

# Why Tourism Firms Do Not Innovate

The hampering effect of business ecosystems

**Master's Thesis 2019**

*(Innovation & Entrepreneurship)*

by

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**Radboud Universiteit Nijmegen**

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## **Preface**

Hereby I proudly present my master's thesis '*Why tourism firms do not innovate*'. My interest for this topic was raised because of my background in the hospitality industry. The topic of innovation in the hotel industry seemed very relevant for me, and I saw this thesis as an opportunity to use and improve my professional hospitality network, which it did.

I took a lot of satisfaction out of this study, and I got into contact with hundreds of interesting hotel managers, and some interesting discussions about the topic.

Finally, I thank Prof. dr. Hillebrand for his supervision, and his structured approach throughout this process. I thank dr. Essers for her time and effort into delivering feedback on my thesis proposal.

I hope you enjoy reading this thesis, and I hope it will give new insights!

Dennis van Twillert

## **Abstract**

The current society is rapidly evolving with advancing technologies. These developments create opportunities for new businesses to take the competitive lead, which disrupts current established markets. Established firms must be flexible, and be willing to give up on certain parts of their organization in order to stay ahead in their market. Firms must be ‘willing to cannibalize’. Firms can cannibalize on sales, investments, and capabilities.

This study explored the concept of a fourth dimension of willingness to cannibalize, namely on relationships. A quantitative explorative research was conducted by means of an online survey method. 179 hotel managers with functions as innovation manager, general manager, or owner, have participated in the survey, delivering valuable insights into the hampering effect of ecosystems in the hotel industry.

Results show that a hampering effect of ecosystems in the hotel industry does exist. However, the effect is more complex than originally thought. Hotel firms are convinced they need their loyalty to business partners in order to achieve radical product innovation. This could mean a very dangerous dynamic for the future of hotel firms. These firms are thus not just blind towards better alternative business relationships, they are blind towards what it takes to achieve radical product innovation.

In the end difficult decisions like changing infrastructure and losing investments on property will eventually become reality. In order not to be forced to innovate more radical in order to survive, hotel firms must make the hard choice earlier than later, and cannibalize on their relationships, to stay loyal to their own firm and employees, and get ahead in the market.

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# **1. Introduction**

The current society is rapidly evolving with advancing technologies. These developments create opportunities for new businesses to take the competitive lead (Rip & Kemp, 1998), which disrupts current established markets. The threat forces established firms to innovate at some point in time, in order to survive. Every firm innovates in their own way and pace. Some firms are used to innovate by improving their current product portfolio, while others innovate by implementing totally new products that disrupt either the market, and their own firm. This firm innovativeness refers to a willingness to implement totally new business ideas (Rubera & Kirca, 2012). Low scores on firm innovativeness, the product improvements, are considered as incremental innovation, and disruptive new business ideas are considered radical innovations.

## **1.1 Radical innovation**

Radical innovation is of big importance for the survival of the firm (Mahajan & Wind, 1992). When firms know how to implement radical innovations, it can lead to a long-lasting advantage for the firm. However, when this type of innovation is being ignored and firms only improve their products, it can lead to the destruction of a firm's success (Foster, 1986). Radical innovation generally increases the firm's value much more than incremental innovation does (Rubera & Kirca, 2012). Firms in the tourism industry seem not to be very innovative, because they focus on improvements rather than disruptive new products. New technology indeed created a window of opportunity here, since Airbnb is able to enter the hotel market because of its revolutionized and disruptive business model (Hou, 2018).

## **1.2 Creative destruction**

Achieving high firm innovativeness requires a certain business mindset. Established firms that want to be ahead in their market, must be willing to replace current, some successful, products, to make way for new innovative products, thereby changing their own organization. The replacement of products for the process of innovation, is called 'creative destruction' (Schumpeter, 1942). When firms are not willing to engage in creative destruction, other firms will do it for them.

Established firms are often at a disadvantage in achieving radical innovation, as these firms have their routines in place that give the firm success in their usual way of working. However, this leads to inflexibility, which is crucial for innovation. This rigidity of a firm

leads to incremental innovation (Tripsas, 1997). Routines are very hard to replace because investments in new routines could make investments in old routines worthless. For firms to implement radical innovation, they must be able to risk their valuable assets and investments. Firms must be willing to '*cannibalize*' themselves (Nijssen, Hillebrand & Vermeulen, 2005).

### **1.3 Willingness to cannibalize**

The term 'willingness to cannibalize' was first coined by Chandy & Tellis (1998), and it is defined as "*the extent to which a firm is prepared to reduce the actual or potential value of its investments*" (p. 475). It concerns a certain mindset of firms to take risks, embedded in the culture of a firm (Deshpande & Webster, 1989). The term means that firms are willing to give up their current sales in order to be flexible for radical innovation. Truly disruptive innovations cannot just be implemented, the firm needs to change for it, and must thus be willing to give up on some (successful) parts of the firm they are used to have. Firms can cannibalize on their current sales, on their investments made, and on capabilities (Nijssen et al., 2005). They can make room for new future sales, new investments and unlearning routines to be able to be flexible for implementing truly radical innovation.

### **1.4 Business ecosystems**

Implementing radical innovation, and thus engaging in creative destruction, does not only impact the firm itself. Firms operate with different stakeholders (Euchner, 2016). When making innovation choices, firms must deal with these stakeholders. They operate in a '*business ecosystem*' (Moore, 2006; Iansity & Levien, 2004). Business partners depend on each other, and business ecosystems are "*characterized by a large number of loosely interconnected participants who depend on each other for their mutual effectiveness and survival.*" (Iansity & Levien, 2004, p. 8).

Relationships in business ecosystems may act as ties that binds, and radical innovation implies that ecosystems need to be adapted. Current partners may become redundant in that process, which is difficult for firms to realize once they have effective business relationships. Stakeholders are essential, because no single firm has all the required knowledge and resources themselves, for implementing true radical innovation (Moore, 2006), however firms can actually gain a lot of advantages with critically and continuously revising their business relationships and constantly strategically re-aligning the right partners around them (Euchner,

2016). Firms must be able to cannibalize their effective business relationships in order to make room and be flexible for radical innovation.

### **1.5 Research aim**

Chandy & Tellis (1998) have shown that the willingness to cannibalize is a proven concept in explaining why some firms are flexible and innovative, and others are not. Originally it has been assumed that firm size is the biggest predictor of radical innovation (Schumpeter, 1942), but the willingness to cannibalize of a firm is a much better predictor (Chandy & Tellis, 1998). The concept of willingness to cannibalize is proven to be a multidimensional construct as a firm can cannibalize on sales, investments and capabilities (Nijssen et al., 2005). The concept, however, may not be complete in the context of business ecosystems. The aim of this research is to explore the concept of willingness to cannibalize relationships in order to get more insight into firm inertia. In more detail, this study tries to get more insight into the hampering effect of ecosystems because of the relationships firms used to have, making them blind for better alternatives (Anderson & Jap, 2005), making the firm less flexible and less able to implement radical innovation.

This study suggests to include a fourth dimension to the concept of willingness to cannibalize, namely cannibalize on relationships, in order to understand more about the hampering effect of ecosystems. The main research question is therefore:

**Research question:** *‘What is the role of willingness to cannibalize relationships in radical product innovation?’*

To answer this research question, this study focusses on an industry that is characterized by ecosystems and experiencing a lack of radical innovations, namely the hotel industry. Hotels deal with a lot of stakeholders around their company in order to deliver the best service to their clients (Gretzel, Werthner, Koo & Lamsfus, 2015), but are also falling behind on implementing radical innovation (Hjalager, 2010), and are not innovative enough (Aldebert, Dang & Longhi, 2011). It is interesting to study if in the hotel industry, this hampering effect of ecosystems exists and to better understand why tourism firms do not innovate radically.

## **1.6 Theoretical relevance**

Exploring the concept of willingness to cannibalize relationships has advantages for several streams of literature. The concept of cannibalization has been researched before mainly towards cannibalizing sales (Chandy & Tellis, 1998; Mason & Milne, 1994). This has shown a lot of insights into firm inertia already and has taught more on how to achieve innovation. Nijssen et al. (2005) have researched the concept further and concluded the three different dimensions of willingness to cannibalize. More exploration and understanding of a fourth dimension of willingness to cannibalize has advantages for several streams of literature.

This study contributes to four streams of literature by extending the knowledge of the already known concept of cannibalization by introducing a fourth dimensions of willingness to cannibalize. I extends knowledge on 1) cannibalization theory, by exploring a fourth dimension, extending knowledge to what is known about cannibalization to the context of business ecosystems. 2) Sunk-, and transaction cost theory, because the willingness to give up on investments refers to a certain mindset that must be adopted, investments that are made that brought the company to where it is now could be worth nothing when implementing new innovations. The sunk cost of investments in the context of relationships has been studied before (Anderson & Jap, 2005), and the cost of switching (transaction cost theory) in the context of relationships has also been studied before (Heide & John, 1988), however not in the context of radical innovation, in combination with the other dimensions of willingness to cannibalize, in the context of the tourism industry. 3) path dependency-, & creation theory, by expanding our knowledge on why firms behave the way they do, and why they always choose for what they are used to, termed their path dependency, more insights can be given into how to change this rigid behavior and choose for new paths to follow (path creation), leading to radical innovation. The concept of path dependency in the context of business relationships can yield new insights into behavior in business relationships, thereby also contributing to the 4) business relationships theory. When we understand more about how firms interact with its business partners and how to deal with their stakeholders, more insights can come forward on how to deal with stakeholders.

## **1.7 Practical relevance**

In the current economy of rapidly evolving business models, it is becoming increasingly important to know what it takes to achieve radical innovation and stay ahead of the market to revolutionize businesses. By giving more insight into firm behavior towards business relationships, decision-makers of firms can be more aware of their stakeholders choices and

be better prepared for implementing radical innovation to stay ahead in the industry. Traditional hotel firms are lacking behind on innovation because the tourism analysts are normally late starters in transferring theory and concepts and trends already known and applied in other industries, leading to disruptive innovation by newcomers that take away sales that is traditionally belonging to hotels (Hjalager, 2010).

When firms do not have the mindset or flexibility for innovation, and be willing to cannibalize, competitors who do will cannibalize them instead. It is furthermore very important and relevant for hotel managers to know more about radical innovation, since this increase the overall firm value and firm performance (Nijssen et al., 2005).

### **1.8 Thesis outline**

The study starts with presenting a detailed theoretical background, giving more insights into the theoretical relevancy on topics of cannibalization, sunk costs-, and transaction theory, path dependency-, and creation, and business relationships. Then the conceptual model for this study is presented, followed by a short discussion of all relationships between the main constructs, thereby creating hypotheses to test. The next chapter describes the conducted research method including sampling information, measurement scales and research ethics. Hereafter, the results from all analysis are presented and this study concludes with conclusions on all hypotheses, an answer to the research question, discussion, practical implication and limitations and future research.

## 2. Theoretical background

This section explains the four streams of literature further and gives more detail on what has been studied and what is known. First more insights will be given on cannibalization theory, thereafter on the path dependency-, and creation theory, the sunk-, and transaction cost theory and the business relationships theory.

### 2.1 Cannibalization theory

Cannibalization theory originally refers to cannibalization on sales. It means to be able to give up on current sales because the firm is switching products, so in order to achieve sales from future products, current sales must be replaced by future sales. This requires a certain mindset and character of a firm because it means to take a risk because future sales are less certain than current sales. This mindset belongs to flexible firms because normally established firms have built up their routines, which make the firm very rigid (Chandy & Tellis, 1998). They are used to working this way, making it hard to change (Nijssen et al., 2005). Firms must look more into the future and must 'eat' their own sales in order to grow bigger, hence the term cannibalization. Firms must be willing to cannibalize in order to be flexible for innovation.

The concept of 'willingness to cannibalize' was originally studied by Chandy & Tellis (1998), who studied it as a determinant of radical product innovation. In traditional literature, firm size is seen as one of the biggest drivers of radical product innovation (Schumpeter, 1942), but Chandy & Tellis (2000) reconsidered that view on firm size in their study towards firm inertia. Their results suggest that size (as a determinant of radical product innovation) is less important than expected. Firms of all sizes can be radical product innovators, it is the willingness to cannibalize that matters. *"The willingness to cannibalize is a more powerful driver of radical product innovation than firm size is"* (Chandy & Tellis, 1998, p. 474).

Nijssen et al. (2005) studied the concept of 'willingness to cannibalize' further with the purpose of better understanding firm inertia in new product development. Three dimensions of 'willingness to cannibalize' were found, which corresponds with the conclusion of Chandy & Tellis (1998) to treat 'willingness to cannibalize' as a multi-dimensional construct. Nijssen et al. (2005) found a willingness to cannibalize on previous investments, which refers to *"the disposition of a firm to introduce new products that will make previous investments obsolete"* (p. 1402). Secondly, they found a willingness to cannibalize on capabilities of the firm, which refers to *"the disposition of a firm to introduce new products that make current organizational capabilities, skills and routines obsolete"* (p.

1402). Finally, a willingness to cannibalize on sales was found, which refers to “*the disposition of a firm to introduce innovations that will diminish the sales of its current products*” (p. 1402).

## **2.2 Sunk-, and transaction cost theory**

The willingness to cannibalize relates to the Theory of Sunk Costs (Duchon, Dunegan & Barton, 1989), because of the mindset it requires of decision-makers of a firm. Firms tend to hold onto their investments for too long, because investments that are made are difficult to abandon without having the certainty of profitable future investments. Investments are kept even after they have become economically irrelevant (Nijssen et al., 2005). The threat of newcomers, with better assets and technology, requires flexibility from established firms and consequently, decision-makers of these firms have to be as flexible as possible. They must be willing to give up their investments, even when these investments are not relevant anymore.

In the context of this study, with a focus on business relationships in ecosystems, this translates into ‘*specialized investments*’. These are investments in assets, human resources, strategies and equipment, that are specialized to a certain business relationships and have little value when that relationship is terminated (Anderson & Jap, 2005). To build an efficient relationship, it can be costly to switch, once a commitment to a business partner is made (Heide & John, 1988), because of the low value of these specialized investments outside of that specific relationship. Specialized investments can also be made in technological systems, and, in the context of the hotel industry, this means having certain investments made in, for example hotel reservation systems. Investments are made either in tangible investments (money) or intangible investments (staff training) (Nault & Vanderbosch, 1996).

## **2.3 Path dependency- & creation theory**

Established firms base their actions on preferences they are used to have, which is termed ‘*path dependency*’. Even when newer, more efficient products, or business relationships, are available, firms still tend to choose the familiar path and commit to old practices (Moulaert et al., 2007). Firms ‘lock themselves in’, meaning they stop thinking critically and just perform their daily routine. Path dependency gives the firm support to let decision-makers continue the behaviour they are used to, by stabilising the wrong behaviour (Schumpeter, 1942). Firms are used to the wrong system, because of the irreversibility of their investments, which makes it

harder and more costly to switch to other ways of working (David, 1985), in the context of this study, with other business partners.

The opposite of path dependency is '*path creation*'. Instead of blindly following routines, firms must take control into their own hands. This underlines the breaking of stability and the creation of new assets, capabilities, investments, and relationships for further more radical innovation (Strambach, 2008). In path creation, the environment of innovation managers is more creative and risk-oriented, with regard to unconventional ideas and business solutions (Rip & Kemp, 1998). Innovation choices made by firms in a state of path dependency, results in more incremental change (Strambach, 2008), while innovation choices made in a state of path creation, results more in radical innovation. This is because the environment in a state of path creation leads to more flexibility, leading to more product diversification and differentiation, which in turn leads the way to radical innovation (Markard & Truffer, 2006). Moulart et al. (2007) also describe that radical innovation has to stand up against the inertia of path dependency, which requires the capacity and mind-set to seek alternative paths and create such an environment throughout the firm.

## **2.4 Business relationship theory**

Firms can hardly innovate solely by themselves anymore because they need close business relationships, with strategically chosen partners (Euchner, 2016). The competitive environment of firms is changing very quickly because traditional monopoly markets are being replaced by networks of companies (Möller & Halinen, 1999). Firms in such business relationships can exploit more mutual benefits than either firm could achieve alone. They stand stronger against rivals, and macro-economic downfalls (Möller & Halinen, 1999).

Aligning business partners strategically, and then continue with daily business, is not enough. Ecosystems are always moving and so must firms by staying critical. Other business relationships could yield more mutual benefits, but as rigid as the company is with the routines it has built, effect business relationships makes the company rigid as well. Firms with effective business relationships are blind for radical innovation. To really change the course of business, and exchange relationships for other ones with more benefits to exploit. Because of this rigidity in relationships, the firm may eventually fail to innovate radically (Anderson & Jap, 2005).

Managers must adopt portfolio thinking when managing their business relationships (Möller & Halinen, 1999). Firms must understand which business relationship they need on what level of collaboration, for every part of their supply chain. Some suppliers are less

important and require a less collaborate relationships, while some key partners could require close intense collaboration for exploiting mutual benefits.

Once a close relationships is established and perceived as effective for the firm, and mutual benefits are being exploited, investments that are continuously made in each other to further strengthen the relationships, to yield even more mutual benefits (Anderson & Jap, 2005). These investments in business relationships lead to trust between partners. They are more likely to share strategic insights to each other, and discuss more details, exploiting more mutual benefits. Firms become dependent on each other, making their business relationships stronger (Anderson & Jap, 2005).

There is, however, a downside to having effective business relationships. Firms stop looking for better alternatives. They have become too dependent on their business partners, and are not willing to replace them anymore, while other better alternatives could exist. Companies should be earlier with cutting their ineffective relationships, because when partners do not have enough freedom to make their own choices, because they are dependent on the other partner too much, proper innovation is impossible (Anderson & Jap, 2005). However, when the relationship is too flexible, there are not enough potential mutual benefits to be exploited from that relationship, because without a certain level of dependence and trust, there is not really a relationships toe exploit benefits from.

This study both replicates and extends a study of Chandy & Tellis (1998) and Nijssen et al. (2005), who have studied on the concept of willingness to cannibalize. Based on the cannibalization theory, sunk-, and transaction cost theory, path dependency-, and creation theory and business relationships theory, from a 'firm-in-an-ecosystem' perspective, it is proposed to include a fourth dimension to the concept of willingness to cannibalize. Corresponding determinant variables of willingness to cannibalize relationships, coming forth from business relationships theory, '*trust*' & '*dependence*' will also be taken into account.

## **2.5 Conceptual model**

To understand the role of willingness to cannibalize relationships, it must be understood relative to all other constructs of the most important previous studies. The building of the total conceptual model for this study starts with the study of Chandy & Tellis (1998), who studied several determinant variables on radical product innovation, through willingness to cannibalize (figure 2.1). The next step in the model is the distinction of the concept of willingness to cannibalize into the three dimensions '*sales*', '*investments*' and '*capabilities*'

from the study of Nijssen et al., (2005) (figure 2.2). The extension of this study is the construct willingness to cannibalize relationships with its two determinant variables ‘trust’ and ‘dependence’, coming from business relationships theory (figure 2.3). For testing all relationships between variables, to get a clear image of the role of willingness to cannibalize relationships into the whole model, a total combined conceptual model is presented, which is the base for this study (figure 2.4).

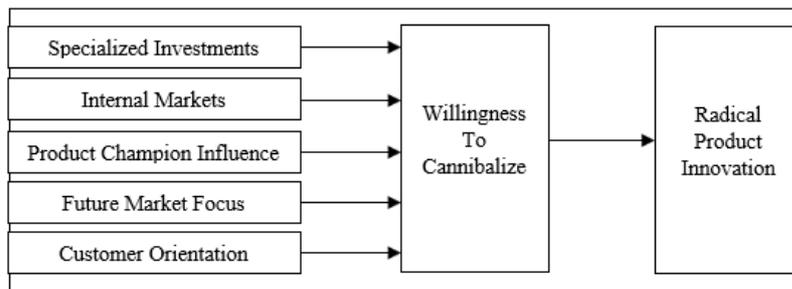


Figure 2.1 Conceptual model of the study of Chandy & Tellis (1998).

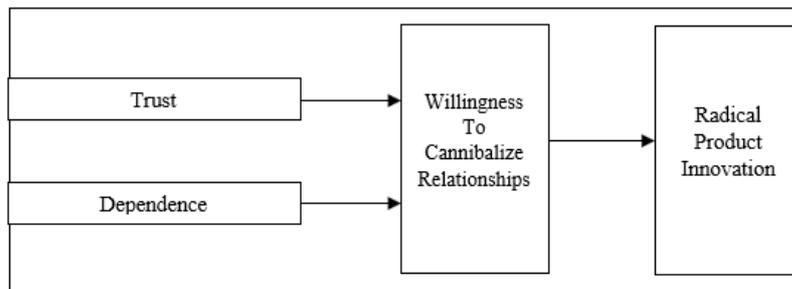


Figure 2.3 Extension of the current study.

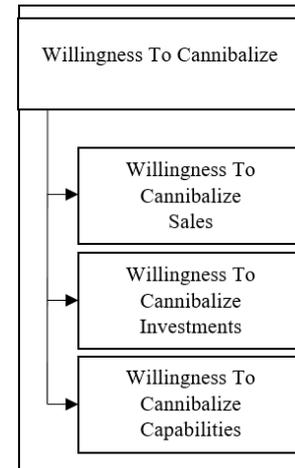


Figure 2.2 Dimensions of willingness to cannibalize from the study of Nijssen et al. (2005).

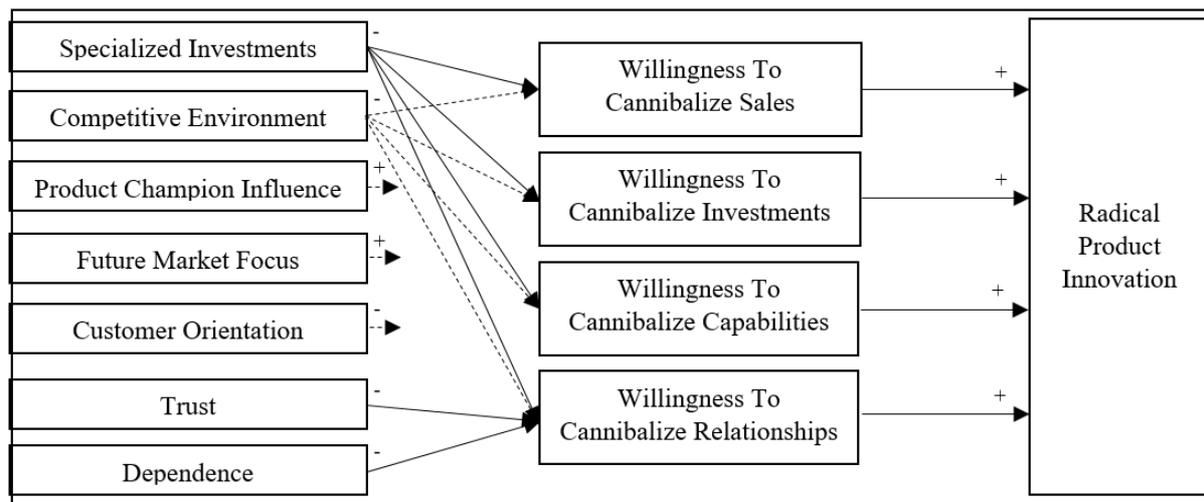


Figure 2.4 Total combined hypothesized conceptual model for this study.

For ease of interpretation not all relationships are drawn. All determinant variables except trust and dependence have relationships with every dimension of willingness to cannibalize.

The total conceptual model for this study shows seven determinant variables on the left side of the model. The original variable '*internal markets*' from the study of Chandy & Tellis (1998) concerns a context of SBU's. Because in this study the focal context is a firm context, this variable is adjusted to '*competitive environment*', similar to the variable that was adopted by Nijssen et al., (2005). In the middle, the four dimensions of willingness to cannibalize are presented and on the right side the model concludes with the dependent variable '*radical product innovation*'.

Because the model contains a lot of variables, and the aim of this study is to explore the construct of willingness to cannibalize relationships, all relationships possible are tested within this study. For hypotheses building, it is thus expected that almost all determinant variable have an effect on all dimensions of willingness to cannibalize, which in turns has effects on radical product innovation. The concept of willingness to cannibalize is thus expected to mediate the relationships of determinant variables on radical product innovation. Furthermore, all direct relationships of determinant variables on radical product innovation are tested for a complete image.

The following paragraphs discuss the conceptual model and its relationships step by step. First the dependent variable is explained, then the mediators, and finally the determinant variables. Hypotheses are build along the way, based on the relationships between the constructs discussed.

### ***2.5.1 Radical product innovation***

'*Radical product innovation*' is defined as: "*A new product that incorporates a substantially different core technology and provides substantially higher customer benefits relative to previous products*" (Chandy & Tellis, 1998, p. 2). Following a development of two S-curves (Foster, 1986; Utterback, 1994), at a certain point in time, the s-curve of a radical innovation takes over the s-curve of existing products, because the radical innovation has inferior customer benefits (Chandy & Tellis, 1998). It is important for a firm to be a radical product innovator, to gain more value for customers and thus to increase firm value (Nijssen et al., 2005). Product improvements can be innovative as well. However, these type of innovations are considered more incremental, and eventually deliver less firm value. Radical product innovation concerns truly new ideas that are disrupting for either the firm and the industry.

### ***2.5.2 Willingness to cannibalize sales, investments and capabilities***

The term 'willingness to cannibalize' is defined as "The extent to which a firm is prepared to reduce the actual or potential value of its investments." (Chandy & Tellis, 1998, p. 475).

Each firm has a level of firm innovativeness, meaning that different firms handle innovation choices on their own way. Some firms hold onto the routines they have adopted and try to improve their existing product lines. However, some firms are willing to risk their most valuable assets, in order to make room for radical innovation.

Firms must be willing to cannibalize current assets and capabilities in order to replace the current customer benefits for a next generation of customer benefits, before the new entrants takes big parts of the market (Nault & Vanderbosch, 1996). Giving up on investments is very difficult for a firm to do, because decision-makers tend to hold onto investments, even when these investments have become economically irrelevant (Nijssen et al., 2005). Firms that want to achieve radical innovation must make a trade-off; choose current sales, or bigger future sales (Nault & Vanderbosch, 1996).

### ***2.5.3 Willingness to cannibalize -> radical product innovation***

A willingness to cannibalize on sales effects radical product innovation, because, when introducing revolutionary new products, the sales of these products replace the sales of the old products, which could be a barrier for firms to engage in radical product innovation (Conner, 1988), especially when the current sales seems to look satisfying, then it is even more difficult to risk these sales. When firms are willing to cannibalize on sales, they are more likely to be radical product innovators.

A willingness to cannibalize investments has an effect on radical product innovation, because, when new products are developed, firms might need a whole different product line to manufacture new products. This means that investments in previous manufacture lines could become worthless, which hold firms back in developing and introducing new products, because they could lose their valuable investments (Nijssen et al., 2005). When firms are willing to cannibalize on investments, they are more likely to be radical product innovators.

Finally, a willingness to cannibalize capabilities effects radical product innovation, because, for completely new products, new organizational routines must be adopted and the used way of working (the daily routine) must change. This could be a challenge for firms (Nijssen et al., 2005) and a barrier to begin with, because investments in training for current capabilities could become worthless. This hold back firms to replace these routines and make

room for revolutionary new ways of working. When firms are willing to cannibalize on capabilities, they are more likely to be radical product innovators.

The first hypotheses of this study are based on the just discussed first three dimensions of the concept of willingness to cannibalize, and are as follows:

**H<sub>1</sub>:** ‘Willingness to cannibalize sales’ has a positive effect on ‘Radical product innovation’.

**H<sub>2</sub>:** ‘Willingness to cannibalize investments’ has a positive effect on ‘Radical product innovation’.

**H<sub>3</sub>:** ‘Willingness to cannibalize capabilities’ has a positive effect on ‘Radical product innovation’.

#### ***2.5.4 Willingness to cannibalize relationships***

The construct that is added for this study is ‘*willingness to cannibalize relationships*’. These relationships concern business relationships with either suppliers, customers, distributors, or other alliances (Anderson & Jap, 2005). Strategically chosen partners in a business ecosystem adds a lot of value to the firm because mutual benefits then can be exploited (Euchner, 2016). Effective established business relationships, where mutual benefits are being heave their own routines. Business partners are then mutually dependent, and are satisfied because of the benefits their experience. These effective business relationships, however, make the firm less flexible towards introducing radical innovation. Partners in an established business relationship may not feel the need to make adaptations anymore (Anderson & Jap, 2005; Grayson & Ambler, 1999).

#### ***2.5.5 Willingness to cannibalize relationships -> radical product innovation***

Working with the right partners in a business ecosystem gives great advantages, because of the joint benefits that can be exploited. However, it decreases flexibility which is needed for radical innovation, especially because radical innovations are disruptive, and require new ecosystems, new business models and new business partners. When business relationships are set into place and joint benefits are experienced by both parties, it makes the firm reluctant to cannibalize on those relationships. Firms are blinded by their effective closely tied

relationships and stop searching for better alternatives (Anderson & Jap, 2005). When firms are, however, willing to give up on their effective relationships, they are more flexible and thus more likely to be radical product innovators. The next hypothesis is therefore:

**H4:** ‘Willingness to cannibalize relationships’ has a positive effect on ‘Radical product innovation’.

### **2.5.6 Specialized investments**

‘Specialized investments’ are defined as: “*Human and physical assets (tangible and intangible) required to support exchange and which are specialized to the exchange relationship*” (Heide & John, 1988, p. 21). Specialized investments are investments made that only support the current condition of the firm (Chandy & Tellis, 1998). These investments lose their value when radical innovation replaces old investments in the organization. Specialized investments increase the chance of firms finding themselves in the ‘*sunk cost fallacy*’ (Williamson, 1988), which means that decision-makers are not able to distance themselves easily from the investments that they have made. Large specialized investments increase commitment to current investments, routines, products and business relationships, meaning when firms contain large specialized investments, there is less inclination to cannibalize, to make room for radical innovation.

In the context of business relationships, large specialized investments create a psychological contract for both parties (Anderson & Jap, 2005), because of the low value of specialized investments outside of that relationship. Anderson & Jap (2005) explain that these specialized investments make both parties dependent on each other, and while a dependency on each other can yield high mutual benefits. They also make the business partners blind for searching for better alternatives. It is thus proposed that specialized investments lead to being less willing to cannibalize. The next hypothesis is therefore:

**H5:** ‘Specialized investments’ has a negative effect on ‘Willingness to cannibalize’ (sales, investments, capabilities, and relationships)’.

### **2.5.7 Competitive environment**

Based on the similar construct of ‘*internal markets*’ (Chandy & Tellis, 1998), a firm with a competitive environment can be defined as: ‘*A firm that has high authority in making decisions related to the firm’s business, and has high rivalry among businesses in an*

*ecosystem*'. When firms operate in a highly competitive market, they have to fight for customers and mainly compete on price action, because customers then have many alternatives to choose from (Jaworski & Kohli, 1993). Firms then have less resources available to change their products radically because of the lower profits made, as a result of the decreasing sales because of price action. While competition forces firms to innovate and to be creative, it is expected that competing on price action gets more priority, making a firm more reluctant to cannibalize on mainly sales. However, also on capabilities, investments and relationships, because the firm is focused too much on price action and waits with changing the whole firm. Replacing investments, capabilities and relationships is then on a hold. Therefore, the next hypothesis is:

**H<sub>6</sub>:** 'Competitive environment' has a negative effect on 'Willingness to cannibalize' (sales, investments, capabilities, and relationships)'.

### ***2.5.8 Product champion influence***

Product champions are visionaries within a company that are active promoters of innovation within that company. The construct '*product champion influence*' is defined as: "*The extent to which employees who advocate new product ideas affect the activities of the organization*" (Chandy & Tellis, 1998, p. 478). These product champions have a future vision for the company and can have a strong influence on decision-makers for overcoming organizational barriers for new product development (Nijssen et al., 2005). Product champions have an active attitude towards new procedures and products and could influence this vision on decision-makers of the firm. Product champions are expected to increase flexibility in a firm, because of their vision of the future, and the awareness that change is needed to achieve that envisioned innovative future. Product champions are willing to change and when they have enough influence towards decision-makers, those firms are willing to change on all aspects of the firm. The next hypothesis is therefore:

**H<sub>7</sub>:** 'Product champion influence' has a positive effect on 'Willingness to cannibalize' (sales, investments, capabilities, and relationships)'.

### **2.5.9 Future market focus**

The construct '*future market focus*' is defined as: "*The extent to which a firm emphasizes future customers and competitors relative to current customers and competitors*" (Chandy & Tellis, 1998, p. 479). A future market focus leads to firms having the capacity to understand customer needs that lie more in the future and are unexpressed right now. A focus on what the customer might want and need in the future makes the company more likely to introduce revolutionary new products, and thus score higher on firm innovativeness (Hillebrand, Kemp & Nijssen, 2011). These firms have a more long-term view and are expected to be more willing to cannibalize on their current sales, investments, routines and relationships. Therefore the next hypothesis is:

**H7:** 'Future market focus' has a positive effect on 'Willingness to cannibalize' (sales, investments, capabilities, and relationships)'.

### **2.5.10 Customer orientation**

A firm with a customer orientation focuses on a firm's current customer needs (Slater & Narver, 1998). The construct '*customer orientation*' is defined as: '*The extent to which a firm emphasizes current customers and competitors relative to future customer and competitors*'. These firms are more focused on current needs of customers and they can even develop close relationships with big current clients to get a better understanding of what they might need (Kelley, 1992). Current customers are likely to share what they would improve to current products (Hillebrand et al., 2011), and are thus more focused on incremental innovation.

While these customer-oriented firms have the ability and the will to adapt to current customer needs (Moorman, Zaltman & Deshpande, 1992), they tend to be biased, however, towards current customer needs (Christensen & Bower, 1996), rather than focussing on the future. While customer-oriented firms are willing to change to a certain extent for larger current customers, they are not willing to risk their most valuable assets, and are thus not willing to cannibalize, to make room for disruptive innovation. The next hypothesis is thus:

**H8:** 'Customer orientation' has a negative effect on 'Willingness to cannibalize' (sales, investments, capabilities, and relationships)'.

### **2.5.11 Trust (on business partners)**

The concept 'trust' is defined as: "*A willingness to rely on an exchange (business) partner in whom one has confidence*" (Moorman et al., 1992, p. 82). Trust is very important in business relationships, because without trust in a partner, no commitment towards that relationship exists. A willingness to rely on a business partner leads to a higher desire to maintain that business relationship. Trust must be present from both parties in order for a business relationships to work, and it is based on mutual expectations of both partners (McEvily, 2017).

Trust exists in business relationships because there is an information asymmetry between partners. Not all strategic insights, or details on resources are shared with each other, which make that some actions in the business relationship are foreseen, and others are neither foreseen, nor intended (Ford & McDowell, 1999). Partners must thus trust on each other's good faith for the relationship to work. Trust in business relationships reflects a reliance on the other partner, and involves vulnerability and uncertainty towards each other (Coleman, 1990).

When these business relationships are established and both parties have found their own way of working together, they have mutual routines in place, and then trust can become a liability for the firm (Anderson & Jap, 2005). When business partners experience high levels of trust, they stop looking critically for better alternatives that would yield even higher benefits for the firm. The firm does not want to breach the trust of the other partner that took so long to build up. This, again, relates to the theory of sunk- and transaction costs, because investments made in the relationships are gone when switching to another relationship, which is perceived as very costly.

This rigidity in business relationships affect the development and production of radical innovative products, because then firms are stuck in a dynamic of effective relationships (Anderson & Jap, 2005). It is proposed that because of this trust, the willingness to cannibalize relationships, is lower, when the level of trust of higher. However, when partners are very loyal to each other, they are also sacrificing themselves, because they let better alternative business relationships go. This, however, is more of a process of accepting less firm performance in return of loyalty to business partners. It does not necessarily means a willingness to cannibalize sales. Because there is no clear expectation of trust on the willingness to cannibalize sales, investments and capabilities, the next hypothesis is concluded as:

**H<sub>10</sub>:** 'Trust' has a negative effect on 'Willingness to cannibalize relationships'.

### ***2.5.12 Dependence (on business partners)***

The construct '*dependence*' can be defined according to the Power-Dependence Theory as: "*A state of two business partners relying on each other, determined by its motivational investment in the relationship and the replicability of the partner*" (Emerson, 1962, p. 33).

While trust in a business relationship can increase the intensity of that relationship, and can lead to more mutual benefits, it can also increase the dependency on each other. Mainly a dependency on resources comes forth from specialized investments in trusted relationships (Heide & John, 1988), also termed '*mutual hostages*' (Anderson & Jap, 2005). The greater the sales and profits that partners account for, the greater the other partner's dependency is (Frazier & Rody, 1991). In effective business relationships with high mutual benefits, a dependency exists from both sides, thereby creating a perfect balance for both parties and the right amount of flexibility needed for innovation.

Established business relationships with key partners are vital for the survival of the firm, and each may deliver important resources which are difficult to find quickly somewhere else (Ford & McDowell, 1999). Additionally, when there are fewer alternative partners that could deliver the same important resources, the dependency on business partners increases (Heide & John, 1988). Being dependent on each other, together with being trustful in a business relationship is very effective (Beier & Stern, 1969), however, it has its downsides as well. Relatable to the Path Dependency Theory, the firm is used to being dependent on its relationships and stops looking for better alternatives. not seen that better alternatives were already possible.

It is thus proposed that a high level of dependency on business partners lead to being less inclined to replace those relationships. Similar to trust, in business relationships, there are no clear expectations on how high levels of dependency influence a willingness to cannibalize sales, investments and capabilities. The last hypothesis of this study is therefore:

**H<sub>11</sub>**: 'Dependence' has a negative effect on 'Willingness to cannibalize relationships'.

### **3. Methodology**

To be able to answer the main research question (‘*What is the role of willingness to cannibalize relationships in radical product innovation?*’), a quantitative research is conducted, in order to explore the new construct in relationship to many other constructs. To understand the role of the central concept ‘willingness to cannibalize relationships’, beliefs and perceptions about the concept must be described, enumerated and linked to other variables. Therefore, a survey method is the best suited method to conduct (Diamond, 2000; Yin, 1994). Sample surveys are furthermore also one of the most important basic research method to find structure among various different constructs (Rossi, Wrigth & Andersons, 2013).

The concept of willingness to cannibalize has been studied before in either theoretical and in empirical form (Chandy & Tellis, 1998; Nijssen et al., 2005), hence the part of this research that replicates those studies, is considered confirmatory research. However, the concept of willingness to cannibalize relationships has not yet been theoretically defined and empirically studied, meaning that this part of the research is exploratory (Forza, 2002). The exploratory part can also be detected in the research question, which is also exploratory. The method adopted in this study is therefore designed towards exploring the role of the new construct.

#### **3.1 Sampling**

In the sampling section, first the unit of analysis is described, thereafter the target population. The procedure for gathering the data is elaborated upon and the sample results are presented.

##### **3.1.1 Unit of analysis**

Since the focus of this study is on the hampering effect of ecosystems, the sample is restricted to a sector which is believed to be characterized by ecosystems, namely the hotel sector. Hotels do not innovate radical enough, because they do not adapt fast enough to trends in the industry, like offering more flexible and personal tourism products (Stamboulis & Skayannis, 2003). The discussed dynamic of s-curves, where radical innovation takes over existing products (Foster, 1986; Utterback, 1994), is found in the tourism industry, where new forms of tourism gradually emerge in the place of conventional tourism (Stamboulis & Skayannis, 2003). The tourism industry, more specifically the hotel industry, is therefore considered a suitable industry to study the hampering effects of ecosystems in. A firm perspective is

adopted throughout the study, because the constructs of radical innovation and willingness to cannibalize try to explain firm behavior. The unit of analysis for this study is therefore ‘the firm’.

### **3.1.2 Target population**

An important first step in conducting a survey method is to identify the target population (Diamond, 2000), which, in this case, are managers in the hotel industry that have enough insight into innovation within their company. The target population is therefore ‘managers in the hotel industry, that are decision-makers on innovation’. From this target population, a sampling method is conducted in order to make relatively few observations, but to still be able to generalize the results and to portray the total population (Babbie, 2015; Diamond, 2000). For this study, no existing lists of all hotel managers, with a saying on innovation, exist. Therefore, active gathering of smaller sample lists via virtual networks were needed, meaning a non-probability sampling method is conducted (Babbie, 2015).

### **3.1.3 Procedure**

The non-probability online survey method is conducted via the online networking application LinkedIn and via e-mail. Surveys generally involve a low response rate, and concluding results from a sample with a high non-response rate will lead to biased results (Whitehead, Groothuis & Blomquist, 1993). This study therefore strived for the highest response rate possible, by using the internet for convenience, sending reminders and guaranteeing anonymity (Forza, 2002). Additionally, only suitable respondents must take part in the survey, because when not suitable hotel employees without enough innovation knowledge participate, this decreases the validity and reliability of the study (Oppenheimer, Mayvis & Davidenko, 2009). The respondents in this sample are very specific and were hard to find, hence a high response rate was especially important for this study.

To procedure of gathering the data for this study started with an alumni list of the Saxion University of Applied Sciences, faculty Hotel Management. Using the researchers network of hotel professionals, by application of a virtual snowball sampling method, more lists of potential respondents were gathered, using hotel networkers connection lists as a sample framework. Respondents were filtered on function ‘hotel manager’, ‘innovation manager’, ‘general manager’, and ‘owner’. Potential respondents were only contacted with accordance of the hotel networker.

The use of social networking sites, like LinkedIn, can be very effective for studying hard to reach populations (Baltar, 2012). Because the population in this study is very specific and thus hard to reach, this virtual method was justified to conduct. The main advantages of this technique are that this expands the geographical scope, and facilitates the identification of individuals with barriers to access (Baltar, 2012). General managers and owners of hotel(s)(groups) are normally without reach for study. However, via this virtual method, with the possibilities of LinkedIn, these very interesting individuals could be reached for this study, and many of them have participated. *“The use of virtual networks in non-probabilistic samples can increase the sample size and its representativeness”* (Baltar, 2012, p. 57).

The use of online social networks for the gathering of respondents is a powerful research tool (Kosinski, Matz, Gosling, Popov & Stillwell, 2015). The response via virtual network sites is higher because the researcher shows personal information on his/her own profile, and also shares the same connection, which increases a respondents confidence (Baltar, 2012). LinkedIn led to a larger sample than with only sampling from alumni lists from hotel management schools.

In addition to a virtual pro-active snowball method, a reactive snowball method is used by survey participants, asking for more potential respondents after completion of the survey. 29 more potential respondents were contacted via submitted e-mail addresses. Because surveys were taken anonymously, it is not clear how many of these referrals did actually take part in the survey.

### 3.1.4 Sample results

1280 hotel managers were personally invited for participation. 198 hotel managers responded, of which eight were filtered out during the survey for not having enough knowledge on innovation within their company. Furthermore, eleven respondents were removed from the dataset because of not completing the whole questionnaire. 179 respondents remained, meaning a total response rate of 14,84% was achieved.

*Table 3.1. Demographic variable ‘Firm size’, based on number of employees.*

<b>Firm size</b>	<b>Frequency</b>
< 50 employees	43
50 – 100 employees	39
> 100 employees	97

*n = 179.*

**Table 3.2 Demographic variable ‘Firm age’, in years.**

<b>Firm age</b>	<b>Frequency</b>
< 2 years	10
2 – 5 years	16
5 – 10 years	22
10 – 20 years	35
20 – 50 years	62
> 50 years	34

*n* = 179.

Demographic variables (table 3.1; table 3.2) shows that all firm sizes are present, with larger firms of over 100 employees being overrepresented twice as much. Furthermore, all age groups are present, with an age group of between 20 and 50 years being overrepresented as well. Because no size-, or age group is underrepresented by a substantial amount. To keep the sample as robust as possible, especially with the hard-to-reach target population, no changes in the dataset for equal group sizes were made. In additional analyses, there is controlled for firm size & firm age (4.4 extended analysis & 4.8 additional analysis).

### **3.2 Measurement**

This section includes the measurements of this study. First the scales are elaborated upon, then the procedure for data analysis is given. The equations per model are thereafter specified and finally the research ethics for this study are discussed.

#### **3.2.1 Scales**

For setting up the measurement scales of the constructs, theoretical concepts are transformed into observable and measurable items, of which all need their own operational definition (Forza, 2002). The theoretical and operational definitions are listed together per construct (Appendix I). The definitions together were used to find measurement scales for construction of the survey. Existing scales are used to improve reliability and comparability of the research (Field, 2013). Multiple items per constructs are formed (Appendix II), with the help of existing measurement scales based of previous studies (Nijssen et al., 2005; Chandy & Tellis, 1998; Jaworski & Kohli, 1993; Narver, Slater & Maclachlan, 2004; Doney & Cannon, 1997; Ganesan 1994). All measurement scales are translated into Dutch by the researcher, and thereafter approved by an expert in the field, improving content validity of the scales (Field, 2013).

Before the actual survey was conducted, both a qualitative and multiple quantitative pilot studies were conducted to pre-test the survey, improving the quality of constructs, improving the overall quality of this study (Forza, 2002). Furthermore, a pilot study makes sure that the data is collected in the right way (Babbie, 2015). First a qualitative pilot study was conducted by getting reviews from two academic colleges and two hotel managers. These reviewers were asked to think out loud and critically review every question, following the ‘think-aloud method’ (Newell & Simon, 1972). Based on this feedback, a lot of improvements were made in rewriting the sentences or adapting the scales to the context of this study. The improved survey thereafter, was submitted for a quantitative pilot study with five hotel alumni students and five hotel managers to test the internal consistency of the measurement scales. Based on this outcome (Appendix III), some constructs were improved based on their construct reliability. Some items were removed, or revised, and for some more problematic constructs, other scales were used. A second round pre-test was conducted with five other hotel alumni students and five other hotel managers, which confirmed previous results on already high scoring items, and showed acceptable Cronbach’s alpha calculations (Appendix IV), showing a readiness for sending out the actual survey. All final measurement scales were approved by an expert in the field before the survey was published.

Once a participant opened the online survey, an introduction was stated on the subject of the study and some guiding instructions for filling in the survey, including the amount of time the participant would need for completing the questionnaire. Additionally, the survey stated that the research is conducted in full anonymity of respondents, and that the participant can exit the survey at any time (Appendix IX). Thereafter a filter question was presented to rule out participants who were not knowledgeable enough about innovation within their company. When being ruled out, the participant automatically skipped the survey to the end, where he/she was thanked for his/her time. The survey then followed with 49 multiple-choice questions on the items, two multiple-choice questions on control variables, one open question to ask for more respondents, one open question to enter contact details for receiving the study results, and finally 1 open question to enter contact details for when participants were interested in winning a small voucher of ten euro. Finally, the respondents are being thanked for their time and effort, before submitting their answers.

### **3.2.2 Preliminary data analysis**

Data analysis tests the adequacy of concepts in relation to the main construct of willingness to cannibalize relationships, and it tests the hypothesized relationships among the variables and

the validity of the conceptual model (Forza, 2002). The variables of reversed items were transformed and thereafter a codebook was made for an overview of all items (Appendix V). The first step in the data analysis process was the internal consistency of scales from the actual data set, which was calculated by Cronbach's alpha calculations. Cronbach's alpha recalculations for the final dataset range from .629 to .929 (n=179), and all scales, except three, have reliabilities of over .7 (Appendix VI). The item 'willingness to cannibalize investments 2' was removed, because by deletion of that item, the reliability on the construct raised from .405 to .629, which was also supported by analyzing the survey questions. Items 1 and 3 were reversed, however, item 2 was not. This measurement error could best be removed by deleting item 2. Furthermore, the items 'competitive environment 5' and 'competitive environment 6' were removed, leading to a raise in reliability from .497 to .655. This decision was supported by theory, because items 5 and 6 could be perceived by respondents as being '*imitation*', rather than being '*competition*'. The third construct that has a reliability of under .7 is '*dependence*'. Removing the first item would yield a higher reliability, however, no support from theory was found, so it was decided to keep this item.

The one-dimensionality of constructs (convergent validity) was tested by means of an exploratory factor analysis, only including the items belonging to a certain construct (Appendix VI). Percentages of explained variance range from 48.13% to 83.00%, and while the percentages must ideally be above 50%, the results are not considered problematically lower than 50%.

Discriminant validity was tested by means of exploratory factor analysis, including all items in one analysis, to show that the constructs are statistically different (Appendix VII). This factor analysis confirmed that all items together make up twelve constructs, confirming the number of constructs that was expected beforehand. For interpreting which items load on which factor, exogenous variables are separated from endogenous variables, leading to better interpretation of the pattern matrix. All items load on the factors they are expected to be, however the variables 'willingness to cannibalize sales' and 'radical product innovation' load onto the same factor. When forcing SPSS to conduct a factor analysis for the endogenous constructs with five factors, these two variables load on different factors (Appendix VII), showing no further problematic results for the discriminant validity of constructs. To conclude the preliminary analyses, mean scores were calculated per construct to create equally weighted indices for further analyses.

### 3.2.3 Model specification

The combined conceptual model of this study shows different models that must be tested in order to gain insight into all relationships. The first model tries to explain the relationships between the dimensions of willingness to cannibalize on radical product innovation, and controls for firm size as well. The second model exists of four sub-models, and tries to explain the relationships between the determinant variables and the dimensions of willingness to cannibalize. Because of adding the new construct making this study exploratory, all dimensions of willingness to cannibalize are treated as an equally weighing predictor for radical product innovation, so for exploratory purposes, all determinant variables make up every dimension of willingness to cannibalize equally much. Every sub model of the second model is therefore made out of the same determinants, in order to get better insight in which determinant variables are significant for which dimension of willingness to cannibalize. The equations for the different models are presented in table 3.1.

**Table 3.1 Equations of the hypothesized sub models.**

$$(1) \text{ 'RPI' } = \text{ 'WTCS' } + \text{ 'WTCI' } + \text{ 'WTCC' } + \text{ 'WTCR' } + \text{ 'Size' } + \varepsilon^{1*}$$

$$(2a) \text{ 'WTCS' } = \text{ 'FMF' } + \text{ 'CO' } + \text{ 'SI' } + \text{ 'CE' } + \text{ 'PCI' } + \text{ 'T' } + \text{ 'D' } + \varepsilon^2$$

$$(2b) \text{ 'WTCI' } = \text{ 'FMF' } + \text{ 'CO' } + \text{ 'SI' } + \text{ 'CE' } + \text{ 'PCI' } + \text{ 'T' } + \text{ 'D' } + \varepsilon^3$$

$$(2c) \text{ 'WTCC' } = \text{ 'FMF' } + \text{ 'CO' } + \text{ 'SI' } + \text{ 'CE' } + \text{ 'PCI' } + \text{ 'T' } + \text{ 'D' } + \varepsilon^4$$

$$(2d) \text{ 'WTCR' } = \text{ 'FMF' } + \text{ 'CO' } + \text{ 'SI' } + \text{ 'CE' } + \text{ 'PCI' } + \text{ 'T' } + \text{ 'D' } + \varepsilon^5$$

Construct	Meaning
RPI	Radical product innovation
WTCS	Willingness to cannibalize sales
WTCI	Willingness to cannibalize investments
WTCC	Willingness to cannibalize capabilities
WTCR	Willingness to cannibalize relationships
FMF	Future market focus
CO	Customer orientation
SI	Specialized investments
CE	Competitive environment
PCI	Product champion influence
T	Trust
D	Dependence

\* $\varepsilon$  = PLS covariance based analysis takes into account independent unobservable error terms.

### **3.2.4 Data analysis**

Equations per model are tested by means of a path analysis, using a partial-least-squares (PLS) method, using Adanco software. PLS is a variance-based structural equation modeling method (SEM) (McDonald, 1996), This conceptual model consists of constructs that are composed from multiple items, and because this study contains composites, the variance-based SEM method is adopted.

Additionally, to be able to cannibalize, a firm must have something built up already. As an extended analysis, all analysis are therefore re-tested with only using established firms as Nijssen et al. (2005) also propose. Furthermore, a test of mediating effects is conducted to get more insights into the mediating effects of the different dimensions of willingness to cannibalize on the relationships between determinant variables and radical product innovation. Finally, multiple additional analysis are conducted, one for checking all direct and indirect relationships at the same time by calculating all equations from all models simultaneously, to check general effect sizes. Because with a SEM-method, a series of dependence relationships can be examined simultaneously, to dig out more complex relationships among several variable. Finally as another additional analysis, the analysis is re-tested with using only larger firms, to check if this yields any different significant effects.

### **3.3 Research ethics**

Conducting an online survey brings forth a lot of ethical considerations (Babbie, 2005). The survey will require participants to reveal personal-, and firm information, so different ethical principles are set into place for conducting this study, to be sure that the research is conducted fully professional and ethically correct, thereby harming no participants or firms in any way.

The ethical considerations already start before conducting research, by proactively working on an effective working relationships with the study supervisor. By being a proactive, punctual, objective and honest researcher, the study improves in professionalism. Towards the respondents, ethical considerations are very important. Respondents are contacted via the online networking application LinkedIn. The ethical consideration here is that respondents first were asked to connect with a small message explaining the purpose of the research and asking for permission of sending more information including the survey (Appendix VIII).

There are guidelines in place on how to deal with online respondents ethically. The participants are made clear; 1) what the purpose is of the information that is going to be extracted from their data, 2) that they can retract their information at any point in time, and 3)

that they can request to receive a publication of any results based on their data (Kosinski et al., 2015).

During the survey, ethical considerations continue by stating that full anonymity of results are guaranteed, that the respondent is always free to exit the survey when they want, and what the average time is for completion of the survey. This is all stated in the survey introduction (Appendix IX).

All ethical considerations are listed for a complete overview of ethical principles this study is conducted with (Appendix X).

## 4. Results

The results on all analyses are stated in this section of the report, including outcomes on the correlation analysis, estimation results on the total hypothesized models, tests of mediating effects and several additional analyses.

### 4.1 Descriptive analysis

The relationships between the dependent variable (radical product innovation), mediator variables (dimensions of willingness to cannibalize) and determinant variables (future market focus, customer orientation, specialized investments, competitive environment, product champion influence, trust and dependence), were investigated using Pearson product-moment correlation coefficients. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity (Pallant, 2013) (Appendix XI). All correlations are presented in the correlation matrix in table 4.1, together with descriptive statistics (mean and standard deviation).

*Table 4.1 Correlation matrix and descriptive statistics*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Radical product innovation												
2. WTC sales	.62***											
3. WTC investments	.11	.20**										
4. WTC capabilities	.30***	.28***	.37***									
5. WTC relationships	-.03	.05	.10	.25***								
6. Future market focus	.50***	.47***	.29***	.38***	.09							
7. Customer orientation	.33***	.29***	.26***	.43***	.06	.57**						
8. Specialized investments	-.21**	-.18*	-.34***	.44***	-.15*	-.31***	-.26***					
9. Competitive environment	-.09	-.15*	-.00	.02	-.08	.18*	.26***	.04				
10. Product champion influence	.41***	.37***	.30***	.39***	.06	.57***	.43***	-.30***	.16*			
11. Trust	.22**	.22**	.04	.12	-.19**	.30***	.26***	-.34***	.04	.21**		
12. Dependence	.17*	.17*	-.03	-.04	-.19**	.17	.10	-.00	.08	.19	.07	
Mean	3.88	3.56	4.80	4.72	4.43	4.99	5.56	3.35	4.84	4.41	5.26	4.02
Standard deviation	1.50	1.26	1.19	1.39	1.14	1.20	1.11	1.09	.99	1.35	.85	1.05

*n = 179; \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , (2-sided)*

Concluded from the correlation matrix is that the new construct with its determinant variables added, namely willingness to cannibalize relationships, and dependence and trust, show significant correlation on each other at the .01 level. However, willingness to cannibalize relationships has less correlation on the other constructs, so the determinants show that they are belonging to the new construct, which is a confirmation of having chosen the right

dependent variables. The whole new construct has lower correlations with the rest of the model.

Trust however scores high on other constructs (three times at the .001 level and four times at the .01 level). Also remarkable is that competitive environment does not score a lot of significant correlations, and most variables have a significant relationships with the dependent variable.

Descriptive statistics are also listed per item (Appendix XII), including histograms with a normality curve to assess normality. No extreme deviated skewness or kurtosis was found among constructs, and slightly skewed variables are not problematic when performing a PLS-method (Hair, Hult, Ringle & Sarstedt, 2016).

#### **4.2 Estimation results**

Table 4.2 shows estimation results from different models. No assumptions of PLS are violated, because in the most complex conceptual model, the maximum number of arrowheads pointing at a latent variable is 7, meaning the sample size must be  $(7*10 =) 70$ . This study has a sample size of 179. Secondly, the data does not violate the data requirements of SEM-PLS, because only metrically scaled variables are used. Control variable 'Firm size' is calculated by means of a multiple regression analysis, together with the dimensions of willingness to cannibalize, because this variable is categorically scaled.

Based on the preliminary analysis using exploratory factor analysis, the measurement model shows sufficient item reliability, convergent validity and discriminant validity. Therefore, the measurement model demonstrates sufficient robustness needed to test all relationships. The structural model is assessed by means of PLS-method, and the results of the path coefficient indicate that model 1 (concerning radical product innovation) explains a significant proportion of the variance ( $R^2 = .41$ ,  $F(4,174) = 30,02$ ,  $p < .001$ ).

Model 2a concerns willingness to cannibalize sales, and explains a significant proportion of the variance ( $R^2 = .32$ ,  $F(7,171) = 11.60$ ,  $p < .001$ ). Model 2b concerns willingness to cannibalize investments, and explains a significant proportion of the variance ( $R^2 = .19$ ,  $F(7,171) = 5.81$ ,  $p < .001$ ). Model 2c concerns willingness to cannibalize capabilities, and explains a significant proportion of the variance ( $R^2 = .35$ ,  $F(7,171) = 12,90$ ,  $p < .001$ ). Model 2d concerns willingness to cannibalize relationships, and explains a significant proportion of the variance ( $R^2 = .14$ ,  $F(7,171) = 4.00$ ,  $p < .001$ ). F statistics and p values were calculated by means of multiple regression analyses to assess significance of explained variance ( $R^2$ ) (Appendix XIII).

**Table 4.2 Estimation results of the hypothesized model**

Model No.	Dependent variable	Independent variable															R <sup>2</sup>						
		Willingness to Cannibalize Sales			Willingness to Cannibalize Investments			Willingness to Cannibalize Capabilities			Willingness to Cannibalize Relationships			Firm Size									
		B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value							
1	Radical Product Innovation	<b>.54***</b>	.06	.000	-.02	.07	.995	<b>.16*</b>	.07	.020	-.10	.14	.468	.08	.10	.164				.43			
		Future Market Focus			Customer Orientation			Specialized Investments			Competitive Environment			Product Champion Influence			Trust			Dependence			
		B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	B	(SE)	P-value	
2a	WTC Sales	<b>.24**</b>	.08	.003	<b>.17*</b>	.08	.034	-.14	.08	.084	<b>-.26**</b>	.08	.004	.07	.08	.775	<b>.14*</b>	.06	.030	.09	.07	.231	.37
2b	WTC investments	.16	.08	.056	.05	.08	.563	<b>-.23**</b>	.08	.002	-.09	.11	.500	.09	.11	.358	.12	.16	.436	-.25	.22	.289	.27
2c	WTC capabilities	-.04	.09	.656	<b>.28***</b>	.08	.000	<b>-.37***</b>	.08	.000	.10	.14	.402	<b>.17*</b>	.08	.034	.05	.08	.513	-.06	.10	.513	.45
2d	WTC relationships	.08	.10	.449	.12	.14	.372	<b>-.35**</b>	.11	.004	-.09	.14	.506	.03	.13	.789	-.12	.08	.146	-.15*	.09	.141	.27

*n* = 179; \*\*\* *p* < .001, \*\* *p* < .01, \* *p* < .05, (2-sided), (SE) = Standard error, WTC = Willingness to Cannibalize, Control variable 'Firm size' is calculated by means of a multiple regression analysis using SPSS software (also including the dimensions of WTC), while this variable is not metrically scaled and is thus unsuited for PLS analysis.

### Dimensions of willingness to cannibalize

Willingness to cannibalize sales has a significant positive effect on radical product innovation ( $B=.54, p<.001$ ). The next significant effect on radical product innovation is that of willingness to cannibalize capabilities ( $B=.16, p<.05$ ). Either willingness to cannibalize investments and willingness to cannibalize relationships show small negative beta coefficients ( $B=-.02$ ) and ( $B=-.10$ ) respectively, but are not significant on radical product innovation. Control variable firm size also shows no significant effect on radical product innovation.

### Determinant variables

Specialized investments has a significant negative effect on willingness to cannibalize investments ( $B=-.23, p<.01$ ), willingness to cannibalize capabilities ( $B=-.37, p<.001$ ) and willingness to cannibalize relationships ( $B=-.35, p<.01$ ). Only at the one-sided significance level, also the effect on willingness to cannibalize sales becomes significant ( $B=-.14, p<.05$ )(1-sided).

Competitive environment has a significant negative effect on willingness to cannibalize sales ( $B=-.26, p<.01$ ), and no significant effect on willingness to cannibalize investments, capabilities or relationships.

Product champion influence has a positive significant effect on willingness to cannibalize capabilities ( $B=.17, P<.05$ ), and no significant effect on willingness to cannibalize sales, investments or relationships.

Future market focus has a significant positive effect on willingness to cannibalize sales ( $B=.24, p<.01$ ). Remarkably, at the 1-sided significance level, also the willingness to cannibalize investments becomes a significant effect ( $B=.16, p<.05$ )(1-sided). No significant effect was found on willingness to cannibalize capabilities or relationships.

Customer orientation has a significant positive effect on willingness to cannibalize capabilities ( $B=.28, p=.001$ ) and willingness to cannibalize sales ( $B=.17, p<.05$ ). No significant effects was found on willingness to cannibalize investments or relationships.

Trust has a positive significant effect on willingness to cannibalize sales ( $B=.14, p<.05$ ), and no significant effects are found on willingness to cannibalize capabilities, investments or relationships.

Dependence has no significant effects on willingness to cannibalize sales, investments, capabilities or relationships.

#### **4.4 Extended analysis 1**

In order to be willing to cannibalize, a firm must have built up something, otherwise there is nothing to cannibalize on. This relates to established firms, similar to the study of Chandy & Tellis (1998). Only established firms are analyzed to assess if there are any different results. All youngest firms (below 10 years ) are removed from the dataset (n=147). Results show that some significant effects are not significant anymore, namely willingness to cannibalize sales shows no significant effect with customer orientation and trust anymore. The willingness to cannibalize investments shows no significant effect with product champion influence anymore. Effects of the willingness to cannibalize capabilities stays the same, and the willingness to cannibalize relationships shows no significant effect for specialized investments anymore.

For the model of willingness to cannibalize relationships, it shows a better fit with the data ( $R^2=.32$ ), than for the original model ( $R^2=.27$ ). Furthermore, the relationships between trust and willingness to cannibalize relationships has become significant ( $B=-.19, p=.05$ ), and the relationships between dependence and willingness to cannibalize relationships as well ( $B=-.21, p<.05$ ).

#### **4.5 Test of mediating effects**

A test of mediating effects is conducted. Preliminary tests are conducted to check for the three conditions of mediating effects, namely 1) exogenous variables and mediators must both have significant correlations with the dependent variable (table 4.2), 2) exogenous variables must be significantly correlated with the mediators and 3) the relationships between exogenous variables and the dependent variables should be weaker or non-significant when the mediator is in the equation, relative to when it is not (Baron & Kenny, 1986). The direct relationships between determinant variables and radical product innovation are tested in isolation first, thereafter including the mediator (Baron & Kenny, 1986). The test of mediating effects is done for the dimensions WTC sales and capabilities, because no variables in the other two dimensions passed the preliminary tests for mediating effects (table 4.1). Results are presented in table 4.3.

**Table 4.4 Test of mediating effects for willingness to cannibalize sales**

<i>Dependent variable: Radical product innovation</i>									
Model no.	Independent variable								R <sup>2</sup>
	Willingness to cannibalize sales	Future market focus	Customer orientation	Specialized investments	Competitive environment	Product champion influence	Trust	Dependence	
a		.50***							.25
b	.60***	.29***							.36
a			.39***						.15
b	.60***		.21***						.36
a				-.33*					.11
b	.61***			-.21					.37
a					-.09	.41***	.22**	.17*	
b					-	-	-	-	

<i>Dependent variable: Radical product innovation</i>									
Model no.	Independent variable								R <sup>2</sup>
	Willingness to cannibalize capabilities	Future market focus	Customer orientation	Specialized investments	Competitive environment	Product champion influence	Trust	Dependence	
a		.50***							.25
b	.29***	.13*							.09
a			.39***						.15
b	.30***		.15**						.09
a				-.33*					.11
b	.29***			-.15**					.08
a					-.09	.41***	.22**	.17*	
b					-	-	-	-	

*n* = 179; \*\*\* *p* < .001, \*\* *p* < .01, \* *p* < .05, (2-sided), (SE) = Standard error, '-' = this variable did not pass the preliminary test for mediating effects, no mediation is possible. Model a is calculated for the last four independent variables, in order to get insight into their direct relationship on radical product innovation.

Model a explains the direct relationships of the determinant variable on radical product innovation, model b explains that same relationship, but with the mediator in the equation.

Results of the test of mediating effects show that when the mediator is included in the model in isolation with a determinant variable, the willingness to cannibalize sales shows a much higher average effect and explained variance than the willingness to cannibalize capabilities. Willingness to cannibalize sales has a fully mediated effect on the relationships of specialized investments on radical product innovation, because when willingness to cannibalize sales is included in the model, the direct effect of specialized investments on radical product innovation completely disappears. Willingness to cannibalize capabilities has a partially mediated effect on the effect of future market focus and customer orientation on radical product innovation, because when this mediator variable is included in the model, their direct effects on radical product innovation becomes less significant.

#### **4.6 Additional analysis 1**

All direct relationships are tested using the PLS method for the equations of the models 1, 2a, 2b, 2c and 2d (table 4.2). All indirect effects (determinant variables on radical product innovation, through the dimensions of willingness to cannibalize) are tested with the test of mediating effects (table 4.3). As an additional analysis, with the possibility of the SEM-PLS-method, all direct and indirect effects can be tested at the same time, by analyzing the complex combined conceptual model with all its relationships as one equation. Results show a sudden drop in significance in some of the relationships (appendix XV). Willingness to cannibalize sales shows no significant effect for customer orientation, competitive environment and trust anymore. Willingness to cannibalize investments and relationships shows no effect with any variables anymore. Furthermore, this combined model does not provide a better fit with the data, when comparing it to the original model, in explaining variance in radical product innovation ( $R^2 = .34$ , versus  $R^2 = .43$ ), willingness to cannibalize sales ( $R^2 = .28$ , versus  $R^2 = .37$ ), willingness to cannibalize investments ( $R^2 = .28$ , versus  $R^2 = .27$ ), willingness to cannibalize capabilities ( $R^2 = .42$ , versus  $R^2 = .45$ ) and willingness to cannibalize relationships ( $R^2 = .20$ , versus  $R^2 = .27$ ).

#### **4.7 Additional analysis 2**

Schumpeter (1942) has originally suggested firm size to be an important predictor of radical product innovation. However, Chandy & Tellis (1998) have already researched this in the context of willingness to cannibalize, and found that firm size is not significant on radical product innovation. Just as in the results of Chandy & Tellis (1998), this study also shows that firm size is not significant on radical product innovation (table 4.2).

#### **4.8 Additional analysis 3**

To test whether bigger firms show different results, all analyses were tested again, only for larger firms (over 100 employees) (n=99). Testing only for larger firms did not result in different significant results (Appendix XVI).

## 5. Conclusions

To answer the research question ‘*What is the role of willingness to cannibalize relationships in radical product innovation?*’, conclusions are first drawn per hypothesis. An overview of accepted and rejected hypotheses is then given. Thereafter, the research question is answered.

### *Willingness to cannibalize sales and capabilities lead to radical product innovation*

A significant positive effect was found from willingness to cannibalize sales and willingness to cannibalize capabilities on radical product innovation. This means that when firms are more willing to cannibalize on their sales and capabilities, then these firms are more likely to be radical product innovators. The beta coefficient of the willingness to cannibalize showed a stronger effect ( $B=.54$ ), while the beta coefficient of the willingness to cannibalize capabilities showed a weaker effect ( $B=.16$ ). The beta coefficients of willingness to cannibalize investments and relationships showed unexpected negative weak results and were not significant. This concludes that the willingness to cannibalize sales is very good predictor of radical product innovation, followed by the willingness to cannibalize capabilities, and that the willingness to cannibalize on investments and relationships do not necessarily lead to radical product innovation. Therefore, hypotheses 1 and 3 are accepted, however hypotheses 2 and 4 are rejected.

### *Firm size does not necessarily lead to radical product innovation*

No significant effect was found between firm size on radical product innovation, which means that willingness to cannibalize sales and capabilities are better predictors of radical product innovation, and that firms of all sizes can be just as likely to be radical product innovators.

### *Specialized investments lead to less willingness to cannibalize on investments, capabilities and relationships*

Significant negative effects were found between specialized investments and willingness to cannibalize investments, capabilities and relationships. This means that when firms hold much specialized investments, they are less willing to cannibalize on these investments, on their capabilities and on their relationships. The strongest effect is on willingness to cannibalize capabilities ( $B=-.37$ ), followed by relationships ( $B=-.35$ ), and investments ( $B=-.23$ ), meaning that firms holding much specialized investments are most likely to cannibalize on capabilities, followed by relationships, and last investments. No significant (2-sided) effect

was found on willingness to cannibalize sales, meaning that holding specialized investments does not mean a firm is more willing to cannibalize its current sales. Therefore, hypothesis 4 is partly accepted. Furthermore, specialized investments also has a significant direct negative effect on radical product innovation itself. However, when willingness to cannibalize sales is added to the equation, this direct relationship disappears completely.

*A competitive environment leads to less willingness to cannibalize on sales*

A significant negative effect has been found between competitive environment and willingness to cannibalize sales. This means that when a firm operates in a highly competitive environment, they are less willing to cannibalize on their sales. No significant effects were found on willingness to cannibalize investments, capabilities and relationships, meaning that firms that operate in a highly competitive environment, are not necessarily more willing to cannibalize on their investments, capabilities and relationships, but only on their sales. Therefore, hypothesis 5 is partly accepted.

*Product champion influence leads to more willingness to cannibalize on capabilities*

A significant positive effect has been found between product champion influence and willingness to cannibalize capabilities. This means that when a firm has an active product champion influence, then this firm is more likely to cannibalize on its current capabilities. No significant effects were found on willingness to cannibalize sales, investments and relationships, meaning that when a firm contains a lot of product champion influence, this does not necessarily lead to that firm being willing to cannibalize on sales, investments and relationships, only on capabilities. Therefore, hypothesis 6 is partly accepted. Furthermore, product champion influence also has a significant direct positive relationship with radical product innovation itself.

*A future market focus leads to more willingness to cannibalize on sales*

A positive significant effect was found between future market focus and willingness to cannibalize sales. This means that when firms emphasized future customer needs relative to current customer needs, then they are more willing to cannibalize on their current sales. No significant effects (2-sided) were found on willingness to cannibalize investments, capabilities and relationships, meaning that when a firm has a future market focus, they are not necessarily willing to cannibalize on investments, capabilities and relationships. Therefore hypothesis 7 is partly accepted. Furthermore, future market focus also have a significant

direct positive relationship with radical product innovation itself. However, when willingness to cannibalize capabilities is added, this direct relationship gets less significant.

*A customer orientation leads to more willingness to cannibalize on sales and capabilities*

Positive significant effects were found between customer orientation and willingness to cannibalize sales and capabilities. This means that when firms emphasize current customer needs relative to future customer needs, they are more willing to cannibalize on their capabilities and sales. The strongest effect is on willingness to cannibalize capabilities (B=.28), thereafter willingness to cannibalize sales (B=.17), meaning firms with a customer orientation are most likely to cannibalize on capabilities, followed by sales. No significant effects were found on willingness to cannibalize investments and relationships, meaning that firms with a customer orientation are not necessarily willing to cannibalize on their investments and relationships. A positive effect was expected, therefore hypothesis 9 is rejected. Furthermore, customer orientation also has a significant direct positive relationship with radical product innovation itself. However, when willingness to cannibalize capabilities is added, this direct relationship gets less significant.

*Trust leads to a willingness to cannibalize on sales, only for younger firms, and less willingness to cannibalize on relationships, only for established firms*

A positive significant effect was found between trust and willingness to cannibalize sales in the main analysis, and a negative significant effect was found on willingness to cannibalize relationships, when considering only established firms. The effect of trust on willingness to cannibalize sales disappears when only considering established firms. This means that younger firms are more willing to cannibalize on sales when these firms hold trusty business relationships, and when a firm becomes more established, they are not willing to cannibalize on sales anymore, and not on their business relationships. No other significant effects were found between trust and willingness to cannibalize investments and capabilities, meaning when firms hold trusty business relationships, these firms are not necessarily willing to cannibalize on investments and capabilities. Therefore, hypothesis 10 is accepted.

Furthermore, trust has a significant positive direct effect on radical product innovation itself.

*Dependence leads to less willingness to cannibalize relationships, only for established firms*

A negative significant effect was found between dependence and willingness to cannibalize relationships, only when considering established firms. When considering all firms, this effect

is not significant anymore. This means that when younger firms experience being dependent on their business relationships, they are not necessarily less willing to cannibalize on those relationships, however, when firms become established, these firms are not willing to cannibalize on those relationships anymore. No significant effects were found on willingness to cannibalize sales, investments and capabilities, meaning when a firm experiences being dependent on business relationships, they are not necessarily willing to cannibalize on sales, investments and capabilities. Therefore, hypothesis 11 is accepted. Furthermore, dependence has a significant positive direct relationship with radical product innovation itself.

The total overview of accepted and rejected hypotheses is given in table 4.4.

*Table 4.4 Overview of all hypotheses.*

#	Hypothesis	Outcome
1	Willingness to cannibalize sales has a positive effect on radical product innovation.	Accepted
2	Willingness to cannibalize investments has a positive effect on radical product innovation.	Rejected
3	Willingness to cannibalize capabilities has a positive effect on radical product innovation.	Accepted
4	Willingness to cannibalize relationships has a positive effect on radical product innovation.	Rejected
5	Specialized investments has a negative effect on all willingness to cannibalize dimensions.	*Accepted
6	Competitive environment has a negative effect on all willingness to cannibalize dimensions.	*Accepted
7	Product champion influence has a positive effect on all willingness to cannibalize dimensions.	*Accepted
8	Future market focus has a positive effect on all willingness to cannibalize dimensions.	*Accepted
9	Customer orientation has a negative effect on all willingness to cannibalize dimensions.	Rejected
10	Trust has a negative effect on willingness to cannibalize relationships.	Accepted
11	Dependence has a negative effect on willingness to cannibalize relationships.	Accepted

*\*Accepted = partially accepted (1 or more dimensions of willingness to cannibalize were significant)*

### **What is the role of willingness to cannibalize relationships?**

Being willing to cannibalize on business relationships is not necessarily a predictor of radical product innovation. Both firms that are willing to cannibalize on relationships, and firms that are not, can both be radical product innovators. However, the concept of willingness to cannibalize relationships is very interesting in relation to other effects in the model, especially towards trust and dependence, that determine the willingness to cannibalize relationships. Younger firms with trusty relationships are not necessarily less willing to cannibalize on those relationships. However, when firms become more established, they are not willing to cannibalize on those relationships anymore. The same goes for dependence on business relationships. Firms are, however, then, more willing to cannibalize on sales, which is the biggest predictor of radical product innovation.

## 6. Discussion

In this section, interpretations are given to the conclusions, in light of theory, to fully understand what can be really learned from this study, and to get insight into why tourism firms do not innovate.

### **6.1 The biggest predictor of radical product innovation is ...**

Firms that are willing to cannibalize on their sales are more likely to be radical product innovators. This study has shown that a willingness to cannibalize sales is the biggest predictor of radical product innovation. Traditionally, Cannibalization Theory refers to cannibalizing sales (Mason & Milne, 1994) which is confirmed by this study. Furthermore, Chandy & Tellis (1998) suggested that once firms have built up their routines, this makes the firm very rigid, which is shown in this study as well, as willingness to cannibalize sales was not significant anymore while firms became established. This dynamic also explains why previous research has mainly focused on cannibalizing sales (Chandy & Tellis, 1998; Mason & Milne, 1994).

### **6.2 A willingness to be loyal?**

This study shows that established firms with trusted and dependent business relationships are less willing to cannibalize on those relationships. Instead of looking for better alternatives, they are becoming blind for innovation (Anderson & Jap, 2005), and they will not give up on their relationships. This study has shown that these firms are even willing to cannibalize on their own sales, so they are willing to sacrifice their own sales, but are not willing to give up on business relations. This shows that hotel firms are very loyal towards their business relationships. During a discussion with one of the survey participants via LinkedIn, this finding was supported.

*“We are very loyal to the people that we work with, both customer and suppliers. This is why we particularly focus on keeping a good relationships with both parties and are not willing leave our business partners too soon. (...) A sustainable business relationship is important, and when needed, we adjust our prices/products/services to come to a comprise”*

(I. den Hartog, personal communication, 6 June, 2019).

### **6.3 The hotel industry's own definition of radical product innovation**

Trust and dependence in business relationships do lead directly to radical product innovation, and in established firms thus also to less willingness to cannibalize. These firms achieve radical product innovation through cannibalizing their own sales, together with being loyal to their trusted business partners on which they depend. However, for truly radical innovation, those relationships, investments made and capabilities learned must be cannibalized as well, because radical product innovation is truly disruptive (Chandy & Tellis, 1998).

A reasonable explanation for this general conclusion is that radical product innovation is perceived differently by hotel managers, and is truly involving more incremental innovation. This would explain why a willingness to cannibalize sales is present, however, not on the other dimensions, because for incremental innovation, sales have sometimes to be sacrificed as well. This also confirms why willingness to cannibalize investments on radical product innovation is not significant and willingness to cannibalize capabilities is. The hotel sector mainly involves processes for delivering their service, which are more easily replaceable by new processes, relative to changing the infrastructure, because it is very hard for a hotel to abandon its property and change completely. This also confirms why the effect of product champion influence is only significant on the willingness to cannibalize capabilities, because of the intangible aspect (processes).

Furthermore, this explains why the relationships of willingness to cannibalize relationships is not significant on radical product innovation, and even, while being insignificant, shows a negative relationship. This shows that the more willing to cannibalize relationships, the less radical product innovation firms could achieve. Hotel managers are thus convinced to be able to achieve radical innovation without cannibalizing relationships.

It is therefore believed that the hotel industry acts on its own definition of radical product innovation. This is confirmed during a discussion with one of the respondents as well:

*“Advancing technology leads to guests being more independent (self-check-in, smartphone check-in, smartphone requests, etc.). At the same time it is challenging to still be personal and unique to feel the guests appreciated, because you have less personal contact. At the moment this is what I perceive as radical innovation.”*

(M. Beernink, personal communication, 5 June, 2019)

These results show that when established firms with trusty and dependent relationships, who are being loyal, are willing to cannibalize only on their own sales, could achieve radical product innovation. When these firms would truly disrupt on their investments and relationships, they would lose their trusted relationships on which they depend.

This gives a lot of insights into the characteristics of the hotel industry, because innovation is clearly perceived very different than in other (more technical) industries (Nijssen et al., 2005). What would be perceived as radical innovation in the hotel industry, could be perceived as incremental innovation in other industries. Hotel firms think they are innovating radically, and think they can do so without cannibalizing on themselves and thereby truly disrupting their own firm and the market. Hotel managers are stuck in the wrong thinking pattern.

52% of all survey participants have requested to receive the results of this study. This together with a lot of discussions that were started because of this topic, shows that hotel firms are working on innovation, and that this topic is very relevant to study within this context of the hotel industry. Firms are thus willing to work on the future, but are not sure how.

This study thus shows that a hampering effect of ecosystems in the hotel industry does exist. However, the effect is more complex than originally thought. Hotel firms are convinced they need their loyalty to business partners in order to achieve radical product innovation. This could mean a very dangerous dynamic for the future of hotel firms. These firms are thus not just blind towards better alternative business relationships (Anderson & Jap, 2005), they are blind towards what it takes to achieve radical product innovation.

## **7. Practical implications**

This section translates the theoretical contributions, into practical implications for hotel managers who want to establish radical innovation.

### **7.1 Being like a young flexible firm again**

Once firms become established in their daily practices and business relationships, they are less willing to cannibalize on those relationships. This willingness to be loyal means that these firms lose their flexibility, which is needed for radical product innovation. Younger firms did not show that negative effect on willingness to cannibalize relationships yet, possibly because they do not have built up trusted and dependent relationships yet. This is however exactly the mindset that must be adopted within more established firms as well. Because firms have built up something does not mean that they must keep it. Established firms must think like a young flexible firm again, being willing to give up more to make room for even bigger things. Being established does not give the certainty anymore when disrupters like Airbnb come into play and take parts of the market.

### **7.2 Making the hard choice**

Of course firms must be loyal to its customers and its suppliers, and trusty business relationships can yield lots of mutual benefits. However, firms must be more loyal to themselves and its own employees. When eventually no radical innovation is taking place, other firms will take over and the firms future could be in danger. Firms must make the hard choice, and be willing to give up on parts of their organization, and be able to disconnect from their effective relationships. This study could be perceived by hotel managers as a warning signal, because with the current rapidly expanding technologies, incremental innovations cannot stand against radical innovations. Hard choices have to be made, and while radical innovation can look different for hotels, this is not a reason that less innovative ideas can make it. In the end difficult decisions like changing infrastructure and losing investments on property will eventually become reality. In order not to be forced to innovate more radical in order to survive, hotel firms must make the hard choice earlier than later, so they can get ahead in their market.

### **7.3 Adopting portfolio thinking**

The thinking pattern that leads to a hampering effect of ecosystems must be broken through. One practical, more concrete way of doing this, is to adopt portfolio thinking and revise business relationships critically. Trusted relationships can be very efficient, but must not hinder radical innovation. While portfolio thinking will be difficult, because sometimes no alternative options could be visible, a firm must still try to do so without limitations. This flexible mindset will already bring firms closer to radical innovation.

### **7.4 Keeping a watch out**

The revealed dangerous dynamic of the faulty thinking pattern of hotel managers, leading to hampering ecosystems, currently has only harmed the lower segments of the hotel industry, which leads to hotel managers not feeling the pressure to change. However, Airbnb as a disruptor has already been proven very effective. Eventually there will be radical innovations that disrupt the middle and higher segments of the hotel market as well. Hotel firms are not keeping a watch out for truly radical innovation, because they think they cannot be harmed, because technological disrupters only harm the lower segment of the market traditionally belonging to hotels.

## **8. Limitations and future research recommendations**

This study concludes with limitations, that are split into researcher-related limitations, and methodology-related limitations, and are followed by corresponding future research advice.

### **8.1 Researcher-related limitations**

The first researcher-related limitation is the limited access to data. The respondents in this study are a very specific group of people, which forced the researcher to use non-traditional sampling methods like the virtual snowball sampling method, and personal professional networks. Eventually this led to higher management of famous Dutch hotels to participating in the survey, thereby increasing internal validity of the study. This limited access to data however also decreases external validity because it reduced generalizability of results to the whole population (Dudovski, 2016).

The second researcher-related limitation is the time constraint. The time available for this study was constrained by a deadline, which did not negatively impact the results for too much. However, more variables could be included to get a bigger picture of radical product innovation, more respondents could be included, and other industries could be explored.

The third researcher-related limitation is personal bias. While the researcher tried to remain as objective as possible throughout the research (Appendix X), a bias because of cultural and personal background can always affect a studies legitimacy (Dudovski, 2016). The data gathering process in this study could be slightly biased because of selection bias, and to reduce personal bias in the data analysis process, several methodology guides are used to keep that process very structured and objective (Field, 2013; Diamond, 2000; Baltar, 2012).

Concluding from researcher-related limitations, future research could focus on replicating this study in the same industry, but with a larger sample size and by conducting interviews, and including more variables. The relationship between radical product innovation and firm value and financial performance, which was tested by Nijssen et al., (2005) could be interesting to study in this context, to check if according to the hotel industry's own definition of radical product innovation, radical product innovations delivers more firm value and financial performance. It could be interesting to study if this indeed does not deliver as much firm value and firm performance as in the context of industrial firms (Nijssen et al., 2005).

## **8.2 Methodological-related limitations**

The first methodological-related limitation is the selection bias. All respondents for the survey were gathered by means of network of the researcher and by means of virtual networking site LinkedIn, which could decrease reliability, and increase validity (Dudovski, 2016). This is because the sample included high management functions who are very knowledgeable about innovation, deliver more accurate results than with only gathering respondents from hotel school alumni lists. However, it decreases reliability because when repeating the research within this specific hard to reach target population, the study could yield slightly different results. Due to selection bias and method of data gathering, hotel managers that are not contacted via email or those who do not have a LinkedIn account could not participate in this study, decreasing validity and reliability (Dudovski, 2016).

The second methodological-related limitation is the possible insufficient sample size for statistical measurement. When this study was first conducted, the sample size contained 120 respondents, showing much less significant correlations and effects. Therefore, it was decided to make the sample more robust and a sample size of 179 respondents was eventually achieved, showing more significant correlations and effects, which showed expected results. However, a larger sample could yield to an even better fit of the data. If the sample size is too small, it will be difficult to identify significant relationships from the data (Dudovski, 2016), which is shown in the additional analysis. Including all equations at once showed much less significant effects, showing generally weak results for the whole study

The third methodological-related limitation is the measurement error. How hotel managers perceive radical innovation could have also been studied by an open question in the survey. Furthermore, low reliability of three scale items could slightly distort the results of this study. Convergent validity showed no problematic results so these three variables were taken into the analysis without adjustment. Finally, the concept of willingness to cannibalize is originally perceived as being negative (Chandy & Tellis, 1998), which could influence participants into not agreeing with those statements.

Concluding from the methodological-related limitations, future research could focus on studying the willingness to cannibalize with a reversed positive construct, namely the willingness to be loyal. This would reveal more details about the hotel manager's thinking pattern and the dynamic of hampering ecosystems.

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