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ENVIRONMENTAL MANAGEMENT AND ORGANIZATIONAL LIFE CYCLE THEORY: THEORETICAL CONCEPTUALIZATION AND EMPIRICAL RESEARCH

DOCTORAL DISSERTATION

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AUTHORSHIP STATEMENT

The undersigned Kaja Primc a student at the University of Ljubljana, Faculty of Economics, (hereafter: FELU), declare that I am the author of the doctoral dissertation entitled Environmental management and organizational life cycle theory: Theoretical conceptualization and empirical research, written under supervision of prof. dr. Tomaž Čater and co-supervision of prof. dr. Bobby Banerjee.

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ZAHVALA

V prvi vrsti se moram za uspeh, ki ga v življenju dosegam, zahvaliti Žiki in Karmen, mojima izjemnima staršema in vzornikoma pri vztrajnosti, postavitvi ciljev, vzgoji in odnosu do dela in ljudi.

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SUMMARY

While many studies have examined the alignment of firm's environmental strategies with a number of contingencies such as general business environment, industry and firm characteristics (size, resources, capabilities, etc.), relatively few have considered the role of the organizational life cycle. To address the gap in the literature, the main purpose of this dissertation is to offer an explanation to understand firms' environmental approach and its relationship with firm success in different stages of the organizational life cycle.

The theory and case studies I present in the Chapter 1 identify environmental strategies that high-performing firms are likely to pursue in each stage of their evolution. By giving practical and theoretical indications of which strategies should be used in different stages of the OLC this chapter can help academia and managers become more fully aware of when to pursue proactive environmental strategies. I contribute to the literature by showing that environmental strategies have to be aligned with the organizational context and structure in order to be successful and that there is no single optimal strategy for all businesses in an industry. In addition, my findings indicate that high-performing firms in the innovative stages pursue the most advanced environmental postures.

Relying on the dynamic capabilities view, Chapter 2 empirically examines relationships between environmental proactivity, organizational life cycle stages, competitive advantage and industry on a sample of 155 Australian firms. The results of a regression analysis show that the construct of the organizational life cycle is significantly related to environmental proactivity. The results also confirm the well-established positive impact of environmental proactivity on competitive advantage. Surprisingly, I found environmental proactivity to be positively related to competitive advantage not only in the innovative stages but also in the conservative ones. My findings reveal the complex nature of environmental proactivity and help better understand the relationship between environmental proactivity and competitive advantage.

In Chapter 3, I explore causal complexity in the relationship between environmental proactivity and firm performance. Using data collected from 27 Australian firms and controlling for the organizational life cycle, type of industry and external contingencies (complexity, uncertainty and munificence), I empirically examined environmental proactivity in high-performing firms from polluting industries. The data were analyzed using fuzzy-set qualitative comparative analysis. In general, the results of the analysis imply that (1) environmental proactivity is not always associated with high firm performance, and (2) environmental proactivity is not as important as the other causal conditions for high-performing firms in highly polluting industries. The study is valuable because it contains a rich set of measures of the firm's external and internal environment, thus allowing me to examine the point of interest more holistically. Based on the findings, firms from highly polluting industries can determine in which circumstances, if any, the adoption of environmental proactivity will result in a positive firm performance.

Keywords: competitive advantage, dynamic capabilities view, environmental proactivity, environmental strategy, firm performance, organizational life cycle

POVZETEK

Številne študije preučujejo dejavnike vpliva na razmerje med okoljem in uspešnostjo podjetja, a malo je znanega o tem, kako so okoljske strategije vključene v poslovni sistem tekom organizacijskega razvoja. Ta primanjkljaj znanja me je spodbudil k analizi in razpravi o pomenu teorije življenjskega cikla organizacije na področju okoljskega managementa.

Teorija in študija primerov predstavljena v prvem poglavju prikazujeta okoljske strategije, ki jih uspešne organizacije zasledujejo v vsaki fazi življenjskega cikla. S praktičnimi primeri in teoretično utemeljitvijo izbire strategij v vsaki izmed faz pomagam akademikom in managerjem k boljšemu razumevanju primernosti izbire proaktivnih okoljskih strategij tekom organizacijskega razvoja. Glavni prispevek poglavja k obstoječi literaturi je spoznanje, da je okoljske strategije potrebno uskladiti z organizacijskem kontekstom in strukturo, ter da ne obstaja ena sama optimalna strategija za vsa podjetja v panogi. Poleg tega moje ugotovitve tudi kažejo, da uspešne organizacije v inovativnih fazah zasledujejo najbolj napredne okoljske strategije.

V drugem poglavju, na podlagi teorije dinamičnih zmožnosti, empirično raziskujem odnose med okoljsko proaktivnostjo, fazami življenjskega cikla organizacije, konkurenčno prednostjo in panogo. Rezultati regresijske analize narejene na vzorcu 155 avstralskih podjetij kažejo, da je konstrukt življenjskega cikla organizacije tesno povezan z okoljsko proaktivnostjo. Rezultati potrjujejo tudi dobro uveljavljen pozitiven vpliv okoljske proaktivnosti na konkurenčno prednost podjetja. Okoljska proaktivnost je pozitivno povezana s konkurenčno prednostjo ne samo v inovativnih fazah temveč tudi v konservativnih fazah. Omenjene ugotovitve razkrivajo kompleksno naravo okoljske proaktivnosti in prispevajo k boljšemu razumevanju odnosa med okoljsko proaktivnostjo in konkurenčno prednostjo.

V tretjem poglavju raziskujem vzročne kompleksnosti v odnosu med okoljsko proaktivnostjo in uspešnostjo podjetja. Na vzorcu 27 avstralskih podjetij preučujem kombinacije dejavnikov, to so faze življenjskega cikla organizacije, dejavniki iz zunanjega okolja podjetja (kompleksnost, negotovost in darežljivost) ter okoljska reaktivnost/proaktivnost, v zelo uspešnih podjetji iz panog, ki močno onesnažujejo okolje. Podatke sem analizirala z uporabo kvalitativne primerjalne analize (mehka logika). Rezultati analize kažejo, da okoljska proaktivnost ni vedno povezana z visoko uspešnostjo podjetja, ter da okoljska proaktivnost ni enako pomembna kot drugi vzročni pogoji za doseganje visoke uspešnosti v zelo onesnaženih panogah. Študija je pomembna, saj vsebuje bogat nabor dejavnikov iz zunanjega in notranjega okolja podjetja, kar mi omogoča celostno preučitev področja . Na podlagi rezultatov lahko podjetja določijo ali bo okoljska proaktivnost pozitivno vplivala na njihovo uspešnost ter v katerih okoliščinah.

Ključne besede: konkurenčna prednost, okoljska proaktivnost, okoljske strategije, teorija dinamičnih zmožnosti, uspešnost podjetja, življenjski cikel organizacije

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INTRODUCTION

"Don't throw anything away. There is no away." (Shell)

Description of the dissertation topic and the issues it addresses

One of the greatest issues that the world is facing today is that of environmental pollution. Human effort to achieve higher living standard has resulted in unprecedented economic prosperity in recent decades. Fast economic and population growth are major treats to natural environment. Current unsustainable growth challenges our ability to prevent pollution and restore the natural environment. Therefore, urgent actions are needed to avoid significant costs of inaction, both in economic and human terms (Organization for economic development and co-operation, 2012).

There is a strong scientific consensus that environmental issues are rising. Therefore, more and more organizations[1] are forced to take the responsibility for the environmental damage they create and to manage the environment more systematically and proactively. As a response, large body of environmental management literature examines and discusses environmentally friendly practices organizations adopt to deal with environmental issues. There has been developed a number of environmental strategy classifications (e.g. Hunt & Auster, 1990; Klassen & Whybark, 1999; Roome, 1992; Su Yol & Seung Kyu, 2007). Despite their differences, studies usually distinguish between two extreme positions: environmental reactivity (also termed reactive environmental strategies), typical of firms that simply comply with existing regulation, and environmental proactivity (also termed proactive environmental strategies), typical of firms that voluntary implement practices to reduce their impact on the environment.

A wide range of activities can result from a proactive approach to environmental protection. For example, González Benito and González Benito's (2005) classification I use in the dissertation focuses on three broad areas: planning and organizational practices, operational practices and communicational practices. Planning and organizational practices include the environmental policy of an organization, procedures for establishing environmental objectives, selecting and implementing environmental practices, and for assessing the outcomes of such practices. Operational practices are classified in two groups: product related and process related. Product related practices focus on designing and developing environmentally friendly products, whereas process related practices aim at developing and implementing environmentally friendly manufacturing and operational methods and processes. A category of communicational practices includes those aimed at

[1] Terms organization(s) and firm(s) are used as synonyms in this dissertation.

communicating the actions taken in favor of the natural environment to the organization's various stakeholders.

The decision about which practices to implement depend on a number of factors: industry sector (González Benito & González Benito, 2006), organizational and managerial resources (Andersson & Bateman, 2000; Hart, 1995; Sharma, 2000; Sharma & Vredenburg, 1998; Shrivastava, 1995b), stakeholder pressure and organization's size (Darnall, Henriques & Sadorsky, 2010), competitive requirements (Berry & Rondinelli, 1998), different characteristics of the general business environment (Aragón-Correa & Sharma, 2003), opportunities to achieve advantage from environmental strategies (Porter & van der Linde, 1995), etc.

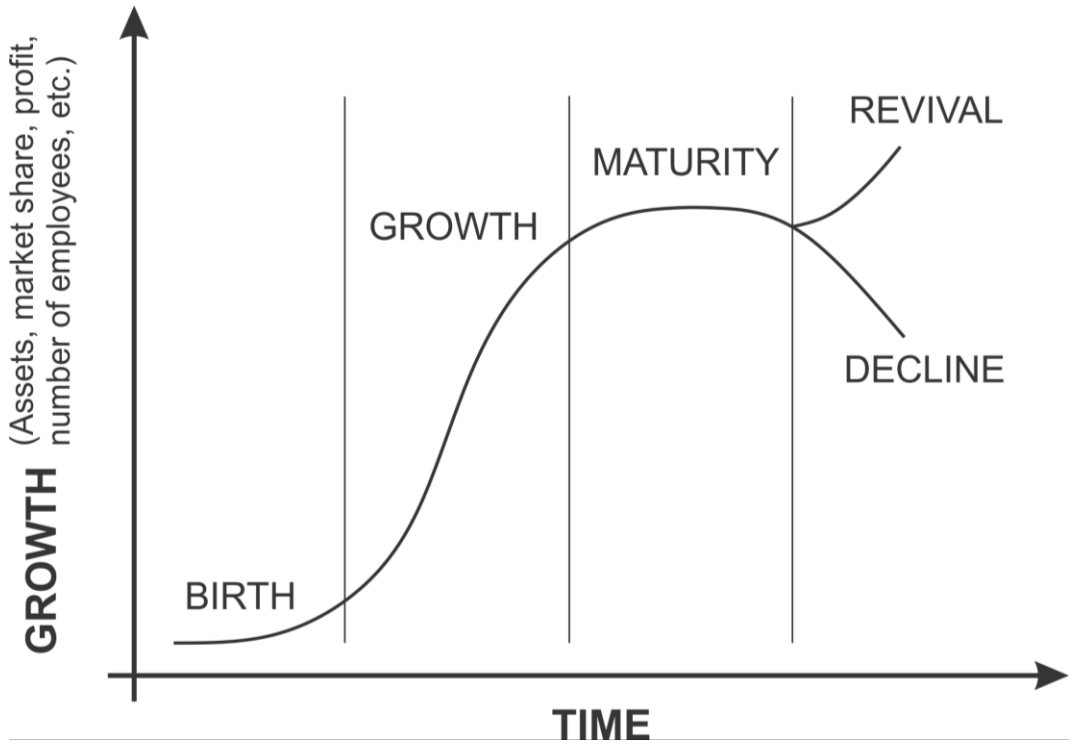
Studies that investigate the relationship between environmental effort and firm performance present conflicting conclusions. For example, Walley and Whitehead (1994) argue that environmental management causes extra costs for the organization and thus reduces profitability, whereas others find no relationship between environmental and financial progress (Aragón-Correa & Rubio-López, 2007; González-Benito & González-Benito, 2005). Often, researches emphasize the "win-win" situations of continuously improving environmental and firm performance (Álvarez Gil, Burgos Jiménez, Céspedes Lorente, 2001; Eiadat, Kelly, Roche & Eyadat, 2008; Klassen & McLaughlin, 1996; Russo & Fouts, 1997).

Literature as well as regulators have made an important step in protecting the environment by showing organizations environmentally friendly ways to achieve the excellence. However, the conflicting results and gap in knowledge related to factors that promote environmental proactivity indicate that this is a complex topic that needs further analysis and explanation.

First, while the existing environmental management literature is rich, understanding of the conditions in which firms profit from environmental proactivity is still lacking (e.g. Ambec & Lanoie, 2008; Dixon-Fowler et al., 2013). Very little is known about how organizations adopt and integrate environmentally friendly practices over the course of organizational evolution. As a response, this dissertation is largely motivated by the desire to examine the value of the organizational life cycle (OLC) theory in environmental management. I find the integration of the OLC theory in environmental management literature as very promising because it could have an important impact on organization's success through improved productivity, innovation, customer satisfaction, decision-making, etc.

The OLC models support the idea of the dynamic nature of organizations. Adizes (1979) argue that changes in organizations follow a predictable pattern which can be characterized by stages of development. Each stage is unique and past researchers have mostly identify OLC stages based on situational, strategic, structural and decision-making factors (Lester, Parnell, Crandall & Menefee, 2008; Miller & Friesen, 1984).

Figure 1. Organizational life cycle stages



Generally speaking, organizations are predicted to evolve through birth, growth, maturity, revival and decline phase (Figure 1) (Miller & Friesen, 1984). As organizations pass through the OLC stages their strategies, structures and activities correspond to the stage of the OLC. Detailed description of the stages can be found in the chapters that follow.

Second, due to complexity in the external and internal environment, the relationship between environmental and firm performance rests not only on a single factor but on the interrelation among multiple characteristics. Yet, environmental management scholars usually examine a small number of conditions in this relationship due to ease of the analysis and interpretation of the results. This leads to significant generalizations that result in the conflicting findings. In response, I holistically examine the influence of numerous factors from external and internal environment that were identified as important in the past research. In the dissertation I use fuzzy-set qualitative comparative analysis (fsQCA) that has been only recently recognized as valuable in management studies. This method is based on the idea of equifinality where a system can reach the same outcome from different paths (Katz & Kahn, 1978). Based on the fsQCA, I analyze the impact of environmental proactivity combined with external contingencies (uncertainty, complexity and munificence) and OLC stage on firm performance. The key question is not about independent effects, but how the selected conditions combine together and what is their outcome.

Research questions addressed in this dissertation

Fierce competition, demanding customers and strict authorities dictate operation of firms and determine benchmark for business success. Now, more than ever, their focus is placed on environmental protection. Therefore, firms need to carefully consider integration of environmental dimension into operation. There are no rules for successful development and implementation of environmental strategies. Firms have specific needs that are greatly influenced by the interplay between market characteristics, firm characteristics, industry traits, etc. Answering the question "Under what condition does it pay to be green?" is the main purpose of this dissertation that consists of three main chapters with three research questions:

(1) How do firms in different stages of their evolution integrate the environmental dimension into their business models?
(2) What is the relationship between environmental proactivity in different stages of the OLC and competitive advantage?
(3) Which combinations of conditions, namely the OLC stages, environmental proactivity and external contingencies (uncertainty, complexity and munificence) are likely to improve firm performance?

Limited research to date has been undertaken with respect to environmental strategies and the OLC. The main objective of the first chapter is to organize and integrate a literature on environmental management and OLC theory to propose how environmental strategies change as firms evolve through the OLC stages. The theory is descriptive with testable propositions and serves as a basis for future empirical research on environmental strategies in different stages of the OLC.

The second chapter complements the knowledge on the environmental proactivity and the OLC theory by providing empirical evidence from the industry. Based on the dynamic capabilities (DC) view (Teece, Pisano & Shuen, 1997), my interest specifically focuses on the relationships between environmental proactivity, competitive advantage and industry. The DC view has a strong focus on performance that recognizes the importance of the organizational as well as external context. By presenting environmental proactivity as a capability that enables firms in the specific stages of the OLC to gain and maintain a competitive advantage, I provide support for the association between environmental proactivity and dynamic capabilities that is context-dependent.

Certain environmentally friendly practices may neither be attractive nor unattractive owing to the presence or absence of a single condition. Instead, the outcome usually results from a combination of conditions. Rather than estimating the relative importance of different conditions, the third chapter examines the impact of environmental proactivity combined with external contingencies (uncertainty, complexity and munificence) and the OLC stages on firm performance. This study is important because it offers a new perspective on the

relationship with its systematic comparative analysis of complex cases. Fuzzy-set qualitative comparative analysis (fsQCA) is suitable for conceptualizing cases as combinations of attributes. It emphasizes that it is these very combinations that give cases their unique nature (Ragin, 2000). The method allows me to identify different paths leading to a high firm performance and to explore which conditions are essential and which are less important or even irrelevant to high-performing firms.

Description of the scientific methods

The first chapter aims at exploring the link between environmental strategies and the OLC stages by using a qualitative research approach. It integrates a theory and research on environmental management and the OLC to show environmental strategies that high-performing organizations develop and pursue in each of the OLC stages. Each stage has the illustration of a case study followed by a discussion and the development of a proposition. The five cases were selected from a dataset described in the following chapter. Given my research objectives, I purposely looked for firms in different stages of the OLC and from high environmental impact sectors (chemicals, utilities, mining, construction, manufacturing etc.). Firms operating in polluting industries have similar regulatory framework, media attention, scrutiny from activists, community concerns, and changes in consumer behavior (Berrone & Gomez-Mejia, 2009).

The second chapter empirically examines the relationship between environmental proactivity, the OLC stages, competitive advantage and industry. The hypothesized relationships are tested on a sample of firms from Australian economy that are part of the dataset created in 2012. The country was selected on the basis of the economy's development and stability. The database provides detailed contact data and a directory of each firm's primary managers. Within November and December 2012, the questionnaire was emailed mostly to senior executives or environmental managers. Questionnaire is pre-tested on a sample of 10 firms from different industries to ensure the relevance of the concepts, and that the phrasing of the items and meaning of the concepts were equally understood. The cover letter sent to senior executives indicated that participation was voluntary and that confidentiality was guaranteed. After three rounds of reminder e-mails, the study had received response rate of 11.3%. 155 responses were correctly completed and considered valid.

The hypotheses from the second chapter are analyzed using moderated hierarchical regression analysis (Cohen & Cohen, 1983), with a moderator effect introduced as a two-way interaction term. Questions related to environmental proactivity, firm performance, competitive advantage and general business environment are all selected from the existing empirical papers. The OLC scale included five descriptions for each of the five OLC stages. The descriptions contained characteristics from the existing literature (Miller & Friesen, 1983; Quinn & Cameron, 1983) that appeared to be indicators of the OLC stages. This approach of classifying was employed after I found the scale of Lester

et al. (2003) to be inappropriate due to the unacceptable coefficient alphas (< .7), low communality values (< .4) and cross-loading of items on factors (Hair & Anderson, 2010).

The third chapter examines which combinations of independent conditions, namely the OLC stages, environmental proactivity and characteristics of general business environment (uncertainty, complexity and munificence), are related to high firm performance. The research is based on the same questionnaire that is used in the second chapter. The research method used for this study is the fsQCA. Set-theoretic methods are rigorous techniques of assessing the complex ways in which causal conditions (in regression analysis termed variables) combine to create outcomes. The fsQCA identifies combinations of conditions associated with the outcome using Boolean logic and Quine-McCluskey algorithm for simplifying complex set-theoretic statements. The motivation for using fsQCA is an interest in set relations, where every condition defines an independent set, and a set membership score is assigned to every case studied in every set. Further description of the method can be found in Chapter 3.

Structure and contents of the dissertation

After this introduction where the research topic is briefly described, and the purpose and the research questions presented, the dissertation proceeds as a collection of three chapters, namely:

- Chapter 1: Environmental strategies in different stages of organizational evolution: Theoretical foundations;
- Chapter 2: The influence of organizational life cycle on environmental proactivity and competitive advantage: A dynamic capabilities view;
- Chapter 3: Environmental proactivity and firm performance: A fuzzy-set analysis.

The aim of the first chapter is to bring together previously separated studies on environmental proactivity and OLC. It develops a descriptive theory with testable propositions for environmental strategies of organizations from the OLC perspective. After a short introduction of the topic, I review the literature on environmental strategies and the OLC (section 1.2). I then present five case studies, integrate the theoretical perspectives of the relevant literature and present propositions (section 1.3). Section 1.4 provides some concluding remarks and outlines the implications.

The second chapter deals with a question of how the OLC, together with industry, affect the environmental proactivity of firms. After a brief literature review on environmental proactivity, the DC view and the OLC, I develop hypotheses describing the relationships between stages of the OLC, environmental proactivity, competitive advantage and industry (section 2.2). In section 2.3 the methodology used in the study is described and the measures are presented (section 2.4). The results in the section 2.5 reveal the relationships between the examined variables. I conclude by discussing the importance of new insights

for theory development (section 2.6) and management (section 2.7), presenting the limitations of the study and providing directions for future research (section 2.8).

Based on the fsQCA, the third chapter analyzes the impact of environmental proactivity combined with external contingencies (uncertainty, complexity and munificence) and OLC stage on firm performance. After a short introduction, in section 3.2 I begin by briefly reviewing the literature on a set of conditions, namely environmental proactivity, the OLC theory, and characteristics of the general business environment (uncertainty, complexity and munificence). I then present the basic idea of fsQCA and describe the research design and data (section 3.3). The results of the analysis are discussed in the following section (section 3.4). I conclude by summarizing the results, considering the importance of the new insights for theory development and practice, and providing directions for future research (section 3.5).

The last part of the dissertation summarizes the main findings, contributions and limitations of the dissertation, followed by references and appendices with a longer abstract in Slovenian language.

1 ENVIRONMENTAL STRATEGIES IN DIFFERENT STAGES OF ORGANIZATIONAL EVOLUTION: THEORETICAL FOUNDATIONS

While many studies have examined the alignment of an organization's environmental strategy with a number of contingencies such as general business environment, industry and organizational characteristics (the organization's size, resources, capabilities, etc.), relatively few have considered the role of the organizational life cycle. The value of life cycle models lies in the idea of the dynamic nature of organizations. As organizations pass through life cycle stages their strategies, structures and activities correspond to the stage of development. The theory and case studies I present in this chapter identify environmental strategies that high performing organizations are likely to pursue in each stage of their evolution. My position is that environmental strategies have to be aligned with the organizational context and structure in order to be successful and that there is no single optimal strategy for all businesses in an industry.

Keywords: organizational life cycle; environmental strategy; high performing organizations; high environmental impact sectors

1.1 Introduction

Organizations constantly encounter changes within and outside their boundaries. These changes, which result in opportunities or threats, force them to transform and adapt their behavior. A number of researchers suggest that the design, development and behavior of organizations in general can be predicted by organizational life cycle (OLC) models (Adizes, 1979; Lester, Parnell & Carraher, 2003; Miller & Friesen, 1984; Shirokova, 2009; Quinn & Cameron, 1983). Organizations at one point are born and grow and many, unless management knows what to do, eventually age and die (Adizes, 2004; Kimberly & Miles, 1980). In each stage, certain difficulties or transitional problems prevail that result in similar and thus predictable patterns of behavior. For example, Jawahar and McLaughlin (2001) found that in any given stage of the OLC, certain stakeholders will be more important than others. Smith and his colleagues (1985) were able to link top management priorities to the stages, whereas Quinn and Cameron (1983) established a link between the OLC stages and organizational effectiveness. The OLC theory has also been recognized as important for the future development of the environmental management area (e.g. Shrivastava, 1995a). Specifically, further theorizing at the organizational level is needed in order to find organizational forms that can be environmentally sustainable. In seeking these forms, future research should also address what it means to be environmentally sustainable in different periods of the OLC. The OLC construct is interesting because it captures many firm-specific variables (e.g. decision-making, structure, innovation activity) that change over time and thus offers a more holistic view.

Ongoing discussions about climate changes and the extensive negative impact of organizations on the natural environment have led to a universal debate regarding corporate environmental responsibility (e.g. Wade, Dargusch & Griffiths, 2014). Environmentally responsible behavior has been increasingly demanded by regulators as well as by other organizational stakeholders. Therefore, over the last two decades we have witnessed a large rise in environmental actions in organizations. While researchers and managers may realize the importance of environmental issues, little is known about how are they adopted and integrated into the business over the course of organizational development. The knowledge deficit concerning the conditions in which organizations profit from environmental strategies (e.g. Ambec & Lanoie, 2008; Dixon-Fowler, Slater, Johnson, Ellstrand & Romi, 2013) and the resulting conflicting conclusions in the 'does it pay to be green' literature (e.g. Čater, Prašnikar & Čater, 2009; Russo & Fouts, 1997; Walley & Whitehead, 1994) has encouraged me to discuss the OLC theory in the field of environmental management which could have an important impact on financial performance through improved innovation, customer satisfaction, decision making etc. Specifically, the purpose of the chapter is to integrate the theory and research on environmental management and the OLC. I aim to show how environmental strategies vary with strategic changes through which organizations progress during their lives. According to Greiner (1972), organizations are prone to pursue strategies that proved to be effective in the past. But when they enter a new OLC stage, past strategies and behaviors become inappropriate and ineffective.

The chapter is important for at least three reasons. First, the majority of environmental strategy studies attach no weight to the specificity of the organizational evolution when prescribing particular environmental strategies. The current chapter builds upon the assumption that the OLC theory does matter since it incorporates many variables that were separately found to be important for the development and implementation of environmental strategies (e.g. Bansal, 2005; Darnall, Henriques & Sadorsky, 2010; Dixon-Fowler et al., 2013; Sharma & Vredenburg, 1998). Second, the chapter develops a descriptive theory with testable propositions for environmental strategies of organizations from polluting industries from the OLC perspective. By enriching the theory with illustrative examples from industry, the chapter seeks to show organizations a way to sustainably exploit resources and capabilities and generate long-term competitive advantage in a more complete and timely manner. In particular, an organization's actions should be aimed at increasing the utilization of renewable sources, reducing the amount of resources needed to produce products or services, substituting polluting and hazardous materials/parts, developing recycling systems and clean technology, selecting cleaner transportation modes, fostering the environmentally friendly behavior of stakeholders, etc. These actions are proven to have positive effects on competitive advantage such as cost-reduction (Christmann, 2000; Shrivastava, 1995b), differentiation and first-mover advantages (Porter & van der Linde, 1995), capability for stakeholder integration, improved organizational commitment and learning, capability of continuous innovation, an

increase in employee skills (Russo & Fouts, 1997; Sharma & Vredenburg, 1998) etc. Finally, no general guidelines for the development and implementation of environmental strategies can be applied to all organizations. Instead, the optimal development and implementation of environmental strategies should be contingent upon the organization's internal and external situation. Therefore, I propose when and how 'it pays to be green' in different stages of organizational development. I show that in any given OLC stage it is likely that certain environmental strategies will be pursued.

The chapter is organized as follows. After this introduction, I review the literature on environmental strategies and the OLC. I then present five case studies, integrate the theoretical perspectives of the relevant literature and present propositions. Finally, I develop a discussion and outline the implications of the chapter.

1.2 Theoretical background

A large body of literature has focused on the OLC and environmental strategies. While researchers mostly study these fields separately, limited research to date has examined the intersection between them. For example, Elsayed and Paton (2009) provide evidence that financial performance has the strongest impact on environmental policy in the maturity stage of the OLC and the weakest impact in the growth stage, whereas Dibrell, Craig and Hansen (2011) suggest ventures characterized as being early in OLC are more likely to have a positive environmental policy leading to a competitive advantage through firm innovativeness. This section provides a brief literature review in order to frame expectations regarding the following research question: Which environmental strategies do high performing organizations pursue in each stage of their evolution? A high-performing organization is defined here as an organization that has considerably better financial and non-financial results than its rivals.

1.2.1 Organizational life cycle theory

The OLC theory is an important contribution to the literature that describes the characteristics of organizations in different stages of their evolution (Miller & Friesen, 1984). Based on the biological science phenomena of birth, growth, maturity and death, several organizational researchers (e.g. Adizes, 1979; Greiner, 1972; Lyden, 1975) attempted to legitimize the concept of the OLC. The consensus emerged that the organizational development is quite structured and each stage is unique (Adizes, 2004; Lester et al., 2003; Miller & Friesen, 1984).

The OLC stage construct has been described by authors in multidimensional terms. While there is considerable variability between models, the life cycle stages have mostly been identified based on the organizational context and structure (Hanks, 1990). The current chapter uses a model that includes the following dimensions: situation, strategy, structure and decision making (Table 1). The term situation covers an organization's size, age,

ownership, heterogeneity of markets etc. Strategy refers to top management's plan to accomplish goals. Structure is the determination of the reporting relationship, and decision making style refers to the administrative personality of an organization (Lester, Parnell, Crandall & Menefee, 2008; Miller & Friesen, 1984).

A review of the literature reveals that the life cycle stages vary from three to ten (e.g. Adizes, 1979; Lippitt, 1967; Miller & Friesen, 1984; Quinn & Cameron, 1983) depending on how the researcher defines the actual stage (Hanks, 1990). Three (e.g. Smith, Mitchell & Summer, 1985), four (e.g. Kazanjian, 1988) and five stage models (e.g. Hanks, 1990; Lester et al., 2003; Miller & Friesen, 1984) have the strongest empirical support. Irrespective of the particular number of life cycle stages, most researchers describe a similar pattern of development and many models contain common elements. This chapter applies the five stage OLC model.

Table 1. Organizational life cycle stage characteristics

	Stage of organizational life cycle				
Characteristics	**Birth**	**Growth**	**Maturity**	**Revival**	**Decline**
Situation	Young, small, homogenous environment	Older, larger, heterogeneous environment	Larger size, competitive and more heterogeneous environment	Very large, heterogeneous, dynamic and competitive environment	Homogenous and competitive environment, internal focus
Structure	Simple, informal	Some formalization, functional	Formal, bureaucratic, functional	Divisional or matrix	Formal, bureaucratic, functional
Decision-making	Centralized, intuitive, substantial risk taking	Somewhat less centralized, more managers involved	Professional management, risk avoidance	Participative, high level of risk-taking	Centralized, conservative, risk avoidance
Innovation and Strategy	Considerable innovation, niche strategy	Cost efficient while maintaining innovative bent	Focus on cost efficiency, consolidation of product-market strategy	Substantial innovation, strategy of product-market diversification	Low-cost, low level of innovation, consolidation of product-market

Source: I. Adizes, Organizational passages: Diagnosing and training life-cycle problems in organizations, 1979, pp. 3–25; D. Lester and J. Parnell, Firm size and environmental scanning pursuits across organizational life cycle stages, 2008, pp. 540–554; D. Miller and P. H. Friesen, A longitudinal study of the corporate life cycle, 1984, pp. 1161–1183; R. Quinn and K. Cameron, Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence, 1983, pp. 33–41.

1.2.2 Environmental strategies

Environmental management literature has developed a number of typologies of environmental strategies organizations adopt to deal with environmental issues (e.g. Banerjee, 2002; Hunt & Auster, 1990; Klassen & Whybark, 1999; Roome, 1992; Sadgrove, 1992; Su Yol & Seung Kyu, 2007). The majority of these studies distinguish between two extreme positions: environmental reactivity and environmental proactivity. Organizations can be reactive by simply complying with the existing regulation or, conversely, they can follow proactive strategies through environmental initiatives. The current chapter uses an adapted typology of generic strategies from Miles and Snow (1978). They distinguish four strategic types, namely prospectors as the most proactive, analyzers, defenders and reactors as the least proactive, based on three strategic dimensions: entrepreneurial, engineering and administrative. Similarly to Aragón-Correa (1998), who found that natural environmental approaches fit with the generic strategies, I define organizational proactivity as a tendency to search for opportunities and initiate changes in various strategic areas rather than to react to events. Based on this, I distinguish between four environmental strategic types: environmental prospectors, environmental analyzers, environmental defenders and environmental reactors (Table 2). This typology is interpreted as a continuum on which environmental prospectors and environmental reactors represent extreme positions. Environmental prospectors constantly search for market opportunities through product and market environmental innovation, take risks and grow. These organizations encourage flexibility, creativity and proactivity and regularly experiment with emerging environmental trends. Therefore, these organizations are the first movers in entering a specific market and the creators of change. Being the first allows them to acquire superior brand recognition and customer loyalty. Slightly less 'green' are environmental analyzers that operate routinely and eco efficiently while still being environmentally innovative. These organizations attempt to maintain their current position and to be somewhat innovative in new markets. They balance an eco-efficient strategy for current products and services along with the innovative development and implementation of new products and services. Environmental analyzers are creative, have efficient and low-cost production, environmentally friendly customized products and services, and tight financial controls. Next are environmental defenders who devote their primary attention to improving the eco efficiency of their existing operations and do not search outside of their domains for new opportunities. These organizations attempt to protect their products and services from new competition while they seldom make major adjustments to their existing technology, structure, or operations. Environmental defenders are especially successful in a declining industry or a stable environment. Finally, the least 'green' are environmental reactors. They attempt to maintain the status quo, only changing when forced to do so by external pressures. These organizations have neither a consistent strategy nor structure. Environmental reactors are unable to respond effectively to perceived change and

uncertainty in their surrounding environment. Therefore, organizations in the declining stage are often the result of reactor strategies.

Table 2. Environmental strategic types

	Environmental strategic type			
	Prospector environmental strategy	**Analyzer environmental strategy**	**Defender environmental strategy**	**Reactor environmental strategy**
Characteristics	Finding and exploiting new environmentally friendly products and market opportunities	Operating eco-efficiently while maintaining environmentally innovative bent	Improving eco-efficiency of existing operations with proven technologies	Complying with environmental laws and regulations

Source: Adapted by J.A. Aragón Correa, Strategic proactivity and firm approach to the natural environment, 1998, p. 557; R.E. Miles and C.C. Snow, Organizational strategy, structure and process, 1978, pp. 31–93.

1.3 Environmental strategies in different stages of organizational evolution

The basis of my theory is a paper by Miller and Friesen (1984) who empirically verify that organizations alternate between innovative stages, namely birth, growth and revival that establish or renew organizational competencies, and conservative ones, namely maturity and decline, and exploit them through efficiency. The chapter starts with an illustration of five cases, namely one case for each of the OLC stages, followed by a theoretical debate and the development of propositions.

1.3.1 Research methodology

A case study is a research method involving a detailed investigation of units of observation that is very useful in reducing the gap between theory and practice. The purpose of this method which we also find fitting for our research question is to describe a situation in a way to understand how and why events occur (Yin, 2003).

The five cases described based on publically available information and detailed survey data were selected from a dataset created in December 2012 (for the sake of confidentiality, each firm is denoted here by a letter). The dataset was formed from cross-sectional on-line survey data of 196 Australian organizations, representing a response rate of 11.3%. The survey was sent to CEOs, managing directors and environmental managers who were considered to have adequate knowledge about the environmental practices and performance of their firms. From this initial sample and on the basis of the industry type, completeness of the information provided and access to secondary sources (i.e. corporate annual reports and web pages), I identify five firms relevant for the study. Given my

research objectives, it is noted that I purposely looked for firms in different stages of the OLC and from high environmental impact sectors (chemicals, utilities, mining, construction, manufacturing etc.) and that, therefore, the sample was not randomly selected. A respondent's firm was categorized in one of the OLC stages based on a description of the situation that best fits the firm. The OLC scale included five descriptions for each of the five OLC stages (Table 3). Those descriptions contained characteristics from the existing literature (Miller & Friesen, 1983; Quinn & Cameron, 1983) that appeared to be indicators of the OLC stages: decision-making, structure, situation, level of innovation, and sales growth. This approach of classifying was employed after we found the scale of Lester et al. (2003) to be inappropriate for the current study due to the unacceptable coefficient alphas (< .7), low communality values (= .4) and cross-loading of items on factors (Hair & Anderson, 2010).

Table 3. Organizational life cycle stages (questionnaire item)

Which of the following descriptions best fits your firm? Please mark the appropriate box.	
	Our firm is less than 10 years old, has an informal structure, and is dominated by an owner-manager. Our decision-making is centralized and intuitive and sometimes we take risks in our business.
	Our sales growth of more than 15% has been rapid due to our cost efficiency programs and our innovative strategies. We have developed distinctive competencies that set us apart from our competitors. The structure of our firm is functionally-based, decision-making is decentralized and procedures are formalized.
	Formalization and control is a norm in our firm. We focus on cost efficiency, while we lack innovation activity. Sales growth is less than 15% and the level of sales is stabilized. Our management focuses on planning and strategy. Decision-making is risk-averse and in the domain of top management.
	We are diversifying our product portfolio and expanding our markets. Our creativity and innovation are facilitated through the use of a divisional or matrix structure, procedures are formalized, and decision-making is much decentralized. Sales growth is greater than 15%.
	Our control and decision-making is centralized and risk-averse. Our profitability has declined due to external challenges and a lack of innovation. The structure of our firm is formal and bureaucratic.

Apart from firm-specific characteristics characterized by the OLC stage, resource selection and deployment are also influenced by external factors, including industry. Organizations operating in polluting industries are similar in terms of the amount of pollution, level of public concern, stringency of environmental regulation and environmental liability risks (Banerjee, Iyer & Kashyap, 2003). Accordingly, these organizations tend to adopt similar strategies in response to environmental issues (Bansal, 2005; Bansal & Clelland, 2004). Of course, evidence from the current study needs to be further validated in larger samples of

organizations from multiple industries. However, the sample used in this chapter, albeit small, covers a wide variety of possible situations in terms of the OLC stage, the kind of customers and market served, and implemented environmental practices. On these grounds, the study allows me to derive an interesting set of phenomena and organizations' typical responses to environmental issues in different stages of the OLC.

1.3.2 Description of cases

1.3.2.1 Firm A

Firm A is a small, privately owned laboratory for microbiological testing and a provider of microbial solutions. Established in 2005, the firm has an informal structure and is dominated by an owner who makes intuitive, sometimes even risky decisions. It is trying to penetrate the market by providing environmental solutions to restore and build the microbial communities that are required for soil health and which can be utilized in an environmentally friendly manner, such as for organic waste management.

Firm A faces environmental issues although they are not directly related to the existing regulations. Its major customers (mining firms, soil product suppliers, farmers, horticulturalists, and golf courses) that are operating under strict environmental regulation are the main drivers of the development and implementation of the firm's sustainable practices. Some particularly important practices for the firm are the responsible disposal of waste and residues, a preference for green products in purchasing, optimizing the exploitation of material, well-defined environmental responsibilities, long-term environmental objectives, and providing information about the firm's environmental management to external stakeholders. Remarkable market uncertainty about future regulations, the availability and price of material as well as the market volume and price requires the firm to be highly anticipative and innovative.

1.3.2.2 Firm B

Firm B is a medium-sized, privately held firm that specializes in ground engineering and slope stabilization. Its main customer is the government. The firm is experiencing revenue growth due to cost efficiency and innovative strategies (R&D spending as a percentage of sales in firm B is around 6%) mainly directed at improving existing practices and broadening the current product assortment.

A functional organizational structure and decentralized decision-making supports the firm's proactive behavior. The management responsible for looking after environmental issues is mostly concerned with developing and implementing proactive environmental practices in planning and operations. In particular, this involves: developing long-term environmental plans, regularly measuring and assessing environmental performance, periodic environmental reporting, acquiring clean technology, consolidating shipments and using reusable containers in logistics, and responsible disposal of waste. The firm is

making considerable investments in these practices even though the regulation is not yet completely in place. It anticipates future customer requirements that will soon emerge in response to new regulations and fierce competition in public procurements.

1.3.2.3 Firm C

Firm C is a large, privately-owned firm that has been present in the market for over 60 years. The firm manufactures paper-, board- and film-based packaging products for a diverse range of customers such as foodservice providers and packaging suppliers. Its factories and offices are located worldwide. Recently, the level of sales has stabilized and the firm is thus focusing on cost efficiency rather than investing in innovation (R&D spending as a percentage of sales is less than 1%). Decision-making is risk-averse and in the domain of top management, while formalization and control represents a norm for the firm.

Firm C is pursuing selected environmentally friendly practices to a limited or moderate extent in order to satisfy its customers and specific national regulations that vary significantly among countries. Some of the firm's environmentally sound practices are environmental reporting, the reuse and recycling of materials, the safe disposal of waste and waste minimization throughout all processes. The firm is also working with suppliers to provide more environmentally friendly solutions regarding the packaging of raw materials, as well as the utilization of materials that minimize waste and total raw materials required for products. These practices do not require a significant capital investment in the technology with the exception of the firm's expenditure on emission filters and end-of-pipe control.

1.3.2.4 Firm D

Firm D is a large multinational firm operating in the construction and consulting business. It is experiencing high revenue growth due to creativity and innovation (R&D spending as a percentage of sales is around 6%) that is facilitated through a matrix organizational structure, formalized procedures and decentralized decision-making. The firm is following a path to becoming more diversified across businesses and geographies. The firm's strategy of investing in markets for the future has prompted several initiatives from the expansion of existing activities in fast-growing markets to the development of a new induction charging technology for electric vehicles.

Environmental protection has been a priority in numerous projects. Firm D pursues a wide range of environmental management practices from regular environmental reporting, managing environmental impacts through use of an environmental management system, environmental trainings for managers and employees, designing products focused on lower resource consumption and waste generation to collaboration with ecological organizations and sponsoring of environmental events.

1.3.2.5 Firm E

Firm E is a small, family-owned fiberglass manufacturer established over 30 years ago. Its biggest customers are automotive and recreational vehicle manufacturers, construction firms and industrial engineers. The firm is currently experiencing a decline in profitability due to external challenges mainly caused by lower demand, customers' increased demand for eco-efficient products, and a lack of innovation.

The firm's structure is formal and bureaucratic, while decision-making is centralized and risk-averse. No one is responsible for looking after environmental issues even though the firm operates in a high environmental impact sector. It is pursuing environmental practices, such as the development and implementation of environmental emergency plans, the use of reusable containers in logistics and responsible disposal of waste, only to a very limited extent in order to satisfy the current environmental regulation. The firm is facing significant uncertainty about the future environmental regulation that is expected to further increase the pressure in the industry.

1.4 Theoretical debate and the development of propositions

1.4.1 Birth stage

The birth stage is the beginning of organizational development where a new organization is attempting to become a viable entity. In this stage, an organization's role in society is determined. According to firm A, the dominant concerns are obtaining finance, developing and implementing a business plan, and entering a market. Direct confrontation with established competitors is avoided by finding unfilled gaps or niches in the market (Miller & Friesen 1984).

Effective performance in the early stages of organizational development requires a funder to be active and able to recognize business opportunities (Sandberg & Hofer, 1987). Despite the fact that environmental issues are gaining in importance, the development and implementation of environmental strategies is still significantly affected by the founder's cognitive framing of environmental issues such as in the case of firm A. Sharma (2000) empirically verifies that the greater the extent to which an organization's managers interpret environmental issues as opportunities, the greater the likelihood that the organization will behave proactively. As seen from case A, organizations in the birth stage are action oriented with simple and flexible organizational structures characterized by extensive and frequent process, product and service innovations (Adizes, 2004; Miller & Friesen, 1984). Their lack of market experience and the absence of routine work that limits incumbents in their proactivity drive visionary organizations in the birth stage to seek opportunities and test their ideas. Moreover, these organizations do not suffer from the lock in effects of infrastructure, technology and product design which enables them to focus on stakeholders' expectations that are increasingly related to environmental

responsibility (Ambec & Lenoie, 2008). Accordingly, the prospector environmental strategy reflects a fit with the birth stage because organizations are active and seek opportunities in the market through product and market innovations.

As a result of the significant employee involvement commonly seen in the birth stage, it is likely that organizations will develop complex skills and acquire valuable resources that lead to a competitive advantage. Further, investments in the development of advanced proactive environmental strategies generate more knowledge based capital (Ghemawat, 1986), whereas the use of new environmental technologies that require increased skills from workers add to the complexity of the organization's operation which creates advantages that are less transparent and difficult to imitate (Groenewegen & Vergragt, 1991). Based on the empirical evidence from case A and the discussion, I propose the following:

Proposition 1: High-performing organizations in the birth stage of the OLC will pursue a prospector environmental strategy.

1.4.2 Growth stage

The growth stage is characterized by rapid sales growth and the establishment of distinctive competencies. Product lines are broadened and products incrementally tailored to new markets, while less stress is placed on major product innovations (Miller & Friesen, 1984). New markets and product lines result in confrontation with the competition. According to case B, in order to keep up the pace organizations are likely to develop or invest in physical assets and recruit specialists who are able to effectively coordinate and control operations and who have the expertise regarding the products, markets and overall operation of the organization. Physical assets can be a source of competitive advantage if they either outperform an equivalent competitor's assets or are deployed in a way that allows an organization to capitalize on and enhance its internal methods, such as methods for waste reduction and the improvement of fuel efficiency (Russo & Fouts 1997). These methods of deployment are likely to be employed within organizations stressing beyond compliance environmental strategies (Hart & Dowell, 2011). Their implementation requires significant employee involvement, cross disciplinary coordination and integration, and a forward thinking managerial style (Shrivastava, 1995b), elements typical of the growth stage. As shown in case B, a functional organizational structure (Miller & Friesen, 1984) also supports an innovative and proactive atmosphere. As a result, the analyzer environmental strategy is a match for this stage since organizations operate routinely and efficiently while still being environmentally innovative.

Advanced proactive environmental strategies in this stage of development are likely to be associated with improved organizational performance because they create valuable organizational capabilities (Hart, 1995) through continual improvement that lead to innovations and consequently to a sustained competitive advantage (Sharma et al., 1999).

Moreover, as internal routines and know how in growing organizations accumulate, knowledge of how to prevent pollution deepens (Dean & Brown, 1995), which reduces risk and improves the environmental and financial performance. Based on the case study and discussion, the following proposition is developed:

Proposition 2: High-performing organizations in the growth stage of the OLC will pursue an analyzer environmental strategy.

1.4.3 Maturity stage

The maturity stage occurs as the sales level stabilises and the level of innovation falls as presented in case C. In this stage, organizations are conservative and seek to protect what they have gained (Lester & Parnell 2008). Their tendency is to maximize profits by avoiding costly changes and ensuring favorable prices of product lines sold in traditional markets. If an organization keeps capitalizing on the momentum for a longer period, this eventually leads to the stage of decline.

According to case C presented above and consistent with the literature, organizations in the maturity stage are expected to be hierarchical, inflexible and bureaucratic, while managers' decision making style is less innovative, less proactive and more risk averse than in any other stage (Burns & Stalker, 1961; Miller & Friesen, 1984). Organizations invest less in the future and cut services related to advertising, promotions and research and development. Their center moves into the finance and legal departments. Management's role is to prevent mistakes being made by establishing rigid administrative systems, policies, rules and guidelines which slow decision making and reaction to changes in the external environment (Adizes, 2004). They instead put more emphasis upon budgets and performance measures (Miller & Friesen, 1984) than on the development of the competencies necessary for environmental proactivity. With such a structure and behavior, adopting advanced proactive environmental strategies is difficult as they require action oriented behavior, and a loosening of organizational structures and norms (Russo & Fouts, 1997). The defender environmental strategy reflects a predicted fit with this stage due to its emphasis on cost control and efficiency. This strategy mostly affects physical asset resources and processes that do not require expertise in managing new environmental technologies or processes (Barney, 1991). Based on this, I propose:

Proposition 3: High-performing organizations in the maturity stage of the OLC will pursue a defender environmental strategy.

1.4.4 Revival stage

As we can see from case D, after a period of hibernation, organizations in the revival stage start focusing back on the needs of customers that are placed above the needs of the organization's members (Lester & Parnell, 2008). In this stage, R&D is more common than in any other stage of the OLC. Creativity and innovation is fostered by teamwork and

collaboration (Miller & Friesen, 1984), elements necessary for the development and implementation of proactive environmental strategies. Typically, the environment is more heterogeneous than in other stage because of the strategy of diversification in products and markets. To increase sales, organizations often enter new markets where the rate of innovation is high and competition intense so it is more likely that they explore, create and invest in dynamic capabilities. While market expansion in general does not require dynamic capabilities (Winter, 2003), expansion to a novel market or the creation of entirely new ones does because the dominant logic that they are accustomed to using is no longer valid. Those organizations that recognize opportunities from environmentally friendly behavior are likely to develop advanced proactive environmental strategies such as the use of new technologies, development of green products and introduction of environmental management systems.

Organizations in the revival stage of OLC adopt a divisional structure to cope with increased market heterogeneity, where the group of professional managers use highly sophisticated control systems to monitor the performance (Miller & Friesen, 1984). Thus, novel efficient environmental technologies are likely to be interesting for organizations in this stage. Further, many professionals are recruited for R&D, engineering, planning and performance analysis activities to help in generating innovations. According to case D, a risk taking, innovative and proactive decision making style prevails while leadership and innovation is encouraged over the imitation of competitors (Miller & Friesen, 1984). The prospector environmental strategy, which constantly searches for market opportunities through product and market environmental innovation, reflects a predicted fit with the renewal OLC stage.

Empirical studies of the environmental financial performance relationship have found that profiting from proactive environmental strategies is more likely if the organization possesses strong innovation capability (King & Lenox, 2001), as organizations from the revival stage do (e.g. Miller & Friesen, 1984). Based on the presented case and discussion, I propose:

Proposition 4: High-performing organizations in the revival stage of the OLC will pursue a prospector environmental strategy.

1.4.5 Decline stage

According to case E, organizations in the stage of decline become stagnant and try to conserve resources by abstaining from product or service innovation. Demand for products becomes inelastic, revenues decline and market share contracts. Creative employees are no longer interested in nor interesting for such organizations (Adizes, 2004). Profitability drops due to a lack of innovation capability, the absence of any well-developed information processing mechanisms and poor communication between top management and departments (Miller & Friesen, 1984). Organizations dissociate from their environment

since they become preoccupied with a self-rescue. Their control and decision making are centralized and internally oriented rather than focused on the needs of customers. They are even reluctant to imitate competitors' innovations due to the temperament of top management or a shortage of funds (Miller & Friesen 1984).

Changes in the external environment represent a threat to an organization in the decline stage because it is no longer able to adapt. Jawahar and McLaughlin (2001) argued that a proactive strategy involves anticipating and accepting responsibility and can only be implemented when threats are forecast while, if a threat already exists, it is then too late for proaction and organizations can only accommodate and develop reactive strategies to obey the legislation. Since product lines are outdated and too expensive to make significant changes, compliance is mostly achieved by the addition of off the shelf hardware, such as filtering devices and the implementation of inexpensive practices as presented in case E that do not require developing skills. Thus, a reactor environmental strategy tends to match the profile of organizations in decline since it is straightforward and leaves an organization essentially in the same resource and capability situation as before it adopted the policy (Groenewegen & Vergragt, 1991).

Compliance presents a great burden on organizations in the decline stage because they are usually unable to wait for long term benefits from those investments (e.g. a reduction in energy consumption, a reduction of waste generation). Based on the empirical evidence from case E and the discussion, the following proposition is developed:

Proposition 5: Organizations in the decline stage of the OLC will pursue a reactor environmental strategy.

1.5 Discussion and implications

In this chapter, I integrate research and theory on environmental strategies and the OLC to propose when and how 'it pays to be green'. The theory is founded upon the premise that organizational structure, behavior and needs change as organizations evolve through the OLC stages and that this will likely reflect in specific environmental postures. My position is that environmental strategies are aligned with the OLC stage in high performing organizations. The OLC stage used as a basis in the current chapter is a multidimensional construct determined by a number of characteristics that offer a great opportunity for researchers to more holistically capture an organization's situation.

The case studies highlight the fact that the organizations are addressing the growing importance of environmental issues very differently. From a practical viewpoint, it seems that the environmental dimension adds significant complexity to a firm's daily operations and that only those firms with flexible organizational structures and an action-oriented mindset consider developing and implementing proactive environmentally friendly practices. As seen from the cases, the development and implementation of proactive

environmental strategies is not limited to large and developed organizations in the later OLC stages. Through their greater social awareness (Noci & Verganti, 1999), simple structure (Adizes, 2004; Miller & Friesen, 1984), flexibility (Aragón-Correa, Hurtado-Torresn, Sharma & García-Morales, 2008), and faster decision-making (Chen & Hambrick, 1995), many smaller firms in the early OLC stages are innovating in ways that larger firms cannot (Jones & Klassen, 2001). For these reasons, smaller organizations may be more successful innovators, more responsive to stakeholder pressures and more successful in their adoption of proactive environmental strategies than their larger counterparts.

In addition, such behavior also indicates a positive relationship with firm performance. On this basis, we may claim that by including the environmental dimension in their strategic planning these firms positively influence their current performance while at the same time securing their future financial and non-financial success. On the contrary, firms from the conservative stages of the OLC are more reactive in their stance. It seems that they perform better when operating with familiar practices and already established procedures than wandering around in clouds of uncertainty without having the appropriate organizational context and mechanisms that would allow them to exploit created opportunities.

The existing literature (e.g. Albertini, 2013; Aragón-Correa & Rubio-López, 2007; Dixon-Fowler et al., 2013) largely discusses whether 'it pays to be green'. My theory contributes to this debate by proposing that high performing organizations are likely to pursue particular environmental strategies at a given time in their evolution. Herein lies the need to test the theoretical propositions in different industries. I based this chapter primarily on the theory of Miller and Friesen (1984) who empirically verify that organizations alternate between innovative stages (birth, growth and revival) that establish or renew organizational competencies and those stages (maturity and decline) that exploit them through efficiency. Based on their findings, other literature (e.g. Adizes, 2004; Lester & Parnell, 2008) and empirical indications, I argue that during the innovative stages high performing organizations pursue more advanced environmental postures.

This chapter's primary contribution is the development of a theory on environmental strategies from the OLC perspective. I contend that academics should be cautious in offering prescriptions about which environmental strategies to pursue and that such prescriptions should be contingent upon the OLC stage that organizations are in. The environmental postures have to be integrated into their business strategies without conflicting with other aspects. By giving practical and theoretical indications of which strategies should be used in different stages of the OLC, this chapter can help managers become more fully aware of when to pursue proactive environmental strategies. Adopting a proactive approach to environmental protection is complex since it requires a loosening of organizational structures and norms (Russo & Fouts, 1997) and changes in doing business as usual (Aragón-Correa & Sharma, 2003), and involves different stakeholders (Russo & Fouts, 1997) as well as managerial commitment and coordination

(Aragón-Correa, 1998). Therefore, managers should think about the stage of their firm's development and adapt their strategies (and level of proactivity) accordingly. Especially in diversified firms, where managers are likely to encounter strategic business units in different stages of the OLC, it is important that environmentally friendly investments in different strategic business units are aligned with the expected (financial) outcomes of those investments. For instance, a diversified firm's overall emissions can be decreased by the same fixed amount by applying different combinations of decreases (and increases) of emissions in different strategic business units. If a manager of a diversified company is aware of the proposed OLC impact on the selection of environmentally friendly strategies (and levels of their proactivity) the chances of attaining a maximum company-level (financial) outcome of a fixed overall emission decrease can be much higher. Accordingly, I believe that with the right set of environmental strategies firms can improve their market position by reducing costs, improving the relationship with stakeholders, improving their organizational commitment and learning, and offering high quality products and services. Therefore, my theory grounded on empirical evidence and existing literature can help organizations exploit their resources and capabilities more efficiently. This chapter has hopefully added further knowledge to help improve understanding of the perennial question: 'When and how does it pay to be green?'

The explicitly stated propositions offer several research opportunities. To test my theory, one should first develop and validate a measure for different environmental strategy postures in order to examine the relationships. An idea is to develop a questionnaire where for each question respondents are asked to position their organization on a scale from 1 to 5. Each environmental strategic type is associated (i.e. achieves high values) with a set of questions. Some sample questions are: (1) We constantly search for market opportunities through product and market environmental innovation (environmental prospectors); (2) We operate eco-efficiently while still being environmentally innovative (environmental analyzers); (3) We attempt to maintain the status quo (environmental reactors); (4) We are creators of change (environmental prospectors); and (5) We are creative, but at the same time eco-efficient (environmental analyzers).

I must point out that the theory is limited to organizations from high environmental impact sectors located in countries with an advanced and stable economy. Organizations operating in moderate environmental impact sectors (e.g. consumer goods, information technology, services) might behave differently due to the lower pressure from their stakeholders and less stringent environmental regulation. I am aware that the complexity of organizations prevents universal theories and models from giving a complete representation. In future research, emphasis should be given to the analysis of a larger number of factors and their interrelations. For example, according to the resource-based logic (Barney, 1986), the extent to which an organization's resources and capabilities enable it to develop and implement strategies that lead to a superior organizational performance cannot be evaluated independently of the market context within which an organization is operating

(Barney, 1991). Based on this view, strategies positively impact organizational performance when there is significant uncertainty about the actual future value of resources used to develop and implement a strategy. Similarly, Aragón-Correa and Sharma (2003) suggest that the dimensions of an organization's external environment including state uncertainty, complexity and munificence affect the development of proactive environmental strategies and an organization's ability to profit from such strategies. One phenomenon that characterizes high uncertainty is economic recession. Due to slow industry growth, economic recession demands organizations to become even more attentive to market demand than in times of prosperity. Such conditions force managers to think innovatively and lead their organizations to learn new patterns of behavior by developing capabilities. Russo and Fouts (1997) propose that one way for managers to improve industry growth is to push an industry through what Shrivastava (1995c) calls "eco renewal" by taking proactive environmental initiatives and changing the nature of the competition. Therefore, firms in the conservative stages, specifically those in a bad shape, might also reconsider developing a new business model with environmental dimensions as one of the key components and thus push themselves away from passivity.

2 THE INFLUENCE OF ORGANIZATIONAL LIFE CYCLE ON ENVIRONMENTAL PROACTIVITY AND COMPETITIVE ADVANTAGE: A DYNAMIC CAPABILITIES VIEW

In today's dynamic environment it is extremely important to study the circumstances in which environmental management contributes to firm competitiveness. Relying on the dynamic capabilities view, this study empirically examines relationships between environmental proactivity, organizational life cycle stages, competitive advantage and industry on a sample of 155 Australian firms. The results of a regression analysis show that the construct of the organizational life cycle is significantly related to environmental proactivity. The results also confirm the well-established positive impact of environmental proactivity on competitive advantage. Surprisingly, I found environmental proactivity to be positively related to competitive advantage not only in the innovative stages but also in the conservative ones. My findings reveal the complex nature of environmental proactivity and help better understand the relationship between environmental proactivity and competitive advantage.

Keywords: organizational life cycle, environmental proactivity, dynamic capabilities view, competitive advantage

2.1 Introduction

One of the most popular research questions in environmental management literature is: "When does it pay to be green?" (Berchicci & King, 2007; Albertini, 2013). General guidelines for successful environmental proactivity cannot be applied to all firms. I define environmental proactivity as the voluntary implementation of practices (e.g. planning and organizational practices, operational practices and communicational practices) and initiatives aimed at reducing the impact on the natural environment (González-Benito & González-Benito, 2006). Specifically, Reinhardt (1998) argued that environmental proactivity needs to be closely linked to the circumstances in which it contributes to competitiveness.

Empirical evidence shows that firm behavior can be predicted by means of an organizational life cycle (OLC) (Adizes, 1979; Lester, Parnell & Carraher, 2003; Miller & Friesen, 1984; Quinn & Cameron, 1983). An OLC stage is a multidimensional construct, mostly identified by organizational context and structure (Hanks, 1990). In each stage of the OLC, certain difficulties or transitional problems prevail that result in similar patterns of firm behavior. For example, Jawahar and McLaughlin (2001) found that at any given stage of the OLC certain stakeholders will be more important than others. Madhani (2010) claimed that the OLC stages are the key determinant of compensation strategies and their effectiveness in achieving organizational goals. Smith and his colleagues (1985) were able to link top management priorities to the stages, whereas Quinn and Cameron (1983) established a link between the OLC stages and organizational effectiveness. The OLC

theory has also been recognized as important for future development of the environmental management area (Shrivastava, 1995b).

Firms develop different levels of environmental proactivity. In this context, multiple studies have offered an explanation to understand the level of proactivity in firms and its relationship with firm performance. While some have highlighted characteristics of firms (e.g. firm size, capability for continuous innovation, tendency to maintain a position of leadership), others have placed importance on the attitudes and practices of managers and other employees (e.g. interpretation of environmental issues as threats versus opportunities, expectations of competitive advantages, personal environmental beliefs, attitudes and motivations, information sharing) or referred to characteristics of the environment (e.g. uncertainty, munificence, complexity) (Aragon-Correa, Martín-Tapia & Hurtado-Torres, 2013; González-Benito & González-Benito, 2006; Sharma, 2000; Sharma, Aragón-Correa & Rueda-Manzanares, 2007; Darnall, Henriques & Sadorsky, 2010; Rueda-Manzanares, Aragón-Correa & Sharma, 2008).

Scholars who have empirically investigated whether there are any opportunities and competitive advantages in relation to environmental proactivity have come to conflicting conclusions. For example, Walley and Whitehead (1994) argued that ambitious environmental goals cause real economic costs for a firm and thus reduce profitability. On the contrary, Russo and Fouts (1997) showed that environmental commitment is associated with enhanced profitability. More often, researchers find no statistically significant relationship between environmental and financial progress (Aragón-Correa & Rubio-López, 2007; Čater, Prašnikar & Čater, 2009; González-Benito & González-Benito, 2005). Although financial indicators are the most commonly used for showing firms' success, many studies have confirmed that environmental proactivity can provide firms with unique advantages. This includes cost-reduction (Christmann, 2000; Shrivastava, 1995b), differentiation and first-mover advantages (Porter & van der Linde, 1995), capability for stakeholder integration, improved organizational commitment and learning, capability of continuous innovation, an increase in employee skills (Russo & Fouts, 1997; Sharma &Vredenburg, 1998) etc.

While the existing literature is rich, understanding of the conditions in which firms profit from environmental proactivity is still lacking (e.g. Ambec & Lanoie, 2008; Dixon-Fowler, Slater, Johnson, Ellstrand & Romi, 2013). Therefore, a review of the relevant environmental management literature indicates that future research should continue identifying contingencies that affect the relationship between environmental performance and firm performance (Ambec & Lanoie, 2008; Dixon-Fowler et al., 2013).

Although the importance of the OLC theory has been recognized in many of the related research fields discussed above, its relationship with environmental proactivity has received no attention thus far. As a response, this chapter is largely motivated by the desire to better understand how the OLC, together with industry, affect the environmental

proactivity of firms. Based on the dynamic capabilities (DC) view (Teece, Pisano & Shuen, 1997), my interest specifically focuses on the following research questions: (1) How do firms in different stages of their evolution integrate the environmental dimension into their business models? (2) What is the relationship between environmental proactivity in different stages of the OLC and competitive advantage? The DC view has a strong focus on performance that explicitly recognizes the importance of the organizational as well as external context within which firms develop a viable strategy.

This chapter contributes to the literature in at least three ways. First, I extend the existing empirical literature on environmental management by including the OLC perspective. I recognize the OLC construct as interesting for environmental management because it captures many firm-specific variables (e.g. decision-making, structure, and innovation activity) and thus offers a more holistic view. Although management scholars have often highlighted the importance of the OLC stages (e.g. Jawahar & McLaughlin, 2001; Madhani, 2010; Shrivastava, 1995b), no results showing the specific importance of firm evolution for environmental management have been published. My analysis suggests that the OLC is significantly related to environmental proactivity and that environmental proactivity is positively related to competitive advantage not only in the innovative stages, but also in the conservative ones.

Second, taking the great uncertainty and significant changes occurring in today's business context into account, I recognize the DC view as important for understanding the link between the OLC stages and firms' environmental approach. By presenting environmental proactivity as a capability that enables organizations in the specific stages of the OLC to gain and maintain a competitive advantage, I provide further support for the association between environmental proactivity and dynamic capabilities that is context-dependent.

Third, by grouping cases into sectors with high and moderate environmental impacts I recognize the type of industry as an important determinant of environmental proactivity. Only by nurturing internal competencies within the appropriate external environment, a firm can develop a viable strategy (Russo & Fouts, 1997).

The chapter proceeds as follows: after a brief literature review on environmental proactivity, the DC view and the OLC, I develop hypotheses describing the relationships between stages of the OLC, environmental proactivity, competitive advantage and industry. I then explain the methodology used in the study, and present my results. I conclude by discussing the importance of new insights for theory development and management, presenting the limitations of the study, and providing directions for future research.

2.2 Theoretical foundations and research hypotheses

2.2.1 The dynamic capabilities view and environmental proactivity

The DC (Teece et al., 1997) is a popular theory in the field of strategic management that places importance on the relationship between firms' strategic choices and environmental conditions. Failure to address changes in challenging environments can negatively affect firm performance (Audia, Locke & Smith, 2000).

The DC view is an extension of the resource-based view (RBV) of the firm (Barney 1986, 1991). Barney (1986), one of founders of the RBV, suggests that the capabilities and unique resources possessed by an organization enable it to gain and sustain a superior performance. Resources include physical and financial assets as well as employees' skills and organizational (social) processes, whereas a capability is something an organization is able to perform, which stems from the organization's resources and routines (Karim & Mitchell 2000; Winter 2000). The RBV assumes that firms are heterogeneous with respect to their resources and capabilities and that such heterogeneity may persist over time. For explaining firms' competitive advantage in rapidly changing environments (e.g. Barreto, 2010; Priem & Butler, 2001), Teece and his colleagues proposed the DC framework.

Teece et al. (1997) defined dynamic capabilities as a firm's ability to respond to its external environment by constantly developing new capabilities in creating a competitive advantage. According to the DC view, the competitive advantage of firms lies with its managerial and organizational processes, shaped by firms' specific asset position and the evolutionary paths they have adopted in the past (Barreto, 2010). A particular set of routines can lose its value if the routines support a competence which is no longer interesting for the market (Teece, 1997).

The inability to make sense of ecological cues introduces hidden vulnerability (Whiteman & Cooper, 2011). The natural environment can seriously constrain firms' attempts to create a competitive advantage because it is likely that the strategy and competitive advantage in the coming years will depend on capabilities that facilitate environmentally sustainable economic activity. Therefore, environmental proactivity is considered one of the key dynamic capabilities that is tacit, causally ambiguous, firm-specific, socially complex, path-dependent and may provide a competitive advantage (Aragón-Correa & Sharma, 2003).

The extent to which the environmental proactivity will lead to a competitive advantage will also depend on the firm's external environment (e.g. Aragón-Correa & Sharma, 2003; Hart & Dowell, 2011). Aragón-Correa and Sharma (2003) found that certain features of firms' external environment (uncertainty, complexity and munificence) moderated the link between environmental proactivity and competitive advantage, whereas Banerjee (2002) recognized that firms from highly polluting industries reveal a stronger orientation to

environmental proactivity. Uncertainty is related to managerial perceptions of the general business environment or one of its components as being unpredictable (Dess & Beard, 1984; Milliken, 1987). Flexible legislation, fast changing demands of consumers and society, and uncertainty about future technologies facilitate the strategic choice of innovative approaches to environmental protection (Majumdar & Marcus, 2001; Rueda-Manzanares et al., 2008). Managers will reduce uncertainty by implementing preventive actions instead of reacting to events that have already occurred (Aragón-Correa & Sharma, 2003). Therefore, greater uncertainty is likely to result in a firm's stronger proactivity. Complexity exists when managers perceive a great diversity of factors and issues as relevant (Miller & Friesen, 1983; Smart & Vertinsky, 1984; Tan & Litschert, 1994). Perceived complexity makes it difficult for managers to identify key strategic factors and introduce changes (Amit & Schoemaker, 1993; Aragón-Correa & Sharma, 2003). Therefore, it is argued (Rueda-Manzanares et al., 2008) that in a complex general business environment firms are less likely to make large investments in environmental proactivity. Finally, munificence is the degree to which an environment can sustain a continuous rate of a firm's growth (Dess & Beard, 1984). A munificent environment is characterized by lower taxes, governmental incentives, robust infrastructure, fast growing markets, a general economic upturn, a qualified workforce etc. (DeCarolis & Deeds, 1999). In a munificent environment, firms find more opportunities to develop proactive environmental approach (Aragón-Correa & Sharma, 2003).

Despite the significant advances in this field, more research is required to analyze internal and external contingencies in the study of the value of dynamic capabilities (Barreto, 2010). Specifically, greater efforts should be made to compare the effects of similar dynamic capabilities in clearly distinct environmental conditions (e.g. different industries or in different periods of time) (Winter, 2003; Barreto, 2010). In the current chapter, I recognize the DC view as important for explaining why firms in different stages of their evolution may pursue different levels of environmental proactivity and generate different levels of competitive advantage with a similar response to environmental protection.

2.2.2 Organizational life cycle theory

While the importance of environmental issues is recognized, little is known about how they are integrated into firms' operations during their evolution. The OLC theory is an important contribution to the literature that describes the characteristics of organizations in different stages of their evolution (Miller & Friesen, 1984). Although there are many different models, most researchers describe a similar pattern of organizational development. In the five-stage model that is used in this chapter, firms are predicted to evolve through their birth, growth, maturity, revival and decline stages (Table 4) (Miller & Friesen, 1984). As a result, firms in different stages vary in their organizational structures, innovativeness, proactivity, decision making etc. (Greiner, 1972; Quinn & Cameron, 1983). In the birth stage, a new firm attempts to become a viable entity. Firms are young, owned by their founders, and have simple and informal structures. The growth stage is

characterized by rapid sales growth and the establishment of distinctive competencies. Typically, a functionally-based structure is established, the decision-making style is more decentralized and procedures are formalized. The maturity stage occurs as sales levels stabilize and the level of innovation falls. Firms in this stage seek to protect what they have gained instead of innovating, while top management focuses on planning and strategy; formalization and control become a norm. Firms in the revival stage display a desire to diversify and expand their product-market scope. Their creativity and innovation is sometimes facilitated through the use of a matrix structure, and decision making is considerably decentralized. The revival stage possesses similar elements of structure, formalization and decision making as the growth stage. The decline stage is characterized by a drop in profitability due to external challenges and a lack of innovation; control and decision making tend to become centralized (Lester & Parnell, 2008; Miller & Friesen, 1984; Quinn & Cameron, 1983).

Existing empirical research confirms that the level of environmental proactivity and its relationship with competitive advantage rests not only on a single attribute but on the interrelation and complementarities between multiple characteristics such as managerial attitudes, physical assets, organizational capabilities and intangible resources (González-Benito & González-Benito, 2006). Following this, I argue that firms can reach the same level of environmental proactivity and competitive advantage from 'different paths' (from the idea of equifinality: Katz & Kahn, 1978). In other words, firms from the different OLC stages can be similar in their environmental approach.

The OLC literature shows that firms shift between the highly innovative birth, growth and revival stages, and the more conservative maturity and decline stages (Adizes, 2004; Lester et al., 2003; Miller & Friesen, 1984; Quinn & Cameron, 1983). Although each stage is unique, a combination of the different complementary variables (e.g. situational, structural, decision making) that determine the OLC stages sets the degree of innovativeness and managerial attitudes, that is similar within the two groups, namely an innovative one with firms in the birth, growth and revival stages, and a conservative one with firms in the maturity and decline stages. Based on this, I argue that the level of environmental proactivity and achieved competitive advantage will be very similar within the innovative and conservative groups of stages. Features of the stages are discussed in the following section.

Table 4. Organizational life cycle stage characteristics

	Stage of organizational life cycle				
Characteristics	**Birth**	**Growth**	**Maturity**	**Revival**	**Decline**
Situation	Young, small, homogenous environment	Older, larger, heterogeneous environment	Larger size, competitive and more heterogeneous environment	Very large, heterogeneous, dynamic and competitive environment	Homogenous and competitive environment, internal focus
Structure	Simple, informal	Some formalization, functional	Formal, bureaucratic, functional	Divisional or matrix	Formal, bureaucratic, functional
Decision-making	Centralized, intuitive, substantial risk taking	Somewhat less centralized, more managers involved	Professional management, risk avoidance	Participative, high level of risk-taking	Centralized, conservative, risk avoidance
Innovation and Strategy	Considerable innovation, niche strategy	Cost efficient while maintaining innovative bent	Focus on cost efficiency, consolidation of product-market strategy	Substantial innovation, strategy of product-market diversification	Low-cost, low level of innovation, consolidation of product-market

Source: I. Adizes, Organizational passages: Diagnosing and training life-cycle problems in organizations, 1979, pp. 3–25; D. Lester and J. Parnell, Firm size and environmental scanning pursuits across organizational life cycle stages, 2008, pp. 540–554; D. Miller and P. H. Friesen, A longitudinal study of the corporate life cycle, 1984, pp. 1161–1183; R. Quinn and K. Cameron, Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence, 1983, pp. 33–41.

2.2.3 OLC stages and environmental proactivity

Proactive firms actively seek opportunities, initiate situations and create favorable conditions, which is in contrast to a more reactive pattern of behavior. Proactive behavior occurs in the domain of innovation (Crant, 2000). The present study considers that a firm is innovative if it develops an organizational culture that predisposes employees to innovate and adopt new ideas (Hurley & Hult, 1998). Miller and Friesen (1984) empirically verified that a firm's strong capacity for innovation, determined by its resources and capabilities (Kostopoulos, 2002), is common in the stages of birth, growth and revival, and thus strategies related to the development and implementation of advanced environmental practices are expected to emerge. Innovative behavior and expected higher levels of environmental proactivity in the innovative stages are further supported by the set of organizational characteristics, such as flexible structures, higher degree of risk-taking and lower degree of formalization (Burns & Stalker, 1961).

To increase sales, firms in the innovative stages often enter new markets where the rate of innovation is high and competition is intense so it is more likely that they explore, create and invest in dynamic capabilities. While market expansion in general does not require dynamic capabilities (Winter, 2003), expansion to a novel market, or the creation of entirely new ones, does because the dominant logic that they are accustomed to using is no longer valid. By developing dynamic capabilities for environmental proactivity, a firm might be able to better adapt to changing industry conditions, learn and exploit new opportunities and articulate an innovative response to market demand. Following these arguments, I expect that firms in the innovative stages of the OLC are likely seeking to adopt a proactive approach to environmental protection.

On the other hand, firms in the conservative stages of the OLC, namely the maturity and decline stages, are more reactive in their stance. In these stages, the level of innovation falls, firms become conservative and seek to protect what they have gained (Lester & Parnell, 2008). These firms are expected to be hierarchical, inflexible and bureaucratic (Burns & Stalker, 1961) and managers' decision-making style less innovative, less proactive and more risk-averse than in any other stages (Miller & Friesen, 1984). With such structures and operation, adopting environmentally proactive behavior is complicated as it requires a loosening of organizational structures and norms (Russo & Fouts, 1997).

Moreover, for firms in the conservative stages any changes in the external environment, such as changes in customers' preferences, represent a threat because their adaptation is more difficult. Jawahar and McLaughlin (2001) argued that environmental proactivity involves anticipating and accepting responsibility and can only be implemented when threats have been forecasted. If a threat already exists, then it is too late for proaction and firms can only accommodate and develop reactive strategies to obey the legislation. According to the DC view, firms must interact with their external environment in order to

prevent rigidity and to encourage proactive behavior (Teece, 1997). Therefore, a forward-thinking and action-oriented management style, common to the innovative stages, is an important element for supporting environmentally proactive behavior. On the contrary, firms in the conservative stages put more emphasis on establishing rigid administrative systems, policies, rules and guidelines which slow decision making and reactions to changes in the external environment (Adizes, 2004).

More likely for the conservative stages, environmental compliance only affects physical asset resources which consist of the physical technology, an organization's plant and equipment, its geographical location, and its access to raw materials (Barney, 1991). These physical resources are usually costly, albeit necessary for organizations in order to comply with regulation and avoid liability costs. Compliance is primarily achieved by the addition of pollution-removing devices to the existing assets of an organization and does not require expertise in managing new environmental technologies or processes (Hart & Dowell, 2011).

Hypothesis 1: Firms in the innovative stages of the OLC are more likely to introduce environmentally oriented resources and develop capabilities which lead to a proactive approach to environmental protection being adopted than firms in the conservative stages.

2.2.4 Industry as a moderator

H1 predicts that firms in the innovative stages of the OLC adopt a more proactive approach to environmental protection than firms in the conservative stages. Apart from firm-specific characteristics, resource selection and deployment are also influenced by external factors, including industry. The development of a firm's strategic assets is an integrative process that depends on the firm's strategic choices in relation to industry- and market-determined factors. The applicability of a firm's bundle of resources and capabilities to a particular industry setting will determine the firm's competitive advantage (Kostopoulos, 2002).

Firms from related industries have a similar regulatory framework, media attention, scrutiny from activists, community concerns and changes in consumer behavior (Berrone & Gomez-Mejia, 2009). Banerjee, Iyer & Kashyap, (2003) found that important antecedents to a proactive approach to environmental protection, namely, public concern, regulatory forces and competitive advantage, are all moderated by industry type. They claimed that firms from 'dirty' industries are more environmentally proactive than firms from service sectors due to the more stringent regulations they are faced with, greater liability risks and the effect of public concern. On the other hand, given the relatively high visibility of environmental problems in 'dirty' industries, the effect of competitive advantage is greater in service sectors due to the few regulations there and consequently the many strategic options. Accordingly, these two groups of firms tend to adopt similar

strategies in response to environmental issues (Bansal, 2005; Bansal & Clelland, 2004; Hoffman, 2001).

Similar to Banerjee and colleagues (2003), I grouped firms in high environmental impact sectors (utilities, manufacturing, construction, agriculture, fishing, mining, forestry, transport, postal and chemical) and moderate environmental impact sectors (services, accommodation, communication, wholesale, warehousing and retail). Due to compliance costs that are much bigger for the high environmental impact sectors, greater cost savings could accrue from resource conservation, lower waste generation, crisis prevention and the establishment of new barriers. Therefore, it is more likely that for firms operating in the high environmental impact sectors the relationship proposed in hypothesis 1 will be more positive than for firms operating in the moderate environmental impact sectors.

Hypothesis 2: The relationship between the OLC stages and environmental proactivity is moderated by the level of the industry's environmental impact.

2.2.5 Environmental proactivity and competitive advantage in different OLC stages

Most arguments used to explain competitive advantage and firm performance associated with environmental proactivity are based on the RBV and, more recently, on the DC view. For example, Russo and Fouts (1997) showed that increased return of assets of an environmentally proactive firm is the result of the distinctive resources it possesses: physical assets, technology, human resources, organizational capabilities and intangible resources. Similarly, Sharma and Vredenburg (1998) identified three key capabilities derived from environmental commitment: continuous innovation, organizational learning, and stakeholder integration. A dynamic capability of environmental proactivity requires the integration of these capabilities through the use of organizational and managerial resources (Aragón-Correa & Sharma, 2003; Russo & Fouts, 1997; Sharma, 2000). In accordance with the OLC theory, compared to firms in the conservative stages firms in the innovative stages are more likely to actively seek opportunities to develop these complex capabilities and acquire valuable resources that are supported by the organizational structure, risk-taking propensity and significant employee involvement (Adizes, 2004; Miller & Friesen, 1984). Investments in the development of capabilities for environmental proactivity generate more knowledge-based capital (Ghemawat, 1986), whereas the use of new environmental technologies that require increased skills from workers adds to complexity in an organization's operation creating advantages that are less transparent and difficult to imitate (Groenewegen & Vergragt, 1991).

Further, empirical studies have found that profiting from environmental proactivity is more likely if a firm possesses a strong innovation capability (Ambec & Lanoie, 2008; King & Lenox, 2001), which is common among firms in the innovative stages. As a result, I expect that the environmental proactivity of firms in the innovative stages has a positive impact on various indicators of competitive advantage such as cost savings, relationships with

different stakeholders, growth opportunities and quality improvements. The latter is not limited to developed firms in the later OLC stages. Through their greater social awareness and concern for the natural environment (Noci & Verganti, 1999), simple and less bureaucratic structure (Adizes, 2004; Miller & Friesen, 1984), flexibility in managing external relationships (Aragón-Correa, Hurtado-Torresn, Sharma & García-Morales, 2008), and faster decision speeds (Chen & Hambrick, 1995), many smaller firms in the early OLC stages are poised to innovate in ways that larger firms cannot (Jones & Klassen, 2001). For these reasons, smaller firms may be more efficient innovators, more responsive to stakeholder pressures and more successful in their adoption of proactive environmental behavior than their larger counterparts.

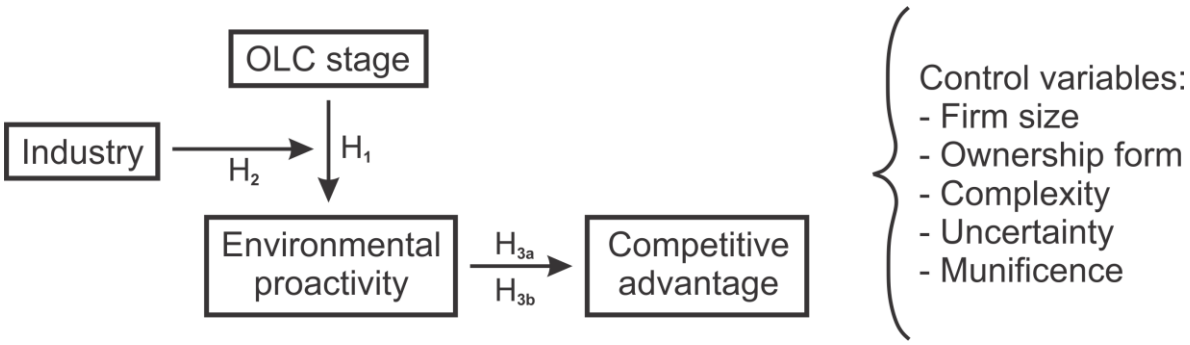
However, empirical findings in the existing literature show that adopting a proactive approach to environmental protection is complex as it requires changes in products, processes and systems (Aragón-Correa & Sharma, 2003), and involves different stakeholders at different levels (Russo & Fouts, 1997) as well as managerial commitment and coordination (Aragón-Correa, 1998). To reduce pollution, firms may need to implement technologies that may fail, or cause quality problems or unforeseen costs (Klassen & Whybark, 1999; Russo & Fouts, 1997). It is also hard to put proactive environmental practices into practice since they require production redesign, new equipment, and cross-functional employee coordination. Moreover, environmental proactivity may increase uncertainty about outcomes (Aragón-Correa & Sharma, 2003). With the structures and operation of firms in the conservative stages, adopting proactive behavior is complicated and unpredictable and requires changes in organizational structures and norms (Russo & Fouts, 1997). Therefore, I argue that environmental proactivity is negatively related to competitive advantage for firms in the conservative stages. These firms are likely to perform better when they are focusing on their existing core competencies, cost control and efficiency.

Hypothesis 3a: Environmental proactivity is positively related to competitive advantage in the innovative stages of the OLC.

Hypothesis 3b: Environmental proactivity is negatively related to competitive advantage in the conservative stages of the OLC.

The research hypotheses that will be tested in this study are illustrated in my research model in Figure 2.

Figure 2. Research model



2.3 Methodology

To test my hypotheses I conducted a cross-sectional on-line survey among Australian firms. The Australian economy, comparatively unaffected by the latest global financial crisis, remains among the most robust in the OECD with solid growth prospects and low unemployment. The country was selected on the basis of the Australian economy's development and stability.

Prior to the survey, I conducted 10 interviews with managers from different industries to ensure the relevance of the concepts, and that the phrasing of the items and meaning of the concepts were equally understood.

My population consisted of 1,736 randomly selected firms in the FrescoData database. This database provides detailed contact data and a directory of each firm's primary managers. Within the field phase of two months, namely November and December 2012, the questionnaire was emailed mostly to senior executives (the Chairman or CEO), who were considered to have a holistic understanding of their firms' strategies and performance, or environmental managers. The cover letter, sent to senior executives (Chairman or CEO) indicated that participation was voluntary and that confidentiality was guaranteed. After three rounds of reminder e-mails, the study had received 196 responses (11.3%), of which 155 responses were correctly completed and considered valid. There were no significant differences between the early and late respondents.

The data were collected from firms with different numbers of employees, revenues, ownership forms and from different industries. Thus, the sample contains a wide range of firms. Regarding the size of the firms, I examined the number of employees: 41% of the firms employ 1-49 employees, 23% have 50-249 employees, 24% have 250-2499 employees and 12% have 2,500 or more employees. The structure of the respondent firms in revenue terms is as follows: 17% of the firms reported revenues of below AUD 1 million; 43% reported revenues of between AUD 1 million and AUD 40 million; 30% between AUD 40 million and AUD 1 billion and 10% AUD 1 billion or more. The

final industry distribution is: services (51%), agriculture, fishing, mining and forestry (13%), manufacturing (10%), construction (8%), transport, postal, warehousing and communication (6%), utilities (5%), and other (7%). Regarding the ownership forms, 69% of the firms are privately held and 31% are publicly traded and others.

Because all data are self-reported and collected through the same questionnaire during the same period of time with a cross-sectional research design, common method bias could have augmented the relationships between the variables. Harman's one-factor test was conducted to test the presence of common method bias. If a substantial amount of common method bias is present, one general factor will account for the majority of the covariance among the variables (Podsakoff & Organ, 1986). The test performed on the items environmental proactivity and competitive advantage indicated no general factor that would account for most of the covariance in the dependent and independent variables.

As suggested by Podsakoff, MacKenzie, Lee and Podsakoff (2003), I attempted to reduce the presence of common method bias by also assuring that the respondents' answers would be anonymous, by asking the respondents to answer questions as honestly as possible and, finally, by not revealing the conceptual framework of the study and mixing the constructs in a way that reduced the possibility of the respondents guessing how the researchers wanted them to respond.

2.4 Measures

2.4.1 Environmental proactivity

The environmental proactivity scale (González-Benito & González-Benito, 2005) used in the current study reflects the degree of implementation of each environmental management practice. The scale (28 items) measures four groups of environmental practices: planning and organizational practices, operational practices: product- and process-related, and communicational practices. Each manager was asked to score the degree of implementation of each practice according to a 5-point Likert scale (1 "Not at all; only what the regulation requires" – 5 "To a great extent; it has been a priority for our firm"). The multi-industry sample used in this study involved problems with the applicability of the environmental practices in different sectors. To overcome this issue, I provided an additional "not applicable" option for product- and process-related environmental practices ($\alpha = .97$).

2.4.2 OLC stages

The OLC scale included five descriptions for each of the five OLC stages (see Appendix A for details). The descriptions contained characteristics from the existing literature (Miller & Friesen, 1983; Quinn & Cameron, 1983) that appeared to be indicators of the OLC stages: decision making, structure, situation, level of innovation, and sales growth. A respondent's firm was categorized in one of the OLC stages based on a description of the

situation that best fits the firm. Following this approach, 34 firms are in stage 1, 24 in stage 2, 35 in stage 3, 43 in stage 4 and 19 in stage 5. This approach of classifying was employed after I found the scale of Lester et al. (2003) to be inappropriate for the current study due to the unacceptable coefficient alphas (< .7), low communality values (< .4) and cross-loading of items on factors (Hair and Anderson 2010). For the purpose of testing the hypotheses, the firms were further classified in the innovative (101) and conservative stages (54).

I conducted an additional analysis using "firm total sales growth" as a proxy for OLC stages to provide further support for the results. The variable was selected on the basis of the existing literature that recognizes sales growth as one of the determinants of the OLC stages (e.g. Adizes, 2004; Lester et al., 2003; Miller & Friesen, 1984). As expected, I found a strong correlation between the conservative/innovative stages and sales growth ($p < .01$).

2.4.3 Industry type

The firms were grouped into the high (utilities, manufacturing, construction, agriculture, fishing, mining, forestry, transport, postal, chemical) and moderate (services, accommodation, communication, wholesale, warehousing, retail) environmental impact sectors based on the firms' effect on the environment. Following the classification of Banerjee et al. (2003), 37% of the firms in the sample operate in high environmental impact sectors and 63% operate in moderate environmental impact sectors.

2.4.4 Competitive advantage

To measure this construct, I applied Banerjee's et al. (2003) scale focused on measuring managerial perceptions (5-point Likert scale) of cost savings, growth opportunities, opportunities in new markets and quality improvement in relation to environmental proactivity (see Appendix A for details). In addition, I introduced questions asking about reputation, employee commitment and relationships with suppliers ($\alpha = .90$).

2.4.5 Control variables

This study included five control variables that may influence the proposed relationships: firm size, ownership form, and three characteristics of the general business environment: uncertainty, complexity and munificence. I controlled for the size of the firms since larger firms are more likely to have resources available for developing and implementing environmental management practices (Aragón-Correa, 1998). An ownership dummy variable was used to distinguish between privately held and publicly traded firms. Publicly traded firms are likely to have a wider scale and a more sophisticated application of environmental management practices as stakeholder pressures become increasingly multifaceted, with higher expectations for publicly traded firms from the point of view of sustainable operation. Finally, I used a six-item scale (Tan & Litschert, 1994) to measure

the managers' perceptions of uncertainty, complexity and munificence. Items were measured on a 5-point Likert scale (1 "Strongly disagree" – 5 "Strongly agree"). An exploratory factor analysis revealed that five items, consistent with the existing literature (Rueda-Manzanares et al., 2008; Tan & Litschert, 1994), show the existence of three factors of the general business environment: uncertainty, complexity and munificence (Table 5).

2.5 Analysis and results

To analyze the hypothesized relationships 1 and 2 I applied moderated hierarchical regression analyzes (Cohen & Cohen, 1983), with a moderator effect introduced as a two-way interaction term in the final step. Interaction was computed by multiplying the independent variable of OLC and industry. To test hypothesis 3 I applied hierarchical regression analysis. Table 6 displays correlations among all the variables. The results show that environmental proactivity has a significant positive correlation with firm size, OLC stages, industry, competitive advantage and munificence, and significant negative correlation with uncertainty. Competitive advantage has a significant positive correlation with firm size, munificence and environmental proactivity, and significant negative correlation with uncertainty. Prior to the analysis, I calculated variance inflation factors (VIF) to test for multicollinearity. VIF values were well below the widely accepted cut-off of 10 (Hair & Anderson, 2010).

Table 5. Principal component analysis of the general business environment

Item	**Factor 1** Uncertainty	**Factor 2** Complexity	**Factor 3** Munificence
V2: The changes in our business environmental are easily predictable (REV)	.96		
V3: The changes in our business environment depend on many factors		.91	
V4: The factors affecting our business environment are very varied		.88	
V5: The changes in our business environment have been very positive for our firm			.81
V6: The changes in our business environment make a positive performance very difficult for our firm (REV)			.90
% of variance explained	21.82	32.85	29.66
Cronbach's α	/	.76	.66

Note. * Total variance explained: 84.33%. Varimax orthogonal rotation.

Table 6. Correlation matrix

Variables	1	2	3	4	5	6	7	8	9
1 Firm size	1								
2 Ownership form	.24**	1							
3 OLC	−.10	−.18*	1						
4 Industry	−.13	0.7	−.00	1					
5 Uncertainty	−0.5	.09	−.02	.05	1				
6 Complexity	−.05	.04	.12	.03	.24**	1			
7 Munificence	.16*	−.05	.07	−.12	−.19*	.01	1		
8 Environmental proactivity	.28**	.07	.20*	.18*	−.19*	.06	.21**	1	
9 Competitive advantage	.21**	.12	.12	−.01	−.20*	.11	.31**	.58**	1

Note. * The number of observations is 155. * $p < 0.05$; ** $p < 0.01$ (2-tailed). Categorical variables coded: OLC stage: 0 = conservative stages (54), 1 = innovative stages (101); Organizational characteristics total sample: firm size: 0 = less than 1,000 employees (123), 1 = 1,000 employees and more (32); Ownership form: 0 = privately held (107), 1 = publicly traded and others (48), Industry: 0 = Moderate environmental impact sectors (98), 1 = High environmental impact sectors (57).

In the first step of the analysis, I tested three models to investigate hypotheses 1 and 2. Hypothesis 1 states that firms in the innovative stages of the OLC adopt a more proactive approach to environmental protection than firms in the conservative stages. The results are displayed in

Table 7. In model 1, the results show that firm size, uncertainty, munificence and industry, all control variables, have a significant effect on environmental proactivity, while ownership form and complexity do not seem to be important in our sample. In model 2, I added the OLC dummy (0 = conservative stages, 1 = innovative stages). The statistical contribution of this variable is highly significant ($\beta = .47$, $p < .01$), hence supporting hypothesis 1. In the final step of the regression analysis, I examined the moderation effect of the industry on the (positive) relationship between the OLC stages and environmental proactivity (hypothesis 2). The findings show that the effect of the moderating variable is negative and insignificant (model 3). Therefore, hypothesis 2 is not supported.

Table 7. Hierarchical regression results (DV = Environmental proactivity)

	Model 1	**Model 2**	**Model 3**
Constant	1.96**	1.84**	1.78**
Firm size	.73**	.76**	.78**
Ownership form	.00	.08	.09
Uncertainty	−.24*	−.23*	−.25*
Complexity	.20	.15	.17
Munificence	.22*	.21**	.19†
Industry	.53**	.52**	.83**
OLC		.47**	.64**
OLC * Industry			−.47
R^2	.20	.24	.26
$R^2_{Adj.}$	.17	.21	.21
F	6.17**	6.75**	6.20**

Note. * The number of observations is 155. † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$ (2-tailed).

To test hypotheses 3a and 3b, concerning the relationship between environmental proactivity and competitive advantage in the different stages of the OLC, I also computed a hierarchical regression analysis which is presented in Table 8. In the analysis I performed I first entered the control variables (models 4a, 4b and 4c), firm size, ownership form, uncertainty, complexity, munificence, industry and OLC stage. In the second step (models 5a, 5b and 5c), I introduced the main effect of environmental proactivity. Within the total sample environmental proactivity is positively related to competitive advantage. Consistent with hypothesis 3a, I also found a positive relationship in the innovative stages ($\beta = .41$, $p < .01$). For hypothesis 3b, which proposes a negative impact of environmental proactivity on competitive advantage in the conservative stages of the OLC, I found a positive and significant relationship ($\beta = .16$, $p < .05$). Therefore, hypothesis 3b is not supported. However, the results show that the relationship between environmental proactivity and competitive advantage is stronger for firms in the innovative stages.

Table 8. Hierarchical regression results (DV = Competitive advantage)

	Total sample		Innovative stages		Conservative stages	
	Model 4a	**Model 5a**	**Model 4b**	**Model 5b**	**Model 4c**	**Model 5c**
Constant	2.52**	1.89**	2.63**	1.48**	2.75**	2.65**
Firm size	.27*	.00	.07	-.20	.62**	.46*
Ownership form	.19	.16	.17	.12	.22	.23
Uncertainty	−.16*	−.08	−.12	−.02	−.32**	−.27**
Complexity	.16†	.11	.13	.08	.29*	.24*
Munificence	.24**	.16**	.28**	.24**	.11	.04
Industry	.06	−.13	−.04	−.17	.34*	.20
OLC	.17	.01				
Environmental proactivity		.35**		.41**		.16*
$\mathbf{R^2}$	.20	.40	.15	.46	.44	.47
$\mathbf{R^2_{Adj.}}$	.16	.37	.09	.42	.36	.39
F	5.12**	12.18**	2.71*	11.41**	6.04**	5.90**

Note. * The number of observations is 155 (conservative stages: 54; innovative stages: 101). † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$ (2-tailed).

2.6 Discussion and theoretical contribution

In the environmental management literature, scholars recognize the role of a firm's resources and capabilities in its development of a proactive environmental approach. This includes the attitudes, skills and practices of managers (e.g. Sharma, 2000), as well as complex environmental capabilities for continuous innovation and stakeholder integration (Russo & Fouts, 1997; Sharma & Vredenburg, 1998). I argue that the extent to which these resources and capabilities will actually lead to the development of environmental proactivity as a dynamic capability will be contingent upon the OLC stage a firm is in. Therefore, firms with similar characteristics (capabilities, degree of innovativeness, proactivity and managerial attitudes) are likely to have a similar environmental approach. In my explanations, I have built on the DC view (Teece et al., 1997) examining the influence of the OLC stages on environmental proactivity.

The most important finding of this study is that the OLC is an important determinant of environmental proactivity. Firms falling into the innovative stages attribute greater importance to environmental issues than firms in the conservative stages. In other words, the level of environmental proactivity depends heavily on a firm's specific characteristics reflected in the OLC stage. My OLC variable included characteristics that appeared to be indicators of the OLC stages (Miller & Friesen, 1984; Quinn & Cameron, 1983): decision making, structure, situation, level of innovation, and sales growth. i argue that firms in the innovative stages achieve higher levels of environmental proactivity due to a set of organizational characteristics such as flexible structures, a higher degree of risk-taking and innovation, and a lower degree of formalization that support proactive behavior. Therefore, prescriptions about which environmental strategies to pursue should be contingent upon the OLC stage firms are in.

I propose that the multidimensionality of the OLC scale is important for untangling the complex relationship between environmental performance and firm success. Differences in firms' behavior and success can be understood from the distinctive resources and capabilities firms possess. Cross-functional management, continuous innovation and organizational learning, which are examples of organizational capabilities common for firms in the innovative stages of the OLC, are separately found to be antecedents of environmental proactivity (e.g. Bansal, 2005; Sharma & Vredenburg, 1998).

However, I found environmental proactivity to be positively related to competitive advantage not only in the innovative stages but also in the conservative ones. A possible explanation is that firms in the conservative stages implement affordable and already established proactive environmental practices. These practices leave a firm essentially in the same resource and capability situation as it was before it adopted them. In this way, firms avoid negative effects of environmental proactivity commonly related to

environmental innovation. More detailed investigations of environmentally proactive firms from the conservative stages are needed to understand this finding.

In addition to simply processing unique resources and developing dynamic capabilities, a firm needs to take the influence of the external business environment into consideration (Priem & Butler, 2001). Therefore, attention has to be also paid to industry (Banerjee, 2002) and the dimensions of the general business environment (e.g. uncertainty, complexity, munificence) (Aragón-Correa & Sharma, 2003). My study contributes to the literature by offering a systemic perspective on the impact of the external general business environment on the value of resources and capabilities in the different OLC stages.

By grouping cases in the high and moderate environmental impact sectors I recognized the type of industry to be an important determinant of environmental proactivity. I could not confirm the moderating effect of the industry variable on any of the two relationships I examined although, consistent with Banerjee's (2002) study, I found industry to have a main effect in the level of environmental proactivity. Factors like stricter legislation and public concern for the environment might explain a higher level of environmental proactivity in the high environmentally impact sectors.

Moreover, I could confirm the relationship between munificence and environmental proactivity as well as between munificence and competitive advantage. Inconsistent with the previous literature (Rueda-Manzanares et al. 2008), I found that environmental uncertainty decreases the level of environmental proactivity and competitive advantage. High environmental uncertainty may lead firms to adopt structures that seek to reduce uncertainty, and hence maintaining the status quo represents a rational response. I also found that firms from the conservative stages of the OLC are more sensitive to the characteristics of the general business environment (complexity and uncertainty). It seems that a complex environment encourages such firms to exploit and utilize their resources and capabilities to help them survive.

This study makes a contribution by integrating the OLC literature (Adizes, 1979; Lester et al., 2003; Miller & Friesen, 1984; Quinn & Cameron, 1983) with the DC view (Teece et al., 1997) and the environmental management literature (e.g. Aragón-Correa & Sharma, 2003; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). The integration of the dynamic capabilities and the OLC literature helps me avoid the criticism of the RBV view as being static and as such inadequate to explain firms' competitive advantage in changing environments (Barreto, 2010; Priem & Butler, 2001). I argue that the OLC stage a firm is in influences its environmental proactive orientation and its relationship with competitive advantage. I also recognize that the external environment plays an important role in this story.

2.7 Recommendations for business and public policy managers

The strong influence of the OLC theory on environmental proactivity provides interesting and novel findings for management. My theory can be a useful tool for effective environmental management in several ways. First, the theory can help managers become more fully aware of when to pursue proactive environmental initiatives. Adopting a proactive approach to environmental protection is complex since it requires a loosening of organizational structures and norms (Russo & Fouts, 1997), changes in doing business as usual (Aragón-Correa & Sharma, 2003), involves different stakeholders (Russo & Fouts, 1997), and managerial commitment and coordination (Aragón-Correa, 1998). Therefore, managers should think about the stage of their firm's development and adapt their strategies as they move through the different stages; otherwise, they may inhibit the further development of their firms. Here, further research is needed to determine specific environmental strategies that are beneficial for firms in different stages of the OLC.

Second, my study offers a novel discovery: Environmental proactivity is positively related to competitive advantage not only in the innovative stages of the OLC but also in the conservative ones. Firms in the conservative stages, specifically those in a bad shape, might reconsider developing a new business model with environmental dimensions as one of the key components and thus push themselves away from passivity. I believe that with the right set of environmental strategies firms can improve their position in the market by reducing costs, improving the relationship with stakeholders, improving their organizational commitment and learning, and offering high quality products and services.

As a result, if a firm wants to be environmentally proactive it may want to hire environmental managers to develop and implement appropriate strategies. Success not only requires the commitment of financial resources, but may also require a firm to change some of its most important characteristics, such as management style or organizational structure. A firm may also wish to offer rewards to employees who undertake environmental practices and behave in a manner beneficial to the firm. Therefore, the theory can help firms exploit their situation, resources and capabilities more efficiently and reduce the ambiguity related to environmental proactivity and its complex nature.

Any efforts to move firms toward being environmentally proactive should be supported through the significant role of public policy makers. First, regulators must modify and support conditions that stimulate environmental proactivity. In addition to binding legislative acts, they may also include different voluntary policies and programs, such as subsidies, taxes, grants and joint research programs, which reward environmentally friendly efforts that will eventually displace less efficient firms' operation. Second, it is also important to make the environmental impacts of firms more transparent by improving the availability of information in existing and/or new registers (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013). In addition, especially in the moderate environmental impact sectors where there are only a few regulations more mechanisms should be offered through

which firms could communicate their environmentally friendly actions. Finally, regulators may sponsor non-governmental organizations to put public pressure on firms. These might include independent consumer magazines that promote environmentally friendly products and services by providing access to comprehensive, objective product testing results.

2.8 Limitations and future research

My study has several limitations that could provide avenues for future research. First, the variables are measured based on managerial perceptions and consequently have a certain degree of subjectivity. Social desirability in reporting a firm's environmental practices may be a potential bias, despite the assurance of anonymity given to the respondents. Therefore, environmental investments made by firms and environmental performance measures need to be included in further studies. The second limitation is the small sample size which might be due to the low level of priority firms place on environmental issues. A small sample size affects the generalizability of results and, consequently, my findings might not be generalizable to other developed and emerging economies. The third limitation is my measure of the OLC which was derived from the existing empirical literature (Miller & Friesen, 1984; Quinn & Cameron, 1983) and applied after I found the scale of Lester et al. (2003) to be inappropriate. Herein lies the need to find a reliable and consistent OLC scale that would enable each of the five OLC stages to be examined separately. Further, I acknowledge that other factors from a firm's external and internal environment, such as the general business environment or stakeholders' pressure, may also influence the examined relationships.

Future research might explore the proposed relationships by adding new variables (e.g. product life cycle, general business environment as a moderator of the relationship between the OLC stages and environmental proactivity). Next, this study used the DC view to build up the research model. Future research could apply an institutional theory or incorporate both the DC view and institutional theories. Although the multivariate analysis allowed me to build the relationships, in the future different methodologies such as qualitative comparative analysis might be used to examine the proposed relationships. Another important and interesting research avenue would be to examine the changes in environmental proactivity over time. Here, an investigation of firms' development and operations over their OLC would be able to capture whether and when these firms changed the level of environmental proactivity and how these changes affected their firm performance.

2.9 Conclusion

In summary, this study emphasizes the importance of the OLC stages in generating the dynamic capability of environmental proactivity and in generating competitive advantage with such a capability. The findings of the study showed that the construct of the OLC, composed of innovation, structure, situation and decision making, is positively and

significantly related to environmental proactivity. In addition, my results showed that environmental proactivity is positively related to competitive advantage in the innovative stages of the OLC and, inconsistent with our hypothesis H3b, also in the conservative stages of the OLC.

3 ENVIRONMENTAL PROACTIVITY AND FIRM PERFORMANCE: A FUZZY-SET ANALYSIS

This study explores causal complexity in the relationship between environmental proactivity and firm performance. Using data collected from 27 Australian firms and controlling for the organizational life cycle, type of industry and external contingencies (complexity, uncertainty and munificence), I empirically examined environmental proactivity in high-performing firms from polluting industries. The data were analyzed using fuzzy set qualitative comparative analysis. In general, the results of the analysis imply that (1) environmental proactivity is not always associated with high firm performance, and (2) environmental proactivity is not equally important as the other causal conditions for high-performing firms in highly polluting industries. The study is valuable because it contains a rich set of measures of the firm's external and internal environment, thus allowing us to examine the point of interest more holistically. Based on my findings, firms from highly polluting industries can determine in which circumstances, if any, the adoption of environmental proactivity will result in a positive firm performance.

Keywords: environmental proactivity, firm performance, fuzzy-set analysis, polluting industries

3.1 Introduction

One of the most enduring questions addressed in the environmental management literature concerns the nature of the relationship between environmental and firm performance (Berchicci & King, 2007). Despite the great interest in the topic, the conflicting findings indicate that researchers are still unable to disentangle the causes of variations in the relationship between environmental and firm performance, with the result that the theory remains incompletely specified and inconclusive (Ambec & Lanoie, 2008; Dixon-Fowler, Slater, Johnson, Ellstrand & Romi, 2013).

Cause-effect relationships are the focus of the organizational design and management literature. The challenge is to find out what really matters in the creation of the effect (Fiss, 2011). Due to complexity in the external and internal environment, the relationship between environmental and firm performance rests not only on a single attribute but on the interrelation and complementarities between multiple characteristics such as firm features (e.g. firm size, managerial attitude and strategic attitude), stakeholder pressure and external factors (e.g. industrial sector and geographical location) (González-Benito & González-Benito, 2006). Yet, the vast majority of literature only examines a small number of conditions in the relationship because each additional condition adds to the complexity of the analysis and interpretation of the results. In this way, the complexity of the empirical world is greatly reduced, leading to significant generalizations that usually result in the emergence of conflicting findings, such as in the case of investigating the impact of environmental proactivity, typical of firms that take initiatives to reduce their impact on the

natural environment, on firm performance (e.g. Russo & Fouts, 1997; Walley & Whitehead, 1994).

Inferences from empirical observations of the relationship are only correct if all important factors that influence the relationship are identified and incorporated in the empirical model. The challenge to ascertain what really matters in the relationship between environmental and firm performance still remains (King & Lenox, 2001). In response, this study examines the influence of a firm's specific characteristics, industry environment and level of environmental proactivity on its performance. I am mainly interested in whether environmental proactivity really leads to a better firm performance or whether the observed relationship is actually the outcome of specific internal and external characteristics of the firm.

Methodologically, the study differs from previous research in its use of fuzzy-set qualitative comparative analysis (fsQCA). This method is based on the idea of equifinality, i.e. "a system can reach the same final state from different paths" (Katz & Kahn, 1978, p. 30), and as such enables a more detailed insight into the causal relationships among configurations or combination of features (Ragin, 2000). Based on the fsQCA, this study analyzes the impact of environmental proactivity combined with external contingencies (uncertainty, complexity and munificence) and organizational life cycle (OLC) stage on firm performance. The key question is not about independent effects, but how these causal conditions or features combine together and what is their outcome. The causal conditions (hereafter conditions) were selected on the basis of previous research that confirmed their influence on environmental and firm performance (e.g. Shrivastava, 1995b, Aragón-Correa & Sharma, 2003).

The current study is important for several reasons. First, it addresses the relationship between environmental and firm performance more holistically by including a number of the firm's external and internal factors identified as important in past research. Second, it offers a new perspective on the relationship with its systematic comparative analysis of complex cases. Next, it identifies different combinations of conditions (paths) leading to a high firm performance and, finally, the core-complementary model allowed me to explore which factors are essential and which are less important or even irrelevant to high-performing firms. In addition, I replicated the analysis to identify the combinations of conditions associated with average and low firm performances. Due to its unique features, I regard the fsQCA method as being very promising for exploring the conditions in which it pays to be green or, put more specifically, to answer the following research question: "Which combinations of OLC stages, environmental proactivity and external contingencies (uncertainty, complexity and munificence) are likely to improve firm performance?"

I begin by briefly reviewing the literature on a set of conditions, namely environmental proactivity, the OLC theory, and characteristics of the general business environment. I then present the basic idea of fsQCA and describe the research design and data. The results of

the analysis are discussed in the following section. I conclude by summarizing the results, considering the importance of the new insights for theory development and practice, and providing directions for future research.

3.2 Theoretical framework

Given that the main objective of the study is to explore paths leading to high firm performance, the study focuses on the following set of conditions: environmental proactivity, OLC stages, and the general business environment (uncertainty, complexity and munificence). While researchers chiefly study these fields separately, limited research to date has examined the intersection between them. In this section, I provide a brief literature review related to the area under consideration.

3.2.1 Environmental proactivity

Environmental issues are gaining ever more importance in organizational strategy formulation and the strategic decision-making process. Because environmental issues can affect a broad range of organizational activities including production, marketing, distribution, and human resources, integrating them must be supported by a strategic focus.

Environmental management literature has developed several environmental strategy typologies firms adopt to deal with environmental issues (e.g. Hunt & Auster, 1990; Roome, 1992; Sadgrove, 1992; Su Yol & Seung-Kyu, 2007). These studies usually distinguish between two extreme positions: environmental proactivity and environmental reactivity. Firms are reactive by simply complying with existing regulations or they can follow proactive strategies through environmental initiatives. Researchers have come to different conclusions when widely investigating whether opportunities and competitive advantages in relation to environmental proactivity exist. For example, Walley and Whitehead (1994) argued that ambitious environmental goals create costs for the organization and thus reduce profitability. On the contrary, Russo and Fouts (1997) showed that environmental proactivity is associated with enhanced profitability. Yet researchers more often find no statistically significant relationship between environmental and financial progress (Aragón-Correa & Rubio-López, 2007; González-Benito & González-Benito, 2005). Although financial indicators are very popular for measuring firm performance, more recently interest has also been shown in other indicators of firm performance. Many studies confirm that environmental proactivity can provide firms with unique advantages. This includes cost reduction (Christmann, 2000; Shrivastava, 1995b), differentiation and first-mover advantage (Porter & van der Linde, 1995), capability for stakeholder integration, improved organizational commitment and learning, capability of continuous innovation, an increase in employee skills (Russo & Fouts, 1997; Sharma & Vredenburg, 1998), etc.

While the existing literature on environmental proactivity and competitive advantage is rich, understanding of the conditions in which firms profit from environmental proactivity is still lacking (e.g. Ambec & Lanoie 2008; Dixon-Fowler et al., 2013). The methodological and conceptual shortcomings, such as a failure to control for numerous predictors of firm performance, may be responsible for the conflicting results (González-Benito & González-Benito, 2005). It is therefore important to identify the conditions influencing the relationship and take them into account when performing the analysis.

3.2.2 Organizational life cycle

Based on the biological science phenomena of birth, growth, maturity, and death, several organizational researchers (e.g. Adizes, 2004; Greiner, 1972; Lyden, 1975) attempted to legitimize the concept of the OLC. They agreed that organizational development is quite structured and each stage is unique (Adizes, 2004; Lester, Parnell & Carraher, 2003; Miller & Friesen, 1984). As organizations pass through the OLC stages their strategies, structures, and activities correspond to their stage of development (Ciavarella, 2001). Although there are many different OLC models, it is the three- (Schmitt & Stults, 1985), four- (Kazanjian, 1988) and five-stage models of the OLC (Hanks, 1990; Lester et al., 2003; Miller & Friesen, 1984) that have the strongest empirical support. For example, in the five-stage model organizations are predicted to evolve through the birth, growth, maturity, revival, and decline stages (Miller & Friesen, 1984). In the birth stage, a new organization is attempting to become a viable entity. Organizations are young, owned by their founders, and have simple and informal structures. The growth stage is characterized by a rapid increase in sales and the establishment of distinctive competencies. Typically, a functionally based structure is established, the decision-making style is more decentralized and procedures are formalized. The maturity stage occurs as sales levels stabilize and the level of innovation falls. Organizations in this stage seek to protect what they have gained instead of innovating, and top management focuses on planning and strategy; formalization and control become a norm. Organizations in the revival stage display a desire to diversify and expand their product market scope. Their creativity and innovation are sometimes facilitated through use of a matrix structure, and decision-making is considerably decentralized. The revival stage includes similar elements of structure, formalization, and decision-making to the growth stage. The decline stage is characterized by a drop in profitability due to the external challenges and lack of innovation; control and decision-making tend to become centralized (Lester & Parnell, 2008; Miller & Friesen, 1984; Quinn & Cameron, 1983). Although each stage is unique, a combination of different complementary variables (e.g. situational, structural, decision-making) that determine the OLC stages establishes the degree of innovativeness and proactivity as similar within two groups of stages, namely the highly innovative birth, growth and revival stages, and the more conservative maturity and decline stages (Adizes, 2004; Lester et al., 2003; Miller & Friesen, 1984; Quinn & Cameron, 1983).

3.2.3 External contingencies: Uncertainty, complexity and munificence

Empirical examination of external contingencies in the environmental management literature is limited. Studies on the influence of exogenous factors on the implementation of environmental strategies mostly recognize that complexity and uncertainty have an important impact on the effectiveness of developed capabilities. For example, Aragón-Correa and Sharma (2003) proposed a theoretical framework in which they discussed how characteristics of the general business environmental moderated the deployment of organizational capabilities for the development of environmental strategies, whereas Rueda-Manzanares, Aragón-Correa and Sharma (2008) studied how complexity, uncertainty and munificence moderated the relationship between stakeholders' integration and a proactive environmental strategy.

The first measure, uncertainty, is related to managerial perceptions of the general business environment or one of its components as unpredictable (Dess & Beard, 1984; Milliken, 1987). Some researchers argue that flexible legislation, the fast changing demands of consumers and society, along with uncertainty about future technologies facilitate the strategic choice of innovative approaches to environmental protection (Majumdar & Marcus, 2001; Rueda-Manzanares et al., 2008). Therefore, managers are likely to reduce the uncertainty by implementing preventive actions instead of reacting to events that have already occurred (Aragón-Correa & Sharma, 2003). In contrast, other researchers claim that high environmental uncertainty may lead firms to adopt structures that seek to reduce uncertainty, and hence maintaining the status quo represents a rational response (e.g. Clampitt, Williams & Korenak, 2000).

Environmental complexity encompasses variations in customer tastes, the proliferation of stakeholders and their concerns, and fast-changing regulations that require different marketing, production and administration processes (Miller & Friesen, 1983; Rueda-Manzanares et al., 2008). The greater the number and differences among these factors, the more complex the external environment. The perceived complexity makes it difficult for managers to identify key strategic factors and introduce changes (Amit & Schoemaker, 1993; Aragón-Correa & Sharma, 2003). Some authors (Rueda-Manzanares et al., 2008) therefore claim that in a complex general business environment firms are less likely to make large investments in proactive environmental strategies. Moreover, due to conflicts between the interests of stakeholders in a complex environmental context, the stakeholders' influence is likely to inhibit the development and deployment of capabilities for implementing proactive environmental strategies (Rueda-Manzanares et al., 2008). On the contrary, some argue that firms operating in complex environments may attempt to exploit and utilize their unique resources and capabilities in order to survive (e.g. Ussahawanitchakit, 2008).

Munificence, the last measure, is the degree to which an environment can sustain a continuous rate of the firm's growth (Dess & Beard, 1984). A munificent environment is

characterized by lower taxes, governmental incentives, a robust infrastructure, fast-growing markets, a general economic upturn, a qualified workforce, etc. (DeCarolis & Deeds, 1999). In a munificent environment, firms find more opportunities to implement proactive environmental strategies (Aragón-Correa & Sharma, 2003).

3.3 Methodology

The finding that environmental proactivity has a positive (or negative) net effect on firm performance does not help us understand in which contexts this occurs and in combination with which additional factors. Therefore, rather than estimating the relative importance of different conditions across all cases, it is better to examine which make sense for which kinds of firms to produce a desired outcome (Fiss, 2007). Accordingly, in order to explore how the conditions contribute to the outcome in question, the current study employs a set-theoretic approach based on a fuzzy-set QCA (fsQCA).

3.3.1 Fuzzy-set qualitative comparative analysis

Firms are complex systems due to the multiplicity of interrelated processes which are independent and retroactively associated (Morin, 2006) that operate in an environment composed of multiple interacting factors. The limitation of conventional statistical methods for holistically examining the complex relationships among attributes of the firm and its external environment for the occurrence of a superior or inferior firm performance suggests that new methods should be used (McGahan & Porter, 2002). The fsQCA allows for the investigation of complex causation, defined as a situation in which an outcome of interest is a product of different combinations of conditions. The key issue is not which condition is the strongest, but how these conditions combine and how many different paths are capable of producing the same result. To examine combinations of conditions with conventional correlational methods, it is necessary to use multiplicative interaction terms that are often difficult to interpret and highly collinear with other component variables (Ragin, 2008). By examining the conjunctures of conditions, it is possible to conduct an in-depth analysis and go beyond simple statements about their effect. Further, whereas correlational arguments are symmetric, set-theoretic arguments are almost always asymmetric (Ragin, 2008). For example, the fact that a condition leads to high firm performance does not in any way imply that the absence of the same condition leads to non-high firm performance.

More generally, these capabilities of the fsQCA may provide a valuable addition to the environmental management research. Since use of this method in management research is relatively rare, the following paragraphs present its basic idea.

As an analytical technique, the fsQCA identifies configurations of aspects and features termed causal conditions associated with an outcome of interest. For example, to examine which configurations lead to high firm performance it examines members of the set of

"high-performing" organizations and then identifies combinations of conditions associated with the outcome (a high firm performance) using Boolean logic and a Quine-McCluskey algorithm for simplifying complex set-theoretic statements. The motivation for using fsQCA is the researcher's interest in set relations, where every condition defines an independent set, and a set membership score is assigned to every case studied in every set (i.e. calibration). Sets defined in this way can be combined by applying logical and (set intersection), logical or (set union), or negation operations (Ragin, 2008). With regard to the set membership scores, fuzzy-set scores can fall anywhere between the two extremes of a full membership value of 1 and a full non-membership value of 0. Fuzzy-set explicitly requires that set-membership scores are based on three qualitative anchors: full set membership (1); full non-membership (0); and indifference (0.5) (Schneider & Wagemann, 2012). A firm can be a partial member of a set of high firm performers as indicated by a fuzzy-set membership score of, say, 0.9. This value indicates that the case can be seen as more of a high-performing firm than a non-high-performing firm. A fuzzy-set membership score does not express the probability of a case's membership in a set but different aspects of uncertainty that stem from conceptual rather than empirical imprecision (Schneider & Wagemann, 2012). The details of our calibration, informed by the existing literature and the qualitative analysis, are provided in the next sections.

The main tool to analyze which configurations may cause a certain outcome is the truth table. Truth tables list all logical possible combinations of conditions and the outcome associated with each configuration. Each truth table row represents one of the logically possible and combinations of conditions. The total number of truth table rows is 2^k, where 2 represents different states in which these conditions can occur (presence or absence) and letter k represents the number of conditions used. The present study involves 5 conditions, producing 2^5 causal combinations. The cases are sorted into the truth table rows based on their values on the attributes, with some rows containing many cases, some only a few, and others containing no cases if there is no empirical instance of the particular combination of conditions. To identify the relevant combinations, setting a frequency threshold (i.e. the number of cases required for a solution to be considered) and a minimum consistency level of a solution is required. I set the frequency threshold for one observation which is acceptable when the aim is to build theory from a relatively small sample size (Ragin, 2006). Consistency here measures the degree to which a combination of conditions corresponds to the outcome. One approach is to choosing a threshold that corresponds to a gap in the distribution of consistency scores (Schneider & Wagemann, 2012). Following this approach, I set the lowest acceptable consistency for the solution at 0.69 (the lowest acceptable consistency for achieving a non-high performance was set at 0.77). The outcome column then indicates whether the specific truth table row is sufficient for the outcome. It often happens that many rows in a truth table are linked to the outcome of interest (a complex solution) which is not very informative and difficult to interpret. Therefore, we would like to obtain a more parsimonious solution. For this, the so-called Quine-McCluskey algorithm (implemented in the fsQCA software package) is used to

logically minimize the sufficiency statements to simplify the complexity and arrive at a more parsimonious answer. The truth table algorithm uses counterfactual analysis to speculate on the most plausible outcomes of the configurations that do not exist in the data set. Distinguishing between easy and difficult counterfactuals allows two kinds of solutions to be established, the simplest parsimonious and the more conservative intermediate solution. Easy counterfactuals are those that are in line with both the empirical evidence at hand and existing theoretical knowledge, whereas difficult counterfactuals are in line only with the empirical evidence at hand without any directional expectations. The parsimonious solution takes advantage of all possible simplifying assumptions regardless of whether they are based on easy or difficult counterfactuals. In contrast, the intermediate solution is more conservative and only includes simplifying assumptions based on easy counterfactuals. The notion of conditions belonging to core or complementary conditions is based on these parsimonious and intermediate solutions: core conditions are part of both parsimonious and intermediate solutions, whereas complementary conditions appear only in intermediate solutions. Accordingly, this approach defines the causal coreness in terms of the strength of the evidence (Ragin, 2008).

Set-theoretic methods are usually interpreted in terms of sufficient and necessary conditions. A condition (or combination) can be considered sufficient if, whenever it is present across cases, the outcome is also present in these cases, and a condition (or combination) is necessary if, whenever the outcome is present, the condition is also present. The relationship between conditions and the outcome is, in both cases, asymmetrical. This chapter primarily focuses on studying sufficient causation, yet since necessary conditions might be overlooked when only performing an analysis of sufficiency I performed a separate analysis of sufficiency and necessity (Schneider & Wagemann, 2012).

3.3.2 Data

I used data drawn from a sample of 27 firms from highly polluting industries (agriculture, mining, manufacturing, construction and transport) located in Australia. The country was selected on the basis of the development and stability of the Australian economy. The data were collected at the end of 2012 using a survey sent to CEOs, managing directors and environmental managers who were considered to have adequate knowledge about the environmental practices and performance of their firms.

Table 9. Cases

Company	Industry	OLC stage	Employees	R&D*	Ownership
Agriculture 1 (AG1)	Dairy farming	Birth	1-19	5-6.99	Private
Agriculture 2 (AG2)	Beef production	Growth	250-999	0-1.99	Private
Mining 1 (MIN1)	Precious metals	Birth	250-999	2-4.99	Public
Mining 2 (MIN2)	Mining and marine	Growth	50-249	2-4.99	Private
Mining 3 (MIN3)	Mining services	Decline	250-999	0-1.99	Public
Mining 4 (MIN4)	Pipeline	Decline	250-999	0-1.99	Public
Mining 5 (MIN5)	Iron ore	Birth	10,000+	10+	Public
Mining 6 (MIN6)	Mining	Birth	2,500-9,999	5-6.99	Public
Manufacturing 1 (MAN1)	Metal treatment	Revival	1-19	10+	Private
Manufacturing 2 (MAN2)	Ground support	Revival	250-999	0-1.99	Other
Manufacturing 3 (MAN3)	Printing	Revival	20-49	2-4.99	Private
Manufacturing 4 (MAN4)	Ceramics	Maturity	1-19	7-9.99	Private
Manufacturing 5 (MAN5)	Plastics	Decline	20-49	0-1.99	Private
Manufacturing 6 (MAN6)	Electrical equipment	Maturity	50-249	0-1.99	Private
Manufacturing 7 (MAN7)	Food	Revival	250-999	2-4.99	Private
Manufacturing 8 (MAN8)	Printing	Maturity	50-249	0-1.99	Private
Manufacturing 9 (MAN9)	Paints and coatings	Maturity	2,500-9,999	5-6.99	Public
Manufacturing 10 (MAN10)	Metals	Revival	50-249	5-6.99	Private

(table continues)

(continued)

Manufacturing 11 (MAN11)	Aerospace, automotive, defense	Revival	50-249	10+	Public
Manufacturing 12 (MAN12)	Printing	Decline	20-49	0-1.99	Private
Construction 1 (CON1)	Civil construction	Growth	50-249	5-6.99	Private
Construction 2 (CON2)	Civil construction	Revival	20-49	0-1.99	Private
Construction 3 (CON3)	Commercial construction	Maturity	20-49	2-4.99	Private
Construction 4 (CON4)	Residential design and construction	Growth	50-249	7-9.99	Private
Construction 5 (CON5)	Gas plant construction	Maturity	1,000-2,499	0-1.99	Public
Construction 6 (CON6)	Rail construction	Maturity	250-999	2-4.99	Public
Transport (TR1)	Aviation	Maturity	2,500-9,999	10+	Other

Note. * Annual R&D spending as a % of sales revenues.

Prior to the survey, I conducted 10 interviews with managers to ensure the relevance of the concepts, and that the phrasing of the items and meaning of the concepts were equally understood. After three rounds of reminder e-mails, I received 196 responses, representing a response rate of 11.3%. From this initial sample used in another study and on the basis of the industry type and completeness of the information provided, I was able to identify 27 firms relevant for the study. Table 9 provides an overview of the cases in the study. I performed t-tests on major constructs between early and late respondents. The results suggested no significant nonresponse bias.

3.3.3 Outcome measure

The primary outcome of interest in this study is firm performance (FRMPER). Consistent with the strategic management literature, financial and non-financial measures of firm performance were used. The need to satisfy multiple stakeholders has been advanced as a key reason to use multiple measures of firm performance (Judge & Douglas, 1998). To measure the construct of firm performance ($\alpha = .76$), I employed a set of established perceptual measures from the literature, asking each respondent to rate their financial and non-financial performance relative to other firms in the industry (a 5-point Likert scale; 1 "Well below industry average"; 2 "Below industry average"; 3 "Neither below not above industry average"; 4 "Above industry average"; 5 "Well above industry average"). The positive and significant level of correlation between perceptual measures and archival measures of firm performance in previous studies indicates that this is a valid measure of the construct (Tehrani & Noubary, 2005).

The fuzzy-set analysis requires variables to be transformed into calibrated sets using three thresholds: full membership, full nonmembership, and the crossover point (Schneider & Wagemann, 2012). Following this approach, I created fuzzy-set measures of high firm performance. Membership in the set was coded 0 for an industry average or below industry average performance (< 3.01) and 1 for an above industry average performance (> 4.00). As a crossover point for a high firm performance I chose 3.49.

To additionally examine which causes led to the absence of a high firm performance, I created measures of membership in the sets of firms with a non-high (i.e. low or average) firm performance. Non-high firm performance is coded as the negation of the measure of high firm performance described above (1 for an industry average or below industry average performance and 0 for an above industry average performance).

3.3.4 Causal conditions

3.3.4.1 Environmental proactivity

I assessed environmental proactivity (ENVPRO) using 19 questions adopted from González-Benito and González-Benito (2005). The environmental proactivity scale ($\alpha = 0.96$) reflects the degree of implementation of different environmental management

practices: planning and organizational practices, operational practices (process- and product-related), and communicational practices. Each manager was asked to score the degree of implementation of each practice according to a 5-point Likert scale (1 "Not at all; only what the regulation requires"; 2 "To a limited extent"; 3 "To a moderate extent"; 4 "To a considerable extent"; or 5 "To a great extent; it has been a priority of our firm"). The multi-industry sample used in the study might involve problems with the applicability of the environmental practices in different sectors. To overcome this issue, I also provided an additional "not applicable" option for environmental practices related to products and processes.

Drawing on the scale, I created a measure of membership in the set of firms exhibiting a high degree of environmental proactivity, coding membership as fully out for a response of 2.49 and fully in for a response of 4.00. The crossover point was 3.01.

3.3.4.2 Organizational life cycle

The OLC scale included five descriptions for each of the five OLC stages. The descriptions contained characteristics from the existing literature (Miller & Friesen, 1984; Quinn & Cameron, 1983) that appeared to be indicators of the OLC stages: decision-making, structure, situation, level of innovation, and sales growth. A respondent's firm was categorized into one of the OLC stages based on the description of the situation that best fits the firm. Following this approach, four firms are in stage 1, four in stage 2, eight in stage 3, seven in stage 4 and four in stage 5. This approach of classifying into the OLC stages was employed after I found Lester's et al. scale (2003) inappropriate for the current study due to unacceptable coefficient alphas (< .7), low communality values (< .4) and cross-loading of items on factors (Hair & Anderson, 2010). To limit the complexity of the model and accompanying problems of limited diversity (which occur when not all theoretically possible combinations of conditions are empirically observable), the firms were further classified into the innovative (birth, growth, revival) and conservative stages (maturity, decline). According to proactivity and innovativeness factors, these two groups are internally consistent (Miller & Friesen, 1984; Quinn & Cameron, 1983). The calibration of the OLC condition is accomplished through use of a "crisp-set QCA" (csQCA). In csQCA, only the membership values 1 (perfect membership) and 0 (perfect non-membership) can be used (Schneider & Wagemann, 2012). Perfect membership was assigned to cases belonging to the birth, growth, or revival stages, whereas non-perfect membership was assigned to cases belonging to the maturity or decline stages.

3.3.4.3 External contingencies: Uncertainty, complexity and munificence

I used a six-item scale (Rueda-Manzanares et al., 2008) to measure the managers' perceptions of the general business environment. The answer to each question was rated using a 5-point Likert scale (1 "Strongly disagree"; 2 "Disagree"; 3 "Neutral"; 4 "Agree"; 5 "Strongly agree"). An exploratory factor analysis revealed that six items, consistent with

the existing literature (Rueda-Manzanares et al., 2008; Tan & Litschert, 1994), show the existence of three factors of the general business environment: uncertainty (UNCER), complexity (COMPLEX) and munificence (MUNIF) (Table 10).

For all three conditions I used the same measures of membership: fully out for a response of "Neutral" (3.01) and fully in (4.00) for a response of "Agree." The crossover point was 3.49.

Table 10. Principal component analysis of the general business environment

Item	**Factor 1** Uncertainty	**Factor 2** Complexity	**Factor 3** Munificence
V1: Factors in the business environment that can affect our firm often change	0.84		
V2: The changes in our business environment are easily predictable (REV)	0.89		
V3: The changes in our business environment are dependent on many factors		.92	
V4: The factors affecting our business environment are very varied		.75	
V5: The changes in our business environment have been very positive for our firm			.87
V6: The changes in our business environment make a positive performance very difficult for our firm (REV)			.87
% of variance explained	31.46	27.04	26.96
Cronbach's α	0.77	0.77	0.70

Note. * Total explained variance: 85.46%. Varimax orthogonal rotation.

3.4 Results

Table 11 presents descriptive statistics and correlations for all conditions and the outcome measure. As expected, the results show a positive correlation between firm performance and the innovative stages of the OLC, and between environmental proactivity and munificence. In contrast, environmental proactivity is negatively correlated to uncertainty.

Table 11. Descriptive statistics and correlation

Variable	Mean	s.d.	1	2	3	4	5	6
1 OLC[1]	/	/	1					
2 UNCER	3.57	.69	−.01	1				
3 COMPLEX	3.85	.65	.26	.54**	1			
4 MUNIF	2.85	.66	.03	−.21	−.05	1		
5 ENVPRO	3.18	.90	.23	−.33†	−.19	.38†	1	
6 FRMPER	3.61	.50	.38*	−.25	.15	.15	.16	1

Note. * The number of observations is 27. † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$ (2-tailed). [1]Dummy variable. Frequency: 0-Conservative stage (12), 1-Innovative stage (15).

In Table 12, I report part of the truth table, namely the combinations of conditions that were empirically observed. The truth table represents 14 corners of the property space (2^5 minus 18 combinations that do not include empirical instances), including a case's frequency, the number and names of cases with membership in each configuration, and the distribution in the outcomes (number and percentage of cases displaying a high firm performance and a non-high firm performance). For example, the configuration occurring most frequently (Row 2) in the sample represents firms from highly polluting industries that do not pursue environmentally proactive strategies (ENVPRO = 0), are in the innovative stage of the OLC (OLC = 1) and whose general environment is uncertain (UNCER = 1), complex (COMPLEX = 1) and not munificent (MUNIF = 0) – 75% of the firms sharing this information, specifically CON2, MAN3, MIN2, achieve a high firm performance.

Table 12. Truth table derived from the fuzzy-set data

	Conditions						Case outcomes			
Row	**ENVPRO**	**OLC**	**UNCER**	**COMPLEX**	**MUNIF**	**Number of cases**	**FRMPERF (1)**	**%**	**FRMPER (0)**	**%**
1	1	1	0	1	0	3	MAN1, MAN7, MAN10	100		0
2	0	1	1	1	0	4	CON2, MAN3 MIN2	75	MAN2	25
3	1	1	1	1	0	3	CON1	33.3	AG1, MIN1	66.7
4	0	0	1	1	0	3	MAN4	33.3	MAN9, MAN12	66.7
5	0	0	0	1	0	1	/	0	MAN5	100
6	1	0	1	0	1	2	MAN6	50	TR1	50
7	0	1	1	1	1	1	AG2	100	/	0
8	1	0	1	1	0	3	CON3	33.3	MIN3, CON6	66.7
9	0	0	0	1	1	1	MAN8	100	/	0
10	1	1	0	1	1	1	CON4	100	/	0
11	0	0	1	1	1	1	/	0	MIN4	100
12	1	1	0	0	0	2	MIN5, MAN11	100		0
13	1	1	1	1	1	1	MIN6	100	/	0
14	1	0	0	0	0	1	CON5	100	/	0

Note. * Rows are labeled as follows: 1 = membership I set, 0 = non-membership in the set. 2^5-14 rows are not displayed in the truth table as they contain no empirical evidence.

3.4.1 Analysis of necessity

The logic of a necessary condition is that whenever the outcome is present, the necessary condition is also present. In other words, if a condition is necessary for the outcome, then no case displays the outcome without that condition. A given observation does not need to have any necessary conditions (Schneider & Wagemann, 2012). I set a consistency benchmark of .90 for necessary conditions (Schneider & Wagemann, 2012). Testing each condition and its complement yields the consistency scores presented in Table 13. We see that the condition munif is largely consistent (.89) with the statement of being necessary for frmper. Since munif has a low coverage score (.44), I disregard the high consistency score and conclude that it is not a necessary condition. Hence, based on the empirical evidence there is no single necessary condition.

Table 13. Test of necessity for single conditions

Condition	Consistency for FRMPER	Consistency for frmper
OLC	.65	.30
UNCER	.54	.79
COMPLEX	.79	.82
MUNIF	.25	.20
ENVPRO	.63	.58
olc	.34	.59
uncer	.51	.28
complex	.29	.30
munif	.81	.89
envpro	.50	.62

Note. * Upper case letters signify the presence of the condition (outcome); lower case letters signify the absence of the condition (outcome).

3.4.2 Analysis of sufficiency

To identify the conditions associated with a high and a non-high firm performance, I use the fsQCA 2.5 software (Ragin & Davey, 2009). Table 14 shows the results for the fsQCA analysis of high firm performance. I use similar notation for the solution tables to Ragin and Fiss (2008) where large circles indicate the presence of a condition, and small circles indicate its absence. Moreover, black circles refer to core conditions, and circles with a crossing-out indicate complementary conditions. Finally, blank spaces in a solution denote a situation in which the condition may be either present or absent.

Existing research establishes that the innovative stage of the OLC and a munificent environment are likely to be associated with improved firm performance (DeCarolis &

Deeds, 1999; Miller & Friesen, 1984). I therefore integrated the presence of a munificent environment and the innovative stage of the OLC as easy counterfactuals in the analysis of sufficient conditions for the high firm performance outcome. The presence of conflicting or a lack of conclusions in the existing literature on the relationships between other conditions did not allow any further assumptions.

The sufficiency analysis found six consistent paths leading to high firm performance (Table 14). The first configuration C1 combines the core condition absence of uncertainty and the complementary conditions environmental proactivity and lack of complexity. The second configuration C2 combines the core condition absence of uncertainty and the complementary conditions complexity and absence of environmental proactivity. Configuration C3 is marked by the core conditions innovative stages of the OLC and absence of environmental proactivity and the complementary condition complexity. C4 combines the core conditions innovative stages of the OLC and munificence and the complementary condition complexity. C5 and C6 combine the core condition absence of uncertainty and the complementary condition innovative stages of the OLC supplemented by either environmental proactivity (C5) or complexity (C6). Overall, either the presence or absence of complexity (depending on other attributes) occurs as a complementary condition in each configuration, except for C5. A munificent environment is only present on one path (C4) leading towards high firm performance, whereas the absence of uncertainty in the general business environment is commonly associated with high firm performance. The analysis also shows that the environmental proactivity condition leads to high firm performance only when combined with the presence or absence of specific attributes. Therefore, it is impossible to provide an answer to "Does it pay to be green?" without having information about a firm's specific characteristics and the general business environment in which it operates. Finally, there is no configuration containing the absence of the innovative stage of the OLC.

I report two measures of fit in Table 14: consistency and coverage. The measure of consistency assesses the degree to which cases sharing a given combination of conditions agree in displaying the outcome. It can range between 0 and 1, where 1 implies perfect consistency. The score is calculated for each configuration separately and for the solution as a whole. The scores for the solution (.83) and for each configuration separately (.74-.96) suggest the presence of clear set-theoretic relationships. Solution coverage (.73), by contrast, assesses the empirical importance of the solution. The raw coverage measures the degree to which an outcome is covered by each configuration. I am also interested in how much of the outcome is covered only by a specific configuration, i.e. unique coverage. Different configurations can overlap, meaning that the same case can follow multiple paths toward the outcome. Hence, I also provide a measure of each configuration's unique contribution to the outcome. An analysis of the coverage suggests C3 is relatively distinct because of its high unique coverage. C5 and C6 have fairly raw coverage but lack unique

coverage, indicating that these configurations overlap with other configurations (Schneider & Wagemann, 2012).

Table 14. Configurations for achieving high firm performance

Condition	**Configurations**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
Environmental proactivity	⊗	⊗	•		⊗	
Innovative stage of OLC			●	●	⊗	⊗
Uncertainty	•	•			•	•
Complexity	⊗	⊗	⊗	⊗		⊗
Munificence				●		
Consistency	.89	.85	.74	.93	.96	.95
Raw coverage	.20	.12	.26	.18	.36	.28
Unique coverage	.05	.04	.17	.03	.001	.01
Solution consistency	.83					
Solution coverage	.73					

Note. * ● Core causal condition (present); ⊗ Complementary causal condition (present); • Core causal condition (absent); ⊗ Complementary causal condition (absent); blank spaces indicate "don't care".

Regression analysis assumes causal symmetry (Ragin, 2008), that is, the absence of conditions leading to high firm performance should predict a non-high firm performance. However, the statements about causal relations are asymmetrical: being able to explain the causes of high firm performance does not help us understand the causes of a non-high (low or average) firm performance. I therefore replicate the analysis to identify the combinations of conditions associated with a non-high firm performance. The analysis suggests four configurations that predict a non-high firm performance (Table 15). Below I report the core and complementary conditions that feature in the intermediate solutions.

The sufficiency analysis found four consistent paths leading to a non-high firm performance (Table 15). The first configuration C1 combines the core conditions complexity, absence of the innovative stages (i.e. conservative stages) of the OLC, absence of uncertainty, and lack of munificence supplemented by the complementary condition absence of environmental proactivity. Configurations C2 and C3 combine the core conditions conservative stages of the OLC, uncertainty and munificence supplemented by the complementary conditions environmental proactivity and absence of complexity (C2) or the complementary conditions absence of environmental proactivity and complexity (C3). Configuration C4 is marked by the core conditions environmental proactivity, innovative stages of the OLC, uncertainty and lack of munificence and the complementary condition complexity.

The solution table shows that the results of the analysis for all four configurations exhibit acceptable consistency (> 0.75). In terms of overall coverage, the configurations account for 41% of membership in the outcome.

Table 15. Configurations for achieving non-high firm performance

Condition	**Configurations**			
	C1	**C2**	**C3**	**C4**
Environmental proactivity	⊗	⊗	⊗	●
Innovative stage of OLC	•	•	•	●
Uncertainty	•	●	●	●
Complexity	●	⊗	⊗	⊗
Munificence	•	●	●	•
Consistency	.83	.77	1.00	.78
Raw coverage	.10	.08	.06	.20
Unique coverage	.08	.07	.04	.20
Solution consistency		.80		
Solution coverage		.41		

Note. * ● Core causal condition (present); ⊗ Complementary causal condition (present); • Core causal condition (absent); ⊗ Complementary causal condition (absent); blank spaces indicate "don't care".

3.5 Discussion and conclusion

In conventional quantitative research, researchers usually treat each condition as an independent cause of the outcome and assess which of the listed conditions (variables) are the most important based on statistical estimates of the net effect of each variable. Unlike conventional statistical techniques based on linear algebra, QCA assumes that causation is complex rather than simple, and that the same outcome may result from different combinations of conditions (Ragin, 2008). Thus, instead of trying to isolate which variables, namely environmental proactivity, characteristics of the general business environment and stages in the OLC, provide the largest contribution to explaining the variance in firm performance, the current study examines which of these conditions and their combinations commonly occur across cases achieving a superior firm performance. The results suggest that characteristics of the general business environment, the attitude towards the environment, as well as the firm-specific characteristics covered by the OLC stages all matter to firm performance. In addition, my findings clearly demonstrate that the determination of high firm performance is underpinned by substantial interdependence among the selected conditions and complexity. Therefore, any particular condition may have a different or even opposite effect on the outcome depending on the presence or absence of other conditions. Based on this, I conclude that:

- **Environmental proactivity is not always associated with high firm performance, and**

- **Environmental proactivity is not as important as the other conditions for high-performing firms in highly polluting industries.**

The analysis shows that environmental proactivity is not always associated with a superior firm performance: in environments characterized by complexity and at the same time an absence of uncertainty, or when in a combination of complexity and the presence of the innovative stages of the OLC, high-performing firms do not pursue proactive environmental practices. This may be the case if firms compensate for their low environmental performance with other means such as brand recognition. Environmental proactivity yields high firm performance in business environments characterized by an absence of uncertainty and absence of complexity, or an absence of uncertainty and the presence of innovative stages of the OLC. Finally, when the business environment is munificent and at the same time complex, or complex and not uncertain, firms in the innovative stages of the OLC achieve a high firm performance regardless of their attitude to the environment. The result of the analysis might differ across sectors of the economy and thus future research is needed to also examine other, less polluting industries.

Overall, the results suggest that the selected conditions have diverse influences on firm performance. Therefore, I argue that failure to account for potential differences between firms may lead researchers to conclude that environmental performance is profitable when, in fact, managers only choose to follow environmentally friendly strategies when other conditions make it profitable to do so. Decision-makers have to understand the relationships between an uncontrollable external environment, such as the nature of the industry and characteristics of the general competitive environment, and a controllable internal environment, such as strategies, organizational structure, and organizational climate, in order to manage their firms successfully. In other words, a manager's decision-making and critical-thinking ability depend on a holistic view of the environment within which a firm operates.

The implications of the different "paths" to an outcome for managers are clear. The identification of multiple paths provides managers with a range of choices regarding their strategy formulation and implementation. By contrast, the results of correlational analysis only show the relative importance of different variables. In this way, managers may feel that the possibilities to achieve a positive outcome are limited. Findings from the fsQCA are relevant for different firms so a firm's strategies can be tailored to suit specific needs. Therefore, identifying different paths allows for greater flexibility in choosing an appropriate level of environmental proactivity. Second, the results also indicate that the successful development and implementation of strategies is dependent on the general business environment. Accordingly, the motivation for managers to behave environmentally proactively and the potential high firm performance derived from this need to be complemented with the ability to respond to demands from the firm's external environment. Reducing anxiety through environmental scanning and taking actions to retain control is thus necessary. Finally, managers have to take into account that the paths

leading to high firm performance are usually different from those leading to non-high performance. For example, the fact that environmental proactivity leads to high firm performance does not in any way imply that the absence of environmental proactivity leads to non-high firm performance.

Since the statements about causal relations are asymmetrical, I replicated the analysis to identify the combinations of conditions associated with a non-high (i.e. average or low) firm performance. The results suggest there is interdependence among the selected conditions and that the presence of environmental proactivity can also have negative effects on the outcome depending on the presence or absence of other conditions.

Importantly, the correct application of fsQCA requires substantive knowledge of individual cases to select the conditions, calibrate the cases and interpret the results. For these reasons, an in-depth analysis and rich data are needed to advance the interpretation of the findings. The current study has two significant limitations. First, it is possible that the configurations may not be generalized to other property spaces constructed with the same conditions in different samples. Second, the inclusion of different conditions constructs different configurations. Therefore, the results are bound by the conditions included in the study. Trying to analyze an intermediate and large number of cases in the future would improve the study. Similarly, the study would also benefit from adding other conditions (for example from the resource-based view literature) that appeared to be important for the outcome in past research.

In summary, I claim that fsQCA is a valuable methodological tool for environmental management researchers. In the current chapter, I have shown how QCA can advance our understanding of firms' environmental behavior and resolved some of the questions that challenged previous researchers. I believe that our findings can assist firms from highly polluting industries to determine in which circumstances, if any, the adoption of environmental proactivity will result in a positive outcome.

FINAL CONCLUSION

The variation in environmental behavior of organizations over time (i.e. across the OLC stages) has been addressed in the literature only to a limited extent. Changes in the relative importance of the examined aspects have not been addressed because of the cross-sectional and almost exclusive focus on mature organizations. By examining organizations from different stages of the evolution, this dissertation attempts to place environmental management within the context of the OLC theory. Summary of the dissertation's main findings is presented in Table 16.

Propositions and confirming the hypothesis

The dissertation has several propositions and two successfully confirmed hypotheses.

- P1 (Chapter 1). High performing organizations in the birth stage of the OLC will pursue a prospector environmental strategy.
- P2 (Chapter 1). High performing organizations in the growth stage of the OLC will pursue an analyzer environmental strategy.
- P3 (Chapter 1). High performing organizations in the maturity stage of the OLC will pursue a defender environmental strategy.
- P4 (Chapter 1). High performing organizations in the revival stage of the OLC will pursue a prospector environmental strategy.
- P5 (Chapter 1). Organizations in the decline stage of the OLC will pursue a reactor environmental strategy.

Organizations in the birth, growth and revival stages tend to be less risk averse, develop their own distinctive competencies, and work in teams which foster innovation and creativity (Miller & Friesen, 1984). This leads to adoption of more advanced environmental strategies. On the other hand, organizations in the mature and decline stages are expected to be hierarchical, less flexible and bureaucratic (Burns, 1961), therefore, for these stages less progressive environmental strategies are expected.

- H1 (Chapter 2). Firms in the innovative stages of the OLC are more likely to introduce environmentally oriented resources and develop capabilities which lead to a proactive approach to environmental protection being adopted than firms in the conservative stages.

The hypothesis H1 was confirmed. A firm's strong capacity for innovation, determined by its resources, capabilities, and by the set of organizational characteristics, such as flexible structures, higher degree of risk-taking and lower degree of formalization, is common in the innovative stages of the OLC, and thus strategies related to the development and implementation of advanced environmental practices are expected to emerge. With structures and operation of firms from the conservative stages, adopting environmentally

proactive behavior is complicated as it requires a loosening of organizational structures and norms. These firms are expected to be hierarchical, inflexible and bureaucratic and managers' decision making style less innovative, less proactive and more risk-averse than in the innovative stages (Burns & Stalker, 1961; Kostopoulos, 2002; Miller & Friesen, 1984; Russo & Fouts, 1997).

- H2 (Chapter 2). The relationship between the OLC stages and environmental proactivity is moderated by the level of the industry's environmental impact.

The hypothesis H2 from the second chapter was not confirmed. Similar to Banerjee and colleagues (2003), I grouped firms in high environmental impact sectors (utilities, manufacturing, construction, agriculture, fishing, mining, forestry, transport, postal and chemical) and moderate environmental impact sectors (services, accommodation, communication, wholesale, warehousing and retail). I could not confirm the moderating effect of the industry on the proposed relationship although I found industry to have a main effect in the level of environmental proactivity.

- H3a (Chapter 2). Environmental proactivity is positively related to competitive advantage in the innovative stages of the OLC.

This hypothesis was confirmed. Empirical studies have found that profiting from environmental proactivity is more likely if a firm possesses a strong innovation capability (Ambec & Lanoie, 2008; King & Lenox, 2001). Therefore, environmental proactivity of firms in the innovative stages is likely to have a positive impact on various indicators of competitive advantage such as cost savings, relationships with different stakeholders, growth opportunities and quality improvements.

- H3b (Chapter 2). Environmental proactivity is negatively related to competitive advantage in the conservative stages of the OLC.

The hypothesis H3b from the second chapter was not confirmed. I found environmental proactivity to be positively related to competitive advantage also in the conservative stages. This could be due to the fact that firms in the conservative stages implement affordable and already established proactive environmental practices that leave a firm in the same resource and capability situation as it was before it adopted them. In this way, firms avoid negative effects of environmental proactivity commonly related to environmental innovation.

- P1 (Chapter 3). Environmental proactivity is not always associated with high firm performance.

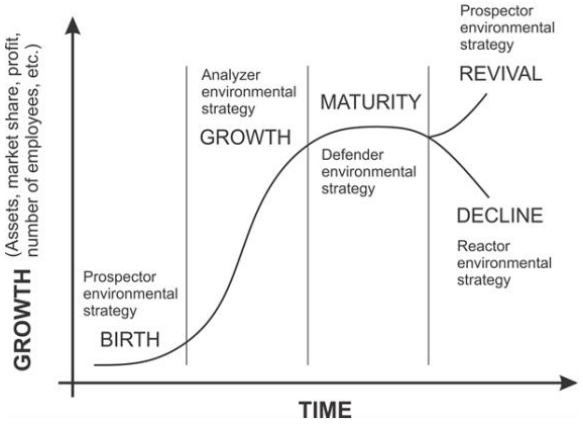
The fsQCA analysis from Chapter 3 shows that environmental proactivity is not always associated with high firm performance. In environments characterized by complexity and at the same time an absence of uncertainty, or when in a combination of complexity and

the presence of the innovative stages of the OLC, high-performing firms do not pursue proactive environmental practices. The configuration marked by the core conditions environmental proactivity, innovative stages of the OLC, uncertainty and lack of munificence and the complementary condition complexity even lead to a non-high firm performance.

- P2 (Chapter 3). Environmental proactivity is not as important as the other conditions for high-performing firms in highly polluting industries.

Finally, the conditions in the configurations are not all equally important for the outcome. The core-complementary model used in the Chapter 3 allowed me to explore which and when are conditions essential and which (and when) are less important or even irrelevant to high-performing firms.

Table 16. Summary of the main findings

Chapter (title)	Research question	Study type (methodology/design/analysis)	Main findings
Chapter 1: Environmental strategies in different stages of organizational evolution: Theoretical foundations	How do firms in different stages of their evolution integrate the environmental dimension into their business models?	Field study – survey on environmental management strategies in Australian firms, Secondary data; Case study	
Chapter 2: The influence of organizational life cycle on environmental proactivity and competitive advantage: A dynamic capabilities view	What is the relationship between environmental proactivity in different stages of the OLC and competitive advantage?	Field study – survey on environmental management strategies in Australian firms; Hierarchical regression analysis and hierarchical moderated regression analysis	OLC is related to environmental proactivity; There is a positive impact of environmental proactivity on competitive advantage; Environmental proactivity is positively related to competitive advantage not only in the innovative stages but also in the conservative ones; Industry has a main effect in the level of environmental proactivity; There is a positive relationship between munificence and environmental proactivity as well as between munificence and competitive advantage;

(table continues)

(continued)

			Environmental uncertainty decreases the level of environmental proactivity and competitive advantage; Firms from the conservative stages of the OLC are more sensitive to the characteristics of the general business environment;
Chapter 3: Environmental proactivity and firm performance: A fuzzy-set analysis	Which combinations of OLC stages, environmental proactivity and external contingencies are likely to improve firm performance?	Field study – survey on environmental management strategies in Australian firms; fsQCA	Environmental proactivity is not always associated with high firm performance; Environmental proactivity is not as important as the other conditions for high-performing firms in highly polluting industries.

Theoretical contribution

The main contribution of my dissertation to environmental management literature is the integration of the two literatures, namely the literature on the OLC theory and the literature on environmental strategies and related competitive advantage. More specifically, the value of this work lies in addressing the relationship between environmental proactivity and the OLC stages by (1) proposing that environmental friendly activities and related competitive advantage differ as organizations evolve through different stages of the OLC, (2) examining the relationships between environmental proactivity, the OLC stages, industry and competitive advantage, and (3) understanding of the causal relationships among environmental proactivity, the OLC stages, characteristics of the general business environment and firm performance. In combination, these contributions create a better understanding and increase a validity of the proposed relationships.

The finding from the existing empirical literature that environmental proactivity has a positive (or negative) effect on firm performance does not help us understand in which contexts this occurs and in combination with which factors. Therefore, another important theoretical contribution is achieved with a use of a novel technique, the fsQCA. The fsQCA investigates causal complexity, a situation in which an outcome of interest is a product of different combinations of conditions. In the Chapter 3, the fsQCA enables me to examine firm performance more holistically by including a number of the firm's external and internal factors identified as important in past research. My results identify different paths leading to a high firm performance and factors that are essential and less important or even irrelevant to high-performing firms.

I contribute to the science field also by recognizing the importance of both, the internal as well as the external organization's environment, and incorporating a large number of factors, that have been recognized as important, in the empirical model. I examine organization's specific characteristics (size, ownership form, the OLC stage), industry, characteristics of the environment (uncertainty, munificence, complexity), competitive advantage related to environmental proactivity and firm performance. By incorporating the variables in the research models in the Chapter 2 and Chapter 3, I try to examine the proposed relationships more holistically.

Finally, the contribution of my dissertation is also in the rigorous empirical examination of the relationships using different analytical techniques. The use of different methods, namely hierarchical regression, moderated hierarchical regression, factor analysis, reliability analysis and fsQCA, strengthens the validity of my results. Further details on the theoretical contributions of the dissertation are presented in Table 17.

Table 17. Summary of contributions to the literature

Chapter (title)	Research question	Contributions to the literature
Chapter 1: Environmental strategies in different stages of organizational evolution: Theoretical foundations	How do firms in different stages of their evolution integrate the environmental dimension into their business models?	The development of a descriptive theory with testable propositions for environmental strategies of organizations from polluting industries from the OLC perspective; The case studies identify environmental strategies that high performing organizations are likely to pursue in each stage of their evolution.
Chapter 2: The influence of organizational life cycle on environmental proactivity and competitive advantage: A dynamic capabilities view	What is the relationship between environmental proactivity in different stages of the OLC and competitive advantage?	The OLC construct is interesting for environmental management because it captures many firm-specific variables and thus offers a more holistic view; The findings from the chapter help better understand the relationship between environmental proactivity and competitive advantage; Further support for the association between environmental proactivity and dynamic capabilities that is context-dependent; Type of industry is an important determinant of environmental proactivity; The integration of the dynamic capabilities and the OLC literature help explain firms' competitive advantage in changing environments.
Chapter 3: Environmental proactivity and firm performance: A fuzzy-set analysis	Which combinations of OLC stages, environmental proactivity and external contingencies (uncertainty, complexity and munificence) are likely to improve firm performance?	The chapter addresses the relationship between environmental and firm performance more holistically by including a number of the firm's external and internal factors identified as important in past research; Failure to account for potential differences between firms may lead researchers to conclude that environmental performance is profitable when, in fact, managers only choose to follow environmentally friendly strategies when other conditions make it profitable to do so; The chapter offers a new perspective on the relationship with its systematic comparative analysis of complex cases; The chapter identifies different combinations of conditions leading to a high firm performance; The core complementary model enables to explore which factors are essential and which are less important or even irrelevant to high-performing firms and average/low firm performance.

Recommendations for business and public policy managers

Results might have important implication also for business and public policy managers (Table 18). Managers are frequently in a position where they do not know exactly how to incorporate environmental dimension into the organization's business model in a way that it pays. My dissertation helps addressing this issue as it provides the theory and practical examples of environmental proactivity in different stages of the OLC. As I repeatedly point out, recognizing the importance of organization's evolution may allow managers to be better able to predict their positions and recognize issues and thus successfully manage their organizations. The findings give managers an idea of what environmental friendly practices they can adopt or pursue, and to what outcomes they may lead.

My dissertation also argues that there are no general prescriptions for successful development and implementation of environmental strategies and each organization is a separate case whose success depends on a complex interrelation between internal and external business environment. I provide managers with knowledge about different scenarios; more precisely, which combinations of causal conditions (environmental proactivity, the OLC stages, uncertainty, complexity and munificence) lead to high firm performance and which to average/low firm performance.

Lastly, the analysis and findings of the dissertation might also have important policy implications when speaking about environmental concerns. Chapter 3 is particularly valuable since it illustrates how policy makers can support an organization's efforts toward being environmentally proactive. In addition to binding legislative acts, they should support proactivity by active cooperation with organizations to find ways to reward environmental proactivity that will eventually displace less efficient organizations' operation.

Table 18. Summary of managerial implications

Chapter (title)	**Research question**	**Managerial implications**
Chapter 1: Environmental strategies in different stages of organizational evolution: Theoretical foundations	How do firms in different stages of their evolution integrate the environmental dimension into their business models?	Managers should think about the stage of their firm's development and adapt their environmental strategies (and level of proactivity) accordingly; The theory grounded on empirical evidence and existing literature help organizations exploit their resources and capabilities more efficiently.
Chapter 2: The influence of organizational life cycle on environmental proactivity and competitive advantage: A dynamic capabilities view	What is the relationship between environmental proactivity in different stages of the OLC and competitive advantage?	The findings help managers become more fully aware of when to pursue proactive environmental initiatives and reduce the ambiguity related to environmental proactivity and its complex nature; Firms in the conservative stages might reconsider developing a new business model with environmental dimensions as one of the key components and thus push themselves away from passivity; Regulators must modify and support conditions that stimulate environmental proactivity; The environmental impacts of firms should be more transparent by improving the availability of information in existing and/or new registers.
Chapter 3: Environmental proactivity and firm performance: A fuzzy-set analysis	Which combinations of OLC stages, environmental proactivity and external contingencies (uncertainty, complexity and munificence) are likely to improve firm performance?	A manager's decision-making and critical-thinking ability depend on a holistic view of the environment within which a firm operates; The identification of multiple paths provides managers with a range of choices regarding their strategy formulation and implementation; The motivation for managers to behave environmentally proactively and the potential high firm performance derived from this need to be complemented with the ability to respond to demands from the firm's external environment; Managers have to take into account that the paths leading to high firm performance are usually different from those leading to non-high performance.

Limitations and future research suggestions

The dissertation has several limitations. First limitation is related to the measurement scale; in particularly, all the variables used in the quantitative parts of the dissertation are measured based on managerial perceptions which could present a threat for a bias. However, there exists a literature that supports the positive link between perceived and actual measures of, for example, firm performance (Wall, Michie, Patterson, Wood, Sheehan, Clegg & West, 2004). Therefore, objective performance measures need to be included in further studies.

The second limitation is the small sample size that affects the generalizability of results and, consequently, the findings might not be generalizable to firms in other industries and economies. To test my research model in the Chapter 2, one would require a sample of firms from other developed and emerging economies. Trying to analyze a larger number of cases from diverse industries and countries would also improve the study from the Chapter 3.

Third limitation is a measure of the OLC construct which was derived from the existing empirical literature. Future studies should focus on developing a reliable and consistent OLC scale that would enable each of the five OLC stages to be examined separately. Moreover, for future research, I suggest that studies adopt a longitudinal perspective. An investigation of firms' operations over their OLC would be able to capture whether and when these firms changed the level of environmental proactivity and how these changes affected their firm performance.

Further, I acknowledge that other factors from a firm's external and internal environment also influence the examined relationships. The results in the Chapter 3 are bound by the conditions included in the study. Therefore, future research might explore the relationships by adding new variables or causal conditions for example from the resource-based view literature or stakeholder theory.

Conclusion

In general, the dissertation contributes to understanding of the factors in the internal and external business environment that influence the development and implementation of organization's proactive environmental strategies. Globally, this work aims to elucidate the contradictive arguments regarding the best approach to environmental protection in different business environments. Because existing research has repeatedly indicated the influence of environmental proactivity on firm performance, the current study not only has growing social relevance but also holds important implications for practitioners from different industries.

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APPENDICES

LIST OF APPENDICES

Appendix A: Survey

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Ph.D. student
University of Western Sydney and University of Ljubljana
e-mail: kaja.brankov@ef.uni-lj.si

Dear Sir/Madam

I am writing to ask for your participation in a study on environmental management strategies in Australian firms. This study is a part of my Ph.D. thesis partly funded by the Australian Government and approved by the Australian Human Research Ethics Committee. My thesis supervisors are Professor Bobby Banerjee and Professor Tomaž Čater.

You have been randomly selected to participate in this survey. Results from the survey will help me better understand the relationship between environmental strategies and business performance. The survey should only take maximum 15 minutes to complete. Completion of the survey signifies your voluntary consent to participate in this research. Your responses will be kept confidential. All results will be released only as summaries without identifying individual responses. Please note that this is not a 'test', and thus there are no 'correct' or 'incorrect' answers to the questions. Read each question carefully, and record the immediate thoughts that come into your head. Please answer all the questions. It is important to complete the survey even if you feel that your organization has limited involvement in environmental issues. If you need to stop before completing the survey, you will be able to complete the survey later.

Should you have any further questions about this project, please do not hesitate to contact the researchers: Professor Bobby Banerjee (b.banerjee@uws.edu.au) and M.A. Kaja Brankov (kaja.brankov@ef.uni-lj.si). I appreciate your time and consideration in completing this survey. Your responses will contribute to the completion of my Ph.D. and to the development of research in business. The results of the study will be useful for your business in terms of identifying best practice in environmental management in your industry. If you would like to be informed about the results of the study please mark the relevant box in the survey and I will send you a summary of findings.

Thank you for participating.

Sincerely,

Kaja Brankov, M.A.	Prof. Bobby Banerjee	Prof. Tomaž Čater
Ph.D. student	Ph.D. supervisor	Ph.D. supervisor
University of Ljubljana	University of Western Sydney	University of Ljubljana

1st PART: ORGANIZATIONAL LIFE CYCLE

1 ORGANIZATIONAL LIFE CYCLE STAGES

The first set of statements relate to your firm's structure, situation, decision-making and information processing. For each statement below please mark the box that indicates your agreement or disagreement.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.1 Our organization is small relative to our competitors.	1	2	3	4	5
1.2 As a firm, we are larger than most of our competitors, but not as large as we could be.	1	2	3	4	5
1.3 We are a widely dispersed organization, with a board of directors and shareholders.	1	2	3	4	5
1.4 The seat of power in our firm is primarily in the hands of the founder.	1	2	3	4	5
1.5 Power in our firm is spread among a group of several owners/investors.	1	2	3	4	5
1.6 Power in our firm is concentrated in our vast number of shareholders.	1	2	3	4	5
1.7 Our firm's organizational structure could best be described as simple.	1	2	3	4	5
1.8 Our structure is department-based, functional and formal.	1	2	3	4	5
1.9 Our firm has a divisional and matrix structure, with highly sophisticated control systems.	1	2	3	4	5
1.10 Our firm has few control systems.	1	2	3	4	5
1.11 In our organization we have some specialization	1	2	3	4	5
1.12 Information processing could best be described as simple, mostly word-of-mouth.	1	2	3	4	5
1.13 Information processing is best described as monitoring performance and facilitating communication between departments.	1	2	3	4	5
1.14 Information processing is sophisticated and necessary for efficient production and earning adequate profits.	1	2	3	4	5
1.15Information processing is very complex, used for coordination of diverse activities to better serve markets.	1	2	3	4	5
1.16 Information processing is not very sophisticated, but badly needed.	1	2	3	4	5
1.17 Decision-making is centralized at the top of the organization and considered to be not very complex.	1	2	3	4	5
1.18 Most decisions in our firm are made by a group of managers who utilize some systematic analyses, but who are still fairly bold.	1	2	3	4	5
1.19 Most decisions in our firm are made by managers, task forces, and project teams who are trying to facilitate growth through participation.	1	2	3	4	5
1.20 Most decisions in our firm are made by a few managers who take a conservative approach.	1	2	3	4	5

2 ORGANIZATIONAL LIFE CYCLE STAGES

Which of the following descriptions best fit your firm? Please check the appropriate box.

	Our firm is less than 10 years old, has an informal structure, and is dominated by an owner-manager. Our decision making is centralized and intuitive and sometimes we take risks in our business.
	Our sales growth of more than 15% has been rapid due to our cost efficiency programs and our innovative strategies. We have developed distinctive competences that set us apart from our competitors. The structure of our firm is functionally-based, decision-making is decentralized and procedures are formalized.
	Formalization and control is a norm in our firm. We focus on cost efficiency, while we lack innovation activity. Sales growth is less than 15% and the level of sales is stabilized. Our management focuses on planning and strategy. Decision-making is risk-averse and under domain of top management.
	We are diversifying our product portfolio and expanding our markets. Our creativity and innovation is facilitated through the use of divisional or matrix structure, procedures are formalized, and decision-making is much decentralized. Sales growth is greater than 15%.
	Our control and decision-making is centralized and risk-averse. Our profitability has declined due to external challenges and lack of innovation. The structure of our firm is formal and bureaucratic.

2nd PART: ENVIRONMENTAL MANAGEMENT PRACTICES

Listed below are a number of environmental management practices a firm can undertake. Please indicate the extent to which you pursue the following practices.

3 PLANNING AND ORGANIZATIONAL

Practice	Not at all, only what regulation requires	To a limited extent	To a moderate extent	To a considerable extent	To a great extent; it has been a priority to our firm
3.1 Explicit definition of environmental policy	1	2	3	4	5
3.2 Clear objectives and long-term environmental plans	1	2	3	4	5
3.3 Well defined environmental responsibilities	1	2	3	4	5
3.4 Full-time employees devoted to environmental management	1	2	3	4	5
3.5 Natural environment training programs for managers and employees	1	2	3	4	5
3.6 Systems for measuring and assessing environmental performance	1	2	3	4	5
3.7 Environmental emergency plans	1	2	3	4	5

4 OPERATIONAL – PRODUCT RELATED

Practice	Not at all, only what regulation requires	To a limited extent	To a moderate extent	To a conside-rable extent	To a great extent; it has been a priority to our firm	Not applicable
4.1 Institution of polluting and hazardous materials/parts	1	2	3	4	5	6
4.2 Designs focused on reducing resources consumption and waste generation during production and distribution	1	2	3	4	5	6
4.3 Designs focused on reducing resource consumption and waste generation in product usage	1	2	3	4	5	6
4.4 Design for disassembly, reusability and recyclability	1	2	3	4	5	6

5 OPERATIONAL – PROCESS RELATED

Practice	Not at all, only what regulation requires	To a limited extent	To a moderate extent	To a conside-rable extent	To a great extent; it has been a priority to our firm	Not applicable
5.1 Emission filters and end-of-pipe controls	1	2	3	4	5	6
5.2 Process design focused on reducing energy and natural resources consumption in operations	1	2	3	4	5	6
5.3 Production planning and control focused on reducing waste and optimizing material exploitation	1	2	3	4	5	6
5.4 Acquisition of clean technology/equipment	1	2	3	4	5	6
Preference for green products in purchasing	1	2	3	4	5	6
5.6 Environmental criteria in supplier selection	1	2	3	4	5	6
5.7 Shipments consolidation	1	2	3	4	5	6
5.8 Selection of cleaner transportation methods	1	2	3	4	5	6
5.9 Recyclable or reusable packaging/containers in logistics	1	2	3	4	5	6
5.10 Ecological materials for primary packaging	1	2	3	4	5	6
5.11 Recuperation and recycling systems	1	2	3	4	5	6
5.12 Responsible disposal of waste and residues	1	2	3	4	5	6

6 COMMUNICATIONAL

Practice	Not at all, only what regulation requires	To a limited extent	To a moderate extent	To a considerable extent	To a great extent; it has been a priority to our firm
6.1 Periodic environmental reports	1	2	3	4	5
6.2 Sponsoring of environmental events	1	2	3	4	5
6.3 Highlighting environmental aspects in marketing of products and services	1	2	3	4	5
6.4 Providing information about our environmental management to external stakeholders	1	2	3	4	5
6.5 Collaboration with ecological organizations	1	2	3	4	5

7 ENVIRONMENTAL MANAGEMENT PRACTICES AND COMPETITIVE ADVANTAGE

The following statements relate to the relationship of proactive environmental management practices and competitive advantage. Please indicate the agreement with the following statements.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7.1 Being environmentally conscious can lead to substantial cost advantages for our firm.	1	2	3	4	5
7.2 By regularly investing in research and development on cleaner products and processes, our firm can be a leader in the market.	1	2	3	4	5
7.3 Our firm can enter lucrative new markets by adopting environmental strategies.	1	2	3	4	5
7.4 Our firm can increase market share by making our current products more environmentally friendly.	1	2	3	4	5
7.5 Reducing the environmental impact of our firm's activities can lead to a quality improvement in our products and processes.	1	2	3	4	5
7.6 Our firm can increase reputation by being environmentally conscious.	1	2	3	4	5
7.7 Our firm can improve relationships with suppliers by making current products more environmentally friendly.	1	2	3	4	5
7.8 Our firm can increase employee commitment by being environmentally conscious.	1	2	3	4	5

3rd PART: EXTERNAL CONTINGENCIES: COMPLEXITY, UNCERTAINTY AND MUNIFICENCE

8 COMPLEXITY, UNCERTAINTY AND MUNIFICENCE

The following statements relate to the relationship of your firm and the general business environment. Please indicate the agreement with the following statements.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
8.1 Factors in the business environment that can affect our firm often change.	1	2	3	4	5
8.2 The changes in our business environment are easily predictable.	1	2	3	4	5
8.3 The changes in our business environment are dependent on many factors.	1	2	3	4	5
8.4 The factors affecting our business environment are very varied.	1	2	3	4	5
8.5 The changes in our business environment have been very positive for our firm.	1	2	3	4	5
8.6 The changes in our business environment make a positive performance very difficult for our firm.	1	2	3	4	5

4th PART: FIRM PERFORMANCE

9 FIRM PERFORMANCE

The following items relate to firm performance. Please rate your firm performance with 1 being well below industry average and 5 being well above industry average.

Item	Well below industry average	Below industry average	Nor below nor above industry average	Above industry average	Well above industry average
9.1 Return on assets (ROA, %)	1	2	3	4	5
9.2 Firm total sales growth	1	2	3	4	5
9.3 Firm market share growth	1	2	3	4	5
9.4 Firm reputation	1	2	3	4	5
9.5 Customer retention	1	2	3	4	5
9.6 Annual employee turnover	1	2	3	4	5
9.7 Value added per employee	1	2	3	4	5
9.8 Productivity of employees	1	2	3	4	5
9.9 Relations with suppliers	1	2	3	4	5

5th PART: GENERAL INFORMATION

The last section asks a few general questions about your firm and you. Please check the appropriate box or fill in the blanks.

10.1 Main industry (ANZSIC classification)	
☐ *Agriculture, Forestry, Fishing*	☐ *Financial and Insurance Services*
☐ *Mining*	☐ *Rental, Hiring and Real Estate Services*
☐ *Manufacturing*	☐ *Professional, Scientific and Technical Services*
☐ *Electricity, Gas, Water and Waste Services*	☐ *Administrative and Support Services*
☐ *Construction*	☐ *Public Administration and Safety*
☐ *Wholesale Trade*	☐ *Education and Training*
☐ *Retail Trade*	☐ *Health Care and Social Assistance*
☐ *Accommodation and Food Services*	☐ *Arts and Recreation Services*
☐ *Transport, Postal And Warehousing*	☐ *Other Services*
☐ *Information Media and Telecommunications*	
10.2 Name your industry by product (e.g. food, chemical, coal, machinery, pharmaceutical, etc.)	_____
10.3 Average number of full-time employees in year 2011	☐ *1 to 19* ☐ *20 to 49* ☐ *50 to 249* ☐ *250 to 999* ☐ *1,000 to 2,499* ☐ *2,500 to 9,999* ☐ *10,000 and more*
10.4 Revenues in year 2011	☐ *0 to 999,999 AUD* ☐ *1,000,000 to 9,999,999 AUD* ☐ *10,000,000 to 39,999,999 AUD* ☐ *40,000,000 to 99,999,999 AUD* ☐ *100,000,000 to 999,999,999 AUD* ☐ *1,000,000,000 AUD and more*
10.5 Annual R&D spending as a percentage of sales revenues	☐ *0-1,99%* ☐ *2,0-4,99%* ☐ *5,0-6,99%* ☐ *7,0-9,99%* ☐ *10% and more*
10.6 Does your firm represent a division or a branch of a large established firm?	☐ *Yes* ☐ *No*
10.7 Does your firm have a manager who is responsible for looking after environmental issues?	☐ *Yes* ☐ *No*
10.8 What is your position in the firm?	☐ *Director or chairmen of the board* ☐ *Middle management* ☐ *Environmental manager* ☐ *Other*_____
10.9 Ownership form	☐ *Publicly traded* ☐ *Privately held* ☐ *Other*

(OPTIONAL) If you are interested in receiving a summary of the findings of this study please write the following data:

10.10 Name of the firm	_____
10.11 Your name and surname	_____
10.12 Your e-mail address	_____

Thank you for your kindness and patience!

Appendix B: Summary in Slovenian language / Povzetek

Opis znanstvenega področja

Delovanje organizacij je odvisno od lastnih organizacijskih značilnosti, lastnosti trga, panoge itd. Splošne smernice za uspešno izvajanje okoljskih strategij, ki so opredeljene kot dolgoročne okolju prijazne aktivnosti (Álvarez Gil, Burgos Jiménez & Céspedes Lorente, 2001), ni mogoče uporabiti za vse organizacije. Natančneje, Reinhardt (1998) navaja, da je sposobnost ustvarjanja konkurenčnih prednosti pri izvajanju okolju prijaznih strategij tesno povezano z okoliščinami v katerih te strategije prispevajo h konkurenčnosti.

Organizacije so stalno pod vplivom sprememb iz notranjega in zunanjega poslovnega okolja. Te spremembe, katerih posledica so priložnosti, nevarnosti, prednosti in slabosti, narekujejo nenehno spreminjanje in prilagajanje vedénja organizacij. Empirične raziskave kažejo, da je razvoj organizacij mogoče predvideti iz teorije življenjskega cikla organizacije (Adizes, 1979, Lester, Parnell & Carraher, 2003, Miller & Friesen, 1984; Quinn & Cameron, 1983). Organizacije ustanovimo, zatem le-te rastejo ter sčasoma dočakajo zrelost in prenehanje (Slika 1) (Adizes, 2004, Kimberly & Miles, 1980). Vsaka faza v življenjskem ciklu je edinstvena. Raziskovalci so faze identificirali večinoma na podlagi situacijskih, strateških, strukturnih dejavnikov in dejavnikov odločanja (Lester, Parnell, Crandall & Menefee, 2008; Miller & Friesen, 1984). Situacijski dejavniki zajemajo velikost organizacije, starost, lastništvo, heterogenost trgov, medtem ko se strategije nanašajo na plane za dosego ciljev. Struktura se nanaša na določitev odnosov znotraj podjetja, pomemben pa je tudi slog oziroma način odločanja (Tabela 1) (Lester & Parnell, 2008; Miller & Friesen, 1984).

Slika 1. Faze življenjskega cikla organizacije

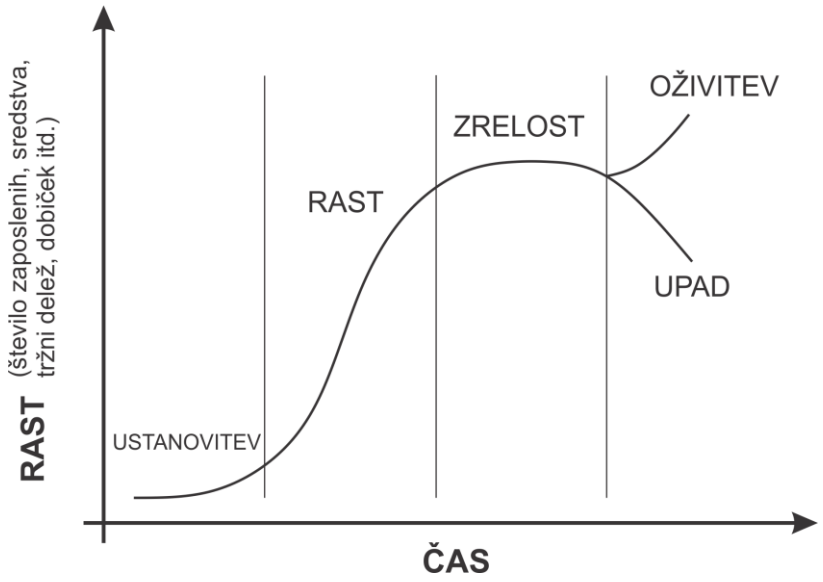

Tabela 1. Značilnosti faz življenjskega cikla organizacije

	Faze življenjskega cikla organizacije				
Značilnosti organizacije	**Ustanovitev**	**Rast**	**Zrelost**	**Oživitev**	**Upad**
Situacija	Mlada; majhna; homogeno okolje	Starejša; večja; heterogeno okolje	Velika; konkurenčno in heterogeno okolje	Zelo velika; heterogeno, dinamično in konkurenčno okolje	Homogeno in konkurenčno okolje; fokus na delovanju podjetja
Struktura	Preprosta, neformalna	Nekaj formalizacije; funkcijska	Formalna; birokratska; funkcijska	Divizijska ali matrična	Formalna; birokratska; funkcijska
Odločanje	Centralizirano, intuitivno, tvegano	Nekaj manj centralizirano; vključenih več managerjev	Strokovno vodenje; izogibanje tveganju	Participativno; visoka stopnja tveganja	Centralizirano; konservativno; izogibanje tveganju
Inoviranje in strategija	Znatno inoviranje; nišna strategija	Stroškovno učinkovitost; ohranitev inoviranja	Stroškovna učinkovitost; strategija ustalitve	Znatno inoviranje; strategija diverzifikacije	Zaustavitev ali zelo malo inoviranja; strategija krčenja

Viri: I. Adizes, Organizational passages: Diagnosing and training life-cycle problems in organizations, 1979, str. 3–25; D. Lester in J. Parnell, Firm size and environmental scanning pursuits across organizational life cycle stages, 2008, str. 540–554; D. Miller in P. H. Friesen, A longitudinal study of the corporate life cycle, 1984, str. 1161–1183; R. Quinn in K. Cameron, Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence, 1983, str. 33–41

V vsaki fazi prevladujejo določeni izzivi, ki se odražajo v podobnih vzorcih obnašanja organizacij. Na primer, Jawahar in McLaughlin (2001) sta ugotovila, da so v določeni fazi nekateri deležniki pomembnejši od drugih. Smith in njegovi sodelavci (1985) so povezali faze s prednostnimi nalogami managementa, medtem ko sta Quinn in Cameron (1983) vzpostavila povezavo med fazami življenjskega cikla in organizacijsko učinkovitostjo. Teorija življenjskega cikla organizacije je pomembna tudi za nadaljnji razvoj področja okoljskega managementa (Shrivastava, 1995). V doktorski disertaciji opredeljujem okoljski management kot skupek organizacijskih dejavnosti, katerih cilj je zmanjšanje negativnega vpliva na naravno okolje. Ta disertacija zagovarja pomembnost vključitve teorije življenjskega cikla v literaturo okoljskega managementa, saj bi to lahko vplivalo na večjo uspešnost organizacije z vidika izboljšanega odločanja, zadovoljstva kupcev, inovacij itd.

Literatura povezana z okoljskim managementom zajema različne tipologije okoljskih strategij, ki jih organizacije implementirajo za namen reševanja okoljskih problematik (npr. Banerjee, 2002; Hunt & Auster, 1990; Klassen & Whybark, 1999; Roome, 1992; Sadgrove, 1992; Su Yol & Seung-Kyu, 2007). Večina teorij in študij razlikuje med »reaktivnimi« in »proaktivnimi« strategijami. Z reaktivnimi strategijami organizacije zadoščajo veljavnim predpisom, medtem ko proaktivne strategije segajo preko okvirov zakonodaje.

Proaktivni pristop k varovanju okolja je povezan s številnimi dejavnostmi (praksami). Klasifikacija Benito-Gonzáleza in Benito-Gonzáleza (2005), ki jo uporabljam v disertaciji, se osredotoča na tri področja: organizacijske prakse, operativne prakse ter trženjske prakse. Organizacijske prakse vključujejo okoljsko politiko organizacije, postopke za oblikovanje okoljskih ciljev, postopke za izbiro in izvajanje okoljskih praks, ter postopke za oceno rezultatov praks. Operativne prakse so razdeljene v dve skupini: prakse povezane s proizvodi in prakse povezane s procesi. Prakse povezane s proizvodi so osredotočene na oblikovanje in razvoj okolju prijaznih proizvodov, medtem ko je cilj praks povezanih s procesi razvoj in uvajanje okolju prijazne proizvodnje ter operativnih metod in postopkov. Kategorija trženjskih praks je namenjena sporočanju ukrepov, sprejetih v korist naravnega okolja, različnim deležnikov organizacije.

Namen doktorske disertacije in raziskovalna vprašanja

Obsežen del literature je povezan z okoljskim managementom in teorijo življenjskega cikla organizacije. Raziskovalci večinoma preučujejo omenjeni področji ločeno, zato ni veliko raziskav, ki bi preučevale stičišče med njima. Eden od pogosto obravnavanih vprašanj v literaturi okoljskega managementa je, zakaj nekatere organizacije, bolj kot druge, razvijajo sposobnosti za proaktivne okoljske strategije, in v katerih okoliščinah »se splača biti zelen« (Berchicci & King, 2007). Pregled relevantne literature kaže, da bi morala prihodnja raziskovanja še naprej ugotavljati dejavnike vpliva na razmerje med okoljem in uspešnostjo (King & Lenox, 2001). Medtem ko so raziskovalci in managerji že spoznali

pomen okoljskih vprašanj, je malo znanega o tem, kako so okoljske strategije vključene v poslovni sistem tekom organizacijskega razvoja. Ta deficit v znanju me je spodbudil k analizi in razpravi o pomenu teorije življenjskega cikla organizacije na področju okoljskega managementa.

Temeljni namen doktorske disertacije je (1) povezati teorijo in raziskave okoljskega managementa in življenjskega cikla organizacije, (2) analizirati, kako se okoljska proaktivnost in poslovna uspešnost spreminjata tekom življenjskega cikla organizacije, ter (3) prikazati vzročno povezavo med okoljsko proaktivnostjo, življenjskim ciklom organizacije, zunanjimi okoljskimi dejavniki (negotovostjo, kompleksnostjo ter darežljivostjo) in poslovno uspešnostjo.

Doktorska disertacija je sestavljena iz zaporedja treh tematsko povezanih poglavij. Prvo poglavje povezuje literaturo o okoljskemu managementu in teoriji življenjskega cikla organizacije ter na podlagi študij primerov prikazuje kako se okoljske strategije spreminjajo tekom razvoja organizacije. Drugo poglavje dopolnjuje znanje o okoljski proaktivnosti in življenjskemu ciklu organizacije z empiričnim dokazom iz bolj in manj onesnaženih panog. Uspešnost posameznih okoljskih strategij je običajno posledica kombinacije različnih dejavnikov. Namesto ocene relativnega pomena posameznih strategij, tretji članek preučuje kombinacijo različnih dejavnikov, in sicer okoljske proaktivnosti/reaktivnosti, faz življenjskega cikla organizacije ter dejavnikov zunanjega okolja (negotovosti, kompleksnosti in darežljivosti), ki vodijo v dosego visoke poslovne uspešnosti (Fiss, 2007). Če povzamem, obravnava doktorska disertacija naslednja raziskovalna vprašanja:

(1) Kakšna je povezava med posameznimi fazami življenjskega cikla organizacije in razvojem okoljskih strategij?
(2) Kakšen je odnos med okoljsko proaktivnostjo v različnih fazah življenjskega cikla organizacije in konkurenčno prednostjo?
(3) Katere kombinacije dejavnikov, in sicer življenjskega cikla organizacije, okoljske reaktivnosti/proaktivnosti in zunanjih okoljskih dejavnikov (negotovosti, kompleksnosti, darežljivosti), vodijo do visoke poslovne uspešnosti?

Prvo poglavje je torej teoretični del doktorske disertacije, ki na podlagi študij primerov predlaga, kako se okoljske strategije in njihov vpliv na uspešnost poslovanja spreminjajo tekom različnih faz življenjskega cikla. V drugem poglavju testiram oblikovane hipoteze z uporabo multivariatne analize (hierarhična moderacijska regresijska analiza). V zadnjem delu uporabljam kvalitativno primerjalno analizo (mehko logiko) za identifikacijo poti, ki vodijo k visoki poslovni uspešnosti.

Okoljske strategije skozi faze življenjskega cikla organizacije

Teorija in študija primerov predstavljeni v prvem poglavju prikazujeta okoljske strategije, ki jih uspešne organizacije zasledujejo v vsaki fazi življenjskega cikla. S praktičnimi primeri in teoretično utemeljitvijo izbire strategij v vsaki izmed faz želim prispevati k boljšemu razumevanju primernosti okoljskih strategij tekom organizacijskega razvoja.

V tem poglavju uporabljam prilagojeno tipologijo generičnih strategij Milesa in Snowa (1978). Ločim jo na štiri strateške vrste, in sicer okoljski raziskovalci, okoljski analizatorji, okoljski branitelji ter okoljski reaktorji. Tipologija je prikazana kot kontinuum, na kateri okoljski raziskovalci in okoljske reaktorji predstavljajo skrajna položaja. Okoljski raziskovalci nenehno iščejo priložnosti na trgu s pomočjo okoljskih inovacij. Okoljski analizatorji delujejo rutinsko in okoljsko učinkovito, medtem ko so še vedno okoljsko inovativni. Okoljski branitelji posvečajo glavno pozornost k izboljšanju okoljske učinkovitosti obstoječih dejavnosti in ne iščejo novih priložnosti zunaj njihovega delovanja. Okoljski reaktorji poskušajo ohraniti status quo in spreminjajo poslovanje le kadar so v to prisiljeni.

Organizacije, ki so v fazah ustanovitve, rasti in oživitve, so ponavadi pripravljene tvegati, stalno razvijajo razločevalne kompetence ter sodelujejo in delujejo v skupinah, ki spodbujajo inovativnost in ustvarjalnost (Miller & Friesen, 1984). Na te osnovi lahko sklepam tudi o razvoju in implementaciji bolj naprednih okoljskih strategij. Po drugi strani pa so organizacije v fazah zrelosti in upada večinoma hierarhične, manj fleksibilne in birokratske ter manj inovativne (Burns, 1961), zato za te faze pričakujem manj napredne okoljske strategije. Na podlagi obstoječe literature ter študij primerov, sem prišla do sledečih predpostavk:

- P1. Uspešne organizacije iz faze ustanovitve bodo zasledovale strategije okoljskega raziskovalca.
- P2. Uspešne organizacije iz faze rasti bodo zasledovale strategije okoljskega analizatorja.
- P3. Uspešne organizacije iz faze zrelosti bodo zasledovale strategije okoljskega branitelja.
- P4. Uspešne organizacije iz faze oživitve bodo zasledovale strategije okoljskega raziskovalca.
- P5. Organizacije iz faze upada bodo zasledovale strategije okoljskega reaktorja.

Študije primerov kažejo na to, da vse večji pomen okoljske problematike predstavlja dodaten izziv za podjetja. S praktičnega vidika se zdi, da okoljska komponenta dodaja znatno zapletenost k delovanju podjetja, ter da samo tista podjetja s fleksibilnimi organizacijskimi strukturami in miselnostjo usmerjeno k akciji razvijajo in izvajajo okolju prijazne strategije. Ta podjetja lahko z vključevanjem okoljske komponente v strateško načrtovanje pričakujejo pozitiven vpliv na trenutno kot tudi prihodnjo finančno in

nefinančno uspešnost. Nasprotno pa so podjetja iz faz zrelosti in upada bolj pasivna. Le-ta podjetja so bolj uspešna, če poslujejo z že poznanimi praksami in uveljavljenimi postopki, kot da tavajo v negotovosti, brez ustreznih organizacijskih značilnosti ter mehanizmov, ki bi jim omogočili iskanje in izkoriščanje priložnosti.

Obstoječa literatura (npr. Aragón-Correa & Rubio-López, 2007; Russo & Fouts, 1997) v veliki meri obravnava vprašanje, ali »se splača biti zelen«. Teorija, ki jo predstavim v doktorski disertaciji, prispeva k tej razpravi s trditvijo, da uspešna podjetja razvijajo različno raven okoljske proaktivnosti tekom organizacijskega razvoja. To poglavje temelji predvsem na teoriji Millerja in Friesena (1984), ki empirično potrjujeta, da organizacije prehajajo med inovativnimi fazami (ustanovitev, rast in oživitev), ki razvijajo ali obnavljajo organizacijske zmožnosti, in konservativnimi fazami (zrelost in upad), ki izkoriščajo svoje zmožnosti preko učinkovitega delovanja. Na podlagi njunih ugotovitev, ostale literatura (npr. Adizes, 2004; Lester & Parnell, 2008) ter empiričnih indikacij, pričakujem, da uspešna podjetja iz inovativnih faz zasledujejo najbolj napredne okoljske strategije.

Glavni prispevek tega poglavja je razvoj teorije o okoljskih strategijah iz perspektive življenjskega cikla organizacije. V poglavju trdim, da bi morali biti previdni pri svetovanju o okoljskih strategijah, ter da bi le-to moralo biti prilagojeno fazi življenjskega cikla v kateri se organizacija nahaja. Okoljsko dimenzijo je potrebno vključiti v strategijo podjetja, ne da bi pri tem bila v konfliktu z drugimi vidiki. Poglavje lahko pomaga managerjem pri planiranju proaktivnih okoljskih strategij. Proaktivni pristop k varstvu okolja je kompleksen, zato je priporočljivo, da razmišljajo o stopnji razvoja svojega podjetja in ustrezno prilagodijo svoje strategije. Zlasti v diverzificiranih podjetjih, kjer so lahko strateške poslovne enote v različnih fazah življenjskega cikla, je pomembno, da so okolju prijazne naložbe v različnih strateških enotah usklajene s pričakovanimi (finančnimi) rezultati teh naložb. Na primer, celotne emisije diverzificiranega podjetja se lahko zmanjšajo z uporabo različnih kombinacij zmanjšanja (in povečanja) emisij v različnih strateških poslovnih enot. Če se management podjetja zaveda vpliva življenjskega cikla organizacije na izbiro okolju prijaznih strategij (in raven proaktivnosti), je verjetnost za doseganje najboljšega finančnega rezultata podjetja kot celote pri zmanjšanju emisij lahko veliko višja. V skladu s tem sem prepričana, da lahko podjetje s pravilno zastavljenimi okoljskimi strategijami izboljša svoj položaj na trgu, zniža stroškov, izboljša odnose z deležniki, izboljša učenje in pripadnost organizaciji itd. Zatorej lahko teorija, ki jo ponujam, pomaga organizacijam bolj učinkovito izkoriščati svoje vire in zmožnosti.

Vpliv življenjskega cikla organizacije na okoljsko učinkovitost in konkurenčno prednost: teorija dinamičnih zmožnosti

V drugem poglavju, na podlagi teorije dinamičnih zmožnosti, empirično raziskujem odnose med okoljsko proaktivnostjo, fazami življenjskega cikla organizacije, konkurenčnimi prednostmi in panogo. Teece et al. (1997) je opredelil dinamične zmožnosti

kot sposobnost odzivanja podjetja na zunanje okolje z nenehnim razvijanjem novih zmožnosti pri ustvarjanju konkurenčne prednosti.

Teorija življenjskega cikla pravi, da podjetja prehajajo med inovativnimi fazami ustanovitve, rasti in oživitve ter konservativnimi fazami zrelosti in upada (Adizes, 2004; Lester et al., 2003; Miller & Friesen, 1984; Quinn & Cameron, 1983). Čeprav je vsaka izmed faz edinstvena, kombinacije različnih dejavnikov (npr. strukturnih, situacijskih ter odločanja) določajo dve skupini faz, tako imenovano inovativno fazo, ki zajema podjetja iz faz ustanovitve, rasti in oživitve, ter tako imenovano konservativno fazo, ki zajema podjetja iz faz zrelosti in upada. Na podlagi tega sklepam, da bo tudi raven okoljske proaktivnosti in s tem povezana konkurenčna prednost podobna znotraj teh dveh skupin faz. To klasifikacijo uporabljam tudi v disertaciji.

Rezultati regresijske analize narejene na vzorcu 155 avstralskih podjetij kažejo, da je konstrukt življenjskega cikla organizacije tesno povezan z okoljsko proaktivnostjo. Rezultati potrjujejo tudi dobro uveljavljen pozitiven vpliv okoljske proaktivnosti na konkurenčno prednost podjetja. Okoljska proaktivnost je pozitivno povezana s konkurenčno prednostjo ne samo v inovativnih fazah temveč tudi v konservativnih fazah. Ena izmed razlag za to je, da podjetja v konservativnih fazah izvajajo cenovno dostopne in že uveljavljene okoljske prakse, ki bistveno ne vplivajo na vire in zmožnosti podjetja. Na ta način se podjetja izognejo morebitnim negativnim učinkom povezanim s tveganjem pri okoljskemu inoviranju ter s tem visokim stroškom. Za boljše razumevanje te ugotovitve so potrebne dodatne raziskave okoljske proaktivnosti podjetij iz konservativnih faz.

V tem poglavju sem spoznala večrazsežnost lestvice življenjskega cikla organizacije za zelo pomembno pri razumevanju zapletenega odnosa med okoljsko učinkovitostjo in uspehom podjetja. Razlike v delovanju podjetij in njihovim uspehom je mogoče razumeti iz razlikovalnih sredstev in razlikovalnih zmožnosti, ki jih podjetje poseduje. Medfunkcionalno upravljanje, stalno inoviranje in organizacijsko učenje, ki so primeri organizacijskih zmožnosti podjetij v inovativnih fazah življenjskega cikla, so bili tudi v drugi literaturi označeni za pomembne dejavnike, ki spodbujajo okoljsko proaktivnost (npr. Bansal, 2005; Sharma & Vredenburg, 1998).

Podjetje mora pri obdelavi edinstvenih virov in razvoju dinamičnih zmožnosti upoštevati tudi vpliv zunanjega poslovnega okolja (Priem & Butler, 2001). Zatorej je potrebno pozornost nameniti tudi panogi v kateri podjetje deluje (Banerjee, 2002) ter značilnostim zunanjega poslovnega okolja (negotovosti, kompleksnosti in darežljivosti) (Aragón-Correa & Sharma, 2003). Z razvrščanjem podjetij v skupini zelo onesnaženih panog in zmerno onesnaženih panog sem ugotovila, da panoga pomembno vpliva na okoljsko proaktivnost podjetja. Dejavniki, kot so strožja zakonodaja in skrb javnosti za okolje, lahko pojasnijo višjo raven okoljske proaktivnosti v bolj onesnaženem sektorju. Poleg tega so rezultati, skladno z obstoječo literaturo, potrdili tudi povezavo med darežljivostjo in okoljsko proaktivnostjo, kakor tudi med darežljivostjo in konkurenčno prednostjo. V nasprotju z

rezultati Rueda-Manzanares et al. (2008) pa sem ugotovila, da negotovost zmanjšuje raven okoljske proaktivnosti in konkurenčno prednost. Velika raven negotovosti lahko vodi podjetja, da sprejmejo ukrepe in delovanje, ki zmanjšujejo negotovost. V tem primeru ohranjanje statusa quo predstavlja racionalen odziv. Rezultati tudi kažejo, da so podjetja iz konservativnih faz življenjskega cikla bolj občutljiva na dejavnike zunanje poslovnega okolja (negotovost in kompleksnost).

Vpliv življenjskega cikla organizacije na okoljsko proaktivnost ponuja zanimive in nove ugotovitve tudi za management. Nova teorija je lahko uporabno orodje za učinkovit okoljski management na več načinov. Prvič, teorija predlaga managementu kdaj je primeren čas za razvoj okoljske proaktivnosti. Proaktivni pristop k varstvu okolja je namreč zelo kompleksen, saj med drugim zahteva razrahljano organizacijsko strukturo in norme (Russo & Fouts, 1997), spremembe v poslovanju (Aragón-Correa & Sharma, 2003), vključuje različne interesne skupine (Russo & Fouts, 1997) ter lojalnost in usklajevanje vodstva (Aragón-Correa, 1998). Smiselno je, da management pozna stopnjo razvoja svojega podjetja ter le-temu prilagaja strategije. V nasprotnem primeru lahko zatre nadaljnji razvoj svojega podjetja. Na tem mestu je potrebna dodatna študija, ki bi raziskala katere so tiste okoljske strategije, ki so koristne za podjetja v različnih fazah življenjskega cikla organizacije.

Drugič, moja študija ponuja zanimivo odkritje, da je okoljska proaktivnost pozitivno povezana s konkurenčno prednostjo ne samo v inovativnih fazah ampak tudi v konservativnih fazah življenjskega cikla organizacije. Podjetja v konservativnih fazah, še posebej tista v slabem stanju, lahko ponovno preučijo svoj poslovni model in vključijo okoljsko dimenzijo kot eno ključnih komponent ter se s tem doživijo preporod. Prepričana sem, da lahko podjetja s pravilno zastavljenimi okoljskimi strategijami izboljšajo svoj položaj na trgu. Dokazano je namreč, da lahko okoljska proaktivnost zmanjšuje stroške podjetja, izboljša odnos z interesnimi skupinami, izboljša organizacijsko učenje in pripadnost podjetju, ter prispeva h kakovosti izdelkov in storitev.

Zatorej, če podjetje stremi k okoljski proaktivnosti, želi morda najeti okoljske managerje za pomoč pri razvijanju in izvajanju ustreznih strategij. Uspeh ne zahteva le zavezanost finančnih sredstev temveč tudi spreminjanje nekaterih najpomembnejših lastnosti podjetja, kot so stil vodenja in organizacijska struktura. Podjetje lahko prav tako ponudi nagrade zaposlenim, ki sprejmejo okoljske prakse in se obnašajo na način, ki je koristen za podjetje. Moja teorija lahko pomaga podjetjem učinkovito izkoristiti trenuten položaj, sredstva in zmožnosti ter zmanjšati nejasnosti v zvezi z okoljsko proaktivnostjo in njegovo kompleksno naravo.

Okoljska proaktivnost in uspešnost podjetja: kvalitativna primerjalna analiza (mehka logika)

V tretjem poglavju raziskujem vzročne kompleksnosti v odnosu med okoljsko proaktivnostjo in uspešnostjo podjetja. Na vzorcu 27 avstralskih podjetij preučujem kombinacije dejavnikov, to so faze življenjskega cikla organizacije, dejavniki iz zunanjega okolja podjetja (kompleksnost, negotovost in darežljivost) ter okoljska reaktivnost/proaktivnost, v zelo uspešnih podjetji iz industrijskih panog, ki močno onesnažujejo okolje. Podatke sem analizirala z uporabo kvalitativne primerjalne analize (mehka logika). Rezultati analize kažejo, da okoljska proaktivnost ni vedno povezana z visoko uspešnostjo podjetja, ter da okoljska proaktivnost ni enako pomembna kot drugi vzročni pogoji za doseganje visoke uspešnosti podjetij v zelo onesnaženih industrijskih panogah.

V kvantitativnih raziskavah raziskovalci vsako spremenljivko običajno obravnavajo kot neodvisno ter pri tem ocenjujejo katera od spremenljivk ima največji vpliv na odvisno spremenljivko. Za razliko od običajnih statističnih tehnik, ki temeljijo na linearni algebri, QCA predpostavlja, da je vzročna zveza zapletena, ter da je izid lahko posledica različnih kombinacij spremenljivk (pogojev) (Ragin, 2008). Torej, namesto da bi ugotavljala katere spremenljivke, in sicer okoljska proaktivnost, faze življenjskega cikla organizacije ter dejavniki iz zunanjega poslovnega okolja, zagotavljajo največji prispevek k pojasnjevanju variance v uspešnosti podjetij, proučujem, kateri od teh pogojev in njihove kombinacije so značilne za podjetja, ki dosegajo visoko poslovno uspešnost. Rezultati kažejo, da so vsi preučevani pogoji pomembni za doseganje uspešnosti. Poleg tega tudi jasno kažejo, da je doseganje uspešnosti posledica znatne soodvisnosti med izbranimi pogoji. Zatorej ima lahko vsak izmed pogojev različen oziroma celo nasprotni učinek na uspešnost, odvisno od prisotnosti ali odsotnosti drugih pogojev. Na podlagi tega sklepam, da okoljska proaktivnost ni vedno povezana z visoko uspešnostjo podjetja, ter da okoljska proaktivnost ni enako pomembna kot drugi vzročni pogoji za doseganje visoke uspešnosti v zelo onesnaženih industrijskih panogah.

Analiza torej kaže, da okoljska proaktivnost ni vedno povezana z uspešnostjo podjetja: v okoljih za katere je značilna kompleksnost in hkrati odsotnost negotovosti, ali kombinacija kompleksnosti in prisotnosti inovativnih faz življenjskega cikla organizacije, visoko uspešna podjetja ne zasledujejo proaktivnih okoljskih praks. Okoljska proaktivnost je povezana z uspešnostjo podjetij v poslovnih okoljih za katere je značilna odsotnost negotovosti in pomanjkanje kompleksnosti, ali odsotnost negotovosti in prisotnost inovativnih faz življenjskega cikla organizacije. Nazadnje, ko je poslovno okolje darežljivo in hkrati kompleksno ali kompleksno in ni negotovo, podjetja v inovativnih fazah življenjskega cikla organizacije dosegajo visoko uspešnost ne glede na njihov odnos do okolja. Rezultat analize se lahko razlikujejo glede na panogo, zato je v prihodnjih raziskavah potrebno preučiti tudi druge, manj onesnažujoče panoge.

Rezultati torej kažejo, da imajo izbrani pogoji lahko različne vplive na uspešnosti. Zato trdim, da slabo poznavanje razlik med podjetji lahko pripelje do napačnih sklepov, da je okoljska uspešnost donosna, ko pa se v resnici managerji odločijo slediti okolju prijaznim strategijam samo v kombinaciji z drugimi pogoji, ki delajo tako ravnanje uspešno. Managerji morajo razumeti odnose med neobvladljivim zunanjim poslovnim okoljem, kot sta narava panoge in značilnost konkurenčnega okolja, in obvladljivim notranjim okoljem, kot so strategije, organizacijske strukture in organizacijske klime, za uspešno upravljanje njihovih podjetij. Z drugimi besedami, managerske odločitve in sposobnost kritičnega razmišljanja morajo biti odvisne od celostnega okolja v katerem podjetje posluje.

Identifikacija več poti, ki vodijo do istega rezultata, prikazuje managerjem različne možnosti glede oblikovanja in izvajanja strategij. Nasprotno pa rezultati korelacijskih analiz kažejo samo relativni pomen različnih spremenljivk. Na ta način lahko managerji mislijo, da so možnosti za dosego pozitivnega izida zelo omejene. Ugotovitve kvalitativne primerjalne analize so pomembne za različna podjetja, tako da lahko le-ta prilagodijo strategije tako, da ustrezajo njihovim potrebam. Prepoznavanje različnih poti do izida torej omogoča večjo prožnost pri izbiri ustrezne ravni okoljske proaktivnosti. Poleg tega rezultati jasno kažejo, da je uspešen razvoj in izvajanje strategij odvisen tudi od dejavnikov zunanjega poslovnega okolja. Zmanjševanje nejasnosti prek skeniranja okolja ter sprejetje ukrepov za ohranitev nadzora je zatorej nujno. Managerji morajo prav tako upoštevati, da so poti, ki vodijo do visoke poslovne uspešnosti lahko zelo različne od tistih, ki vodijo k nizki uspešnosti podjetja. Na primer, dejstvo, da okoljska proaktivnost vodi do visoke uspešnosti podjetja nikakor ne pomeni, da odsotnost okoljske proaktivnosti vodi k nizki uspešnosti podjetja.

Ker so izjave o vzročnih povezavah asimetrične, sem ponovila analizo za identifikacijo kombinacij pogojev povezanih z ne-visoko (povprečno ali nizko) uspešnostjo podjetja. Rezultati kažejo, da je med izbranimi pogoji velika medsebojna odvisnost in da ima lahko prisotnost okoljske proaktivnosti tudi negativne učinke na izid, odvisno od prisotnosti ali odsotnosti drugih pogojev.

Zaključek

Odnos organizacij v različnih fazah življenjskega cikla do okolja je bil, zaradi poudarka na presečnih analizah med različnimi panogami ter fokusa na zrelih organizacijah, v literaturi obravnavan le v omejenem obsegu. S povezavo okoljskega managementa in teorijo življenjskega cikla organizacije doktorska disertacija pripomore k izboljšanju razumevanja notranjega in zunanjega poslovnega okolja ter njegovega vpliva na okoljski management.

Vrednost doktorske disertacije se kaže v obravnavanju odnosa med okoljskim managementom in teorijo življenjskega cikla organizacije, konkretno (1) v utemeljitvi vpliva okoljskih strategij na poslovno uspešnost organizacije tekom različnih faz življenjskega cikla, (2) v empiričnem preučevanju in analizi predlaganih razmerij, ter (3) v

prispevku k izboljšanem razumevanju vzročne zveze med okoljsko proaktivnostjo, fazami življenjskega cikla organizacije, zunanjimi dejavniki poslovnega okolja in poslovno uspešnostjo. Na osnovi tega lahko doktorska disertacija pomaga managerjem pri odločitvah o razvoju proaktivnega okoljskega vedenja. Natančneje, poznavanje pomena razvoja organizacije lahko pripomore k boljšemu poznavanju in prepoznavanju sprememb v okolju ter s tem uspešnejšemu managementu v organizacijah ali nadaljnje, teorija dinamičnih zmožnosti lahko pomaga organizacijam, da izkoristijo svoje vire in zmožnosti na učinkovit način ter si s tem pridobijo trajno konkurenčno prednost.