



RESIDENTIAL CARE CONCEPTS OFFER A SOLUTION FOR HEALTH CARE INSTITUTIONS

MASTER THESIS REAL ESTATE AND HOUSING

Master Thesis Presentation

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INTRODUCTION

Reform in the healthcare systems

The sustainability of current healthcare systems is threatened by several societal and economic developments, including an aging population, an increase of unmet medical needs and rising healthcare costs (Janssen, 2013).

The consequence of these developments leads to new healthcare legislation.

Introduction

Healthcare institutions:

- Threat of vacancy in their real estate
- Job lost
- Healthcare institutions are not adaptive enough

Problem description

Healthcare institution context:

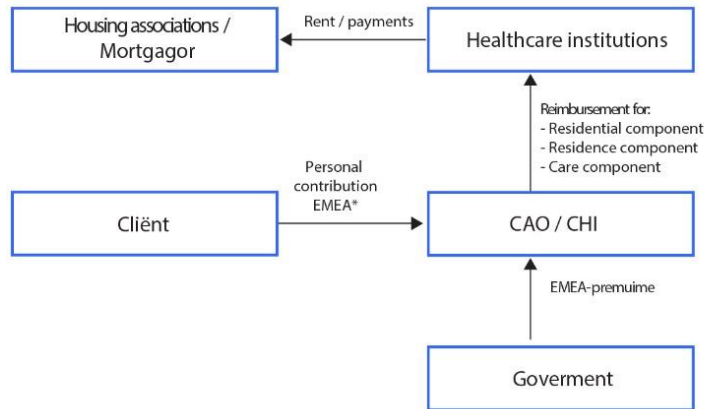
New healthcare legislations:

- Intermural, Normative housing component (NHC)
 - Annual outsourcing
 - Limited number customers
 - No client, no fee.
- Extramural, Separation residential- and care component

Demographics

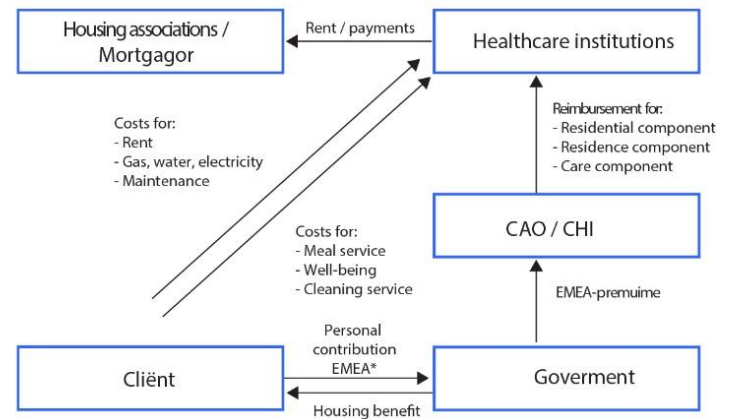
Problem description

CASHFLOW OLD LEGISLATION



CAO = Central administration office
 EMEA = Exceptional Medical Expenses Act
 CHI = College of health insurers
 * Consists of personal contribution for the care and housing component.

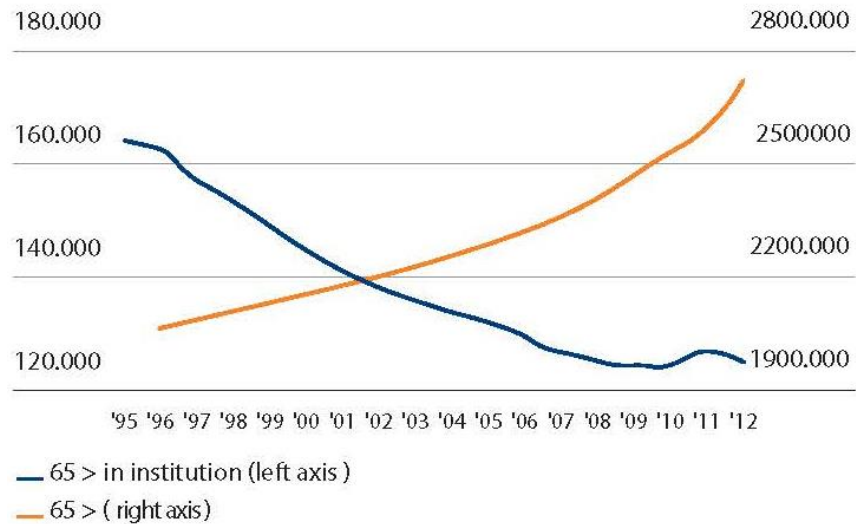
CASHFLOW NEW LEGISLATION



CIP = Care intensity package
 CAO = Central administration office
 EMEA = Exceptional Medical Expenses Act
 CHI = College of health insurers
 * Client gets a care without residence indication (CIP 1 t/m 4) only pays a personal contribution for the care component.

Problem description

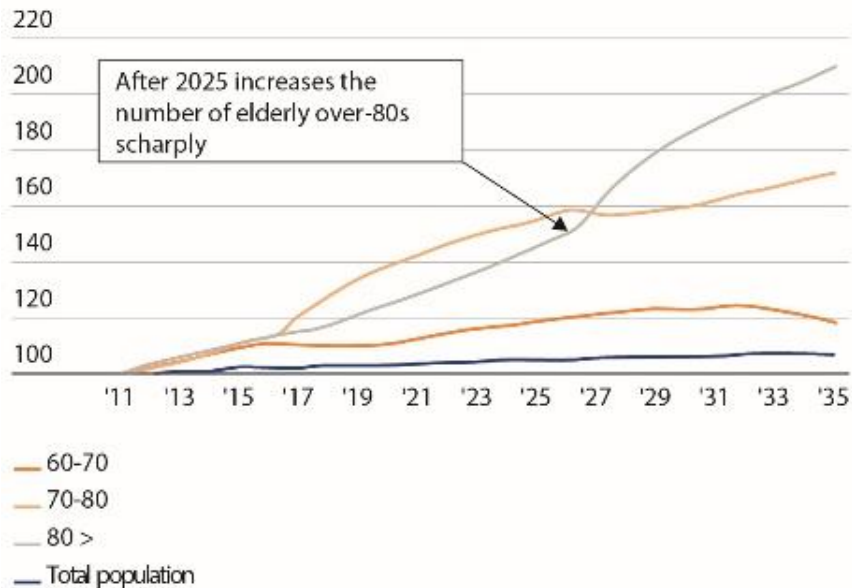
Number of elderly people living in the care homes decreases for numbers of years



Source: CBS, 2013

Problem description

Number of older elderly increases sharply after 2025
(2011=100)



Source: CBS, 2013

Problem description

For healthcare institutions with elderly care real estate, it is important that both the services offered by them as well as the real estate owned by them, will be involved in the decisions about developing a good business model (Olde Bijvank, 2012)(Ginneken, 2014).

Main research question

How to design a business model that aligns residential care concepts with real estate strategies for elderly care institutions.

More specifically, the following sub questions will be addressed:

1. Which target group profiles can be distinguished for health care institutions?
2. Which factors are important for Residential Care Concept that focuses on independent living?
3. Which real estate strategies are deployed within the current healthcare legislation?
4. Which real estate strategies can be aligned with these Residential Care Concepts to formulate a business model?

THEORETICAL FRAMEWORK



**Apartments in nursing home De Geinsche Hof,
Nieuwegein, Utrecht**

Theoretical framework

The residential care concept model:

- Based upon the HORIZON model
- Interviews with the experts

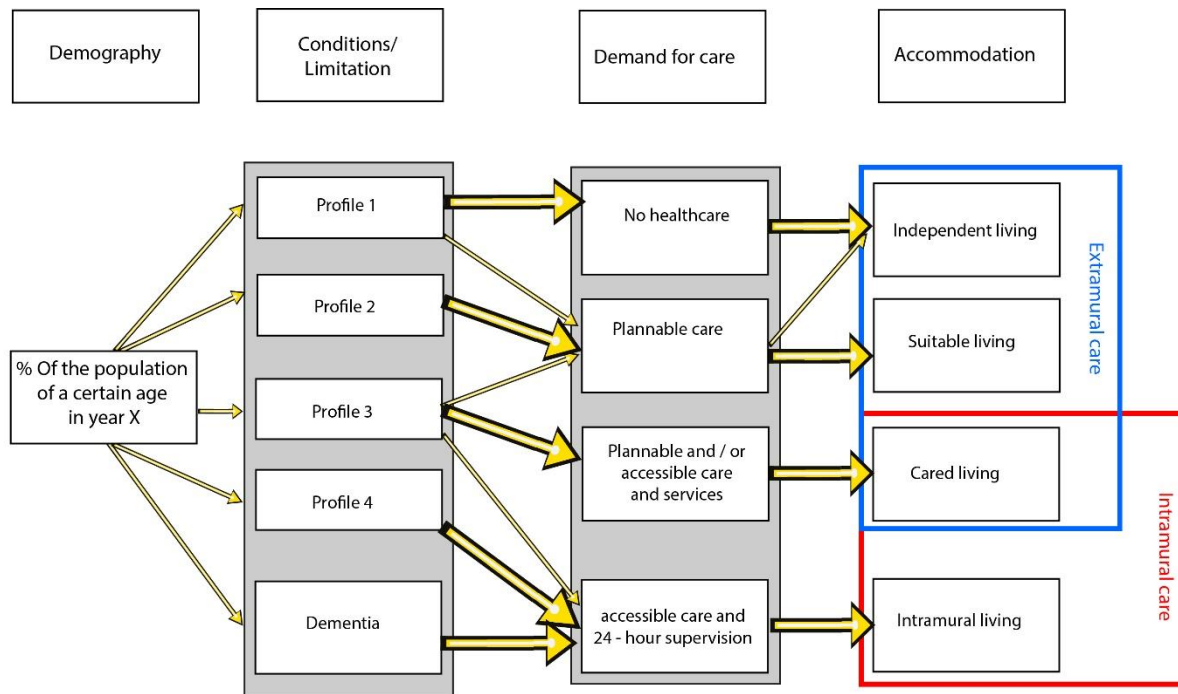
Possible real estate strategies:

- Literature research
- Interview with the experts

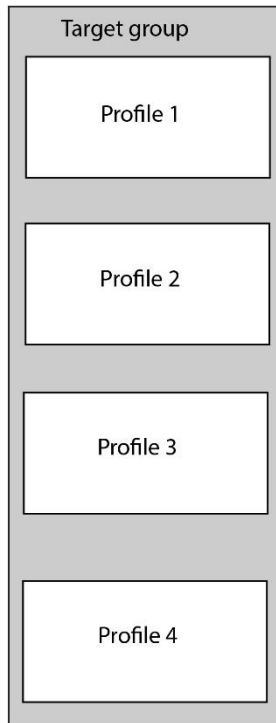
Business model:

- Based upon the canvas business model

The HORIZON model



The residential care concept model



Profile 1: the elderly in this profile have no or little mobility limitations;

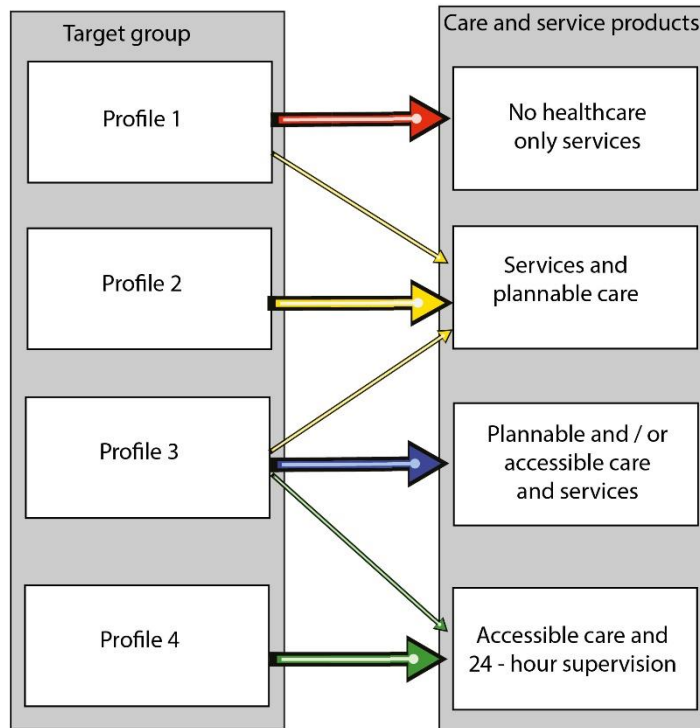
Profile 2: elderly people with mobility limitations: for instance, in climbing stairs, leave and enter the house and move outdoors;

Profile 3: elderly people with mobility- and personal care limitations;

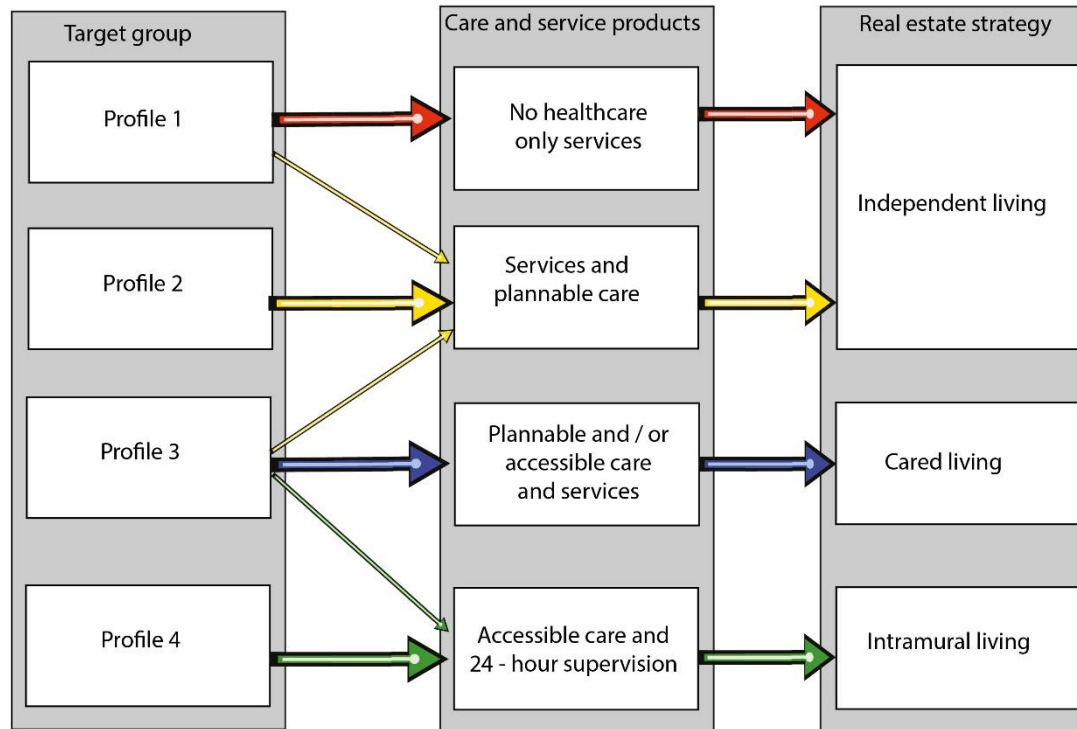
Profile 4: elderly with many functional limitations.

1. Which target group profiles can be distinguished for health care institutions?

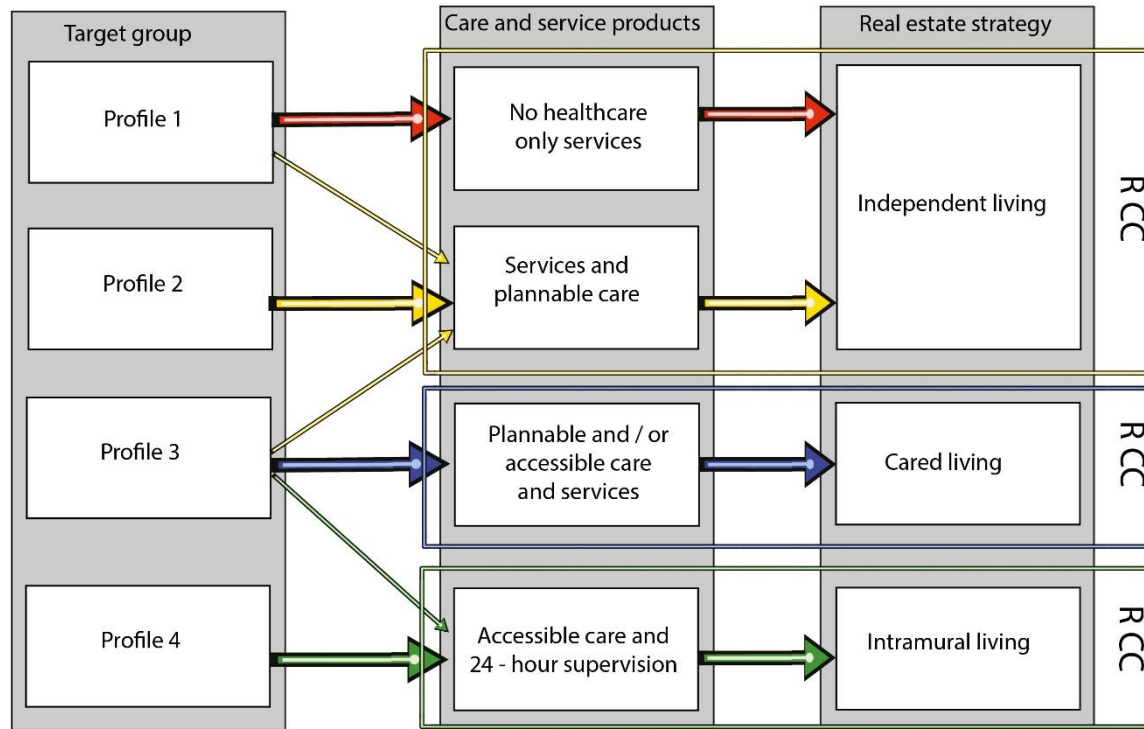
The residential care concept model



The residential care concept model



The residential care concept model



2. Which factors are important for Residential Care Concept that focuses on independent living?

The residential care concept

Residential care concept 1: intramural living.

Residential care concept 2: Cared living

Residential care concept 3: independent living

The real estate strategies

Strategy 1: Increase the nursing capacity (focus on intramural customers).

Strategy 2: The renting of the care apartments and (possibly) providing extramural home care (focus on extramural customers).

Strategy 3: The reorganisation of real estate portfolio and expand home care capacity (focus on extramural customers).

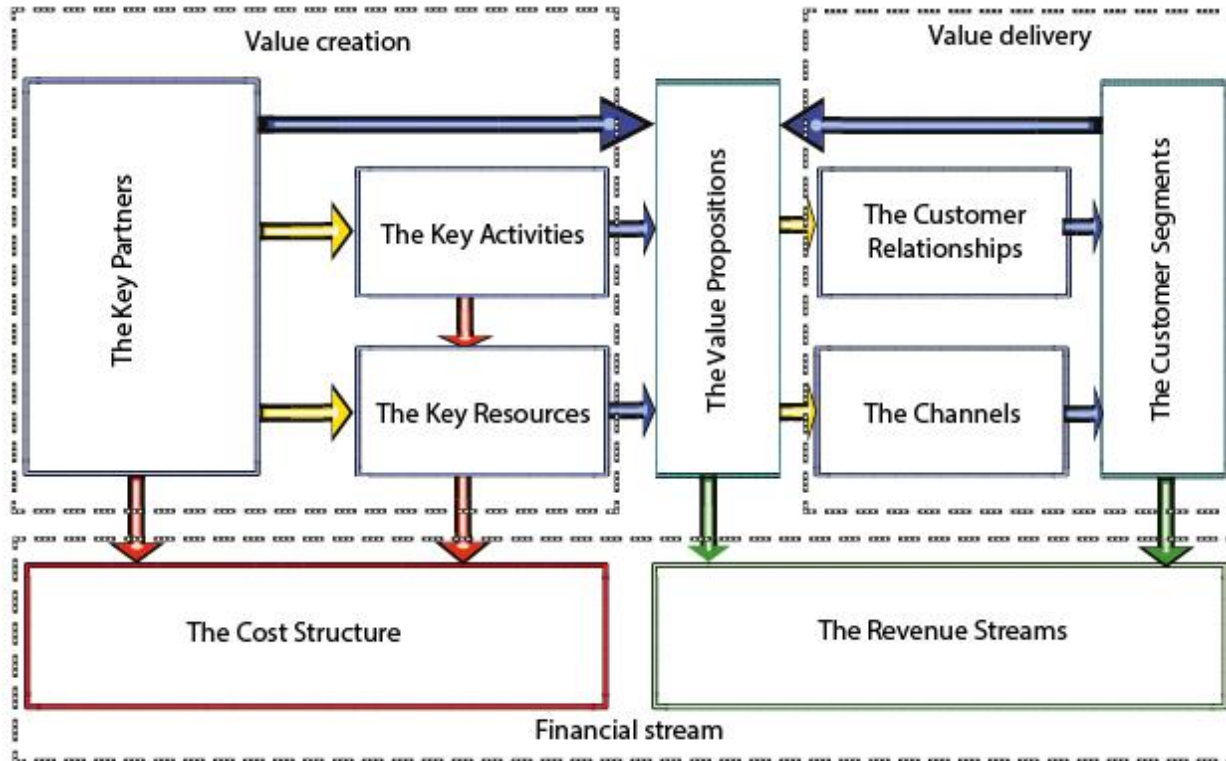
Strategy 4: The alternative use of the property with the ultimate goal disposing of it.

The overall goal of these strategies are to reducing the vacancy and increasing the profitability of the healthcare institutions.

3. Which real estate strategies are deployed within the current healthcare legislation?

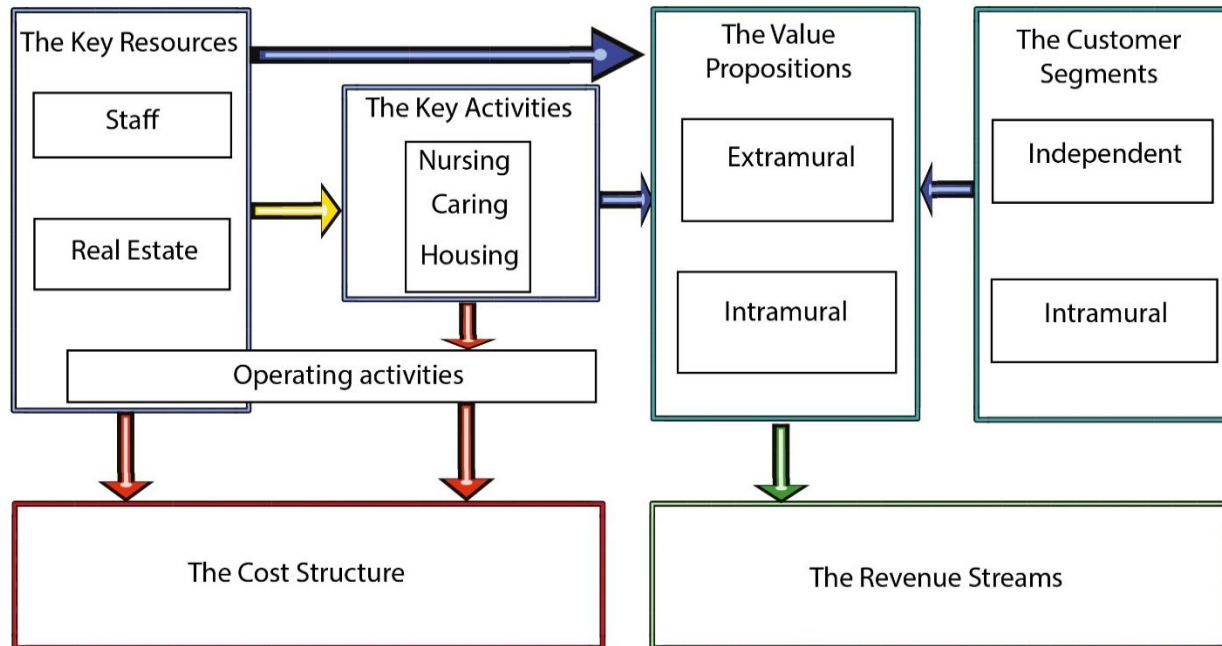
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Canvas business model



(A. Osterwalder, Y. Pigneur, 2010)

New business model



Hypothesis

Impact on the revenue streams:

The first real estate strategy => RCC (intramural living)

Negative: *key resources (real estate and staff) and the key activity (care products)*

Positive: *value propositions the number of the intramural customer*

The second real estate strategy => RCC (cared living)

Negative: *real estate and the key activities (for providing housing and care)*

Positive: *the number of the extramural customer*

The third and fourth strategies => RCC (independent living)

Negative: *real estate*

Positive: *the number of the extramural customer*

4. Which real estate strategies can be aligned with these Residential Care Concepts to formulate a business model?

Hypothesis

The application of a business model in which intra- and extramural residential care concepts are aligned with different real estate strategies better explain the level of the profitability (the revenue streams) for health care institutions than only real estate strategies.



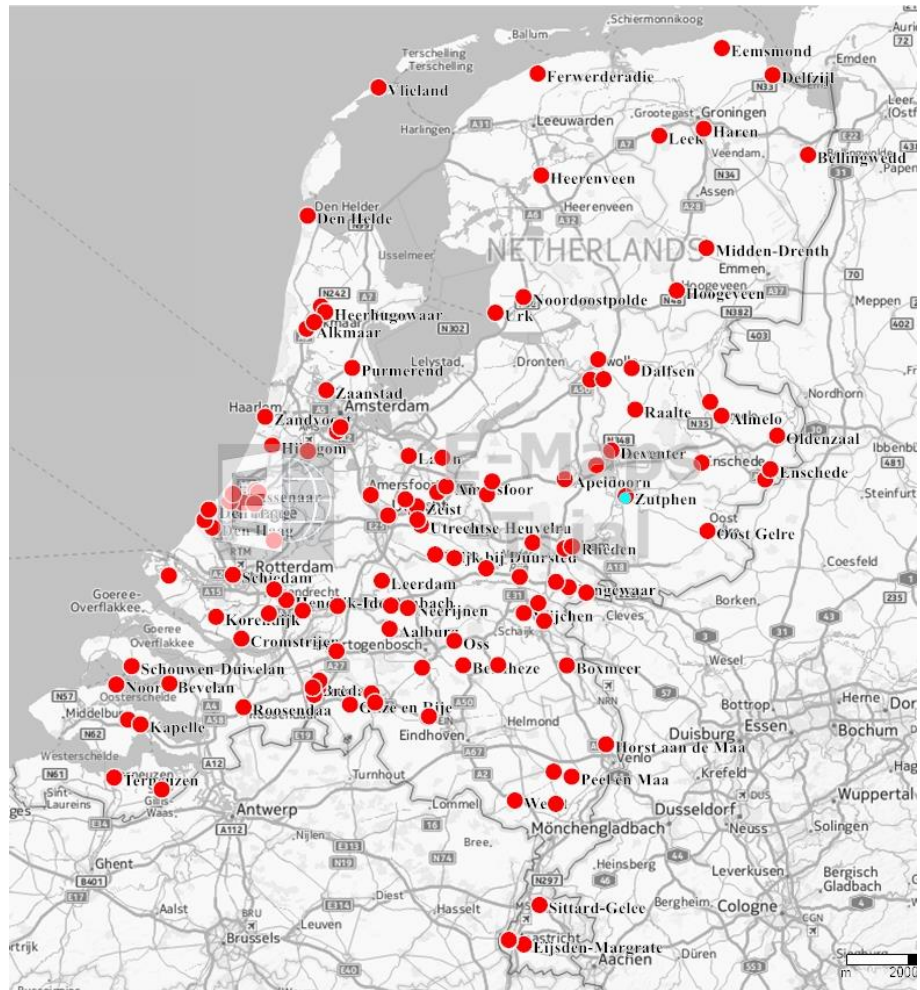
METHODOLOGY



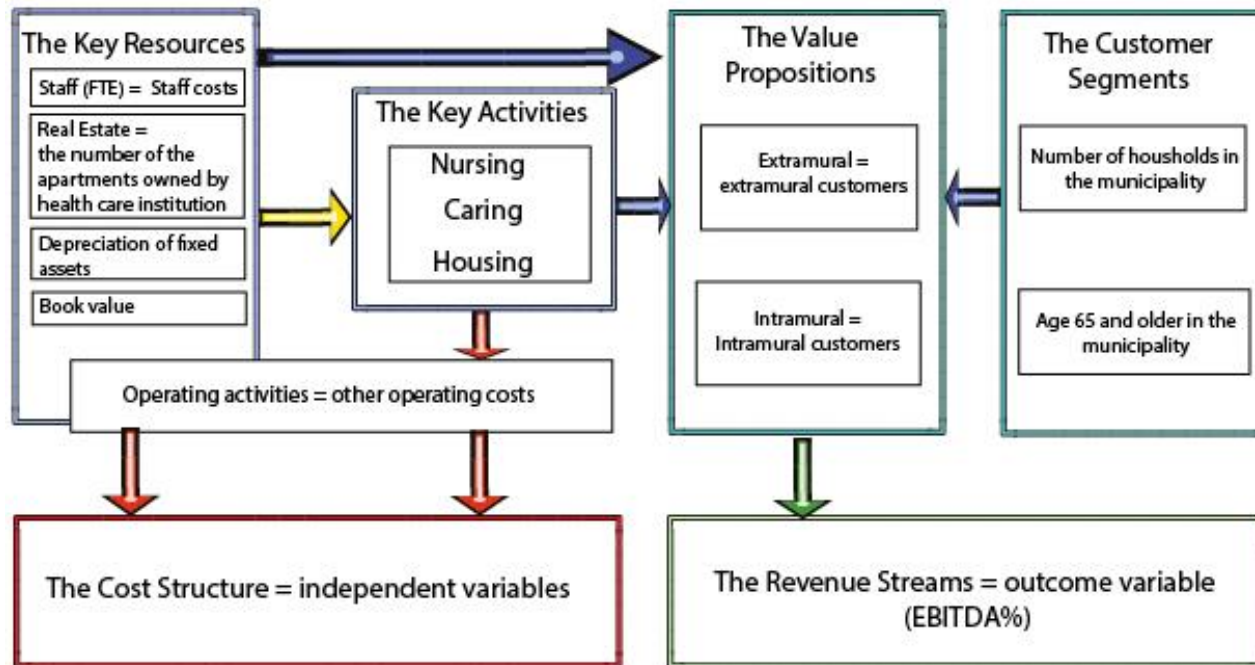
Apartment in care home Vilente De Pleinen, Ede
Gelderland

Methodology

Care on the Map “zorg op de kaart” combined database
127 elderly care institutions
Geographically dispersed



Regression modelling



$$EBITDA\% = (b_0 + b_1 \text{ Staff cost} + b_2 \text{ Real estate} + b_3 \text{ depreciation of fixed assets} + b_4 \text{ book value} + b_5 \text{ Other Operating cost} + b_6 \text{ Number of intramural customers} + b_7 \text{ Number of extramural customers} + b_8 \text{ Number of household in the municipality} + b_9 \text{ Number of residences age 65 years and older in the municipality}) + \varepsilon_i$$

Regression modelling

Dependent (outcome) Variable

The outcome variable (the revenue streams) is identify as: Earnings before interest, taxes, depreciation, and amortization (EBITDA%).

Regression modelling

Independent (explanatory, predictor) variables

The Key resource

Variable Name		Label	unit conversion	unit
Dutch	English			
Personeelskosten - 2013	Staff (FTE)	Staff costs	in million	€
Aantal appartementen	Real estate	Number of apartments	none	number
Afschrijvingen vast eactiva - 2013	Depreciation of fixed assets	Depreciation of fixed assets	in million	€
Boekwaarde - 2013	Book value	Book value	in million	€

The Key activities

Variable Name		Label	unit conversion	unit
Dutch	English			
Overige bedrijfskosten - 2013	Operating activities	Other operating cost	in million	€

The Value propositions

Variable Name		Label	unit conversion	unit
Dutch	English			
Aantal cliënten extramuraal (GHZ & VVT)	Extramural	Number of clients extramural	none	number
Aantal cliënten intramuraal (GHZ & VVT)	Intramural	Number of clients intramural	none	number

The Costumers segment

Variable Name		Label	unit conversion	unit
Dutch	English			
Aantal huishoudens	Number of household in the municipality	Number of household	in thousands	number
Leeftijd 65 jaar en ouder	Number of residences age 65 years and older in the municipality	Age 65 and older	none	%

RESULTS



Descriptive statistics

Independent (explanatory, predictor) variables

The Key resource	Mean	Std. Deviation	95% CI_LB	95% CI_UB
Staff costs*	10,7	11,8	8,6	12,8
Number of apartments	82,6	43,2	75	90,3
Depreciation of fixed assets*	0,9	1,3	0,7	1,2
Book value*	11,8	18,5	8,5	15

* in million €

The Key activities	Mean	Std. Deviation	95% CI_LB	95% CI_UB
Other operating cost*	3,7	3,7	3	4,4

* in million €

The Value propositions	Mean	Std. Deviation	95% CI_LB	95% CI_UB
Number of clients extramural	175	249,8	129,4	220,5
Number of clients intramural	195	195	159,4	230,6

The Costumers segment	Mean	Std. Deviation	95% CI_LB	95% CI_UB
Number of household in the municipality*	42,5	69,4	30,3	54,6
Number of residences age 65 years and older in the municipality**	13,6	16,9	10,7	16,6

* in thousands ** in percentage

Statistical model

Final model Output (forward method)	<i>B</i>	<i>SE B</i>	β
Constant	18,74	3,604	
Number of extramural cutomers	0.009	0,004	0,290
Age 65 and older in the municipality	-0,378	0,188	-0,168
Number of household in the municipality	-0,297	0,933	-0,271
Book value 2013	0,022	0,080	0,527
Staff costs 2013	-0,836	0,140	-1,289
Depreciation of the fixed assets 2013	0,398	1,347	0,700

R2 = .36 ; (p < .05)

Conclusion

Impact on the revenue streams:

The first real estate strategy => RCC (intramural living)

Negative: **staff costs** (*significant*)

Positive: *the number of the intramural customer* (*no significant*)

The second real estate strategy => RCC (cared living)

Negative: *real estate and the key activities* (for providing housing and care) (*no significant*)

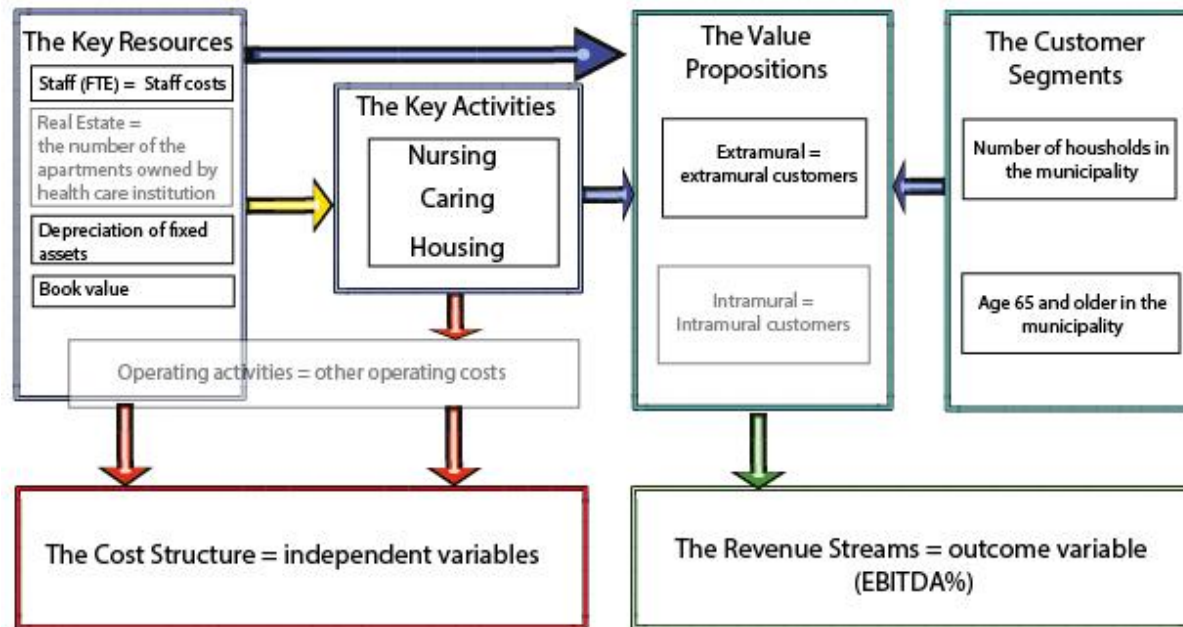
Positive: *the number of the extramural customer* (*significant*)

The third and fourth strategies => RCC (independent living)

Negative: *real estate* (*no significant*)

Positive: *the number of the extramural customer* (*significant*)

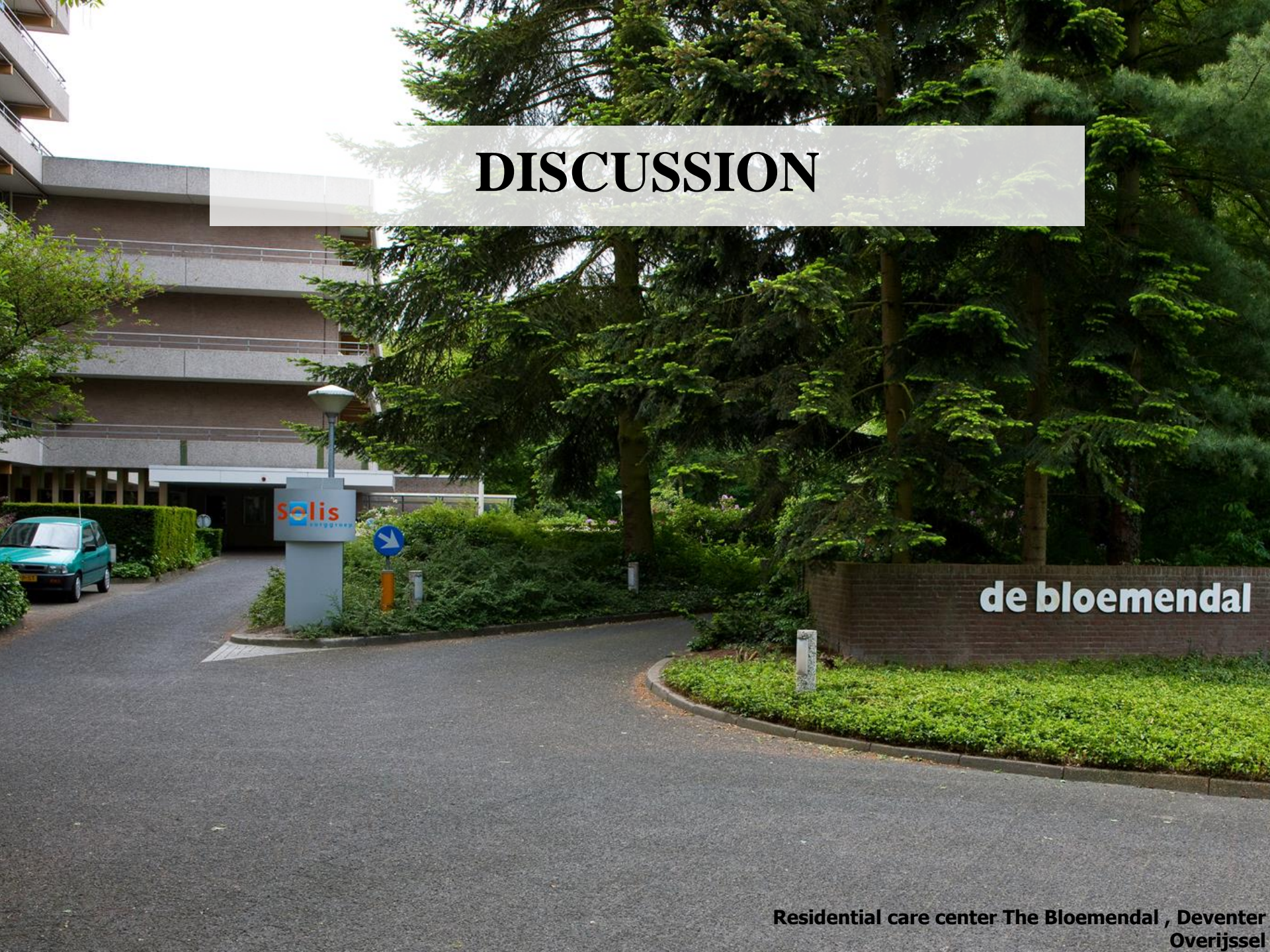
The final business model



Conclusion

The present study tends to support the hypothesis that alignment of Residential Care Concepts with real estate strategies in business models might support profitability for health care institutions.

DISCUSSION



Residential care center The Bloemendal , Deventer
Overijssel

Implementation

By adapting well described residential care concepts and expanding the extramural care provision may have a positive effect on the overall financial performance of the health care institutions, in addition the results suggest that merely focusing on the intramural care in the short and long-term may have adverse effects on the revenues of the health care institutions, given the current policies being very focused on the deferral of intramural care growth.

Restriction and limitation

- The available data were from 2013
- Generalizability of the model
- Negative impact of the customer segment
- The key Partners, customer relationships and channels

Recommendations for further research

- Repeat research every 2 to 3 years
- Change in the healthcare legislation after 2013
- Incorporate care institutions providing elderly care in addition to another kind of primary care in a similar study
- Extent the scope of this research by include all business model components

CONCLUSION

**Apartments in residential care center Veldhof,
Leidsche Rijn, Utrecht**

Conclusion

- It can be concluded that the components of the business model, for health care institution, are a crucial element in the financial performance of their business.
- The key resource factors, such as the **staff cost**, **depreciation of fixed assets** and **the book value** definitely influences the business model performance, and thus the profitability of the elderly health care institution.
- The significant impact of **intramural customers** does not hold up on the long run. But the number of the **extramural costumers** most certainly has significant impact on the revenue streams.