Tuli et al. (2007) *Conceptual*	Customer solutions (B2B)
3 Hierarchical classification of operant resources: - Basic, operant resources - Composite, operant resources - Interconnected, operant resources	Madhavaram and Hunt (2008) *Conceptual*	Service-dominant logic and operant resources *Specify the nature of capabilities rather than the actual capabilities*
Define interaction orientation as a portfolio of capabilities required for being customer-centric: - Customer concept as unit of analysis for marketing actions - Interaction response capacity - Customer empowerment - Customer value management	Ramani and Kumar (2008) *Empirical - Quantitative*	Interaction orientation
3 classification of operant resource-based capabilities: - Innovation-based capability - Marketing-based capability	Ngo and O'Cass (2009) *Conceptual*	Service-dominant logic and operant resources

- Production-based capability

Capabilities	Studies	Context
Propose 5 distinctive capabilities: - Service-related data processing and interpretation capability - Execution risk assessment and mitigation capability - Design-to-service capability - Hybrid offering sales capability - Hybrid offering deployment capability	Ulaga and Reinartz (2011) *Conceptual*	Customer solutions (B2B) and hybrid offerings
Portfolio of capabilities: - Individuated interaction capability - Relational interaction capability - Ethical interaction capability - Empowered interaction capability - Developmental interaction capability - Concerted interaction capability	Karpen et al. (2012) *Conceptual*	Service dominant logic
Antecedents to Customer Participation: - Technical Innovation Capability - Non-technical Innovation Capability	Ngo and O'Cass (2013) *Empirical – Quantitative*	Customer Participation

Capabilities	Studies	Context
Proposes 4 classifications of capabilities each including few sub-categories: - Customer activation (customer mobilisation, customer identification, customer agility) - Organisational activation (leadership, collaborative integration of resources) - Interaction capabilities (relational, ethical, empowered, developmental, and concerted) - Learning agility (Responding to customer needs, Organisational flexibility).	Sharma et al. (2014) *Empirical - Qualitative*	Organisational capabilities for customer participation in health care service innovation
Introduces capabilities solution quality: - Organisational competence - Employee competence - Customer orientation - Sourcing network competence - Coordination effectiveness - Asset management effectiveness	Macdonald et al. (2016) *Conceptual*	Customer solutions (B2B)
Innovation Capability Marketing Capability Networking Capability	Zhang et al. (2015) *Empirical - Quantitative*	Value co-creation in industrial markets

Capabilities	**Studies**	**Context**
Introduces 4 categories of stakeholder capability: - Networking *(pre-project)* - Competence mapping *(pre-project)* - Relational *(in-project)* - Knowledge management *(in-project)*	Kazadi et al. (2016) *Empirical - Qualitative*	Stakeholder participation during the innovation process (Pharmaceutical industry - B2B)
Market-relating capabilities: - Market-linking capability - Marketing capability	Chen et al. (2017) *Empirical - Quantitative*	Interaction orientation (IO)
Proposes 23 capability areas grouped under 6 main categories: - Strategic Alignment - Governance - Methods - Information Technology - People - Culture	Hosseini et al. (2017) *Conceptual*	Open innovation capabilities
Co-creation generates dynamic capabilities linked to: - Adaptation - Knowledge - Innovation and relationship management	Preikschas et al. (2017) *Empirical - Qualitative*	Value co-creation in industrial markets

Capabilities	**Studies**	**Context**
IT-enabled capabilities: - Relational information processing capability - Analytical information processing capability	Saldanha et al. (2017) *Empirical – Quantitative*	Customer involvement in Innovation of IT
Builds on Karpen et al., 2012 capability model and introduces a classification framework "sustained purposeful engagement" which encompasses value creating practices and capabilities.	Marcos-Cuevas, Nätti, Palo, and Baumann (2016) *Empirical - Qualitative*	Value co-creation in industrial markets

Appendix D:

Table D1: Organisational capabilities related to actor participation or relevant concepts

Organisational Capabilities		
Actors	**Process**	**Leadership and Management**
- Relationship management - Customer service management - Market and customer orientation - Networking - Interaction orientation - Market linking - Market sensing capability - Relational capability - Market learning	- Channel partnerships - Flexible production capacity - Technological capabilities - Absorptive capacity - R&D - Organisational learning - Innovation capabilities - IT capabilities - Analytical and processing of big data - Training capabilities - Failure recovery and support	- Governance and control of the process - Resource development and allocation - Ethical and responsible interaction capabilities - Innovation or organisational Culture - Multi-level leadership structure - Strategic flexibility

2. Paper II: Performance Implications of Actor Participation

Abstract

Organisations are increasingly using *Actor Participation* (AP) strategies, incorporating both intellectual and non-intellectual resources of not only their consumers but also the public. While this strategy is known to provide a competitive advantage, a review of the literature suggests there is limited empirical evidence regarding the specific qualities of AP. For example, research on the financial outcomes of AP remains sparse. Additionally, while AP can be applied in various forms, the extant research offers little guidance as to whether certain forms are financially superior to others. Similarly, empirical studies are yet to determine the fundamental organisational capabilities required for executing the different forms of AP. Against this backdrop, this research has two key objectives: (1) to investigate the financial implications of the different forms of AP; and (2) to examine the role of a series of organisational capabilities on the financial success of AP. The authors explore these objectives across two distinct studies. The first focuses on secondary data and analyses the direct impact of AP and its various forms on the objective financial performance of 110 public organisations in the business-to-consumer market. The second study is based on the primary data of 300 mid- to senior-level marketing managers regarding their AP strategy, organisational capabilities and subjective financial performance. Overall results indicate that those forms of AP that focus on the integration of actors' intellectual resources (such as knowledge and skills) are financially superior. Relatedly, the authors found three capabilities – research and development, technology, and strategic flexibility – facilitate the financial success of such forms of AP. The theoretical and managerial implications of the research are discussed in detail.

Keywords: *Actor participation, Value co-creation, Core-dimensions, Organisational Capabilities, Partial-least square structural equation modelling*

2.1 Introduction

In 2004, toy manufacturer LEGO experienced a 29 per cent drop in worldwide sales, leading to the largest loss in the organisation's history (Delingpole, 2009). Since then, however, the near-bankrupt organisation has revolutionised its business by realising the value of consumer inputs and their integration into core processes. LEGO has continuously engaged the minds of consumers on various platforms, leading to a significant rise in sales (Gyrd-Jones & Kornum, 2013). We refer to this phenomenon as *Actor Participation* (AP), which involves the provision of intellectual and non-intellectual resources during and/or beyond creation or consumption of product/service offerings (Dong & Sivakumar, 2017). We use the term 'actor' because intellectual and non-intellectual resources are contributed not just by existing or prospective consumers but also by members of the public or crowd (Dong & Sivakumar, 2017; Svensson & Grönroos, 2008). While AP is increasing in popularity among practitioners, it may not always deliver the intended benefits and may face challenges that could affect organisations' performance. For example, Uber (a quintessential example of an organisation endorsing and practising AP), which reached a valuation of nearly US$70 billion by outsourcing its ride-hailing taxi service to actors, has been hit by a series of serious challenges (Economist, 2018b). Uber's problems have been traced back to its leadership, organisational culture, corporate social responsibility, and local regulations in different international markets (Butler, 2017; Economist, 2018a). Consequently, the organisation faced a net loss of over US$1 billion in late 2017 (Patnaik & Subrat, 2017).

It is important to note that several key factors related to AP strategy contributed to divergent outcomes for LEGO and Uber. One of LEGO's key success factors was how it transformed consumers' intellectual resources, such as knowledge and skills, into superior performance (Piller, Ihl & Vossen, 2010; Prahalad & Ramaswamy, 2004b). In Uber's case, it can be argued that although the integration of actors' non-intellectual resources – such as physical effort and personal possessions (e.g., vehicles) – has been a prominent success factor, the organisation's conduct and behaviour towards actors has been a key area of weakness (Economist, 2018a, 2018b; Sundararajan, 2014). We argue that the examples of Uber and LEGO not only showcase the variety of ways in which AP strategy can be practised but also underscore the importance of understanding their financial implications. Further, the two cases are a testimony to the need to recognise the significance of organisational capabilities for sustainable success and profitability of AP. However, empirical explorations of financial outcomes, and of the fundamental organisational capabilities required for AP, remain scarce in marketing literature.

In light of the above, this research aims to: (1) investigate the financial implications of AP in B2C markets; and (2) examine the role of different organisational capabilities in the financial success of AP. We pursue these two objectives by following the theoretical classification of AP developed by Hatami, Nagpal and Kayande (2018).[7] The classification is based on three core dimensions: *transactional intensity* of AP (i.e., transactional vs non-transactional), *tangibility of actors' contributions* (i.e., intellectual vs non-intellectual), and *interaction intensity* of AP (dyadic vs network). These core dimensions represent the various ways in which organisations execute AP strategy (Hatami et al., 2018). We test our conceptual model across two distinct empirical studies. The first examines the impact of AP on objective financial performance by focusing on secondary data from a sample of 110 public organisations across various industries. The second study focuses on the collection of primary data from over 300 organisations in the USA regarding their AP strategies, specific capabilities, and impact on subjective financial performance.

[7] First paper of this dissertation

Our findings reveal that integrating intellectual resources of actors (i.e., knowledge and skills) enhances organisations' financial performance. Further, the three organisational capabilities of R&D, technology, and strategic flexibility also facilitate the transformation of intellectual resources into financially superior outcomes. Additionally, results suggest that investments in other capabilities increase when organisations focus on specific dimensions of AP. For instance, the ethical interaction capability becomes essential when organisations focus extensively on the integration of actors' non-intellectual resources (i.e., physical effort/labour and tangible resources). Similarly, ethical interaction capability is found to be critical when AP takes place beyond sales or consumption (i.e., is non-transactional).

This research adds value to the emerging theory and marketing concept of value co-creation. Despite the increasing importance of AP and advances in these domains, several key shortcomings can be identified. First, the majority of the literature examines benefits and consequences of AP from the actors' viewpoint (Dong & Sivakumar, 2017; Mustak, Jaakkola & Halinen, 2013; Mustak, Jaakkola, Halinen & Kaartemo, 2016). Fewer studies have focused on the implications of AP for organisations, and even then these have primarily been in the business-to-business (B2B) context.[8] Second, studies that have investigated consequences of AP from organisations' viewpoint have either focused on relational and social outcomes – such as increased actor/customer satisfaction, loyalty, positive word-of-mouth (Auh, Bell, McLeod & Shih, 2007; Gebauer, Füller & Pezzei, 2013; Ramani & Kumar, 2008) – or explored non-financial implications, such as speed to market (Carbonell, Rodríguez-Escudero & Pujari, 2009; Fang, 2008; Sawhney, Verona & Prandelli, 2005), organisational innovativeness and creativity (Chen, Tsou & Ching, 2011; Fang, 2008), quality of product/service offerings (Chan, Yim & Lam, 2010; Hoyer, Chandy, Dorotic, Krafft & Singh,

[8] AP and its strategic development are considerably different across B2B and business-to-consumer (B2C) markets. This is due to the characteristics of actors and nature of interactions in B2C markets, which are principally non-contractual and less formalised.

2010), and employee job stress (e.g., Chan et al., 2010). What is missing is the impact of AP on organisations' financial performance, a gap we address in this research.

Lastly, empirical research on organisational capabilities that facilitate the success of AP is scarce. Very few studies have investigated organisational capabilities in this domain, with those few being related to allied concepts of AP, such as service-dominant logic (Karpen, Bove, Lukas & Zyphur, 2015) or interaction orientation (Chen, Li, Evans & Arnold, 2017). We, therefore, address these research shortcomings by providing an empirical investigation of the financial implications of AP based on its three core dimensions. Doing so allows us to investigate the AP phenomenon in a more comprehensive manner, beyond the specific scope already been explored in the literature (e.g., new product development and innovation). We provide a comparative examination of the different ways in which AP is implemented and their relative financial outcomes. Further, we shed light on why it is important to understand AP and its various dimensions by focusing on the organisational capabilities that are critical for successful AP.

In the following sections, we first present the conceptual background, followed by research hypotheses and analysis. Finally, we discuss the theoretical and managerial implications of our research in detail, as well as limitations and future research directions.

2.2 Conceptual Background and Hypothesis Development

We build on the conceptual development of AP by Hatami et al. (2018)[9] and investigate financial implications based on three core dimensions: transactional intensity, tangibility of contributions, and interaction intensity of AP. 'Transactional intensity' deals with the context in which participation takes place. AP can either occur during sales and/or consumption –

[9] Please note that this refers to the first paper included in this dissertation.

referred to as *transactional* (e.g., customisation, peer-to-peer services, etc.) – or it can be *non-transactional*, occurring outside sales and/or consumption (e.g., idea/design contests, unsolicited/solicited problem-solving, etc.). The second dimension, 'tangibility of contributions', reflects the type of resource actors contribute during participation, which can be divided into intellectual and/or non-intellectual. Intellectual resources, which are intangible, are the knowledge and skills actors share related to new or existing product/service offerings, brand, market, competitors etc. (Hunt, 2004; Nambisan & Baron, 2009; Ngo & O'Cass, 2009). Non-intellectual resources include the provision of labour or physical effort, and tangible resources, such as actors' personal possessions, which can be shared, sold or rented out during participation. The final core dimension, 'interaction intensity', deals with the scale of interactions and is classified into dyadic and network. Dyadic AP refers to interactions that are two-way, exclusively between organisations and actors, whereas network AP also incorporates interactions that occur among actors. For a more detailed explanation of all the three core dimensions, please refer to the first paper in this dissertation.

In the following section, we investigate the financial implications of AP, followed by our proposed hypotheses. Further, we address the second research question by investigating organisational capabilities fundamental to financially successful AP. We propose additional hypotheses regarding the mediating role of organisational capabilities in the relationship between AP and financial performance.

2.2.1 Actor Participation and Financial Performance

As mentioned previously, considerable research has already been dedicated to investigating relational outcomes of AP for organisations such as increased satisfaction and loyalty (Auh & Menguc, 2007; Chan et al., 2010; Dong, Sivakumar, Evans & Zou, 2014) as well as financial and relational outcomes for actors (see Appendix A for an extended summary of the literature). The focus of this article, however, is on financial outcomes of AP for organisations.

Early research on the financial consequences of AP focused primarily on efficiency and cost-minimisation in different operations, such as production and R&D (Lovelock & Young, 1979; Mills, Chase & Margulies, 1983). By integrating actors into frontline processes, organisations can transfer part of the labour costs to actors (e.g., IKEA), which enables them to lower prices and increase their sales volume (Lovelock & Young, 1979). Further studies identify other financial consequences, such as increased purchase behaviour and/or willingness to pay, and lower price sensitivity (Bowers, Martin & Luker, 1990; Hsieh & Chang, 2004; Hsieh & Yen, 2005). In addition, a few studies examine financial implications in narrower contexts by focusing on fewer dimensions of AP. For example, Eisingerich, Auh and Merlo (2014) found a positive relationship between customers' voluntary participation (a concept similar to non-transactional AP) and sales performance. Their study highlighted that AP leads to cross-selling because of the access to creative ideas and solutions that are used to either develop new or improve existing products/services. Ramani and Kumar (2008) investigate the impact of interaction orientation (a concept similar to transactional and non-transactional AP) and reported an indirect effect on aggregate business performance (e.g., profit and return on marketing investment). The authors find a series of relational factors play a mediating role between interaction orientation and financial performance. Similarly, Ngo and O'Cass (2013) find service quality to mediate the positive relationship between customer participation in service delivery (a concept similar to transactional AP) with sales and profitability.

Several other studies have analysed the financial impact of AP in the innovation research domain. Gruner and Homburg (2000) investigated AP across different stages of new product development (NPD) within B2B markets and found a positive effect on the financial success of new products during the early and late stages. Witell, Gustafsson and Johnson (2014) similarly focus on the impact of AP over multiple stages of NPD and find mixed results for manufacturing compared to service organisations. The authors report financial performance is highest within manufacturing organisations during the early stages of NPD, with a decline in later stages. However, for service organisations, financial gains were found to be high at both early and late stages of NPD. Conversely, Carbonell et al. (2009) identify no such difference in the sales performance of service organisations across different stages of NPD. Their study, however, found technical quality and innovation speed mediated the effect of AP on sales performance. A summary of the extant literature is provided in Table 2.1.

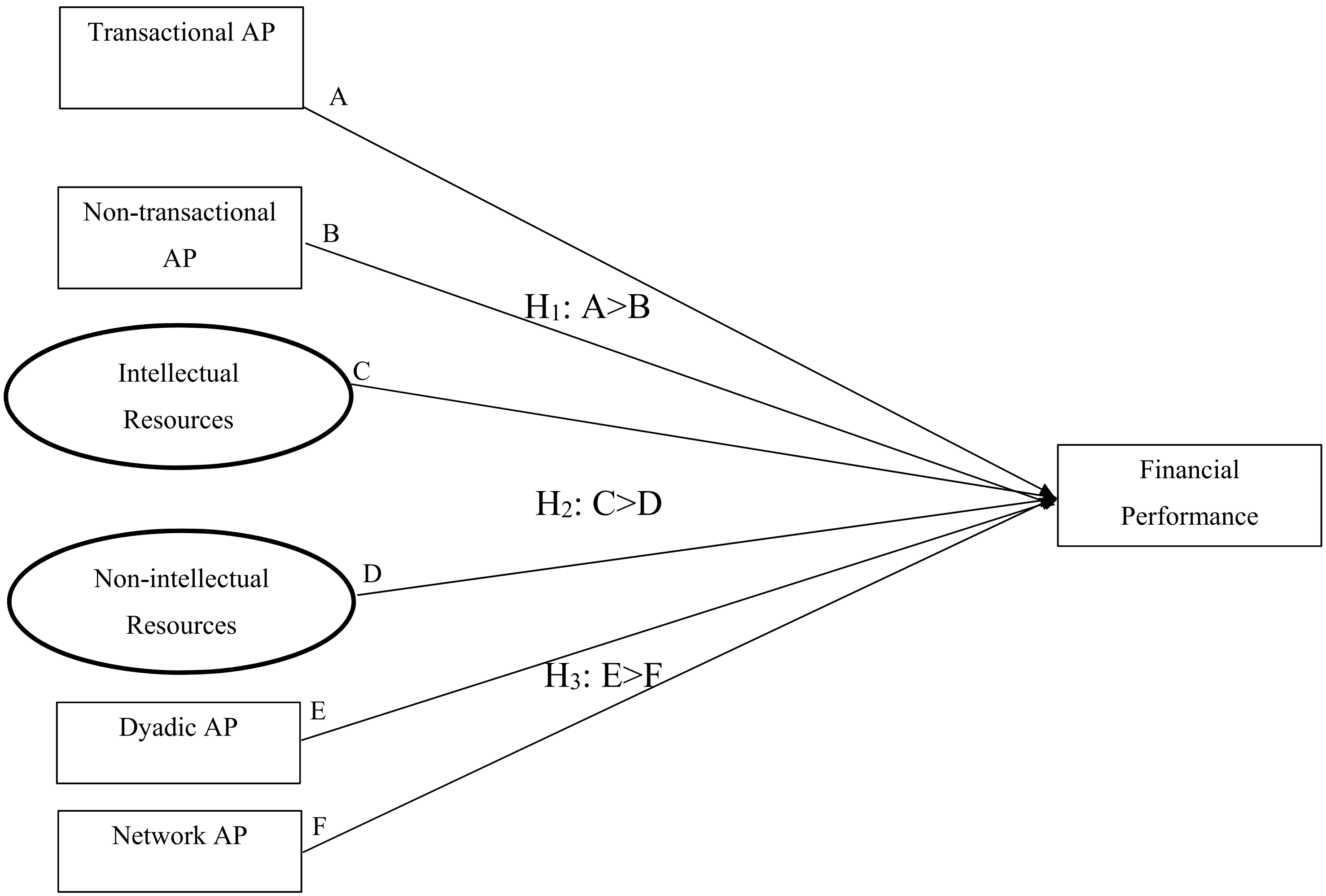
Table 2.1: Existing literature on Financial Performance Implications of AP

Financial Outcomes of AP	Exemplary Studies
Cost Reductions	Lovelock and Young (1979); Mills et al. (1983)
Reduced consumer switching cost/behaviour	Adjei, Noble, and Noble (2010)
Performance (Sales and market share, profit) of new product	Carbonell et al. (2009); Eisingerich et al. (2014); Ngo and O'Cass, (2013); Smets, Langerak, and Rijsdijk (2013); Witell et al. (2014).
Financial success of new product	Gruner and Homburg, (2000)
Willingness to pay	Bowers et al. (1990); Franke, Keinz, and Steger (2009); Fuchs, Prandelli, and Schreier (2010); Hsieh and Chang (2004); (Hsieh & Yen, 2005); Moreau and Herd (2010); Gebauer et al. (2013)

Against this background, it can be concluded that existing research on the link between AP and organisations' financial performance is inconsistent and demonstrates mixed results. The majority of studies have (1) explored financial prospects of AP from the actors' perspective; (2) focused on one particular dimension of AP or been limited to narrower contexts, such as innovation and NPD; or (3) found only indirect relationships between AP and financial performance. To this end, we conduct a thorough investigation into the financial outcomes of AP using the three core dimensions of transactional intensity, tangibility of contributions, and interaction intensity of AP. Doing so enables us to provide a comparative analysis of various dimensions of AP and their relative influence on financial performance.

In the following section, we present three hypotheses related to the direct link between the core dimensions of AP and financial performance. We propose that all the dimensions have a positive effect on the financial performance of organisations (A-F links), but that one of the sub-types of each core dimension has a stronger positive effect (H_1-H_3). **Figure 2.1** depicts our conceptual framework.

Figure 2.1: Core Dimensions of Actor Participation and Impact on Financial Performance



2.2.1.1 Transactional Intensity of AP

As previously mentioned, transactional AP occurs during sales or consumption of an offering directly associated with the core business of organisations. As a result, transactional AP involves a certain degree of structure and formalisation compared to non-transactional AP (Dong & Sivakumar, 2017). Such formality is to ensure that interactions take place in an efficient and effective manner. Actors are guided by the organisation to follow certain steps to successfully complete the sales process or derive optimal value from the consumption experience (Auh & Menguc, 2007; Hibbert, Winklhofer & Temerak, 2012; Ranjan & Read, 2016), and organisations retain more control to maintain the quality of interactions.

Non-transactional AP, however, is much less formalised and actors have much more freedom in their behaviour (Fang, Palmatier & Evans, 2008; Prahalad & Ramaswamy, 2004a) because their participation takes place outside sales or consumption. Organisations can face notable challenges in processing actors' behaviours and shared resources in non-transactional AP. For example, increasing use of non-transactional AP may require organisations to invest in the development of mechanisms for processing different types of actors' resources (Hoyer et al., 2010). Another challenge is the heterogeneity of actors in terms of their expertise and preferences (Auh et al., 2007; Franke et al., 2009; Hoyer et al., 2010). Actors' inputs can significantly vary in terms of quality, structure and importance, which can require cross-functional teams for their governance and coordination (Alexy, Criscuolo & Salter, 2011; Hoyer et al., 2010). Finally, the lower level of formality in non-transactional AP may increase the risk of passive or active customer opportunism and misbehaviour (Ertimur & Venkatesh, 2010). It is also notable that, while non-transactional AP might create significant social value (Chan et al., 2010), it may not always result in economic value due to the operational challenges and difficulties. To this end, we argue that while both transactional and non-transactional AP enhance financial performance, transactional AP is superior to non-transactional AP. Thus:

H_1: Transactional AP will have a stronger positive effect on organisations' financial performance compared to non-transactional AP.

2.2.1.2 Tangibility of Actors' Contributions

As mentioned earlier, actors can contribute different types of resources – intellectual (i.e., knowledge and skills) and non-intellectual (i.e., labour and tangible resources) – during AP. The literature on product/service innovation has explored the implications of using actors' intellectual contributions on new product performance (Fang et al., 2008; Gruner & Homburg, 2000). While there have been mixed findings, with some studies addressing downsides of integrating intellectual contributions (see, e.g., Enkel, Kausch & Gassmann, 2005; Enkel, Perez-Freije & Gassmann, 2005; Noordhoff, Kyriakopoulos, Moorman, Pauwels & Dellaert, 2011), there is general consensus on its positive impact on new product/service performance (Carbonell et al., 2009; Fang et al., 2008). We argue that this positive impact is not only valid but can also apply to a broader scope, beyond new product/service development.

We suggest that integration of actors' intellectual contributions can be valuable for organisations for several reasons. First, it provides a much more efficient way of getting access to large amount of 'sticky information' about the market, existing or future product/service offerings, brand, etc. (Chang & Taylor, 2016). Actors' intellectual contributions can enable organisations to identify latest market preferences, areas of strength or weakness, and novel solutions to existing problems at a faster pace (Blazevic & Lievens, 2008; Eisingerich et al., 2014). As a result, organisations can enjoy significant economic gains due to cost minimisation in marketing, research and development. Second, intellectual contributions are considered a fundamental source of competitive advantage (Ramani &

Kumar, 2008). Capitalising on actors' intellectual contributions equips organisations with new capabilities that can assist them in adapting to highly dynamic environments (Chen et al., 2017) and, thus, differentiating themselves itself from competitors (Ramani & Kumar, 2008).

The economic advantages of resource integration are not limited to intellectual contributions. Non-intellectual contributions of actors, such as the provision of labour and physical effort or tangible resources such as products/services, equipment, property etc., are also considered to yield benefits for organisations. However, there have been mixed findings regarding the advantages of outsourcing labour to actors. While some scholars have considered it as a great cost-reduction mechanism (Lovelock & Young, 1979; Ritzer, 2009), others have identified downsides. Xia and Suri (2014) note that outsourcing labour to actors can lead to expectations not being met and lower willingness to engage in AP. They also find that actors are likely to seek more in compensation or monetary reward for their participation than they would be willing to pay to have the organisation do the task in-house (Xia & Suri, 2014). This is likely to occur as actors develop higher expectations and demand more compensation for the physical effort they contribute during participation (Bendapudi & Leone, 2003; Heidenreich, Wittkowski, Handrich & Falk, 2014; Xia & Suri, 2014). Therefore, it can be suggested that labour-intensive AP may lead to potential actor dissatisfaction, especially if it is not properly incentivised by the organisation (Zwick, Bonsu & Darmody, 2008).

Tangible contributions are also considered to play an important role in the improvement of organisations' performance. Organisations are increasingly transferring ownership and provision of key tangible assets to actors (Lovelock & Gummesson, 2004; Moeller, 2008). By relying on actors to sell, share or rent out their personal possessions or handicraft (Benoit, Baker, Bolton, Gruber & Kandampully, 2017; Kohler, 2015), organisations are able to achieve considerable cost reductions in asset ownership. In addition, actors are able to gain revenue and financial benefits through the contribution of their personal assets (Benoit et al., 2017; Lamberton, 2016), which may lead not only to satisfaction but also to continuous participation. On another note, as with the labour resource, AP strategies relying on tangible resources could be subject to risks of exploitation and opportunistic behaviour. For example, actors might contribute tangible resources solely for financial rewards without following organisations' quality standards and norms.

Against this background, we posit that both intellectual contributions and non-intellectual contributions positively influence financial performance, but that intellectual contributions will have a stronger impact than non-intellectual contributions such as labour and tangible resources. We propose the following hypothesis:

H_2: Intellectual contributions will have a stronger positive effect on organisations' financial performance compared to non-intellectual contributions.

2.2.1.3 Interaction Intensity of AP

Dyadic interactions are two-way communications that occur between organisations and actors in which organisations have an in-depth focus on actors' resources. Interactions are more personalised than in network AP, and organisations play an active role in reciprocating actors' contributions (Chen et al., 2017; Ramani & Kumar, 2008). However, while dyadic AP is identified as generating economic value for organisations (Ramani & Kumar, 2008), network AP is likely to also lead to increased social value (Djelassi & Decoopman, 2013; Lusch, Vargo & Tanniru, 2010; Schau et al., 2009). Research around network AP is scarce and at the early stages (Brodie et al., 2013), with a few recent studies having addressed the significance of triadic or multi-actor exchanges (Bardhi & Eckhardt, 2012; Belk, 2014; Benoit et al., 2017; Schau, Muñiz Jr & Arnould, 2009). The extent of resource exchange in network AP is indicated to be much larger than in dyadic AP and the focus of organisations is beyond short-term sales and profit (Benoit et al., 2017; Hoyer et al., 2010; Van Doorn et al., 2010).

Organisations that practice a high level of network AP have a facilitation role rather than a directive one. They mainly provide the proper environment and tools, as well as the norms, and rely on actors to perform most of the core business activities. We, therefore, posit that while dyadic and network AP are positively associated with financial performance, network AP will have the stronger effect as it will not only lead to greater social value but will also generate greater economic value than dyadic AP because of the operational cost reductions (Benoit et al., 2017; Cravens & Piercy, 1994; Vargo & Lusch, 2008). We make the following hypothesis:

H_3: Network AP will have a stronger positive effect on organisations' financial performance compared to dyadic AP.

Overall, although we expect some of the dimensions to have a stronger impact on financial performance, we suggest all dimensions have a positive influence on organisations' performance. In the next section, we address our second research question and investigate organisational capabilities that can facilitate the financial success of AP. We propose that organisations need to invest in specific capabilities to transform AP initiatives into positive financial outcomes.

2.2.2 Organisational Capabilities Fundamental for Actor Participation

Existing research on the role of organisational capabilities in the financial success of AP is limited. After a comprehensive review of the literature in the domain of AP and related concepts (summarised in Table 2.2, below), two points were notable. First, most studies have analysed the role of organisational capabilities for AP using non-financial metrics, such as product innovativeness and development speed (Chen et al., 2017), customer value (Zhang, Jiang, Shabbir & Du, 2015) and degree of patented innovation (Saldanha, Mithas & Krishnan, 2017). These studies examined organisational capabilities either as an antecedent (Zhang et al., 2015), mediator (Chen et al., 2017) or moderator (Saldanha et al., 2017).

Second, a majority of studies focusing on organisational capabilities essential for AP have been either conceptual or qualitative. Very few studies have undertaken a quantitative examination of the link between organisational capabilities for AP and financial performance (Karpen et al., 2015; Ngo & O'Cass, 2013; Ramani & Kumar, 2008). For example, Ngo and O'Cass (2013) analyse the impact of innovation capabilities during AP on service quality and organisation performance. The authors identify that AP mediates the relationship between innovation capabilities and service quality, which in turn enhances organisations' performance in areas such as sale, profitability, and market share. Ramani and Kumar (2008) associate interaction orientation (a concept related to AP) with a combination of organisational capabilities, but find only an indirect effect on financial performance. Finally, the most recent study by Karpen et al. (2015) analyses the influence of certain organisational capabilities as antecedents to service-dominant logic (another concept related to AP) in the automotive retail industry, which indirectly affected financial performance.

In light of the mentioned research shortcomings, it can be concluded that more comprehensive empirical research that investigates various organisational capabilities fundamental to the financial success of AP is missing. A thorough investigation of capabilities informs organisations of the expertise they need to develop beyond innovation capabilities. Organisations should not overlook the fact that they need to possess or invest in suitable capabilities to get the most out of AP. Finally, unlike the majority of prior research, the examination of these effects across various industries provides more generalised findings.

We address this research gap by examining the role of a series of organisational capabilities and their effect on the relationship between the three core dimensions of AP and financial performance. We build on the conceptual framework of Hatami et al. (2018), which introduces three categories of organisational capabilities related to *actors*, *process*, and *leadership and management.* The *actor* category reflects capabilities that deal with recognition, motivation and interaction of valuable actors as well as establishing a sustainable relationship with them. The *process* category includes capabilities that facilitate execution of AP through the exchange and transformation of actors' resources. The *leadership and management* category involves expertise required for decision-making, governance and control of AP.

Table 2.2: Organisational Capabilities related to AP

Capabilities	**Studies**	**Context**
Propose 5 potential capabilities for the supplier organisation: - Contingent hierarchy - Documentation emphasis - Incentive externality - Customer interactor stability - Process articulation	Tuli, Kohli, and Bharadwaj (2007) *Conceptual*	Customer solutions (B2B)
3 Hierarchical classification of operant resources: - Basic, operant resources - Composite, operant resources - Interconnected, operant resources	Madhavaram and Hunt (2008) *Conceptual*	Service-dominant logic and operant resources *Specify the nature of capabilities rather than the actual capabilities*
Define interaction orientation as a portfolio of capabilities required for being customer-centric: - Customer concept as unit of analysis for marketing actions - Interaction response capacity - Customer empowerment - Customer value management	Ramani and Kumar (2008) *Empirical - Quantitative*	Interaction orientation
3 classifications of operant resource-based capabilities: - Innovation-based capability - Marketing-based capability - Production-based capability	Ngo and O'Cass (2009) *Conceptual*	Service-dominant logic and operant resources

Table 2.2 ***(Cont'd)*****:** Organisational Capabilities related to AP

Capabilities	Studies	Context
Propose 5 distinctive capabilities: - Service-related data processing and interpretation capability - Execution risk assessment and mitigation capability - Design-to-service capability - Hybrid offering sales capability - Hybrid offering deployment capability	Ulaga and Reinartz (2011) *Conceptual*	Customer solutions (B2B) and hybrid offerings
Portfolio of capabilities: - Individuated interaction capability - Relational interaction capability - Ethical interaction capability - Empowered interaction capability - Developmental interaction capability - Concerted interaction capability	Karpen, Bove, and Lukas (2012) *Conceptual* Karpen et al. (2015) *Empirical*	Service-dominant logic
Antecedents to Customer Participation: - Technical Innovation Capability - Non-technical Innovation Capability	Ngo and O'Cass (2013) *Empirical – Quantitative*	Customer Participation

Table 2.2 *(Cont'd)*: Organisational Capabilities related to AP

Capabilities	Studies	Context
Proposes 4 classifications of capabilities each including few sub-categories: - Customer activation (customer mobilisation, customer identification, customer agility) - Organisational activation (leadership, collaborative integration of resources) - Interaction capabilities (relational, ethical, empowered, developmental, and concerted) - Learning agility (Responding to customer needs, Organisational flexibility).	Sharma, Conduit, and Hill (2014) *Empirical - Qualitative*	Organisational capabilities for customer participation in health care service innovation
Innovation Capability Marketing Capability Networking Capability	Zhang et al. (2015) *Empirical - Quantitative*	Value co-creation in industrial markets
Introduces 4 categories of stakeholder capability: - Networking *(pre-project)* - Competence mapping *(pre-project)* - Relational *(in-project)* - Knowledge management *(in-project)*	Kazadi, Lievens, and Mahr (2016) *Empirical - Qualitative*	Stakeholder participation during the innovation process (Pharmaceutical industry - B2B)

Table 2.2 ***(Cont'd)*****:** Organisational Capabilities related to AP

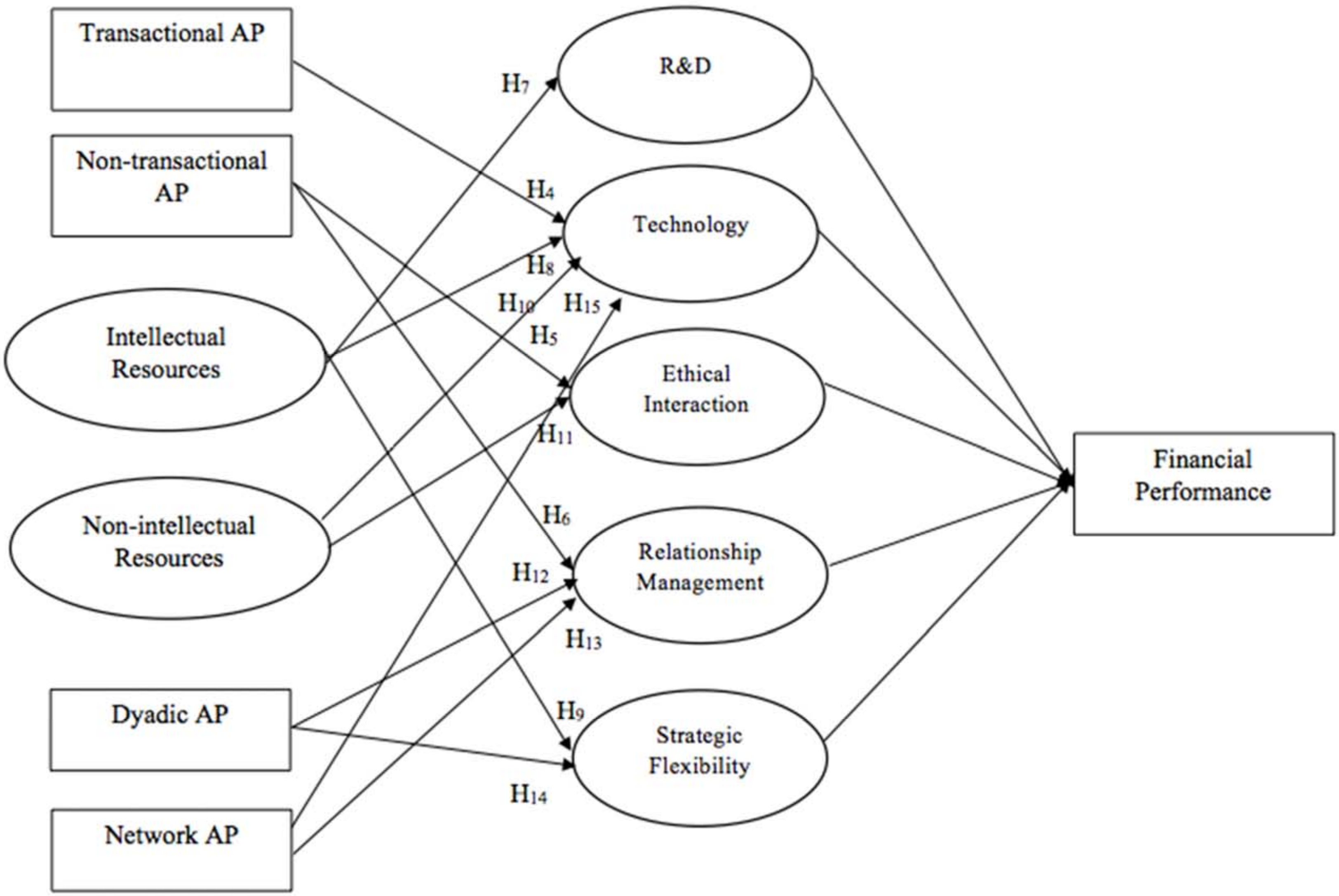
Capabilities	Studies	Context
Introduces capabilities solution quality: - Organisational competence - Employee competence - Customer orientation - Sourcing network competence - Coordination effectiveness - Asset management effectiveness	Macdonald, Kleinaltenkamp, and Wilson (2016) *Conceptual*	Customer solutions (B2B)
Market-relating capabilities: - Market-linking capability - Marketing capability	Chen et al. (2017) *Empirical - Quantitative*	Interaction orientation (IO)
Proposes 23 capability areas grouped under 6 main categories: - Strategic Alignment - Governance - Methods - Information Technology - People - Culture	Hosseini et al. (2017) *Conceptual*	Open innovation capabilities
IT-enabled capabilities: - Relational information processing capability - Analytical information processing capability	Saldanha et al. (2017) *Empirical – Quantitative*	Customer involvement in Innovation of IT

Table 2.2 ***(Cont'd)*****:** Organisational Capabilities related to AP

Capabilities	Studies	Context
Co-creation generates dynamic capabilities linked to: - Adaptation - Knowledge - Innovation and relationship management	Preikschas et al. (2017) *Empirical - Qualitative*	Value co-creation in industrial markets
Builds on Karpen et al., 2012 capability model and introduces a classification framework "sustained purposeful engagement" which encompasses value creating practices and capabilities.	Marcos-Cuevas, Nätti, Palo, and Baumann (2016) *Empirical - Qualitative*	Value co-creation in industrial markets

Drawing from propositions of Hatami et al. (2018), each core dimension of AP inherently involves certain risks and challenges which organisations need to take into account. For example, due to higher formality involved in transactional compared to non-transactional AP, use of advanced technological capabilities is more important for the former to ensure error-free and effective processes. As for actors' resources, because of the greater sensitivity involved in non-intellectual resources (i.e., physical effort, labour, personal possessions) and concern over actors' well-being, investment in ethical interaction capability is of higher importance than for intellectual resources. Similarly, we argue that strategic flexibility capability is more critical for dyadic AP than for network AP. This is due to the highly personalised interactions that occur during dyadic AP, which require flexibility across different organisational functions. In the following section, we present the full details of organisational capabilities fundamental for obtaining a superior financial performance from AP, based on its three core dimensions. **Figure 2.2** depicts the inclusion of organisational capabilities in our conceptual model.

Figure 2.2: Organisational Capabilities fundamental for Financially Successful Actor Participation



2.2.2.1 Transactional Intensity of AP

As mentioned in previous sections, transactional AP occurs during sales or consumption, when actors are the primary players and there is thus a greater risk of error during the participation process. In such situations, capabilities related to the *process* of AP become vital to ensure an error-free transaction. Advanced technological expertise is a process-related capability that is extensively used not only to guide actors' performance but to also provide a fast failure recovery system (Heidenreich et al., 2014). In addition, unlike the B2B context, transactional AP in B2C markets is not based on contractual agreements and, instead, primarily involves informal agreements and unwritten codes of conduct (Dwyer, Schurr & Oh, 1987; Heide & John, 1992; Macneil, 1980; Wathne & Heide, 2000). As such, opportunistic actor behaviour becomes another notable challenge during transactional AP (Ertimur & Venkatesh, 2010). Such behaviour occurs when actors take advantage of the opportunity and behave with guile, seeking their self-interest without regard for the consequences of their action (Macneil, 1980; Wathne & Heide, 2000). Technological tools are one of the primary mechanisms used in these situations to govern and restrict actors' behaviour and identify misbehaviour. We propose that organisations practising a high degree of transactional AP must capitalise and invest in technological capabilities. Transactional AP can have a positive influence on financial performance through the use of advanced technological capabilities. We hypothesise:

H_4: Technology capability mediates the relationship between transactional AP and the organisation's financial performance.

Non-transactional AP, as mentioned earlier, takes place outside sales/consumption; the actors' contribution is entirely voluntarily and the organisation is usually the ultimate beneficiary (Dong & Sivakumar, 2017; Nuttavuthisit, 2010). Consequently, actors may not always be sufficiently motivated to engage with organisations. In fact, actors may be reluctant to engage in non-transactional AP due to perceptions of opportunistic organisational behaviour. We argue that this issue can be resolved through effective *management and leadership* of AP, through which organisations' goodwill and fair corporate culture can be communicated to actors. Ethical interaction expertise is related to management and leadership through which organisations become transparent and communicate the risks and benefits of AP (Albinsson, Perera & Sautter, 2016). Ethical interaction capability enables organisations to gain the trust of actors and ensure lack of opportunistic behaviour. Hence, we emphasise that it is vital for organisations to develop and adopt ethical interaction capability to deal with the potential risks of non-transactional AP and to communicate fairness. Doing so can increase actors' engagement with the organisation beyond sales or consumption and thereby link non-transactional AP to strong financial returns. We propose:

H_5: Ethical interaction capability mediates the relationship between non-transactional AP and the organisation's financial performance.

Similar to ethical interaction capability, relationship management capabilities can be critical to increasing actors' engagement and overcoming the challenge of low participation during non-transactional AP. Organisations must employ capabilities related to actors to be able to increase their participation by recognising their psychological needs, preferences and behaviours. This can be done through building a strong rapport and consistent relational interactions with actors, which can create a sense of belonging and bonding with the organisation and its brand (Gebauer et al., 2013; Ramani & Kumar, 2008). Actors who become advocates of the organisation are more likely to engage in non-transactional AP (Eisingerich et al., 2014). Moreover, actors who care about the organisation are likely to have a higher willingness to contribute resources that are of better quality (Auh et al., 2007; Mills et al., 1983). We, therefore, suggest that a superior relationship management and interactive capability is an important mechanism in the link between non-transactional AP and financial performance. Hence:

H_6: Relationship Management capabilities mediate the relationship between non-transactional AP and the organisation's financial performance.

2.2.2.2 Tangibility of Actors' Contributions

As the types of resource actors contribute can change (intellectual, such as knowledge and skills, and non-intellectual, such as labour and tangible resources), organisations need different sets of expertise to transform these resources into feasible and optimal solutions. One key challenge for dealing with intellectual contributions is processing and analysis. The intellectual contributions of actors must be evaluated in terms of quality and value prior to being transformed into operational resources. The intangible nature of such contributions adds difficulty to the recognition and distinction of valuable input from the rest. This challenge is associated with the *process of AP* and can be overcome through the use of absorptive capacities such as R&D capabilities, which are all process-related (Hunt & Madhavaram, 2012). R&D capabilities facilitate the successful use of intellectual contributions by allowing organisations to process and evaluate the quality of a large amount of input. It can be argued that organisations that integrate external intellectual contributions to a high degree will make additional R&D investments to ensure effective translation of AP initiatives into a superior financial outcome. We therefore hypothesise:

H_7: R&D capability mediates the relationship between integrating intellectual contributions of actors and the organisation's financial performance.

Another important absorptive capacity critical for intellectually-intensive AP strategies is technology. Technological capabilities provide a suitable mechanism for the exchange of intellectual contributions in an efficient manner. Organisations need to use proper tools to ensure actors' knowledge and skills are conveyed through channels with minimum noise and error. Additionally, using proprietary technological capabilities not only allows organisations to interact with actors in a unique and engaging way but also effectively records a substantial amount of intellectual input. As with R&D capabilities, we suggest that the exchange of intellectual contributions requires an increased use and continuous development of technological expertise. Thereby, we propose:

H_8: Technology capability mediates the relationship between integrating intellectual contributions of actors and the organisation's financial performance.

One of the primary reasons the integration of intellectual contributions is a source of competitive advantage is their transformation into valuable know-how and competence (Chang & Taylor, 2016). This transformation process can be challenging for organisations because they must deal with significant heterogeneity in actors' intellectual contributions. Strategic flexibility is associated with *management and leadership capabilities* and provides openness in organisational structure and culture, which can facilitate the transformation of various contributions into valuable solutions (Coviello & Joseph, 2012; Cui & Wu, 2016; Nambisan, 2002). Strategic flexibility allows organisations to make changes in how they create, maintain, and prioritise opportunities for future (Bowman & Hurry, 1993; Buckley, 1997; Grewal & Tansuhaj, 2001). Be developing their strategic flexibility capability, organisations can transform and adapt resources based on actors' intellectual inputs and, thus, create a new portfolio of competitive intangible resources (Johnson, Lee, Saini & Grohmann, 2003). We contend that strategic flexibility is a fundamental mechanism for translating intellectual contributions into a competitive advantage and financial performance. Hence:

H_9: Strategic flexibility capability mediates the relationship between integrating intellectual contributions of actors and the organisation's financial performance.

Although outsourcing provision of non-intellectual resources (such as labour and tangible resources) to actors has merit, such as providing cost minimisation (Etgar, 2008; Lovelock & Young, 1979), it can also create challenges, such as governance and control of quality. In AP strategies where core in-house activities are allocated to actors (e.g., provision of labour and/or sharing of different tangible resources), organisations need to ensure clarity of actors' roles and responsibilities during AP and avoid any potential error and violation (Ertimur & Venkatesh, 2010; Meuter, Bitner, Ostrom & Brown, 2005; Schneider & Bowen, 2010). Technological capabilities are useful in dealing with such *process-related* challenges because they facilitate governance and guide actors' performance in the provision of resources. Various technological tools are employed in service interactions to add clarity to actors' roles and avoid disruptions (Meuter et al., 2005; Meuter, Ostrom, Roundtree & Bitner, 2000). We propose that technological capabilities are fundamental to the financial success of AP strategies that rely heavily on the provision of non-intellectual contributions:

H_{10}: Technological capability mediates the relationship between non-intellectual contributions of AP and the organisation's financial performance.

It is notable that the exchange of non-intellectual contributions can also pose challenges beyond governance and quality control, such as ensuring the well-being and fair treatment of actors. As with non-transactional AP, there are risks of actors' perception of organisational opportunistic behaviour. Actors will not participate if they perceive they are being exploited for free labour or treated unfairly in return for sharing/selling their personal possessions. Therefore, in order to gain actors' trust, ensure continuous engagement in AP and, ultimately, derive sustainable financial gain, organisations need to develop a culture of transparency and ensure fairness during AP interactions (Prahalad & Ramaswamy, 2004b). This *management and leadership-related challenge* can be solved by employing an ethical interaction capability, whereby the organisation explicitly communicates the risks and benefits of participation (Albinsson et al., 2016). Ethical interaction capability verifies with actors that the organisation will not mislead, manipulate or deceive them and will share all the essential information during the participation process (Karpen et al., 2012; Vargo & Lusch, 2008). Not only will ethical interaction capability gain the trust of actors, but it will also increase the likelihood of continuous contribution of non-intellectual resources. We therefore contend:

H_{11}: Ethical interaction capability mediates the relationship between non-intellectual resources of AP and the organisation's financial performance.

2.2.2.3 Interaction Intensity of AP

Compared to B2B markets, AP in B2C markets involves additional challenges due to the distance between actors and the organisation and the existence of more intermediaries, such as retailers (Hoyer et al., 2010). This is especially the case in dyadic AP, as organisations focus on in-depth interactive two-way communications with actors. Organisations need to have expertise in understanding actors, their needs, behaviours etc., as well as to possess the tools to effectively manage interactions with actors. Relationship management is an *actor-related* capability that enables organisations to proactively manage dyadic interactions at various business stages (Reinartz, Krafft & Hoyer, 2004). Further, relational capabilities assist organisations to properly allocate resources for dealing with different tiers of actors and derive economic value through continuous interactions (Reinartz et al., 2004; Zeithaml, Rust & Lemon, 2001). We therefore argue that the use and development of interactive and relational capacities is key to the sustainable financial success of dyadic AP. We propose:

H_{12}: Relationship management capabilities mediate the relationship between dyadic AP and the organisation's financial performance.

As mentioned earlier, the detailed focus on each individual actor's input during dyadic AP requires organisations to reciprocate in a personalised manner. Organisations will, therefore, benefit from developing a flexible and open culture across different organisational levels (i.e., management and leadership-related) to allow quick, appropriate tailoring of interactions based on actors' inputs. Strategic flexibility is a critical capability, as it enables organisations to reallocate and reconfigure the use of resources and adapt actions to dynamic changes in external input (Johnson et al., 2003). Organisations engaging in dyadic AP need to invest in creating flexibility in many areas – resource allocation, supply-chain operations, relationship with partners etc. – to cater for the personalised needs of actors and achieve competitive advantage. We therefore suggest that strategic flexibility is an important mechanism in carrying the positive effect of dyadic AP on financial performance.

H_{13}: Strategic flexibility capability mediates the relationship between dyadic AP and the organisation's financial performance.

As with dyadic AP, relationship management is also fundamental for network AP, which requires more focus on building and managing relationships *among* actors (i.e., actor-related challenge). Organisations need to provide suitable mechanisms that encourage actors to interact with one another effectively (Ramani & Kumar, 2008). Relationship and networking expertise are known to foster collaborative interactions and exchange of resources in multi-actor communications (Zhang et al., 2015). Developing relational and networking capabilities not only reinforces organisations' capacity in creating profitable networks but also equips them with the proper tools to manage and reciprocate interactions in multi-actor networks (Saldanha et al., 2017). Studies focusing on triadic or multi-stakeholder business relationships have also addressed investments in networking capabilities for building long-term relationships and trust among actors (Mitrega, Forkmann, Ramos & Henneberg, 2012). Besides building long-term relationships, networking capabilities also reinforce problem-solving among actors (Mohr, Fisher & Nevin, 1996). We propose that all these factors can lead to the creation of financial value for the organisation, making relationship management and networking capabilities fundamental in transforming network AP into superior financial performance.

H_{14}: Relationship management capabilities mediate the relationship between network AP and the organisation's financial performance.

Once organisations overcome the challenge of encouraging interactions among multiple actors, they need to provide proper platforms where actors with established relationships can successfully exchange resources (i.e., process-related challenge). We propose that technological capabilities are most suitable for facilitating systems through which large networks of actors can exchange different resources. Using sophisticated technological tools in network AP would adjust governance procedures and ensure a fair exchange of resources among actors. Further, organisations can keep track of large-scale interactions through the use of technological tools. Thus:

H_{15}: Technological capability mediates the relationship between network AP and the organisation's financial performance.

In the following section, the methodology and analysis will be discussed. The hypotheses will be examined across two distinct studies, which respectively focus on secondary and primary data. We then turn our attention to specifying the appropriate analysis methods and reporting the findings.

2.3 Methodology

Our research is divided into two distinct studies. The first focuses on secondary data to investigate the relationship between AP and objective financial performance, while the second study uses a survey-based method to collect primary data from managers to analyse the role of organisational capabilities in the link between AP and subjective financial performance (Please see Appendix B for the challenges involved in the research design). Details on sampling and the procedure of each study are presented in the following sections.

2.3.1 Study 1

Study 1 focuses on secondary data and examines our framework using a sample of public organisations from multiple industries. The three core dimensions of AP are the main focus of this study. To capture data for these dimensions, we hired three research assistants to answer 11 questions regarding the AP strategies of organisations from our sample. We had to exclude organisational capabilities in this study due to the lack of secondary sources of data.

2.3.1.1 Sample

We used a sample of 110 organisations (selected from Fortune 500 and Hoover's Database) listed on either the NYSE or the NASDAQ[10] stock exchange. The organisations were selected from specific industry sectors of apparel and accessories, automobile, broadcasting and telecommunications, car rentals, consumer electronics, personal care and cosmetic products, entertainment, food and beverages, Internet, restaurants and cafes, professional services, retail and, finally, travel. It is notable all the mentioned industries are in B2C markets where

[10] Acronyms for New York Stock Exchange and National Association of Securities Dealers Automated Quotations.

AP strategies are typically employed. For example, industries such as construction, oil etc. were excluded as they are either unrelated to AP or their AP strategies are specific to B2B markets. Additionally, the organisations in the sample vary based on their financial performance, age and size. The distribution of the sample based on industries is provided in Appendix C.

2.3.1.2 Procedure

To gather secondary data regarding the AP strategies of the organisations in the sample, we recruited three research assistants (RAs). The RAs were asked to provide their perception of each organisation's AP strategy by answering 11 questions centred on the three core dimensions. The RAs were qualified through interviews conducted by the PhD researcher and supervisors. All RAs had a masters degree with practical and research experience in the marketing and management discipline. Particularly, they had experience in secondary research as well as inter-rater reliability approach. After the recruitment process, the RAs were trained to understand the context of the research, particularly the concept of AP and its core dimensions, with practical examples. However, to avoid any potential bias in their answers they were not informed of the objective of the study or the underlying theoretical framework (i.e., investigation of organisations' financial performance).

Several trials involving small batches of organisations (not included in the main sample) were conducted over a three-month course of training to ensure RAs' comprehension of the project. After each round of practice, the inter-rater reliability was analysed, followed by a face-to-face meeting for further training. It is notable that there was no communication between the RAs after the training, in order to ensure all answers remained unbiased in the main study. The 11 questions were presented to RAs through a Qualtrics online survey instead of an Excel sheet to enhance precision and reduce data entry errors. The organisations used during the training process were excluded from the main study.

RAs primarily used websites and other official platforms of the organisations in the sample to gather information. They were advised against using blogs, forums, etc. that were not hosted by the organisations to avoid inaccurate and invalid data. They also were encouraged to use relevant business magazines and news articles such as the Economist, Bloomberg, Forbes, New York Times, etc. For example, information regarding the extent to which organisations are open to unsolicited suggestions (Table 2.3) can usually be identified through organisations' *Terms of use* or *Privacy Policy*, or *Contact Us* pages. Organisations normally declare their policies about acceptance of unsolicited ideas on one of these sections. The RAs were advised about these sources of information during the training process (For further details regarding the training process of the RAs, please see Appendix D which includes the instructions provided for each construct).

2.3.1.3 Measurement Instruments and Calculation of Objective Financial Data

The measurement instruments were based on a combination of existing and new scales and were mostly kept as single-item scales to ensure the feasibility of the project by RAs. We used and adapted existing scales to measure intellectual contributions (Ramani & Kumar, 2008; Ranjan & Read, 2016). The intellectual contributions construct was considered as a formative rather than a reflective variable, because the items can be independent of one another or correlate weakly (Ranjan & Read, 2016). Labour scale was adapted from Bielby and Bielby (1988) and Heidenreich et al. (2014). The tangible resource scale was also adapted from Elmuti (2003) and Gilley and Rasheed (2000). Due to the novelty of our framework and the two dimensions of *transactional intensity* and *interaction intensity* of AP, we could not find any existing scales. As such, we did a face-to-face pilot study with 12 marketing and academic experts to create and refine these scales. Based on the COARSE[11]

[11] Construct definition, Object classification, Attribute classification, Rater identification, Scale formation, and Enumeration (Rossiter, 2002).

procedure, there was an overall consensus on considering these constructs as single-item scales (Rossiter, 2002). In addition, we improved the wording and comprehensibility of other scales based on the results of the pilot study.

As mentioned previously, we used secondary data for the dependent variable of financial performance. Specifically, we used the three financial measures of *sales*, *profitability* and Tobin's Q. Sales and profitability are accounting-based ratio measures that represent past performance; Tobin's Q is a capital market-based measure that indicates future performance (Anderson, Fornell & Mazvancheryl, 2004; Rust, Moorman & Dickson, 2002). Accounting-based measures such as sales and profitability contain limited information about the future shareholder value of an organisation (Geyskens, Gielens & Dekimpe, 2002). Additionally, relying only on accounting-based measures for evaluation of organisations' performance across different industries can be problematic due to differences in accounting practices (Anderson et al., 2004). An organisation's stock price is considered as a parsimonious option and a common benchmark for future economic performance. Stock prices contain great information regarding potential future profitability of organisations (Malkiel & Fama, 1970). Overall, a large majority of previous studies emphasised the benefit of Tobin's Q as a forward-looking measure of financial performance. However, a recent study by Bendle and Butt (2018) notes several shortcomings Tobin's Q as a measure of financial performance, which we addressed in our study (see Appendix E for our responses). As sales and profitability are also being used as measures of financial performance, we believe using Tobin's Q should not be problematic.

We used *Compustat* and *Center for Research in Security Prices* (CRSP) databases from *Wharton Research Data Services* platform to extract different financial data. Initially, we extracted *Tinker*, *Global Company Key* (GVKEY), and *Standard Industrial Classification* (SIC) values of each company from Compustat, CRSP and the *Bloomberg* website. We followed Chung and Pruitt's (1994) and Lee and Grewal's (2004) method to calculate Tobin's Q. Tobin's Q was calculated as the sum of market value, liquidation value of the organisation's outstanding preferred stock, and debt to its total assets:

(1)

$$Q = \frac{\text{MVE+PS+DEBT}}{\text{TA}}$$

Where:

MVE = (Closing price of shares at the end of the financial year) $\times$ (Number of common shares outstanding),

PS = Liquidation value of the firm's outstanding preferred stock,

DEBT = ((Current liabilities $-$ Current assets) $+$ (Book value of inventories) $+$ (Long-term debt)), and

TA = Total assets.

We extracted Tobin's Q based on both year-end and the average stock price at the end of four quarters (i.e., March 31, June 30, September 30, and December 31). The problem with using the year-end measure of Tobin's Q is that the final results will depend on this single measure of stock price, which can involve considerable volatility (Lee and Grewal, 2004). We therefore incorporated the average of the four quarters as a more accurate measure of annual stock price. Using a quarterly measure of Tobin's Q will reduce the volatility problem. The correlation between the year-end and quarterly measures of Tobin's Q in our dataset is .77 and is statistically significant ($P < 0.001$), thus making it suitable to use the quarterly instead of annual stock data in our analysis.

Regarding the timeline of the secondary data, the RAs were advised to consider the three-year timeframe of 2013–2015 in their secondary research for each organisation in the sample. Due to the long-term impact of strategic initiatives, we considered a four-year timeframe (2013–2016) for extraction of financial data. More precisely, the financial data from the year 2016 were considered as the dependent variable and the average financial data of the three previous years, 2013–2015 were incorporated to control for organisations' past performance and for lag effect. We also controlled for any potential environmental and extraneous variation of financial performance from unknown industry sources (Slater & Zwirlein, 1992; Vorhies, Orr & Bush, 2011) by mean-centring each of the three financial measures (Tobin's Q, sales and profit). We used the two-digit SIC number to calculate the industry averages of each of the three financial measures, which were then subtracted from the organisations' financial values. Also, we created a new variable[12] to control for situations where organisations engage in more than one form of AP (e.g., adopt transactional and non-transactional AP and/or integrate both intellectual as well non-intellectual contributions of actors).

The other control variables commonly believed to influence financial performance are organisation age, organisation size and contextual or environmental variables such as competitive intensity and market turbulence (Jaworski & Kohli, 1993; Kirca, Jayachandran & Bearden, 2005). Due to the unavailability of data from secondary sources for the contextual variables, we only considered the age and size of the organisation for this study. We used the Compustat Global Company Key (GVKEY) codes of each organisation to extract size and Tinker values to obtain the age of each organisation from Bloomberg. We measured organisation size as the number of employees (Fang, Palmatier & Grewal, 2011).

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[12] NOD: Number of Dimensions, which takes into account the number of dimensions of AP in which organisations engage.

2.3.1.4 Assessment of Inter-Rater Reliability

We followed the procedure of Rust and Cooil (1994) for assessing the inter-rater reliability of our three RAs. The authors use 'proportional reduction in loss reliability' (PRL) and assert that a score of 0.7 or higher is acceptable for most academic research. Our PRL reliability scores ranged from 0.7 to 0.99, so we concluded that there had been a sufficient level of agreement among the three RAs and, thus, the answers to all scale items are reliable. A summary of the PRL score for all the items is provided in Table 2.3.

Table 2.3: Inter-Rater Reliability Scores

Construct/Item	**PRL Score**
Information Sharing The extent to which each company collects information from participants.	0.7
Unsolicited Ideas The extent to which each company is open to and welcomes participants' unsolicited suggestions for developing new or improved product/service offerings.	0.78
Customisation The extent to which each company allows consumers to customise products/services according to their specific requirements.	0.9
Problem-solving The extent to which each company allows participants to apply their knowledge and intellectual skills (e.g., graphical design, technical, numerical, IT or technological, and analytical, etc.) in the creation of products/services or processes related to them.	0.81
Consumer Engagement and Word-of-Mouth The extent to which each company encourages participants to share their opinions of products/services or its brand with other people (e.g., encouraging the spread of word-of-mouth (WOM), or asking them to share their consumption experiences online/offline, offering consumer referral bonuses when they tell a friend).	0.85
Physical Effort and Labour The extent to which participants expend physical effort for participation activities of each company.	0.99
Tangible Resources The extent to which each company relies on participants for the provision of tangible resources.	0.99
Transactional AP	0.9

The extent to which the activities of each company occurs during sales or consumption.	
Non-transactional AP The extent to which the activities of each company occurs outside sales or consumption.	0.81
Dyadic AP The extent to which each company uses strictly two-way interaction.	0.72
Network AP The extent to which each company interactions in multiple networks where all participants also interact with one another.	0.7

Note PRL = Proportional Reduction in Loss Reliability

As we only have two latent constructs (i.e., intellectual and non-intellectual contributions), we performed an exploratory factor analysis in SPSS to evaluate the quality of the measurement. Both the Kaiser-Meyer-Olkin test and Bartlett's Test of Sphericity indicated that factor analysis was appropriate, with two factors emerging as expected, explaining 58% of the variance. It is also notable that, because we used secondary objective financial data, we did not have concerns regarding common method bias in this study. Table 2.4 provides a summary of the descriptive statistics: means, standard deviations and correlations.

Table 2.4: Descriptive Statistics and Correlations of Study 1

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Intellectual Contributions	1													
2.	Non-Intellectual Contributions	.376**													
3.	Transactional	.601**	.566**												
4.	Non-Transactional	.726**	.183	.283**											
5.	Dyadic	.208*	.143	.373**	.06										
6.	Network	.683**	.296**	.315**	.786**	-.067									
7.	Tobin's Q (2016)	.161	-.161	.104	.64	-.095	.105								
8.	Sales ($) (2016)	.098	.117	.036	.052	.107	.037	-.134							
9.	Profit ($) (2016)	.245*	.197*	.170	.111	.140	.069	-.021	.659**						
10.	Tobin's Q (2013-2015)	.346**	.164	.283**	.349**	-.129	.352**	.338**	-.180	-.073					
11.	Sales ($) (2013-2015)	.041	.42	-.30	.11	.104	-0.026	-.077	.937**	.612**	-.252*				
12.	Profit ($) (2013-2015)	.195*	.066	.094	.114	.157	0.019	.003	.626**	.863**	-.138	.682**			
13.	Organisation Age	-.218*	-.320**	-.362**	-.016	.024	-0.078	-.017	.169	.044	-.285**	.191	.086		
14.	Organisation Size	.005	.079	-.140	.111	.119	-0.018	-.152	.609**	.398**	-.298**	.623**	.444**	0.362**	1
Min		1.67	1	1	1.67	1.67	1.33	-20.54	-41804	-2394	-1.32	-36669.76	-2782.30	10	0.53
Max		3.73	2.67	4	4	4	4	5.35	139526	24200	4.51	143038.65	20839.28	210	527
Mean		2.39	1.25	2.09	2.44	2.52	2.67	.40	22762	2398.2	0.45	27950.05	2799.02	65.83	106.94
SD		.46	.33	.64	.53	.58	.63	2.61	40245	4851.9	1.27	38574.20	4568.11	45.67	112.87

Note **Correlation is significant at $P < 0.01$ (two-tailed test).

*Correlation is significant at $P < 0.05$ (two-tailed test).

2.3.1.5 Analysis and Results of Study 1

Of the 110 organisations rated by the three RAs, 103 were usable. Seven were removed due to missing values and unavailability of some of the financial metrics for the three-year timeline. The hypotheses (H_1–H_3) were tested using multiple regression analysis (least squares) with the two control variables of organisation age and size (transformed into their log value). The unit of analysis was at the organisation level and we analysed the same conceptual model for each of our three dependent variables.

We did not use structural equation modelling due to the small size of our sample (N=103) as well as the majority of our predictors being single-item measures. We obtained scores for the two formative constructs of intellectual and non-intellectual contributions by averaging respective formative indicators. The results of the regressions are presented in Tables 2.5–2.7. Overall, the adjusted R^2 across the three models is highest (.366) for the second model (sales as the dependent variable) and lowest (.188) for the third model (profit as the dependent variable). Overview of the variance inflation factors for the regression equations showed that the highest variance inflation factor was 3.7, which is well below the cut-off value of 10 for multicollinearity (Neter, Kutner, Nachtsheim & Wasserman, 1996). Thus, multicollinearity was not an issue in the interpretation of results.

Table 2.5: Study 1 Regression Results of Model 1

Independent Variable	*β*	*t*-Value	VIF	F	*P*	R^2	Adjusted R^2
Model				3.177	.002	0.257	.176
Intellectual Contributions	.309	1.813	3.599		.073		
Non-intellectual Contributions	-.262	-2.191	1.776		.031		
Transactional AP	.238	1.600	2.751		.113		
Non-transactional AP	-.105	-.514	5.120		.608		
Dyadic AP	-.035	-.318	1.490		.751		
Network AP	.146	.873	3.325		.714		
Company Age	.092	.858	1.421		.393		
Company Size	-.052	-.496	1.371		.621		
Tobin's Q (2013-2015)	.299	2.741	1.472		.007		
NOD	-.380	-1.847	5.231		.068		

Note Dependent Variable: Tobin's Q; VIF: Variance Inflation Factor; NOD: Number of Dimensions

Table 2.6: Study 1 Regression of Model 2

Independent Variable	*β*	*t*-Value	VIF	F	*P*	R^2	Adjusted R^2
Model				8.350	.000	.889	.887
Intellectual Contributions	.006	.094	3.606		.926		
Non-intellectual Contributions	.039	.848	1.774		.398		
Transactional AP	.024	.417	2.668		.677		
Non-transactional AP	-.083	-1.077	4.997		.284		
Dyadic AP	-.022	-.530	1.462		.597		
Network AP	.062	.957	3.480		.341		
Company Age	.020	.487	1.393		.628		
Company Size	.071	1.422	2.048		.158		
Sales (2013-2015)	.890	19.485	1.735		.000		
NOD	.070	.884	5.152		.379		

Note Dependent Variable: Sales

Table 2.7: Study 1 Regression of Model 3

Independent Variable	β	t-Value	VIF	F	*P*	R^2	Adjusted R^2
Model				3.945	.000	.793	.771
Intellectual Contributions	.068	.752	3.686		.454		
Non-intellectual Contributions	.061	.961	1.780		.339		
Transactional AP	-.055	-.707	2.668		.481		
Non-transactional AP	-.275	-2.640	4.833		.010		
Dyadic AP	-.086	-1.495	1.463		.138		
Network AP	-.007	-.081	3.469		.936		
Company Age	.037	.665	1.394		.508		
Company Size	.066	1.120	1.566		.266		
Profit (2013-2015)	.802	14.466	1.370		.000		
NOD	.338	3.120	5.211		.002		

Note Dependent Variable: Profit

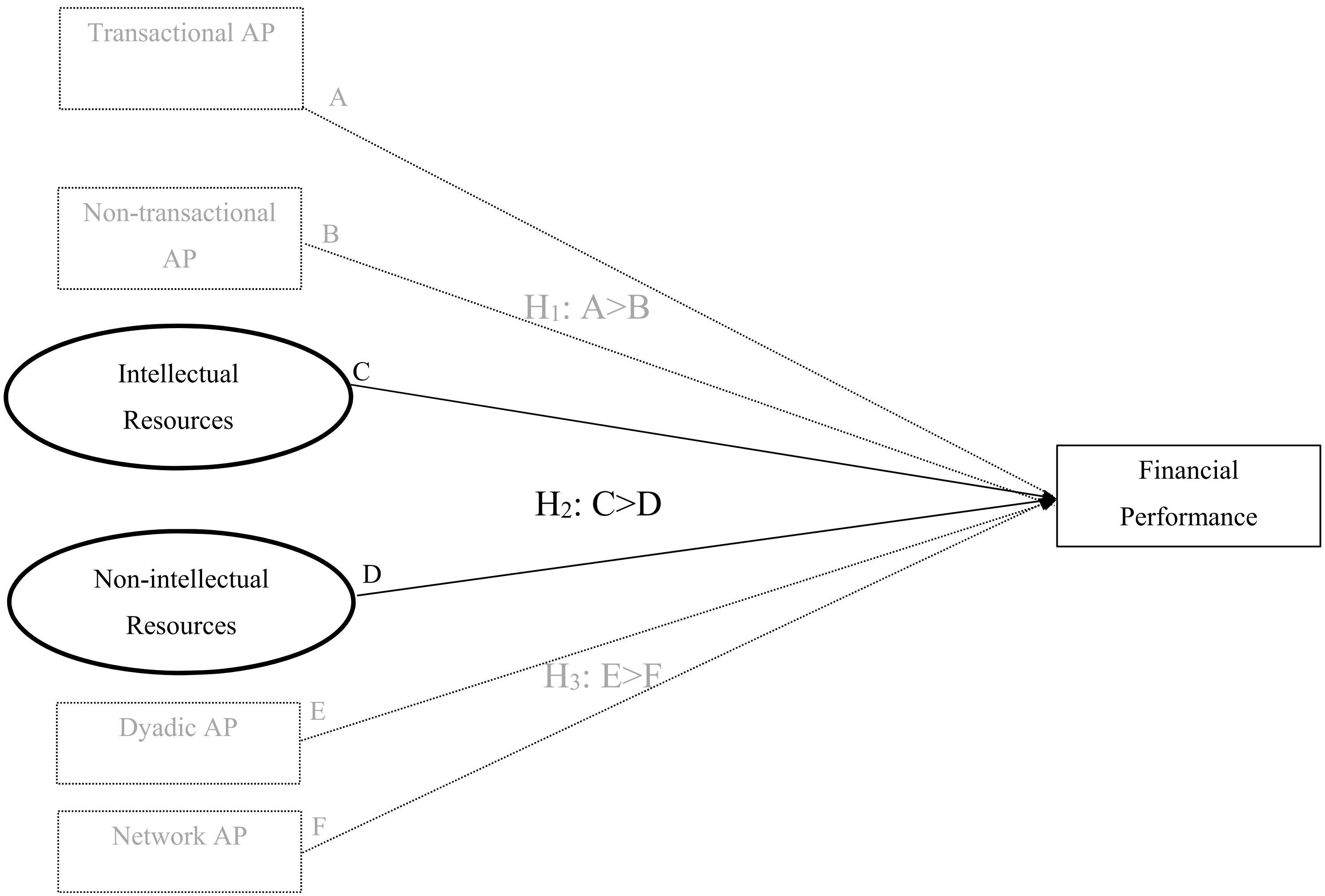
In the first model, with Tobin's Q as the dependent variable, one hypothesis out of three is statistically significant. Results in Table 2.5 show that integration of non-intellectual contributions has a negative relationship on Tobin's Q ($\beta = -.262$, $P < 0.05$), which is contrary to what we initially hypothesised. However, in support of H_1, intellectual contributions are positively associated with Tobin's Q ($\beta = .309$, $P < 0.1$). Of the four control variables (organisations' age, size, past performance, and engagement in several forms of AP), only two appear to have an impact on Tobin's Q. Financial performance over the previous three years, 2013–2015, is shown to influence Tobin's Q ($\beta = .299$, $P < 0.05$). Interestingly, it is found that engaging in more forms of AP can have a marginally significant negative impact on future financial performance ($\beta = -.380$, $P < 0.1$).

In the second model (Table 2.6), with sales as the dependent variable, we did not find support for any of the hypotheses in this model. However, past performance of the organisations appears to have a strong influence on sales performance ($\beta = .890$, $P < 0.001$).

In the last model, with profit as the dependent variable, we found partial support for our first hypothesis. It can be seen from Table 2.7 that non-transactional AP has a negative effect on profit ($\beta = -.275$, $P < 0.05$). Of all the control variables, two are shown to be associated with organisations' profitability. Similarly to the previous models, past performance has a strong influence on profitability ($\beta = .802$ $P < 0.01$). Also, contrary to the first model, results show that engaging in more than one form of AP has a positive impact on profitability ($\beta = .338$ $P < 0.05$).

Figure 2.3 provides a visual summary of the supported hypotheses. The relationships that were not supported are demonstrated in dots.

Figure 2.3: Supported Hypotheses of Study 1



2.3.2 Study 2

Our second study focused on the collection of primary data using a cross-sectional survey-based method. We addressed our second research question and examined the role of organisational capabilities in the relationship between the core dimensions of AP and subjective financial performance. We analysed the data using multiple regressions and structural equation modelling. Multiple regression analysis with SPSS was used to undertake a comparative analysis of the same theoretical framework as in Study 1 with the new dataset. Structural equation modelling was used to test the extended conceptual framework comprising organisation capabilities.

2.3.2.1 Sample

The key informants for this study were mid- to senior-level marketing, product, sales or brand managers who had adequate knowledge of their organisation's AP activities as well as their financial performance. As in Study 1, in the interest of generalisability of our findings, we focused on several consumer product and service industries: food and beverages, fashion and apparel, entertainment, Internet, travel, hospitality, telecommunication, professional and financial services within the USA. We used ResearchNow, a highly reputable and reliable market research company, to obtain access and collect responses from our key informants (See Appendix B). We also did two rounds of pilot study, with 50 and 40 respondents respectively, which allowed us to further refine and improve the survey.[13] The profile sampling of ResearchNow was quite detailed and met all the key selection criteria in the study.

We could not target more than one informant within each organisation because market research companies do not profile their panels with organisation names. Although using more

[13] Data obtained from pilot studies was not used in the main dataset.

than one informant per company is one of the common ways to reduce common method bias (CMB), we followed recommendations of MacKenzie and Podsakoff (2012) to not only control for CMB after data collection but also reduce CMB prior collection of data. More details about CMB, the study design remedies, and post-hoc tests are provided in the following section.

2.3.2.2 Procedure

We administered and monitored the survey ourselves through *Qualtrics Online Survey Tool*. Due to the criticisms of using panel respondents, we created several quality check procedures. We embedded seven screening questions that dropped disqualified respondents at the beginning of the survey. The screening questions checked the location, age, type of business (B2B or B2C), the primary role of the managers, level of seniority, type of industry and years of experience in the organisation. Respondents living and working outside the USA, below the age of 25, working at B2B product/service organisations, or with less than two years of experience in the organisation or industry were all screened out. Additionally, respondents with primary roles unrelated to marketing (e.g., accounting, human resources, IT etc.) and at the internship/associate levels of seniority were also screened out. These screening criteria prevented respondents from participating in the survey just for the incentives. Those participants who qualified through screening questions were then presented with the main purpose and instructions of the study. At this stage, we also provided them with an option to exit the survey if they realised that they lack the capabilities or knowledge to answer the questions. Additionally, we incorporated six attention checks throughout the survey to control random and straight-line responses. Similarly, we included three reverse coded items to further recognise those who filled out the survey randomly. Lastly, we embedded codes in the survey to monitor the duration each respondent took to complete the survey. ‘Speeders’ who took less than one-third of the median time (i.e., less than 30% of the median) to complete the survey were removed. Overall, these remedies significantly enhanced filtering of low-quality data and removal of noise.

Our survey was sent to a sample of 1004 managers in the USA, with 352 complete surveys returned (response rate = 35%). Out of 352 complete responses, 297 were usable and the rest (n = 55) removed based on the previously mentioned criteria (i.e., speeders, attention checks, reverse coded scale items etc.).

2.3.2.3 Measurement Instruments

We used a combination of existing and new scales for this study. For the core dimensions of AP, we built on the scales used in Study 1. We considered the *intellectual* and *non-intellectual contributions* constructs as second-order latent formative constructs. As in Study 1, we conceptualised intellectual contributions as a combination of several formative indicators, including sharing information such as needs, preferences, solutions, customisation, and provision of unsolicited ideas.[14] We adapted these items from Ranjan and Read (2014), Ghosh, Dutta and Stremersch (2006), Ramani and Kumar (2008) and Chan et al., 2010.

We adapted scales for Labour from Bielby and Bielby (1988) and Heidenreich et al. (2014). As tangible resources in the context of AP are a relatively a new construct, we could not find a solid scale; instead, we used existing scales from studies in the outsourcing literature (Elmuti, 2003; Gilley & Rasheed, 2000) to capture this measure. These scales consider the extent to which the organisation relies on external partners for the provision of tangible resources. Both labour and tangible resources served as formative indicators for the second-order construct of non-intellectual contributions.

[14] Each of these three formative indicators is a first-order reflective construct.

For measuring financial performance, we had to consider that managers are usually unwilling to disclose primary objective financial data (Morgan, Kaleka & Katsikeas, 2004). Therefore, we used existing scales by Kohli and Jaworski (1993) and Homburg, Jensen and Krohmer (2008) for subjective financial performance, such as sales and profitability compared with competitors in the market. For various organisational capabilities, we also used established scales. The scales for strategic flexibility were adapted from Cui and Wu (2016). We adapted the scale for relationship management capability from Reinartz et al. (2004). We also adapted six of the items from Albinsson et al. (2016) for ethical interaction capability. For R&D and technology capabilities, we used scale items of Li and Calantone (1998).

We used contextual variables such as competitive intensity and market turbulence as control variables (Grewal, Chandrashekaran, Johnson & Mallapragada, 2013; Jaworski & Kohli, 1993). Additionally, we used *internal dynamism* as another control variable, which was captured based on Homburg et al. (2008). The authors define internal dynamism as the firm-level changes around the five main elements of organisational structure, business strategy, work processes, evaluation criteria for employees, and superiors. Organisation size (i.e., number of employees) and age (i.e., year in which the organisation was founded) were also incorporated as control variables because they are commonly known to influence the market and financial performance.

3.2.4) Common Method Bias

Given that this study relied on a single source of data and one informant representing each organisation in the sample, common method bias (CMB) could be a potential threat. To control for CMB, we used two main approaches: (1) the recommendations of MacKenzie and Podsakoff (2012) to minimise the bias through careful design of the survey, otherwise referred to as *priori approaches*; and (2) post hoc tests to statistically control for CMB.

MacKenzie and Podsakoff (2012) identify the inability to provide accurate responses or unwillingness to respond accurately as one of the fundamental sources of CMB. The authors suggest four distinct factors that contribute to inaccurate responses, which are outlined in Appendix F, along with the remedies we took to address them. Additionally, the two phases of the pilot study further reduced CMB by improving the survey in terms of identifying questions where respondents were either incapable of or unwilling to expend the cognitive effort to answer properly.

In addition to the priori techniques mentioned above, we assured all respondents of their anonymity and that the study would be used for academic purposes only. It is notable that using multiple questionnaire design procedures, including the use of different scale anchors and multiple types of scaling, also minimises the possibility of CMB (Gilliland & Kim, 2014). Finally, respondents were provided with the contact details of the researchers to request a summary of the research findings in the event that they were interested (Wang, Li, Ross & Craighead, 2013).

From a post hoc perspective, we followed Harman's one-factor test to examine the extent of CMB (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Podsakoff & Organ, 1986). The result of this analysis did not show evidence of a dominant common factor. The first factor in the unrotated structure accounted for 23% of the variance, which was well below the 50% threshold. Furthermore, we employed the marker variable technique proposed by Lindell and Whitney (2001). We used a one-item measured construct, *primary role*, as a marker variable because it is theoretically unrelated and we have no reason to expect any correlation between that and other focal constructs in the model. As evident from the correlation results in Table 2.11, the marker variable does not have a significant correlation (all below 0.02) with any of the other variables. We therefore conclude that CMB does not pose a serious threat to the interpretation of results.

2.3.2.4 Analysis and Results of Study 2

2.3.2.4.1 Measurement Model and Assessment of Properties

The unit of analysis was at the organisation level. To evaluate the measurement model, we examined several psychometric properties, such as Cronbach's alpha, composite reliability, factor analysis and discriminant validity. Most of the constructs demonstrated reasonable measurement reliability except for two of the contextual/control variables, competitive intensity and market turbulence. Due to their low scores for Cronbach's alpha, we removed them from our analysis. While the Cronbach's alpha for customisation construct is below the commonly recommended threshold in the literature (Bagozzi & Yi, 1988), the composite reliability and average variance are above the recommended thresholds of .7 (Fornell & Larcker, 1981) and .5 (Bagozzi & Yi, 1988) respectively; we therefore retained the customisation construct due to the importance of being one of the first-order formative indicators of intellectual contributions. We also undertook exploratory factor analysis in SPSS, following the guidelines of Bagozzi and Yi (1988) for retention and removal of low factor loadings (accepted loadings above the recommended threshold of .4). We used Oblique (direct oblimin) rotation, as some of the factors are allowed to correlate because they are dimensions of the second-order construct. The final 34 retained items resulted in nine factors that loaded on their respective latent construct and together explained 58% of the overall variance. We also further validated the items in SmartPLS by running the measurement model. All the refined items demonstrated satisfactory and significant loadings (see Table 2.8).

Table 2.8: Measurement Properties

Construct/Scale Item	CR	α	AVE	Factor Loading
Information Sharing	0.873	0.819	0.58	
We frequently ask consumers or the public to share information about their needs and preferences.				0.784
We frequently ask consumers or the public to share their opinions of our products/services or brand with us.				0.758
We frequently encourage consumers or the public to share their opinions of our products/services or brand with other consumers.				0.742
We frequently ask consumers or the public to share their ideas and suggestions to help us develop new products/services through surveys, our official website, brand communities, idea/design contests, etc.				0.768
We frequently ask our consumers or the public to send us creative solutions for specific problems.				0.754
Unsolicited Ideas	0.934	0.858	0.876	
We are very open to consumers' or the public's unsolicited creative suggestions regarding our brand, advertising, technology, etc.				0.933
We provide opportunities for consumers or the public to willingly submit their creative suggestions				0.939
Customisation	0.765	0.552	0.527	
The set of features in the final product/service is decided entirely by our consumers. / The set of features in the final product/service is decided entirely by our organisation.				0.783

Our consumers compose products/services to their specific needs. / We compose products/services to the specific needs of consumers.				0.804
We enable consumers to customise products/services to their requirements without any specific assistance from us. / We customise products/services to consumers' requirements (possibly after a significant interaction with them)				0.565
Physical Effort and Labour	0.931	0.888	0.818	
Consumers or the public expend a lot of physical effort when they participate to create or deliver our products/services.				0.926
Consumers or the public expend a considerable amount of time and energy when they participate to create or deliver our products/services.				0.905
Consumers or the public expend a lot of physical effort when they participate to dispose off our products/services.				0.881
Tangible Resources	0.894	0.851	0.631	
Our business is designed in a way that when our consumers or the public engage with us, they often: Sell their personal possessions.				0.846
Rent out their personal possessions.				0.847
Share their personal possessions				0.86
Provide financial contributions or donations				0.691
In our business, consumers or the public often provide personal possessions such as products, equipment, property, funding, etc.				0.71
Internal Dynamism	0.877	0.834	0.591	
How frequently the following aspects change in your organisation:				0.828

Organisational structure				
Business strategy				0.634
Work processes				0.734
Evaluation criteria for employees				0.758
Superiors				0.87
Strategic Flexibility Capability	0.881	0.798	0.711	
In responding to changes in the environment, your organisation’s strategy emphasises:				
Redefining product/service strategies in terms of which market segment it will target.				0.785
Reconfiguring chains of resources the organisation can use in developing, manufacturing, and delivering its intended offerings to targeted markets.				0.891
Redeploying organisational resources effectively to support the company’s intended product/service strategies.				0.85
Ethical Interaction Capability	0.887	0.887	0.57	
Our organisation fully informs consumers about all risks stemming from participation in activities.				0.837
Participants receive comprehensive information pertaining to how benefits were assessed for the participation experience.				0.801
Our organisation is very clear and factual about the negative factors associated with products/services.				0.785
Our organisation allows participants to make informed decisions regarding the risks of the product /service experience.				0.783
Participants are given open access to information that might be useful in enhancing the overall design and delivery of the product/service experience.				0.66

We treat participants as equal partners in sharing information that is needed to achieve a successful participation experience.				0.643
Relationship Management Capability	0.86	0.784	0.606	
We invest in technology to acquire and manage “real time” consumer information and feedback.				0.818
We have a dedicated customer relationship management (CRM) technology in place.				0.818
We have technologies that allow for one-to-one communications with potential consumers.				0.713
Relative to our competitors the quality of our information technology resources is higher.				0.76

Note: CR=composite reliability; AVE=average variance extracted

Unlike reflective constructs, the standard expectations of high inter-item loading or properties like Cronbach's alpha do not hold as an assessment of item reliability for formative constructs. This is because formative indicators can be independent or weakly correlated with one another. Therefore, we followed the recommendations of Chin (1998) to evaluate measurement reliability and validity of the two second-order formative constructs, *intellectual* and *non-intellectual contributions*. Chin (1998) suggests that the path coefficients or outer weights (i.e., beta coefficients in a regression model) serve as the reliability measure and reflect how an indicator contributes to the latent construct. As it can be seen in Table 2.9, the outer weights are all above the suggested value of .2 and statistically significant (Chin, 1998). This provides support for keeping intellectual and non-intellectual contributions as second-order formative constructs.

Table 2.9: Measurement Properties of Formative Constructs

Second-order Formative Construct	Outer Weight	P-Value	t-Value	VIF
Intellectual Contributions				
Information Sharing	0.709	0.000	26.029	1.552
Unsolicited Ideas	0.354	0.000	18.621	1.58
Customisation	0.133	0.000	4.032	1.061
Non-intellectual Contributions				
Physical Effort and Labour	0.457	0.000	23.192	1.253
Tangible Resources	0.708	0.000	28.470	1.253

Note VIF: Variance Inflation Factor

To evaluate the discriminant validity, we used Fornell and Larcker's (1981) test. As can be seen in Table 2.10, the average variances extracted were greater than the squared value of correlations between any pair of constructs. This supports the discriminant validity of the main latent constructs in our model. Furthermore, we checked and found that all correlations among latent variables were significantly lower than 1.0 (Bagozzi and Yi, 1988), providing further evidence of the discriminant validity of our measures (Table 2.10).

Table 2.10: Discriminant Validity

		1	2	3	4	5	9
1	Relationship Management Capability	0.779					
2	Ethical Interaction Capability	0.503	0.755				
3	Internal Dynamism	0.466	0.19	0.769			
4	Non-intellectual Contributions	0.322	0.294	0.305	0.715		
5	Strategic Flexibility Capability	0.551	0.385	0.41	0.236	0.843	
9	Intellectual Contributions	0.496	0.36	0.313	0.437	0.404	0.624

Note Diagonal elements represent average variance extracted and off-diagonal elements represent squared correlations between latent variables.

The descriptive statistics are presented in Table 2.11, which demonstrate different data characteristics, such as distribution and correlations for all observed and latent constructs used in our study. For more detail on sample characteristics related to organisation age and size, industry distribution, type of business, and manager's position seniority, please see Appendix G.

Table 2.11: Descriptive Statistics and Correlation of Study 2

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Intellectual Contributions	1																
2. Non-Intellectual Contributions	.451**																
3. Transactional	.266**	.528**															
4. Non-Transactional	.298**	.481**	.736**														
5. Dyadic	.352**	.365**	.484**	.566**													
6. Network	.298**	.396**	.451**	.510**	.365**												
7. Sales	.227**	0.095	.135*	.138*	0.071	.127*											
8. Profit	.206**	.151**	.150**	0.101	0.069	.152**	.663**										
9. Organisation Age	-0.039	0.001	-0.068	-0.053	-0.059	-0.002	-.133*	-.182**									
10. Organisation Size	0.044	0.04	0.068	0.045	0.018	0.101	.215**	.243**	-.619**								
11. Internal Dynamism	.302**	.333**	.188**	.212**	.193**	.260**	0.076	.128*	-.346**	.484**							
12. Relationship Management	.481**	.345**	.262**	.278**	.293**	.284**	.381**	.385**	-.192**	.344**	.468**						
13. Ethical Interaction	.342**	.286**	.355**	.316**	.251**	.117*	.204**	.176**	0.01	0.014	.187**	.500**					
14. Technology	.277**	.208**	.147*	.151**	.119*	.200**	.446**	.439**	-0.102	.162**	.164**	.432**	.201**				
15. R&D	.229**	.176**	0.083	0.102	0.078	.167**	.450**	.503**	-.235**	.318**	.270**	.460**	0.1	.551**			
16. Strategic Flexibility	.372**	.240**	.222**	.241**	0.097	.247**	.270**	.311**	-.129*	.235**	.416**	.548**	.384**	.244**	.261**		
17. Primary Role	-0.02	-0.033	-0.015	0.025	-0.074	-0.063	-0.049	-0.045	0.065	-0.01	-0.037	-0.093	0.009	-0.022	0.012	-0.087	1
Min	1.0	0	1.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2
Max	4.8	4.63	5.0	5.0	5.0	5.0	5.0	5.0	8.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	8
Mean	3.27	1.76	2.65	2.53	2.58	2.32	3.66	3.57	4.52	3.23	2.57	3.47	3.65	3.21	2.93	3.49	7.17
SD	0.66	1.03	1.29	1.24	1.32	1.27	0.86	0.84	2.39	2.17	0.81	0.82	0.72	0.93	1.0	0.76	1.22

Note **Correlation is significant at $P < 0.01$ (two-tailed test).

*Correlation is significant at $P < 0.05$ (two-tailed test)

Prior to testing the structural model, we used multiple regression analysis to examine the main effects and compare the results with Study 1. Multiple regressions were done on two separate models corresponding to the two dependent variables of sales and profitability.[15] We used factor scores (i.e., the average of formative/reflective indicators) to represent latent variables in the analysis. Review of the variance inflation factors for the regression equation demonstrated that the highest variance inflation factor across the two models was 2.6, which is well below the cut-off value of 10 (Neter, Wasserman & Kutner, 1990); hence, there was no evidence of multicollinearity.

As can be seen from tables 2.12 and 2.13, both models support our second hypothesis that intellectual contributions have a stronger impact on financial performance than non-intellectual contributions. Specifically, in this case it is shown that intellectual contributions have positive effect on both sales ($\beta = .228$, $P < 0.001$) and profit ($\beta = .169$, $P < 0.01$). Neither of the other two hypotheses for main effects were supported in this study.

[15] Tobin's Q could not be used as the second study only involves subjective/perceptual financial performance.

Table 2.12: Study 2 Results of Model 1

Independent Variable	*β*	*t*-Value	VIF	F	*P*	R^2	Adjusted R^2
Model				4.225	.000	.105	.080
Intellectual Contributions	.228	3.529	1.344		.000		
Non-intellectual Contributions	-.071	-.980	1.669		.328		
Transactional AP	.069	.791	2.438		.430		
Non-transactional AP	.071	.776	2.681		.439		
Dyadic AP	-.069	-.990	1.585		.323		
Network AP	.025	.371	1.468		.711		
Company Age	.005	.065	1.654		.948		
Company Size	.201	2.803	1.659		.005		

Note Dependent Variable: Sales Performance; VIF: Variance Inflation Factor

Table 2.13: Study 2 Results of Model 2

Independent Variable	*β*	*t*-Value	VIF	F	*P*	R^2	Adjusted R^2
Model				4.596	.000	.113	.089
Intellectual Contributions	.169	2.627	1.344		.009		
Non-intellectual Contributions	.030	.412	1.669		.680		
Transactional AP	.115	1.329	2.438		.185		
Non-transactional AP	-.068	-.743	2.681		.458		
Dyadic AP	-.052	-.746	1.585		.457		
Network AP	.072	1.071	1.468		.285		
Company Age	-.058	-.817	1.654		.415		
Company Size	.187	2.618	1.659		.009		

Note Dependent Variable: Profit

2.3.2.4.2 Structural Model

We used Partial Least Square Structural Equation Modelling (PLS-SEM) instead of Covariance-based SEM (CB-SEM) for several reasons (Hair, Sarstedt, Ringle & Mena, 2012). First, and most importantly, we have a mix of second-order formative and reflective latent constructs. Models that include a combination of formative and reflective variables are considered a significant issue for SEM (Diamantopoulos & Winklhofer, 2001; Jarvis, MacKenzie & Podsakoff, 2003). Although CB-SEM is applicable to formative models under specific conditions (Bollen & Davis, 2009; Diamantopoulos & Riefler, 2011), PLS-SEM has been noted as superior in handling mixed models (i.e., those including both reflective and formative measures). Therefore, the use of PLS-SEM is recommended for highly complex models with multiple independent and dependent variables, as in our study (Chin, 1998). Second, the distribution of our sample is not entirely normal, which is another reason PLS-SEM is considered more suitable than CB-SEM (Hair et al., 2012).

While PLS-SEM provides the abovementioned advantages for analysing our complex theoretical model, it also has the shortcoming of lacking a universal model fit index. Therefore, neither the PLS-SEM nor the CB-SEM methods are considered superior to the other (Hair et al., 2012). Rather, scholars have recommended researchers apply the SEM technique that best suits their study objectives, data characteristics and structural model (Fornell & Bookstein, 1982; Gefen, Straub & Rigdon, 2011; Reinartz, Haenlein & Henseler, 2009).

Against this background, we used the *explained variance* as the indication of goodness of the model (Arnett, Laverie & Meiers, 2003; Jarvis et al., 2003; Petter, Straub & Rai, 2007). In particular, we used R^2, which is also suggested in similar studies to reflect how well the model fits the hypothesised relationships (Ranjan & Read, 2016). As we have two dependent variables, Sales and Profit, we demonstrate R^2 (% variation in sales and profit explained by independent variables) individually for each model (Wixom & Watson, 2001). The first structural model explains 30% of the variance in *sales* and the second model explains 34% of the variance in *profit.*

We analysed the models pertaining to organisational capabilities with SmartPLS 3.2.7 (Ringle, Wende & Will, 2005). According to Chin's (1998) recommendation, a bootstrapping procedure using 1000 sub-sample replications was performed to identify the statistical significance of each path coefficient and mediation relationships. The results of testing hypotheses H_4–H_{15} are presented in tables 2.14 and 2.15 respective to the two dependent variables (sales and profit). The tables include coefficients for each specific path as well as the overall paths in the structural model, along with the bootstrapped T-statistics and p-values. Due to the fact that our model includes two second-order formative constructs, intellectual and non-intellectual contributions, we used two approaches to evaluate the overall path coefficients and statistical significance. First, we analysed T-statistics and p-values for each individual link (i.e., *second-order formative independent variable → mediator* and *mediator → dependent variable*). If each individual path was statistically significant, then the mediation hypothesis would probably be supported. Second, we created an additional model in which we removed the formative indicators of the two second-order constructs and replaced them with the factor score (i.e., the average of indicators). We did this primarily to obtain the specific indirect path coefficients and their p-values (i.e., *second-order formative independent variable → mediator → dependent variable*). This was done because SmartPLS demonstrates path coefficients from each formative indicator (e.g., information sharing, customisation, etc.) to the dependent variable.

Table 2.14: Structural Equation Modelling Results of Model 1

Paths		β	T-Statistics	P-Values
IntelRes →R&D		0.233	4.742	0.000
IntelRes → Tech		0.262	4.752	0.000
IntelRes → StratFlex		0.401	8.034	0.000
NoIntelRes → EthicInt		0.179	2.943	0.002
NoIntelRes → Tech		0.064	0.888	0.187
Transact → StratFlex		0.168	2.585	0.005
Transact → Tech		0.074	1.237	0.217
NoTransact → RelatMang		0.084	1.095	0.274
NoTransact → EthicInt		0.239	3.714	0.000
Dyadic → RelatMang		0.18	2.697	0.007
Dyadic → StratFlex		-0.117	1.581	0.057
Network → RelatMang		0.176	2.524	0.012
Network → Tech		0.101	1.438	0.075
R&D → Sales		0.241	3.405	0.001
Tech → Sales		0.239	3.4	0.001
EthicInt → Sales		0.072	1.178	0.239
RelatMang → Sales		0.109	1.45	0.074
StratFlex → Sales		0.094	1.474	0.07
Org. Size → Sales		0.119	1.656	0.053
Org. Age → Sales		0.001	0.012	0.991
IntDynam → Sales		-0.163	1.866	0.062
Specific Indirect Paths	***Hypothesis***			
Transact → Tech → Sales	H_4	0.018	1.133	0.257
NoTransact → EthicInt → Sales	H_5	0.017	1.031	0.303
NoTransact → RelatMang → Sales	H_6	0.009	0.742	0.458
IntelRes → R&D → Sales	H_7	0.058	2.681	0.007
IntelRes → Tech → Sales	H_8	0.063	2.51	0.012
IntelRes → StratFlex → Sales	H_9	0.039	1.367	0.172
NoIntelRes → Tech → Sales	H_{10}	0.012	0.629	0.265
NoIntelRes → EthicInt → Sales	H_{11}	0.017	1.079	0.281
Dyadic → RelatMang → Sales	H_{12}	0.02	1.229	0.219
Network → RelatMang → Sales	H_{13}	0.019	1.19	0.234
Dyadic → StratFlex → Sales	H_{14}	-0.011	1.012	0.312
Network → Tech → Sales	H_{15}	0.024	1.255	0.105
Transact → StratFlex → Sales	New	0.016	1.251	0.211

Note: Dependent Variable: Sales*;* One-tailed test for hypothesised relationships
IntelRes =Intellectual contributions; *NoIntelRes* =Non-intellectual contributions; *EthicInt* =Ethical Interaction Capability; *Tech*=Technology; *StratFlex* =Strategic Flexibility; *Transact* =Transactional AP; *NoTransact* =Non-transactional AP; *RelatMang* =Relationship Management; *IntDynam* =Internal Dynamism

Table 2.15: Structural Equation Modelling Results of Model 2

Paths		β	T-Statistics	P-Values
IntelRes → R&D		0.233	4.574	0.000
IntelRes → Tech		0.262	4.394	0.000
IntelRes → StratFlex		0.402	7.772	0.000
NoIntelRes → EthicInt		0.179	2.858	0.003
NoIntelRes → Tech		0.064	0.904	0.183
Transact → StratFlex		0.167	2.481	0.016
Transact → Tech		0.074	1.183	0.119
NoTransact → RelatMang		0.079	1.108	0.143
NoTransact → EthicInt		0.239	3.665	0.000
Dyadic → RelatMang		0.181	2.708	0.003
Dyadic → StratFlex		-0.116	1.53	0.063
Network → RelatMang		0.181	2.815	0.002
Network → Tech		0.101	1.395	0.082
R&D → Profit		0.316	4.731	0.000
Tech → Profit		0.189	2.874	0.003
EthicInt → Profit		0.033	0.575	0.283
RelatMang → Profit		0.083	1.138	0.128
StratFlex → Profit		0.162	2.714	0.003
Org. Size → Profit		0.094	1.265	0.103
Org. Age → Profit		-0.049	0.768	0.221
IntDynam → Profit		-0.16	2.765	0.003
Specific Indirect Paths	***Hypothesis***			
Transact → Tech → Profit	H_4	0.014	1.019	0.154
NoTransact → EthicInt → Profit	H_5	0.008	0.545	0.293
NoTransact → RelatMang → Profit	H_6	0.007	0.644	0.26
IntelRes → R&D → Profit	H_7	0.076	3.277	0.001
IntelRes → Tech → Profit	H_8	0.05	2.445	0.007
IntelRes → StratFlex → Profit	H_9	0.066	2.593	0.005
NoIntelRes → Tech → Profit	H_{10}	0.01	0.599	0.275
NoIntelRes → EthicInt → Profit	H_{11}	0.008	0.527	0.299
Dyadic → RelatMang → Profit	H_{12}	0.015	1.015	0.155
Network → RelatMang → Profit	H_{13}	0.015	0.95	0.171
Dyadic → StratFlex → Profit	H_{14}	-0.019	1.368	0.086
Network → Tech → Profit	H_{15}	0.019	1.231	0.109
Transact → StratFlex → Profit	New	0.027	1.853	0.032

Note Dependent Variable: Profit; One-tailed test for hypothesised relationships
IntelRes =Intellectual contributions; *NoIntelRes* =Non-intellectual contributions; *EthicInt* =Ethical Interaction Capability; *Tech*=Technology; *StratFlex* =Strategic Flexibility; *Transact* =Transactional AP; *NoTransact* =Non-transactional AP; *RelatMang* =Relationship Management; *IntDynam* =Internal Dynamism

The results from model 1 (Sales as the dependent variable) show that two of the hypotheses are fully supported (H_7 and H_8). As expected, R&D capabilities mediate the positive relationship between intellectual contributions and sales performance ($\beta = .058$, $P < .01$). Similarly, technological capabilities mediate the relationship between intellectual contributions and sales performance ($\beta = .063$, $P < .05$). To assess the robustness in the mediating effects of R&D and technological capabilities, we also tested an alternative structural model that included a direct path between intellectual contributions and sales performance. The direct relationship was not found to be statistically significant ($\beta = .071$, *n.s.*), suggesting that both capabilities are full mediators of the 'intellectual contributions – sales performance' link. It is worth noting that the results regarding the mediating role of strategic flexibility in the relationship between dyadic AP and financial performance show each of the individual links *Dyadic AP → Strategic Flexibility* ($\beta = -.117$, $P < .1$) and *Strategic Flexibility → Sales* ($\beta = .094$, $P < .1$) to be marginally significant. However, the overall path was not found to be statistically significant.

With regards to the control variables, organisations' size and internal dynamism respectively show a positive ($\beta = .119$, $P < .1$) and negative ($\beta = -.163$, $P < .1$) but marginally significant influence on sales performance. Organisation's age did not have any significant impact on sales performance ($\beta = .001$, *n.s.*). We could not find support for other hypotheses because the paths from organisational capabilities such as ethical interaction ($\beta = .072$, *n.s.*), relationship management ($\beta = .109$, $P < .1$) and strategic flexibility ($\beta = .094$, $P < .1$) to sales performance were either statistically insignificant or marginally significant.

While other hypotheses were not supported, it is notable from Table 2.14 that all links between core dimensions of AP and organisational capabilities are, in fact, significant, except for non-intellectual → technology ($\beta = .064$, *n.s.*) transactional AP → technology ($\beta = .074$, *n.s.*) and non-transactional → relationship management ($\beta = .084$, *n.s.*). This suggests that increased implementation and adoption of AP at these dimensions leads to increased use of such capabilities. Of all the links, non-transactional AP has the strongest association with ethical interaction capability ($\beta = .239$, $P < .001$), which means that organisations become more ethical when they employ an increased degree of non-transactional AP. On the other hand, dyadic AP was found to have a negative but marginally significant impact on strategic flexibility ($\beta = -.117$, $P < 0.1$), which is contrary to what we expected. Also, in addition to non-transactional AP, non-intellectual contributions also demonstrate a positive and significant relationship with ethical interaction capabilities ($\beta = .179$, $P < .05$). Dyadic AP is also positively related to relationship management capability ($\beta = .180$, $P < .05$). Lastly, network AP has positive and significant association with relationship management ($\beta = .176$, $P < .05$) and technology ($\beta = .241$, $P < .05$) capabilities.

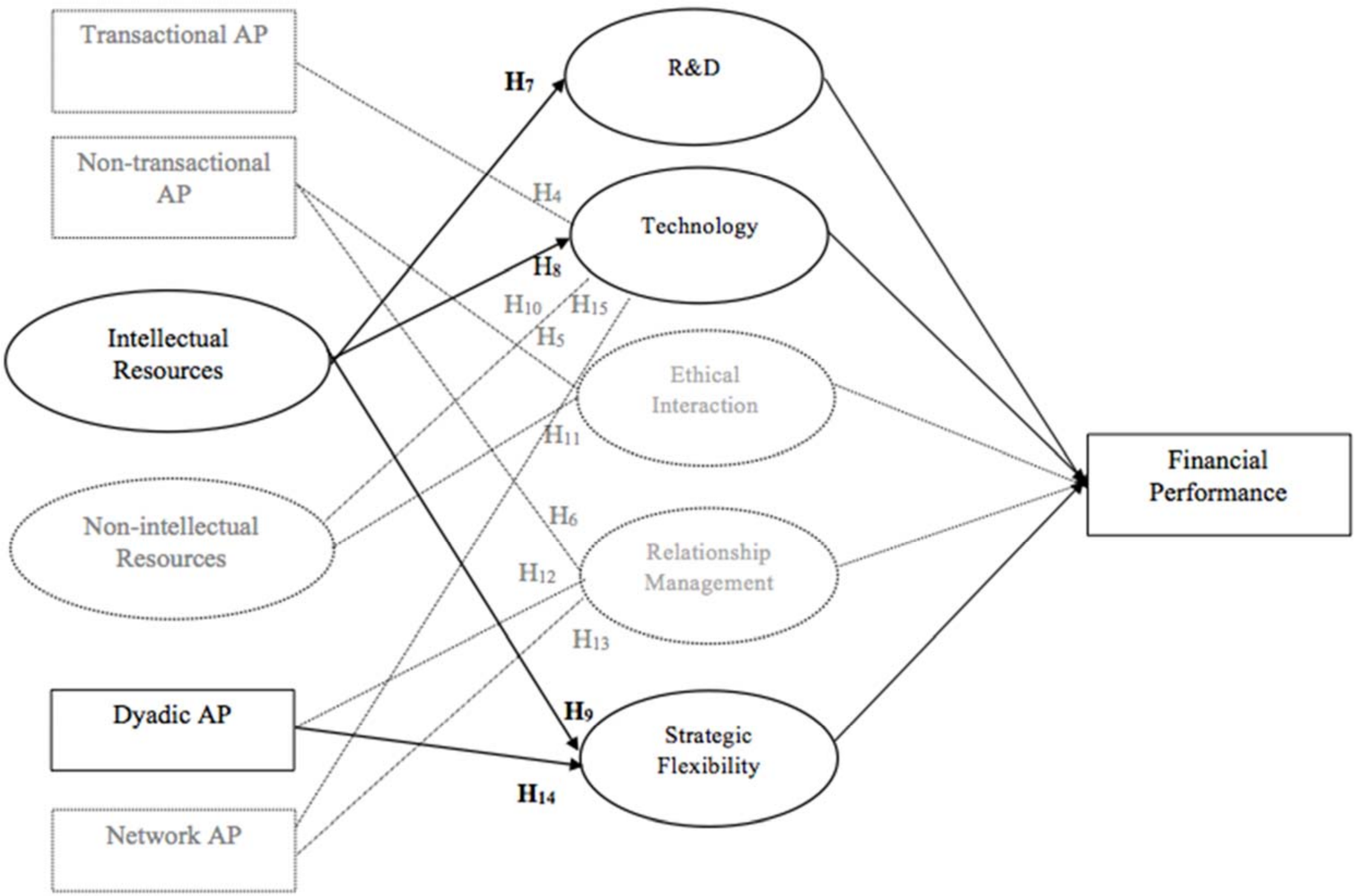
As for the second model, with profit as the dependent variable, we found support for four hypotheses (H_7, H_8, H_9 and H_{14}). As can be seen from Table 2.15, we find support for H_7 and H_8, which respectively indicate that R&D ($\beta = .076$, $P < .001$) and Technology ($\beta = .050$, $P < .05$) capabilities mediate the positive effect of intellectual contributions on profitability. Additionally, as predicted in H_9, strategic flexibility mediates the positive relationship between intellectual contributions and organisations' profitability ($\beta = .062$, $P < .05$). However, contrary to what we expected, strategic flexibility was found to negatively mediate the link between dyadic AP and profitability ($\beta = -.019$, $P < 0.1$). We also identified a new and unexpected finding. Strategic flexibility was found to positively mediate the impact of transactional AP on profitability ($\beta = .027$, $P < 0.05$). As with the previous model, we assessed the robustness of the supported meditating effects by also simultaneously testing direct paths between the independent variables (i.e., intellectual contributions, transactional AP, and dyadic) and profit. Results showed that none of the direct links between intellectual contributions → profit ($\beta = .002$, *n.s.*), transactional AP → profit ($\beta = .056$, *n.s.*) or dyadic AP

→ profit (β= *–.032*, *n.s.*) were statistically significant. Thus, we can conclude that all capabilities are fully mediating the relationships. As for the control variables, while internal dynamism has a negative (β= *–.160*, $P < .01$) influence on profit performance, organisation age (β= *–.049*, *n.s.*) and size (β= *.094*, *n.s.*) were not found to have any statistically significant impact.

We could not find support for the rest of our hypotheses. The links from ethical interaction (β= *.033*, *n.s.*) and relationship management (β= *.083*, *n.s.*) to profitability were not statistically significant. However, as in the previous model, several links between the core dimensions of AP and organisational capabilities were found to be statistically significant. Non-transactional AP has a positive effect on ethical interaction capability (β= *.239*, $P < .001$). Also, non-intellectual contributions show a positive relationship with ethical interaction capabilities (β= *.179*, $P < .05$). Dyadic (β= *.181*, $P < .05$) and network (β= *.181*, $P < .05$) AP have similar positive and significant associations with relationship management capability. Similarly, network AP has a positive but marginally significant impact on technology capability (β= *.101*, $P < .1$). In contrast, transactional (β= *.074*, *n.s.*) and non-transactional AP (β= *.079*, *n.s.*) failed to have statistically significant effects on technology and relationship management capabilities.

A summary of the hypotheses that were supported and vice versa is presented in **Figure 2.4**. The supported relationships are highlighted in bold and those that we did not find support are shown in dots. In the following section, we will discuss the major findings of our research and their implications for marketing research and practice.

Figure 2.4: Supported Hypotheses of Study 2



2.4 Discussion

Integration of actors such as existing or future consumers, the general crowd, or fans of the organisation/brand has become an important field of research in marketing. Although the importance of AP has been well articulated in the literature, little empirical research exists regarding the financial implications of AP and the different ways it can be undertaken. Use of various actor engagement strategies in the industry has challenged researchers to explore the importance and differences of such strategies and enhance understanding of actor participation. We extend the existing research by addressing two important research questions: (1) How does AP impact organisations' financial performance?; and (2) What organisational capabilities are fundamental for financially successful AP? We developed a conceptual framework that investigated financial implications of AP based on the three core dimensions of *transactional intensity*, *tangibility of contribution,* and *interaction intensity.*

The use of multiple subjective and objective measures of organisation performance revealed some consistent and inconsistent patterns of findings. Our results across the two studies mutually suggest a stronger association between integration of actors' intellectual contributions and financial performance compared to non-intellectual contributions. It is notable that this is consistent with findings of research in other contexts, such as the resource-based view where intangible resources of external stakeholders, such as knowledge and skills, are considered a source of competitive advantage and profitability (Camisón & Villar-López, 2012; Schroeder, Bates & Junttila, 2002).

In regard to other core dimensions, we found valid effects only in the first study. For example, considering the core dimension of transactional intensity of AP, we expected both transactional and non-transactional AP to have a positive effect on financial performance, with transactional AP having a stronger impact. However, non-transactional AP was found to have a negative impact on profit performance. This conflict in results might be explained by a few underlying reasons. First, the negative association between non-transactional and financial performance may be due to the costs and challenges associated with non-transactional AP. Organisations need to make considerable investments in R&D, analysis, and creation of new governance mechanisms to process the heterogeneous contributions of actors (Ertimur & Venkatesh, 2010; Franke & Von Hippel, 2003; Hoyer et al., 2010). Further, the inclusion of such processes and mechanisms can potentially delay the normal pace of core business activities, which may also affect performance.

Another underlying reason for the negative effect of non-transactional AP on financial performance may be because the impact non-transactional AP has on organisations' brand equity and image. In many instances, organisations do not incentivise non-transactional AP, which in turn may fail to meet actors' expectations and, therefore, lead to reduced purchase behaviour. A third potential reason for the identified negative effect may be the way organisations incorporate and use actors' contributions in product/service offerings, which can be below the expectations of their consumers. A final possible theoretical explanation might be the increased transparency and autonomy during non-transactional AP (Füller, Mühlbacher, Matzler & Jawecki, 2009; Prahalad & Ramaswamy, 2004a). A high degree of non-transactional AP can result in overexposure to the external environment, and competitors can replicate similar strategies to raise their sales performance. This is also consistent with Enkel et al. (2005). who suggested increased integration of customers during innovation and new product/service development can reveal organisations' proprietary know-how and reduce their competitive advantage.

Our second study, which investigated the role of organisational capabilities such as technology, R&D, ethical interaction, relationship management and strategic flexibility in the financial success of AP, revealed several key findings. First, while the first study revealed intellectual contributions of actors as a great source of competitive advantage, organisational investments in the three capabilities of technology, R&D and strategic flexibility also further facilitate the transition of these contributions into sales and profitability. Interestingly, however, we found dyadic AP to exert an indirect negative effect on financial performance through strategic flexibility capability. This might be explained by changes in environmental factors, such as market turbulence and competitive intensity, which are a limitation of our study.[16] Previous research in customer orientation has found a similar effect under high market turbulence (Alpkan, Yilmaz & Kaya, 2007). The authors found customer orientation to have an indirect negative effect on performance through increased strategic flexibility. As such, it can be suggested that organisations in highly turbulent markets that focus on dyadic AP need to keep investing in strategic flexibility at a reasonable level. Expending excessive time and resources to adapt strategic directions to the personalised input of actors may lead to lower financial performance (Alpkan et al., 2007; Das, 1995).

We also found a new effect that was not hypothesised. Transactional AP was found to have a positive indirect effect on financial performance through strategic flexibility capability. This suggests that organisations need to build flexibility in decision-making, allocation of resources, and operations when they integrate actors during the sale and/or consumption. Transactional AP benefits from extra strategic flexibility to cater to various actors' requests and integrate their inputs during transactions. Integration of actors' contributions during transactions in short periods is challenging for organisations. Additionally, actors' participation in transactional AP is involuntary and they spend time, effort and money, which adds extra pressure on organisations to meet their expectations. Thus, strategic flexibility enables organisations to respond in a timely manner with minimised risk of compromising quality and undermining their value proposition (Fang,

[16] Low Cronbach's alpha for contextual variables of market turbulence and competitive intensity

2008; Johnson et al., 2003).

Empirical evidence did not fully support the remaining hypotheses related to organisational capabilities; however, a few key findings emerged for further discussion. It was revealed that increasing use of actors' non-intellectual contributions, as well as non-transactional AP, would, in fact, lead to greater investment in and use of ethical interaction capability. This is consistent with the premise in the extant literature that ethical interaction capability is an essential element for execution of AP-related strategies (Karpen et al., 2012; Karpen et al., 2015). Our study adds to the existing literature by empirically testing this premise and identifying the specific dimensions of AP for which ethical interactions is most essential (i.e., non-intellectual and non-transactional). Organisations need to gain actors' trust and assure them of fair treatment during the contribution of non-intellectual contributions (i.e., labour and tangible resources) as it concerns actors' wellbeing. Likewise, actors need to be assured of organisations' fairness and lack of opportunistic behaviour during non-transactional AP, as participation is primarily voluntary and organisations are considered as the ultimate beneficiary. Another key finding established that advanced use of dyadic and network AP leads to increasing investments in relationship management capability. Both dyadic and network AP have a significant focus on creating opportunities for interactive communication with and among actors. This is also aligned with extant literature around interaction orientation (Chen et al., 2017), which considers networking and marketing capabilities important in the successful implementation of such AP strategies. Lastly, our study showed that organisations need to use technology capabilities when they employ a high degree of network AP.

While we could not find support for positive associations between certain capabilities and financial performance, extant literature has established links for ethical interaction and relationship management with sales and profitability. For example, Karpen et al. (2015)

indicate that organisations with a high level of service-dominant logic are those that possess relational and ethical capabilities. The authors highlight that these capabilities trigger service-dominant logic to positively, albeit indirectly, influence financial and market performance outcomes such as sales and market share. Other studies in relevant research domains have found positive relationships between different relationship management strategies and financial performance (Ramani & Kumar, 2008; Reinartz et al., 2004). Therefore, we speculate that the lack of support for the association of the two capabilities of ethical interaction and relationship management with financial performance could be due to the limitations of the cross-sectional survey-based method employed.

2.4.1 Theoretical Implications

We overview the theoretical contributions of our study in line with the two most recent research articles in customer participation and value co-creation by Dong and Sivakumar (2017) and Ranjan and Read (2016). First, both studies strongly recommend future empirical research to investigate this phenomenon in terms of a wider range of dimensions rather than a narrow perspective. We address this research gap by exploring AP through the three core dimensions of *transactional intensity*, *tangibility of actors' contributions*, and *interaction intensity of AP.* These three core dimensions provide an effective indication of the different forms of AP strategy organisations pursue. More specifically, it is notable that an organisation can adopt several forms simultaneously; for example, organisations might implement both transactional and non-transactional AP whereby they integrate different actors' contributions, such as both knowledge and labour. Therefore, empirical investigation of our core dimensions also provides concrete evidence for the financial implications of co-occurrence of several strategies.

Second, the two aforementioned research articles, as well as Mustak et al. (2016), emphasise the need for analysing the financial consequences and implications of AP. After a comprehensive literature review, we discovered that the outcomes of AP have been primarily examined from the actors' point of view. We addressed this important research gap by empirically analysing the effect of AP on organisations, and specifically their objective and subjective financial performance. It is notable that several studies (see, e.g., Hoyer et al., 2010) call for further research on implications of AP using more sophisticated financial metrics such as Tobin's Q, which we incorporated into this research.

Third, both Dong and Sivakumar (2017) and Ranjan and Read (2016) call for further research on exploring the essential resources for AP. Similarly to the previous point, after a thorough review, we realised the majority of the literature studies this aspect from the actors' perspective, highlighting factors such as actor expertise as important drivers for AP (Auh et al., 2007; Tuli et al., 2007). We extend previous research and build on the conceptual work of Hatami et al., (2018) by empirically exploring a series of organisational capabilities and their mediating roles in bridging the link between AP and financial performance. Overall, we make theoretical contributions to the customer participation and value co-creation research domains by providing a thorough empirical investigation of AP, its financial implications and the fundamental organisational capabilities required for effective AP.

2.4.2 Managerial Implications

Our research has several important implications for marketing managers and organisations. Organisations should not merely depend on the internal and in-house development of intellectual resources, such as knowledge and skills. Rather, they should adopt strategies that facilitate the integration of competence from external sources, such as their customer base, brand advocates and the general public. Additionally, although there is a shared belief among organisations that extensive use of non-transactional AP – such as incorporating actors' unsolicited ideas into the core business – is challenging and expensive, our findings prove otherwise. We suggest that, while the implementation of non-transactional AP can be costly in the short-term, in the long run, organisations' financial performance is enhanced. Meanwhile, organisations must invest in and develop certain organisational capabilities for successful and financially superior AP. Managers need to develop absorptive capacities, such as R&D and technological capabilities, and to build strategic flexibility when they integrate a high degree of external knowledge and skills. Additionally, an ethical interaction capability becomes essential when organisations rely solely on actors for the provision of labour and tangible resources, such as personal possessions. Similarly, organisations should remain ethical and gain actors' trust when they allow actors to contribute various resources voluntarily (i.e., non-transactional AP), regardless of whether financial or non-financial incentives are offered. Finally, we propose that managers need to build expertise in relationship management to facilitate not only two-way exchanges between the organisation and actors, but also multiple interactions whereby actors exchange resources with one another.

Overall, our research indicates that not all strategies of AP have the same influence on organisations' financial performance. While some strategies can have a direct and immediate impact on financial performance, others need to be combined and facilitated through the use of certain organisational capabilities to ensure financial gains. Therefore, managers need to make informed decisions on designing AP strategies and invest in suitable organisational capabilities to ensure competitive advantage and superior financial performance.

2.4.3 Limitations and Directions for Further Research

This research has a number of limitations that may provide opportunities for future research. The analysis of the first study, which was based on secondary data, may include an endogeneity problem. Given the difficulties of finding instrumental variables, we could not control for the possible effects of omitted variables. Therefore, future research can examine the impact of core dimensions of AP on financial performance using more control variables to test for the possibility of endogeneity problem. Regarding the second study, we could not effectively analyse the impact of contextual factors, such as competitive intensity and market turbulence. We relied on secondary data for the first study, which limited our investigation to information that was obtainable, which did not include contextual variables. Similarly, we could not achieve sufficient reliability in the measurement of these variables in the second study. Therefore, it would be worthwhile to further investigate the influence of contextual factors in our research context. Second, it would be fruitful to explore AP and its implications through longitudinal studies to understand whether the effects are persistent in the longer term. Third, it might be worthwhile to further investigate AP and its implications in a dyadic context, with data collected from actors as well as managers. Fourth, further research could examine the role of other important organisational capabilities, such as organisational learning capacity, relationship building with supply chain partners etc. Fifth, although previous research has already investigated the relational implications of AP, it might still be worthwhile to analyse whether and how the relational consequences of AP can affect financial performance.

Lastly, our primary focus was on the identification of positive outcomes of AP on financial performance. Several recent studies have identified and addressed potential negative prospects of AP, primarily from the actors' perspective. For example, as mentioned earlier in the document, some studies have found certain conditions in which AP might create customer dissatisfaction (Haumann et al., 2015; Heidenreich et al., 2014). Gebauer et al. (2013) also highlighted the potential drawbacks of crowdsourcing and, specifically, non-transactional AP, which can lead to negative word-of-mouth. Very few studies have explored the negative implications of AP from the organisational aspect, and these studies have been conceptual (Enkel et al., 2005; Hoyer et al., 2010), focused on industrial and B2B markets (Fang, 2008; Noordhoff et al., 2011), or explored only non-financial implications (Chan et al., 2010; Hsieh & Yen, 2005). More research is warranted to empirically investigate the negative financial implications of AP.

2.5 Appendices

Appendix A: Extended Literature Review

Organisations and actors would jointly choose to engage in AP only if it yields benefits for each individual party (Chan et al., 2010; Füller, 2010; Preikschas et al., 2014; Xia and Suri, 2014). Benefits of AP can be looked at from two perspectives of actors and organisations. Furthermore, such benefits can be classified into non-economic (e.g., relational) and economic (e.g., non-financial and financial).

Non-economic benefits for actors can be broken down into relational and psychological. Relational benefits such as socialising and bonding arise as a by-product of AP because it is executed through dialogue and continuous interactions with the organisation (Prahalad and Ramaswamy, 2004; Auh et al., 2007; Eisingerich et al., 2014). In addition, actors enjoy psychological benefits such as feelings of achievement, enjoyment, and self-esteem, which result from having control and a voice in the organisation's business process (Dahl and Moreau, 2007; Holbrook, 2006; Muniz and O'guinn, 2001; Yim et al., 2012).

The *economic benefits* for actors, in particular, the non-financial ones, include receiving higher quality products/services that also satisfy their latent needs and preferences (Auh et al., 2007; Chan et al., 2010; Etgar, 2008, Xie et al., 2008). Also, some of the actor participation activities such as the use of electronic kiosks would save considerable time and energy for actors, which is regarded as an economic but non-financial benefit. Financial benefits for actors may include receiving discounts or low-priced offerings as a compensation for their participation efforts or getting monetary rewards and prizes (Bateson, 1985; Jo Bitner, Faranda, Hubbert, & Zeithaml, 1997; Tax, Colgate, & Bowen, 2006). It is notable that all of the aforementioned benefits can potentially lead to relational organisational benefits such as increased customer satisfaction and loyalty (Auh et al., 2007; Chan et al., 2010), or economic organisational benefits such as reduction of customer-switching behaviour (Adjei et al., 2010; Eisingerich et al., 2014).

Table A1: Consequences of AP for Actors

Consequence of AP	Category	Exemplary Studies
Bonding and feeling of belonging	Relational	Ennew (1996); Schau et al. (2009)
Self-esteem and self-efficacy	Psychological	Xie, Bagozzi, and Troye (2008)
Enjoyment	Psychological	Dahl and Moreau (2007); Yim, Chan, and Lam (2012); Buechel and Janiszewski (2014)
Perceived control and authority	Psychological	Marzocchi and Zammit (2006);
Improved quality of purchased offerings	Economic	Auh et al. (2007); Chan et al. (2010); Etgar (2008); Xie et al. (2008)
Saving time & money	Economic/Non-financial	Bateson (1985); Bitner, Faranda, Hubbert, and Zeithaml (1997); Etgar (2008); Tax et al. (2006)
Increased perceived value	Economic	Dong et al. (2014); Troye and Supphellen (2012)

Non-economic benefits of AP for organisations such as relational and social have been relatively studied in the literature. As previously mentioned, outcomes such increased actor/customer satisfaction and loyalty, bonding with the organisation and its brand, promoting the organisation through engaging in positive word-of-mouth, and consumer referrals have been identified (Auh et al., 2007; Gebauer et al., 2013; Ramani and Kumar, 2007). Continuous engagement and interactive processes of AP enables actors to develop a social bond with the organisation that moves beyond actor satisfaction and can result in longer-term consequences such as attitudinal loyalty (Auh et al., 2007; Eisingerich et al., 2014). For example, experiential events organised by Harley Davidson not only triggers consumers and fans to participate but to also become loyal to the brand and engage in various activities of the brand (Harmeling, Moffett, Arnold, & Carlson, 2017; McAlexander & Schouten, 1998). While this the majority of existing studies emphasise increased customer/actor satisfaction and stand with positive relational benefits of AP, there has also been evidence to the contrary. In an experimental study with actors engaging in primarily transactional AP, Haumann et al. (2015), identified that intensive and high degree of AP can in fact negatively affect satisfaction. Also, a few other studies highlighted the repercussions of AP on satisfaction when actors encounter a failed outcome or a problem during participation (Bendapudi & Leone, 2003; Heidenreich et al., 2014). Both studies revealed that during service failure, satisfaction would be far more negatively affected when actors participate than situations where there is no or little participation.

Studies have similarly classified economic organisational benefits of AP into non-financial and financial (Chan et al., 2010; Eisingerich et al., 2014). Few studies have addressed that increased use of AP has a positive effect on speed to market (Carbonell et al., 2009; Fang, 2008; Sawhney et al., 2005). Also, studies in innovation and new product development indicated AP to enhance innovativeness and creativity within organisations because of gaining access to lots of external novel ideas (Chen et al., 2011; Fang, 2008). In addition, it has been suggested that AP can increase the quality of products and services since problems are detected more easily compared to traditional development methods (Chan et al., 2010; Hoyer et al., 2010). While most of the literature has emphasised the positive economic outcomes of AP, there has also been some contradictory evidence. For instance, Chan et al. (2010) identified that high degree of interactions and integration of actors in the business will take away power and control away from organisations’ employees, and hence, increase employee job stress.

Table A2: Consequences of AP for Organisations

Consequence of AP	Category	Exemplary Studies
Customer Satisfaction	Relational	Bendapudi and Leone (2003); Chan et al. (2010); Haumann et al. (2015); Heidenreich et al. (2014); Ramani and Kumar (2008); Yim et al. (2012), etc.
Customer word of mouth	Relational	Eisingerich et al. (2014); (Eisingerich et al., 2014); Gebauer et al. (2013); Ramani and Kumar (2008);
Employee Job Stress and Performance	Economic/Non-Financial	Chan et al., (2010); Hsieh and Yen (2005); Yim et al., (2012)
Innovativeness	Economic/Non-Financial	Fang (2008)
Speed to market or innovation speed	Economic/Non-Financial	Carbonell et al. (2009); Fang (2008);
Customer loyalty	Economic/non-Financial	Auh and Menguc (2007); Auh et al. (2007); Schneider and Bowen (2010)
Cost Reductions	Economic/Financial	Lovelock and Young (1979); Mills et al. (1983)
Reduced consumer switching cost/behaviour	Economic/Financial	Adjei et al. (2010)
Customer acquisition and retention	Economic/Non-Financial	Ramani and Kumar (2008)
Performance (Sales and market share, profit) of new product	Economic/Financial	Carbonell et al. (2009); Eisingerich et al. (2014); Ngo and O'Cass, (2013); Smets et al. (2013); Witell et al. (2014).
Quality of product/service	Economic/Non-financial	Gruner and Homburg, (2000); Ngo and O'Cass, (2013);
Financial success of new product	Economic/Financial	Gruner and Homburg, (2000)
Willingness to pay	Economic/Financial	Franke et al. (2009); Fuchs et al. (2010);

		Moreau and Herd (2010); Gebauer et al. (2013)
New product value	Economic/Non-financial	Fang et al., (2008)
Competitive superiority	Economic/Non-financial	Carbonell et al. (2009)

Appendix B: Challenges of Research Methodology

Initially, we planned to collect primary data from only public organisations across various industries so that we could match their responses in regards to their AP strategies and organisational capabilities to their objective financial data. However, we faced several challenges in this process, which ultimately led us to make significant changes in our methodology and split our method into two distinct studies.

First, we had great difficulty in getting access to our desired sample size of 300 mid- or senior-level managers. We used a variety of approaches such as contacting managers on LinkedIn, using University contacts, snowballing, etc., however, we were unsuccessful in reaching our target sample size. We then decided to use a panel company to gain access to our sample, which then faced our second challenge. Unfortunately, panel companies inherently do not profile their participants based on the names of their companies, hence, made it impossible for us to match responses with the objective financial data. As a result, we decided to redesign our survey by asking managers to not only answer questions in regards to their own organisation but also provide their perception of AP initiatives at other public organisations. The idea was to randomly display names of four (out of a sample of 120) public organisations to each manager and ask for their general perception of AP strategies at those organisations. We arranged for each public organisation to be displayed up to 4 times to each participant; thus, having four responses for each company. We coded the survey in a way that participants could choose the 4 organisations they were most familiar with before proceeding to the survey. In this scenario, participants could have been from either public or private organisations and data in regards to their financial performance would have been perceptual. We then planned to pair their perception of public organisations and responses related to their AP initiatives with financial data available from the COMPUSTAT database.

We used Qualtrics survey tool for the design of the questionnaire. The coding of this survey was very complicated and it took over 3 months. Unfortunately, at the pilot study stage, we encountered our third challenge where we realised that managers would have difficulty in answering the questions regarding AP strategies of the four public companies amid the fact that they had 20 alternative organisations to select from. Had we proceeded with this methodology design, it would have resulted in imprecise answers and significantly low inter-rater reliability scores. Therefore, we came up with our final changes to the methodology. We divided our methodology into two distinct studies.

Study 1 was designed to focus on the AP strategies of public organisations and pair them with their objective financial data. We planned to hire three research assistants to carry out study 1 by doing research on the 110 public organisations using available secondary sources to answer questions about AP strategies and activities of each organisation. The research assistants would have to be trained by the PhD researcher prior to completion of the study. Additionally, the study would also be done by the PhD researcher as a point of comparison with answers of the RAs. As a result, this new study design and approach would enhance the accuracy of answers compared to the previous plan (i.e., Asking marketing managers to provide their perception about AP strategies of the 110 organisations). The details of this study are fully specified in the following section.

Study 2 aims to collect primary data from 300-350 mid to senior-level managers about AP strategies of their organisation. The survey for this study includes questions about AP strategies, perceptual financial performance as well as specific capabilities of their organisation. Due to the large size of the sample, we decided to use a panel company to get access to managers. As mentioned earlier, we cannot use objective financial performance for not having access to names of organisations. It is also against the code of conduct of panel companies to include identification questions (e.g., name of the respondent, name of the company they work for, etc.) in the survey. The procedure of this study is described in detail in Study 2 section.

Initially, we planned to directly access and collect the primary data from the key informants through various sources such as LinkedIn, personal contacts and snowballing. However, getting access to managers in such positions and level of seniority was quite challenging and ultimately unsuccessful. Therefore, we decided to use an intermediary panel company for getting access to 300-350 key informants, each representing one organisation. We first used the Cint Company, which we did a pilot study of 60 respondents, equally distributed between mid and senior-level managers. Cint’s profile sampling procedure was based on our chosen industries and the level of seniority of managers. However, due to the low number of qualified respondents and incident rate the sample as well as low quality of data, we terminated the project with Cint after the pilot study. Out of the 60 complete responses, 32 of them were acceptable for which we used to refine our survey and measurement instruments further.

Appendix C: Industry distribution of Study 1

Table C1: Industry Distribution of Organisations in Sample of Study 1

Industry Types	Number of Organisations in Sample
Airline	3
Apparel & Accessories	8
Banking and Financial Services	8
Car Rental	3
Computer software, Hardware, Internet	12
Consumer Electronics	6
Food & Beverages	11
Hotel	4
Motor Vehicles	5
Personal Care	7
Publishing	1
Restaurants and Cafes	4
Retail	22
Telecommunication & Broadcasting	8
Toys and Games	1
Total	**103**

Appendix D: Research Assistants' Guideline

Questions and Instructions

<table>
<tr><td colspan="2">Question 1:
Please specify the extent to which you believe each company collects information from participants (i.e., existing or prospective consumers, general public/crowd) about their needs, preferences, or problems.</td></tr>
<tr><td>Instructions</td><td>Various ways are being used to actively collect such information such as:

-Consumer consultations (especially within companies in financial and professional service industries)

-Surveys

-Hosted brand communities and forums (remember these are different from communities created by fans. Hosted communities are facilitated and administered by the company, these communities can be in form of a website or as a Facebook/Twitter page but make sure that these pages are official pages of the brand and not created by fans)

- Info collected through idea/design contests

-Focus groups (use of a group of loyal consumers or early adopters for brainstorming and idea generation)

-Any other form of information collection that is <u>not passive</u> and participants actively provide the info like the above methods.

One of the sources where companies mention some of the ways and reasons why they collect information is within their Privacy Policy page. However, various sources (e.g., official social media channels, official brand community, websites, annual reports, etc.) should be searched to identify whether the company is actively collecting information through these approaches or not.</td></tr>
</table>

NONE	This option would be highly unlikely to be selected for this question as these days all companies are collecting data at least *"A Little"* bit. Example of *"A little"* is *Kellogg's*.
A little	If the company only does passive info collection (sometimes referred to as automatic info collection on privacy pages) such as website cookies, transaction history, search or browsing history on apps, etc.
Some	Select this option if the company uses at least one of the above-mentioned approaches.
A LOT	Select this option if the company uses most of the above-mentioned approaches or any other active info collection not listed there. Examples include *Alphabet* and *Apple* as they collect such data through their official social media pages, use of early adopters, and through other platforms. Other examples can be consulting services but there might be exceptions based on the organisations in the sample so please use your discretion and information available to you to make the judgement.

Question 2: Please indicate the extent to which each of the following companies welcomes participants' (i.e., existing or prospective consumers, general public/crowd) unsolicited suggestions for developing new or improved product/service offerings.	
Instructions	Unsolicited suggestions/ideas are initiated and submitted voluntarily by participants and the company has not asked for them. This is **different** from solicited initiatives such as idea contests, consumer surveys, etc. where the company actively seeks ideas and facilitates a platform for submissions. Also, note that unsolicited suggestions/ideas are more about *creativity* and are more than just a constructive feedback. Also, be aware that welcoming unsolicited submissions does ***Not*** mean that the company will give away or share intellectual property; rather, it is about whether they are even interested or may process or use submissions at all. *L'Oreal, Enterprise car share*, *Target* companies/brands are still open to such submissions despite being strict on ownership rights; however, the extent to which they welcome submissions depends on their statement and your judgment.

	All companies have a specific page/section (usually on *Terms of use* or *Privacy Policy* page, sometimes on *Contact Us* page as in the case of *Netflix*) on their website that declares their policy regarding unsolicited submissions. Usually the exact keyword *"Unsolicited Ideas"* or *"Idea Submission"* is used, which makes it very easy to search for. Sometimes, *"user content"* is the alternative used key term. In situations where nothing is mentioned on the company's website, "*Some or A Lot"* options should ***NOT*** be selected. The choice comes down to *None* or *A little,* which should be decided based on the mechanisms the company has in place for people to directly submit content such as open-ended text, graphics, etc. For example, *Pandora Accessories* has not explained anything about their policies for unsolicited ideas. Looking at various pages of its website and even Googling keywords shows that they do not have mechanisms for submitting anything or even providing suggestions. They only offer email addresses for general enquiries. Therefore, Pandora would be considered as "*None"*.
NONE	Examples include: -*Pandora* -*Samsung*
A Little	-*Enterprise CarShare (under heading "**USE OF INFORMATION SUBMITTED**" https://www.enterprisecarshare.com/us/en/terms-of-use.html)*
Some	-*L'Oreal* (http://www.lorealusa.com/terms-of-use) Look at the paragraph under headings *User Content (We welcome user comments…)* -*Target (http://target.com/terms-conditions/-/N-4sr7l)* Look at the paragraph under heading *User reviews, comments & submissions (Target welcomes your reviews…)*
A LOT	The difference btw *A Lot* and the other points is that these companies have specific mechanism (e.g., special form) dedicated for submission of unsolicited ideas. Check the following examples and their links for clear distinction. -*Google* (https://support.google.com/contact/bizdev?hl=en)

	-*Harley-Davidson* even has provided a form for unsolicited submissions (https://members.hog.com/es_XX/en_US/Content/Pages/Utility/contact-us.html); (https://www.harley-davidson.com/content/dam/h-d/.../idea_submission_form.doc)

Question 3: Please specify the extent to which each of the following companies allows consumers to customize products/services according to their specific requirements.	
Instructions	Examples include designing a T-shirt or customizing a holiday package or a flight itinerary (e.g., selection of seat, meal, etc.), or hotel/accommodation experience (e.g., add/remove breakfast, select mattress or pillow firmness, etc.). Some professional, financial, investment and asset management services also offer customized solutions to individual clients.
NONE	*-Zara, H&M* *-Woolworths, Aldi*
A Little	*- Apple (http://www.apple.com/shop/buy-mac/macbook-pro/13-inch), Also Apple allows customizing processors, RAM, and storage for personal computers* *- Costco (https://www.costcophotocenter.com/ProductDetails/Mugs) - (https://www.costcophotocenter.com/shop/stationery)*
Some	-*Pandora* (Customization is not to a large extent as you still cannot customize colours, shapes, textures, overall design of jewellery, can only select charms for bracelets, which are entirely designed by Pandora itself)
A LOT	-*Build-a-bear workshop* -*LEGO* (a lot of customisation, idea/design contests: https://ideas.lego.com/) -*Nike* -*Threadless.com* (a lot of customisation and contests: https://www.threadless.com/make/submit/) -*Zazzle (https://www.zazzle.com - http://www.cafepress.com)*

Question 4: Please specify the extent to which each of the following companies allows participants (i.e., existing or prospective consumers, general public/crowd) to apply their knowledge and intellectual skills (e.g., graphical design, technical, numerical, IT or technological, and analytical, etc.) in the creation of products/services.	
Instructions	In case the company in question is even using one of the following examples but to a large extent (e.g. LinkedIn, Lego), you should either select *Some* or *A lot.* Also, refer to examples made for each of the scale points to get a better idea. Examples include: -*Solicited idea/design/solution submission*: these are usually in form of *contests* but can also be in other forms such as an open call for ideas on the website, social media platforms such as Facebook/twitter, or hosted brand communities that are not necessarily competitive. *Remember* such idea/design submissions are not just limited to functionality and physical appearance of product/service offerings, but can also include creative ideas about their promotion/advertising campaigns, name and logo, new technology, packaging, etc. *Useful Keywords: Idea/design contest or competition, Crowdsourcing, eyeka* (eyeka is a well-known intermediary platform that hosts many contests for many popular brands). -Content generation on social network/media platforms (*This* co-*creation activity has a high weight (A Lot) for social media platform companies such as Facebook, Twitter, LinkedIn, etc. because their entire business model is about the creation of content*) - *Creation of Apps:* some companies such as Apple allow the creation of apps by participants

	- Troubleshooting/support communities: many companies let consumers to answer other consumers' questions. A good example is Apple's support communities (https://discussions.apple.com/welcome).
NONE	Hard to find because most companies have at least (i.e., *A Little*) one *official and hosted* page on Facebook, Instagram, Twitter, were they encourage engagement and content creation.
Some	*-Nike (hosts contests from time to time with prizes: http://patch.com/oregon/beaverton/nike-contest-seeks-shoe-designs-athletes-all-abilities ; http://sneakernews.com/2016/10/28/nike-ease-challenge-50k-grand-prize-opens-today/ ; http://www.nicekicks.com/nike-and-nice-kicks-present-the-digital-air-max-hunt/)nike)* *Also, Nike encourages people to share photos, stories, etc. related to the brand to increase brand engagement (http://www.forbes.com/sites/clareoconnor/2014/02/13/starbucks-and-nike-are-winning-instagram-and-your-photos-are-helping/#378c85a131b0).*
A LOT	*-Apple (extensive creation of apps, Support community discussions)* -*LEGO* (has a dedicated platform for idea and design contests and even gives royalty payments: https://ideas.lego.com) -*Threadless.com* (a lot of customisation and contests: https://www.threadless.com/make/submit/) *-Facebook* *-LinkedIn* *-Twitter* *-YouTube*

Question 5:

Please specify the extent to which you believe each of the following companies encourages participants (i.e., existing or prospective consumers, general public/crowd) to share their opinions of products/services or its brand with other people (i.e., spreading word-of-mouth (WOM) or sharing experiences online/offline through various platforms; offering consumer referral bonuses like Uber's free ride or meal discounts when you tell a friend).

Instructions	*(External + Many-to-many)*
NONE	Hard to find because most companies have at least (i.e., *A Little*) one *official and hosted* page on Facebook, Instagram, Twitter, were they encourage engagement, sharing of experience and creation of buzz.
A LOT	-*Harley-Davidson* (very interactive HOG community) -*Samsung* (very interactive brand communities: https://us.community.samsung.com/; also official pages on social network platforms) -*Threadless.com* (different ways of engaging people and also increasing WOM and referrals: https://www.threadless.com/participate/) -*Uber* (different ways of engaging people and also increasing WOM and referrals by giving offers or free vouchers to friends)

Question 6: For this question, we would like you to think of co-creation activities that require participants (i.e., existing or prospective consumers, general public/crowd) to contribute labor and physical effort.	
Instructions	Labor and physical effort in co-creation are provided in situations where participants perform employees' and salespeople's basic physical tasks. Examples include: -Use of different self-services such as electronic kiosks -Do-it-Yourself (DIY) offerings or assembling various products such as furniture -Cleaning after your meal in a fast-food restaurant, etc. This question is fairly straightforward to answer as it deals with the type of product/service offerings and how they are delivered. Use of *ATMs, self-service kiosks* require physical effort, however, assuming they are just one of the many service offerings of a large company, the extent of co-creation is ***NOT considered as "A lot"***.

	Car rentals/shares are however considered to require "<u>*A Lot*</u>" of physical effort, as consumers have to physically go to the spot where the car is parked and get the car themselves; this is similar to the DIY concept. ***<u>Please NOTE</u>*** that some major companies such as *BMW* or *Daimler* may have a subsidiary that is a P2P car rental/share. In such situations, the physical effort will be considered as "<u>*Some*</u>" *instead* of "<u>*A Lot*</u>" because the parent company (i.e., BMW) is not a car rental/share. Be careful about retailers; for example, the furniture at Big W are other brands and Big W is just a distributor. However, most retailers have self-checkout kiosks, which is considered as labor.
NONE	Samsung, Kellogg's, Nestle, many other companies.
A LOT	-*Ikea* (self-checkout as well as DIY) -*Enterprise car share and rental* -*Uber driver expends a lot of physical effort. Uber does not have employees as drivers and has outsourced this role to the crowd (i.e., crowdsourced).* -*GoGet car share*

Question 7: For this question, we would like you to think of co-creation activities that require participants (i.e., existing or prospective consumers, general public/crowd) to contribute or share their own **<u>tangible possessions</u>** (e.g., goods/products to sell on peer-to-peer auctions, sharing of equipment or property as in cases of Uber and Airbnb, etc.).	
Instructions	Again fairly straightforward to answer as very specific companies with special business models (e.g., peer-to-peer) include this type of co-creation. Examples are: -Online peer-to-peer auctions (e.g., *Gumtree* which owned by *eBay*) -*Uber* (drivers contribute their car), *Airbnb* (hosts contribute their property).

	*Now please bear in mind that some major companies may have a ***subsidiary*** that uses this co-creation activity (eBay owns Gumtree; Tripadvisor owns Flipkey which is P2P accommodation rental; Expedia *may* also own P2P rentals).
NONE	*Samsung, Domino's Pizza, Kellogg's, Harley-Davidson*, and many other companies
A LOT	*eBay*, for example, is considered as *"A Lot"*, because not only its business model is based on P2P auctions but also owns subsidiaries (i.e., Gumtree) with a same business model that use this type of co-creation to great extent. ***However***, *Tripadvisor* is considered as "*Some*" because only its subsidiary (i.e., *Flipkey*) uses this type of co-creation.

Question 8: Please specify the extent to which the co-creation activities of each of the following companies are internal *(Transactional)*.	
Instructions	Co-creation activities take place in two different forms: Internal and External. Internal (transactional) co-creation activities occur within the realm of purchasing and/or consuming products/services. In such activities, the participation of participants is necessary for the completion of purchasing/consumption task and participants are primarily participating for their own sake and not to do a favour for the company. Internal (transactional) co-creation activities include: -*Self-services* (tech-based services such as use of apps, social network platforms, online booking/purchase, various electronic kiosks and self-check outs, etc.) -*Customization* of the products/services prior purchase

	-Use of peer-to-peer services including both supplier-side and buyer-side - *Creation of Apps:* some companies such as Apple allow creation of apps by participants In all of these examples participation is essential and is done to complete a purchase or consumption activity.
NONE	Hard to find as most companies today offer at least even a little online booking/purchase, which is considered as internal co-creation. Other co-creation activities such as idea/design contests, solicited submissions such as consumer feedbacks, surveys, and focus groups, unsolicited submissions, distribution of WOM *are all considered as external*. Therefore, in rare cases, if a company *solely* uses co-creation activities that are external in nature, then "*None*" can be selected.
A LOT	*-Domino's Pizza, Nike, Subway restaurant; Zazzle and Café Press* (Any company that offers extensive customisation of offerings prior purchase) - *Enterprise CarShare* -*Facebook, YouTube, Twitter, LinkedIn, etc.* (Any other Social network/media platform because co-creation is happening during consumption of their service) -*Gumtree, Airbnb, Uber, Etsy* (Any peer-to-peer service company), etc. -*Ikea* (Any company that involves assembling of an offering/DIY to great extent)

Question 9: Please specify the extent to which you believe the co-creation activities of each of the following companies are external (Non-transactional).

Instructions	External (non-transactional) co-creation activities occur outside the realm of purchasing and/or consuming products/services where participants' roles (i.e., existing/prospective consumers, or general crowd provide) are **voluntary** in nature and **extra** to the company's core business. Participation in such activities takes place to help the company and participants are *Not* playing the role of a consumer or user of the company's products/services. Companies primarily use this form of co-creation to increase engagement with their brand and to generate creative ideas for new or existing product/service offerings, or for their promotion/advertising campaigns. External (non-transactional) co-creation activities include: -*Idea/design contests (Solicited submissions)* -*Consumer feedbacks, surveys, suggesting solutions on support communities/forums/blogs* -*Using focus groups* -*Unsolicited submissions* -*Hosted brand communities online or offline* -*Distribution of WOM online or offline; consumer referral bonuses*
NONE	Again, hard to find because most companies have at least an official and hosted pages on Facebook, Instagram, Twitter, etc., even if they do not use other external co-creation activities. Please ensure not to confuse use of social network platforms in this question with the previous one. In the previous question, social network platform companies themselves are considered to use internal co-creation because of their specific business model (i.e., the participant is a consumer of that social media platform) whereas in this question participants use social network platforms as a medium to engage in external activities for other companies/brands.
A little	-*Allianz: has* official and hosted pages on Facebook, Instagram, Twitter, etc. - *Enterprise CarShare* -*Ikea*

	-*Netflix: has* official and hosted pages on Facebook, Instagram, Twitter, etc. They haven't done contests since 2009. -*Target: has* official and hosted pages on Facebook, Instagram, Twitter, etc. but not much else. Their co-creation activities are mainly internal.
Some	-*Nike (occasional contests and frequent social media and brand community engagement)* -*Uber: Distribution of WOM online or offline; has* official and hosted pages on Facebook, Instagram, Twitter, etc.
A LOT	-*BMW* (<u>used to have </u>a co-creation and innovation Lab in <u>*2010*</u>: https://www.press.bmwgroup.com/global/article/detail/T0085113EN/the-bmw-group-s-co-creation-lab?language=en.); *I know this example is not valid for this project because of the date, however it is a good example for understanding external co-creation.* - *Doritos Chips, Coca-Cola, McDonald's, etc.* (Regular idea contests, interactive social network/media activities) -*Harley-Davidson* (HOG brand community, unsolicited ideas) -*LEGO* (Lego idea contests, brand communities, forums, occasional social events to exhibit projects <u>hosted by the company</u>) -*Threadless.com*

Question 10: Please specify the extent to which you believe co-creation activities of each of the following companies takes place in a one-to-one format.	
Instructions	Co-creation activities can take place in a <u>**one-to-one**</u> or a <u>**many-to-many**</u> format. One-to-one co-creation occurs only between the company and its customer base. Customers do <u>***Not***</u> interact with one another in one-to-one co-creation. Examples include: *-Individual consumer feedback and consultations* *-Self-service electronic kiosks (self-check out machines)* *-DIY or assembling various products*

	-*Customization of products/services prior purchase*, etc.
NONE	Again very unlikely to have none because most companies today offer at least even a little online booking/purchase, or interact individually with consumers for feedback.
A Little	-*Target (self-checkout, online shopping and personalisation)*
Some	-*Alphabet (especially Google search)* -*Pandora (Customization)*
A LOT	-*Enterprise CarShare* -Domino's pizza, *Subway Restaurant, Build-a-Bear workshop, Nike ID* (the whole order process is interactive, high degree of customisation) -*Investment companies such Morgan Chase, Goldman Sachs, Barclays Investment bank*, etc. (these companies have high degree of frequent one-on-one consultations with clients) - *Ikea* (self-checkout, DIY) -*Nike* (extensive customization, which is a one-to-one interaction). - Hotels

Question 11: Please specify the extent to which you believe co-creation activities of each of the following companies takes place in a many-to-many format.	
Instructions	Many-to-many co-creation takes place beyond a one-to-one scope, within a network of participants (i.e., existing or prospective consumers, general public/crowd). Unlike one-to-one co-creation, participants interact with one-another in addition to interacting with the company. You have to consider interactions and the entities/actors in interactions of co-creation to distinguish between one-to-one and many-to-many. Examples include Idea/design contests, brand communities, peer-to-peer services, etc. ***Additional useful Keywords:*** Crowdsourcing, shared or network economy, eYeka.

NONE	Again very unlikely and hard to find because most companies have at least an official and hosted pages on Facebook, Instagram, Twitter, or a hosted forum on their website.
Some	-*Domino's Pizza (WOM and referral bonuses; Social media engagement)* -*Nike*
A LOT	-*Apple* (Creation of apps, brand community, trouble shooting forums) -*Airbnb, eBay, Alibaba, Uber*, Etsy, etc. (any peer-to-peer service company as interactions occur in a network of supplier, buyer, and the company which owns the platform) -*Alphabet (especially YouTube subsidiary)* -*Coca-cola, Harley-Davidson* (very interactive hosted brand communities on social networks, lots of crowdsourced contests, etc.) -*Doritos chips* (lots of crowdsourced contests on various platforms such eyeka website, their Facebook pages, Youtube channel, Superbowl ad contests) -*LEGO* (Lego ideas lab, lots of contests, brand community, and even they have occasional social events to exhibit projects <u>hosted by the company</u>)

Appendix E: Tobin’s Q Criticism according to Bendle & Butt (2018)

Table E1: Responses to Tobin’s q Criticisms

Criticisms of Tobin’s Q	**Our response to criticism**
Comparability across industries: Tobin’s Q is impacted by industry effects	We controlled for industry effects in our study by mean-centring Tobin’s Q
Use of only tangible assets in the denominator	We used total assets to align with Tobin’s original theory, which comprises all of the organisation’s assets
Find equilibrium at 1 or are typically above 1	The average value of our Tobin’s Q was 0.45, which is well below 1. (Demonstrated in Table 2.11)

Appendix F: CMB Survey Design Remedies

Table F1: Procedural Remedies of Common Method Bias

Conditions Creating Method Bias	Remedy and Solutions Applied in Study 2 Design
Undermine the capabilities of the respondent	Make sure the unqualified respondents get screened out; Used tight screening questions that did not lead respondents into guessing the correct or intended answer; Make sure the sample of informants fit with the criteria.
Make the task of responding accurately more difficult	Provision of instructions and examples across the survey especially for questions that required extra attention. Remove double-barreled scale items. Make sure the timeframe of the questions is suited in a way that respondents do not need to recall a distant past.
Decrease the motivation to respond accurately	Make sure respondents are incentivised suitably; ResearchNow uses multiple methods for their incentive system such as payment, vouchers, reward points, gift cards, etc. An option to request access to a summary of research findings was also provided at the beginning and at the end of the survey. Avoid too repetitive scale items and question types to avoid boredom.
Make it easier for respondents to satisfice (i.e., decrease the difficulty of the task of satisficing)	Three rounds of pilot study helped us identify the areas which were difficult to understand make improvements. Also, keep the duration of the survey short; below around 15 minutes as respondents tend to give inaccurate answers towards the end of a long survey. We also located attention checks at the beginning, middle, and end of the survey to highlight random response styles. Use existing and already well-established scales for the majority of constructs.

Appendix G: Sample Characteristics for Study 2

Table G1: Industry Types and distribution in the Sample

Industry	Frequency in Dataset
Apparel and Accessories	9
Automotive	20
Banking, Investment, and Insurance Services	45
Computer Software/Hardware	3
Consumer Electronics	3
Entertainment	14
Food and Beverages	26
Household and Personal Care/Cosmetic Products	8
Internet	2
Restaurants and Coffee Shops	10
Retail	114
Telecommunications	5
Travel, Tourism, and Hospitality Services	34
Real Estate	4
Total	**297**

Table G2: Organisation Sizes in the Sample

Number of Employees	Frequency in Dataset
1-49	117
50-100	30
101-200	20
201-500	22
501-1000	15
1000+	93
Total	**297**

Table G3: Organisation Age in the Sample

Year of Foundation	Frequency in Dataset
Before 1950	58
1950-1960	22
1961-1970	19
1971-1980	40
1981-1990	41
1991-2000	33
2001-2010	52
After 2010	32
Total	**297**

Table G7: Business Type of Organisations in the Sample

Business Type	Frequency in Dataset
Business-to-Consumer Products	123
Business-to-Consumer Services	75
Business-to-Consumer AND Business-to-Business Products	68
Business-to-Consumer AND Business-to-Business Services	31
Business-to-Consumer Products	123
Business-to-Consumer Services	75
Business-to-Consumer AND Business-to-Business Products	68
Business-to-Consumer AND Business-to-Business Services	31
Total	**297**

Table G8: Primary Role of Respondents in the Sample

Position Seniority	Frequency in Dataset
Middle-level Manager in marketing, production, branding, or sales.	176
Senior Manager (Director, Vice President, C-level Executive, or Owner)	121
Total	**297**

Overall Conclusion of the Dissertation

This dissertation focused on the phenomenon of Actor Participation (AP) and endeavoured to provide a greater understanding of this concept. Despite the increasing popularity of AP in research and practice, there is still a lack of conceptual clarity on what exactly is AP. A thorough review of the literature across a wide range of research domains – including co-production (e.g., Auh et al., 2007; Etgar, 2008; Haumann et al., 2015), co-creation (e.g., Heidenreich et al., 2014; Hoyer et al., 2010), customer engagement (e.g., Brodie et al., 2011; Van Doorn et al., 2010), customer citizenship (e.g., Bettencourt, 1997) etc. – revealed several shortcomings (see Table 3.1 for a summary of the shortcomings of existing research).

Previous research has mostly investigated AP from the actors' perspective, exploring the psychological and behavioural effects of AP on actors (e.g., Bendapudi & Leone, 2003; Heidenreich et al., 2014; Ramani & Kumar, 2008). Less attention has been dedicated to the organisational side of AP, with these studies exploring participation in narrowly framed contexts such as business-to-business (B2B) markets (e.g., Fang et al., 2008; Tuli et al., 2007); or innovation and new product/service development (e.g., Carbonell et al., 2009; Chen et al., 2011; Chen et al., 2017). However, AP can also take place in B2C markets and in processes beyond innovation. Thereby, a broader and more comprehensive exploration of AP that distinguishes its various forms has hitherto been missing.

Another notable shortcoming is that there is limited empirical evidence on the financial implications of AP across multiple B2C industries. Research has yet to determine which forms of AP produce financially superior outcomes and whether managers should invest in different organisational capabilities to ensure success. A fine-grained understanding of AP and its peculiarities provides the foundation for identifying the organisational capabilities required for the development of an effective AP strategy. Existing organisational capability portfolios have been either dedicated to AP in B2B markets (e.g., Tuli et al., 2007), have been very specific to a particular form of AP, such as participation in product/service innovation (e.g., Hosseini et al., 2017; Kazadi et al., 2016), or have been too broad, such as capabilities related to the service-dominant logic (e.g., Madhavaram & Hunt, 2008).

In this dissertation, these research shortcomings are addressed by investigating AP from organisations' point of view. In this research, I forward three core dimensions of AP, which help classify its many forms. Specifically, the three dimensions are *transactional intensity* of AP, *tangibility of actors' contributions* and *interaction intensity* of AP. These dimensions jointly capture the nuances of AP by reflecting the context in which it takes place (transactional and/or non-transactional), the type of resource actors contribute (intellectual and/or non-intellectual) and the scale and format of interactions between organisations and actors (dyadic and/or network). These three core dimensions and their sub-types are combined to generate a 2 x 3 x 2 matrix, thereby defining 11 distinct forms of AP.[17] The identification of these dimensions facilitates a greater and nuanced understanding of AP, as they highlight the various forms AP can be practised. Further, the dissertation identifies and proposes a second matrix that offers a series of organisational capabilities associated with the core dimensions and their sub-types. These capabilities assist in understanding the potential risks and challenges in the execution of different forms of AP and how to overcome them. The proposed models provide insight on the resource-exchange activities between the organisation and actors that ultimately lead to the joint creation of value. In this way, these classifications enhance the understanding of AP and add to the emerging marketing concepts of value co-creation (Prahalad & Ramaswamy, 2000; Ranjan & Read, 2016) and customer participation (Bendapudi & Leone, 2003; Chan et al., 2010; Chang & Taylor, 2016).

[17] See Figure 1.1 in Paper 1.

The core dimensions of AP also provide a proper tool for empirical assessment of the concept. This research narrows the gap in the extant literature represented by the limited empirical evidence on the implications of AP by analysing the impact of the core dimensions on organisations' financial performance. Previous research has emphasised the need for linking AP with more advanced financial metrics, such as Tobin's Q (Hoyer et al., 2010). In response, in this study Tobin's Q, sales and profitability were used as objective and subjective[18] financial metrics to examine the impact of different forms of AP across multiple industries. Further, the extant research lacked empirical investigation of organisational capabilities suited to various forms of AP; existing studies mainly analysed organisational capabilities suited to one form of AP (Kazadi et al., 2016) or did not distinguish and related capabilities to different forms of AP (Karpen et al., 2015; Ramani & Kumar, 2008). The research findings thus offer a generalised and comparative insight on the implications of AP.

Table 3.1: Summary of the previous research limitations and current research contributions

Gaps in the Literature	Current Research Contributions
Limited examination of organisational side of AP (Most studies examined psychological and behavioural aspects of AP)	Investigates organisational aspect of AP
Lack of a broader and more comprehensive examination of the AP phenomenon (Most studies examined AP in a specific context such as innovation)	Investigates AP in a holistic and broader context incorporating all the different forms this strategy can be executed
Lack of empirical evidence on financial implications of AP	Investigates the performance implications of AP and its various forms using primary and secondary financial data
Limited knowledge of organisational capabilities associated with different forms of AP	Conceptual and empirical investigation of fundamental organisational capabilities associated with different forms of AP

[18] Only Sales and Profitability were used as subject measures of financial performance.

The findings of this research have several implications for organisations. The core dimensions facilitate informed strategic design and implementation of AP. For example, findings revealed that integration of actors' knowledge and skills (i.e., intellectual contributions) is financially superior to the integration of other types of contributions (i.e., non-intellectual). Also, consistent with the shared belief that AP forms such as the provision of unsolicited/solicted problem solving, idea/design contests, etc. (i.e., non-transactional AP) are financially challenging for organisations, results confirmed their negative impact on organisations' profitability.

The core dimensions of AP also alert managers to the numerous measures they need to consider during the implementation of AP. Managers can understand which resources and capabilities to prioritise and ensure an alignment between them and the AP strategy that would yield the greatest competitive advantage. The findings inform managers of the importance of organisational capabilities such as R&D, technology and strategic flexibility in transforming actors' intellectual contributions into financially optimal solutions. Additionally, the results suggest investment in ethical interaction capability is required for two specific forms of AP, that which incorporate actors' non-intellectual contributions (such as labour and personal possessions) and that which engages actors beyond sale/consumption of offerings (i.e., non-transactional AP). Empirical evidence also indicated that strategic flexibility serves as a suitable mechanism when organisations engage actors in activities such as customisation of product/service offerings or provision of peer-to-peer services, all taking place during sales and/consumption (i.e., transactional AP).

The limitations of the dissertation provide directions and opportunities for future research (see table 3.2 for a summary). As the creation of a classification beyond three dimensions makes for a complicated visualisation, we limited our framework to three dimensions. While this distinguishes our research from the extant literature, it might be fruitful to investigate further characteristics of AP that can be used as additional dimensions. Similarly, further research could be dedicated to identifying other organisational capabilities that are fundamental to specific forms of AP. Additionally, studies could focus on actors and the relevant expertise required to participate successfully in different business activities. Doing so would complement the current research and provide managers with a proper understanding of strategic requirements on both the organisational and actor side of AP. Relatedly, it may also be beneficial for future empirical studies that explore the implications of AP to conduct a dyadic research, whereby both of these sides – organisation and participant – are studied simultaneously.

As this dissertation was part of doctoral studies, it was not possible to conduct a longitudinal study to assess the long-term financial implications of AP. It would be worthwhile to examine the effect of AP on performance over time and compare financial results. Likewise, it would be valuable to compare and contrast the financial implications of AP considering the influence of other contextual factors, such as competitive intensity and market turbulence. Lastly, this dissertation primarily analysed the positive outcomes of AP. Future research could concentrate on the 'dark side' of AP and the potential challenges that might have negative implications for organisations' performance.

Table 3.2 Summary of Limitations and Future Research Directions

Future Research Avenues
Investigation of other dimensions of AP that determine key distinguishing features.
Exploration and distinction of other organisational capabilities critical to different forms of AP.
Provision of a portfolio of capabilities of actors essential for successful.
Dyadic and longitudinal investigation of performance implication of AP.
Incorporation of other contextual factors such as competitive intensity and market heterogeneity.
Investigation of the negative effects of the AP strategy for organisations.

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