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El Aidi, Doaa

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Analyzing, Projecting and synthesizing Real-world Problem from a designer perspective: Exploratory study to tackle poverty in Egypt

Doaa El Aidi

Ph.D. Candidate at BERGISCHE UNIVERSITÄT WUPPERTAL, Germany

Assistant lecturer at the FACULTY OF APPLIED ARTS, Helwan University, Cairo, Egypt

System thinking will help designers to avoid falling into the trap described by Goethe in 1817 "One faces the danger of seeing and yet of not seeing." (qtd. in Findeli 2001, P. 11)

System Thinking and Complex Reality

Interconnected thinking and the paradigm of Pattern (Vester, 2007)

recognizing the interconnecting relationships between components of the problem and its context (the paradigm of pattern)

1st and 2nd generation design methods (Rittel, 1972)

1st generation design methods

1. *assume: Asymmetry of ignorance*

- there is a professional expertise about other people's problems
- the designer is knowledgeable about other people's problem and how it can be solved.

2. *Separation model*

- designer plans for client who has the problem without involving him

3. *Design process is not argumentative*

Listening & understanding > thinking > solution

4. *The aim of getting more involved*

- planning for others /on behalf of others

1st and 2nd generation design methods (Rittel, 1972)

1st generation design methods

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2. Separation model

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3. Design process is not argumentative

Listening & understanding > thinking > solution

4. The aim of getting more involved

- planning for others /on behalf of others

2nd generation design methods

1. assume: Symmetry of ignorance

- the expertise and ignorance about the problem are distributed over all participants
- nobody is knowledgeable about problems than others(different participants means activating different knowledge)

2. Conspiracy model of planning to overcome implementation problems

- designer is like a teacher: his role is to show others how to plan for themselves

3. Design process is argumentative

the logic of reasoning by designer:
asking questions > generating info. > forming judgments

4. The aim of self-elimination

- designer is an activist and modest
- designer moderate optimism

Research problem and Research hypothesis

Since publishing the first Egypt Human Development Report (EHDR) 1995, **the role of design as a partner in the developing process to achieve sustainable development is not recognized yet** or even available in the local design discourse.

Through my research, I argue that **design can play a powerful role in contributing to ongoing efforts** of many institutions and organizations in Egypt that are trying to tackle 'poverty' in order to achieve sustainable development.

Methodological Approach

- Pragmatic worldview with transformative character (exploring and empowering)
- Ontology: Beyond duality of reality
- Dynamic Sequential Mixed Methods approach*
- Strategy of inquiry (Case study)
- Methods (interviews, Vester's sensitivity model, Schwartz scenarios, different visual methods)

* Creswell and Clark (2011)

KEY RESULTS

Theoretical Foundation to answer the following question: **What do sustainable development and design have in common?** Answering this question is vital to find out the connection between design and sustainable development.(know-what)

Operational Framework to guide processing the data; using different methods from different backgrounds where system thinking, scenario building and strategic planning and acting are important methodological components synthesized in this framework (know-how)

Case Study for **visualizing the proposed design thinking process** to solve Real-world problems that ending up with a prototype for the solution in form of design social business model.

KEY RESULTS

> Theoretical Foundation

> Operational Framework

> Case Study

Research fields

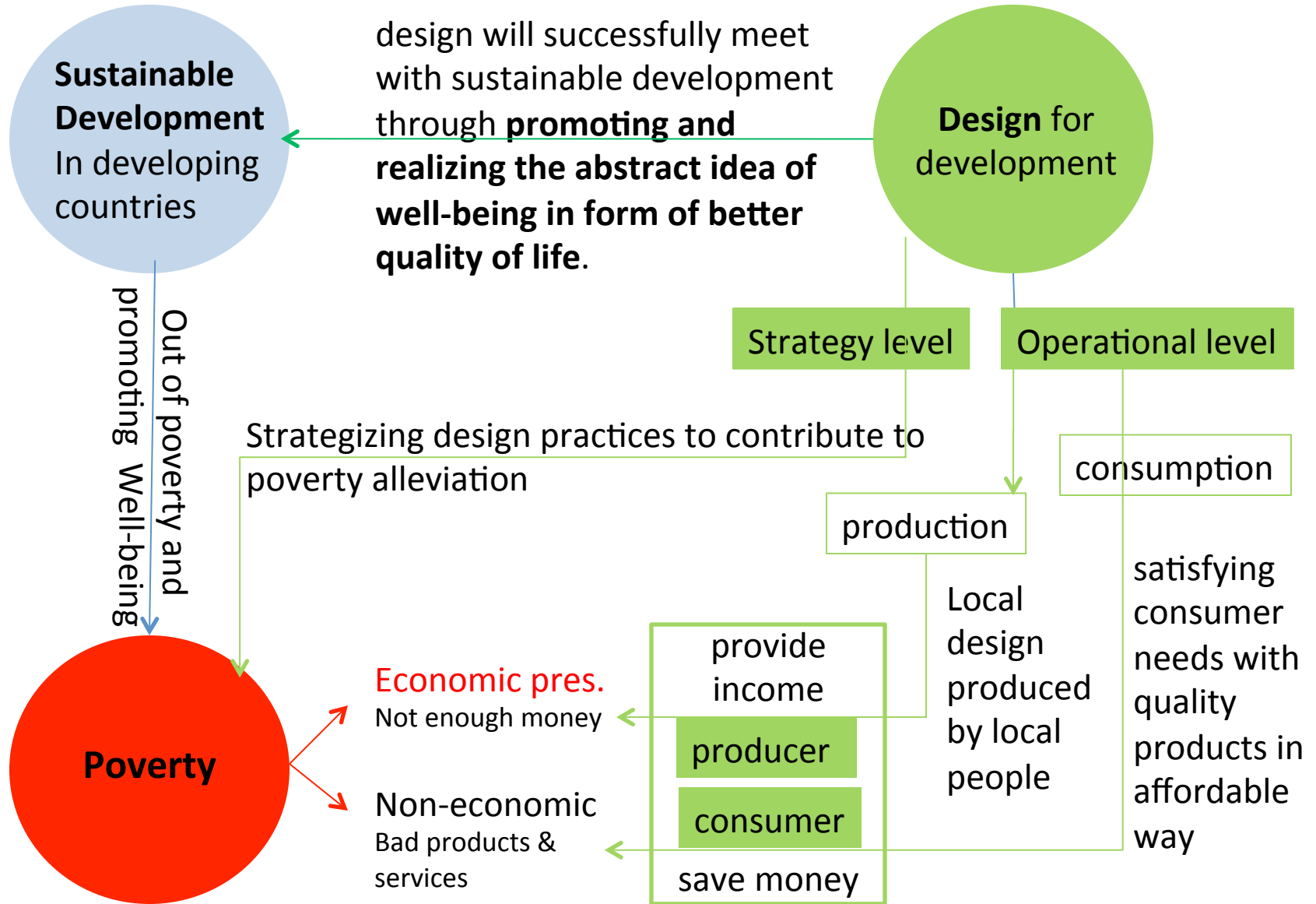


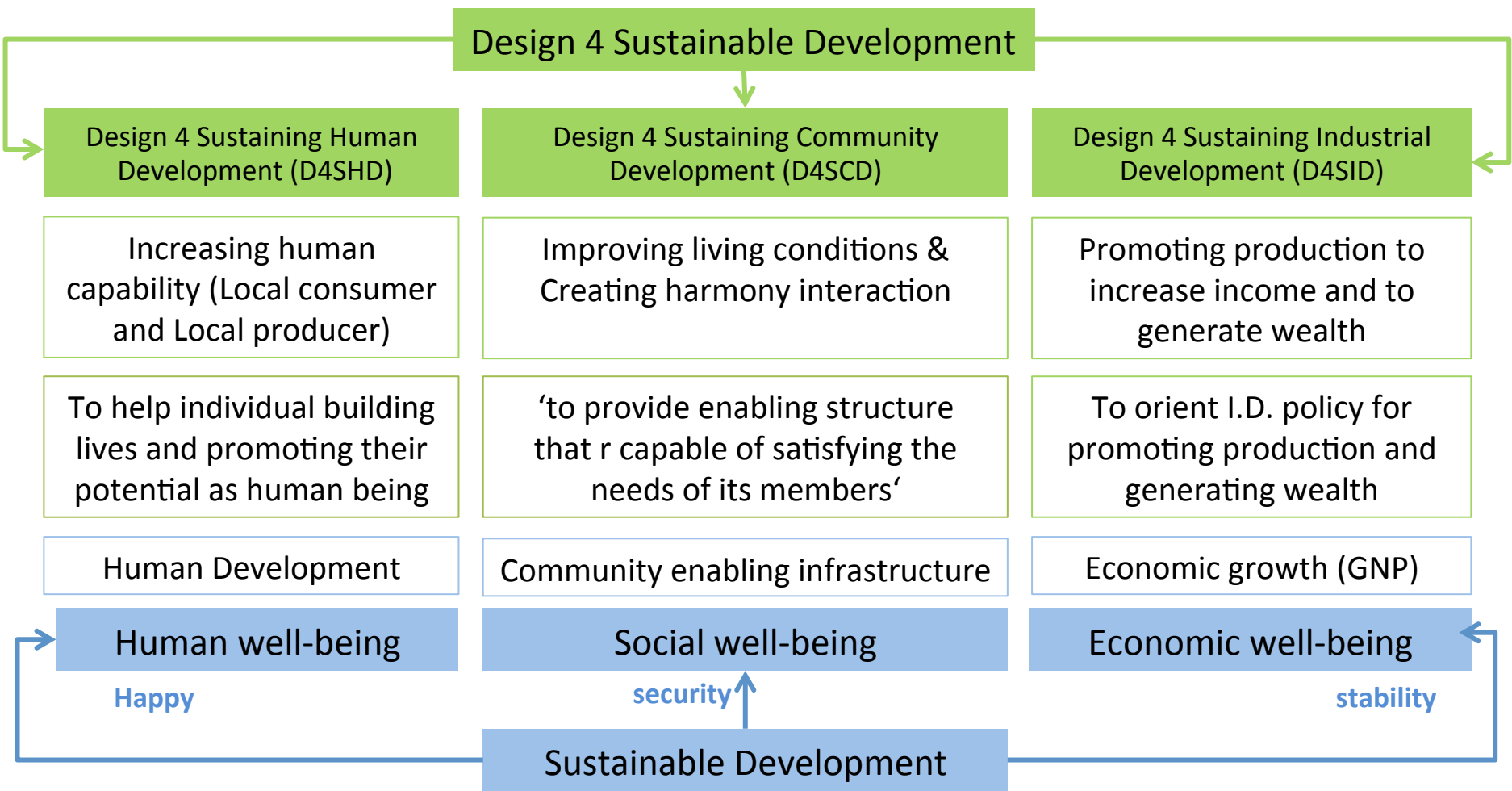
**Sustainable
Development**

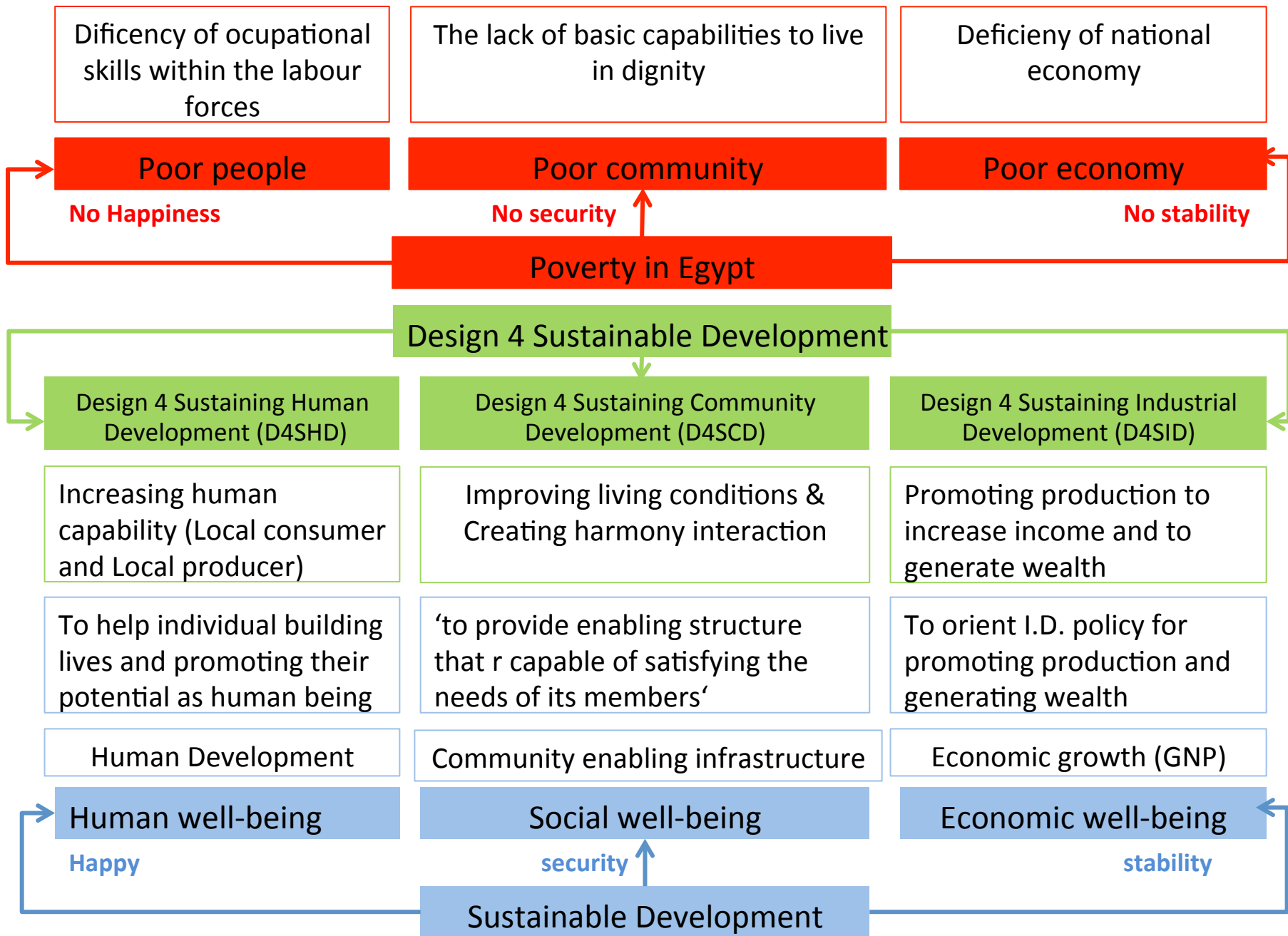
Design

Poverty

Research fields







KEY RESULTS

> Theoretical Foundation

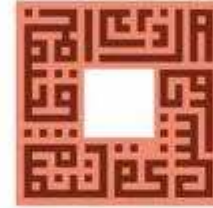
> Operational Framework

> Case Study

	PROBLEM PRESENTATION	PREDICTION	DESIGNING
Herbert Simon (1996)	Make it transparent as possible by designing intelligent information-filtering system	Constructing alternative scenarios for the future by allocating the time & attention perspective between present & future satisfactions	Designing an evolving system where each step of implementation created a new situation provided a new goal

Design Process	Setting of variables: > Filter out vital data	Criteria matrix > Check the variables	Influence matrix > Studying interactions	Systemic role > Determining role within the system	Listing 2 driving forces: Critical uncertainties	Define 2 extreme values of driving forces:	Selecting scenario logics: 2x2	Fleshing out the scenarios: 'Context scenario' matrix	Identify unmet wants & needs in 'a user-story board'	Collecting relevant info. to Market force	Designing the problem system-map	Transform the info. into business model
	Frederic Vester (2007): sensitivity model				Peter Schwartz (1986): developing scenarios			Developing Design strategies				
Out-put:	→ Intervention point & context scenarios				→ strategic insight			→ solution prototype				

	A1	A2	A3	A4	P1	P2	P3	P4	S1	S2	S3	S4
Hugentobler; Jonas; Rahe (2004)	Getting data	Make sense 'Knowledge'	Understand 'worldviews'	Presenting IS Situation	Getting future data	Interpreting Data	Possible futures Scenarios	Presenting scenarios	Data on shall be	Evaluating	Design solutions	Presenting
	ANALYSIS ,the true' how it is today				PROJECTION ,the ideal' how it could be			SYNTHESIS ' the real' how it is tomorrow				



Al-Darb Al-Ahmar
Community Development Company

Case Study

92,000 people living there

Improve the quality of life for communities living in dilapidated historic cities through increasing physical, economic and social assets.

Vester sensitivity model: Set of variables > Criteria matrix > Influence matrix > Role allocation

Sensitivitätsmodell Prof. Vester © Version 7.5d

Einflussmatrix

Konsensmatrix Systemmodell: Poverty reduction

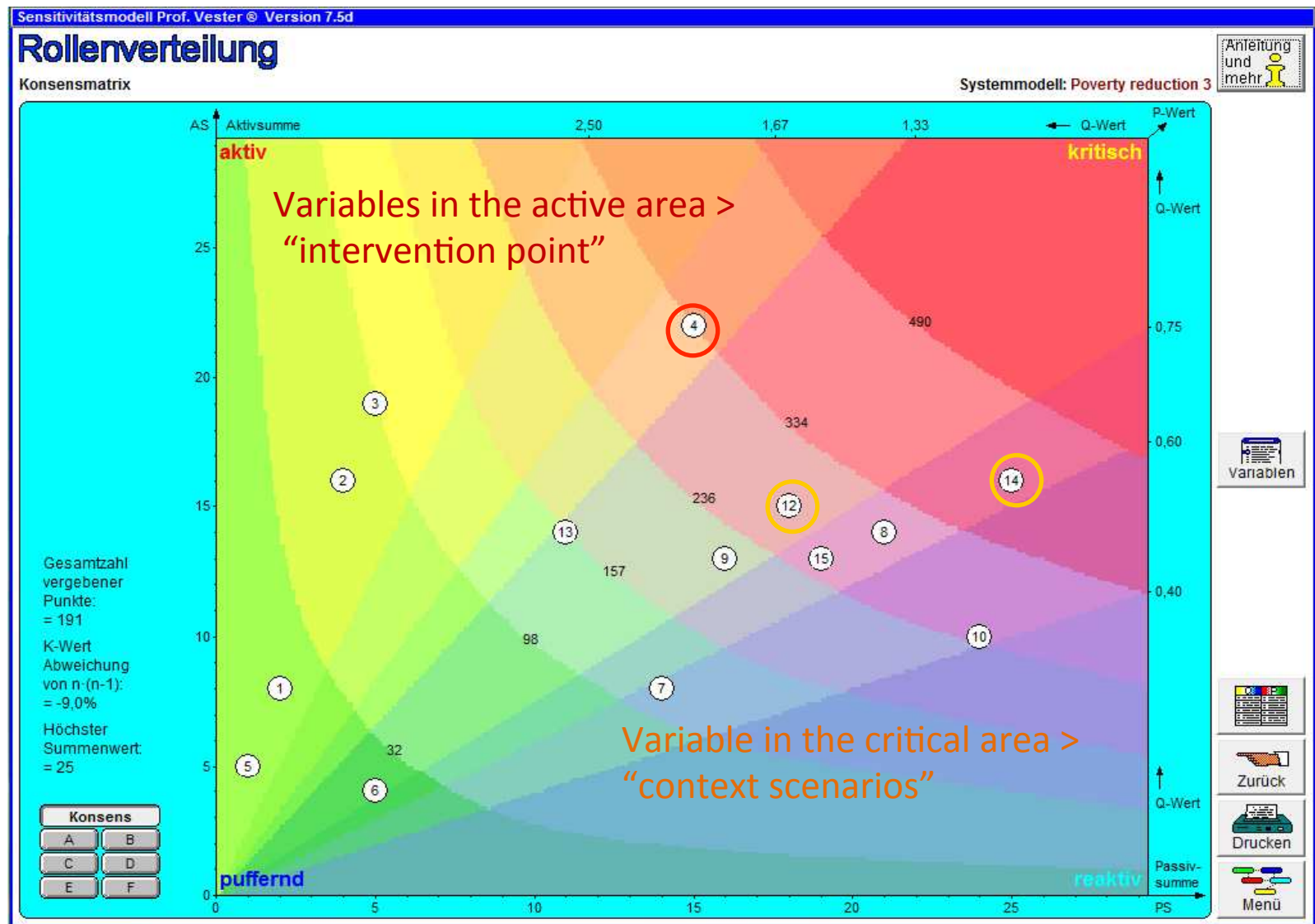
Anleitung und mehr

Wirkung von Variable_i auf Variable_j →

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	AS	P
1 Healthcare accessibility	X	2	3	1	1	1	2	0	0	0	2	1	2	3	2	20	280
2 raising Education's skills	2	X	1	0	2	1	2	1	1	3	1	3	3	2	2	24	312
3 vocational training	0	1	X	3	1	1	2	2	1	3	2	2	1	2	1	22	308
4 Hancraft quality development	0	0	1	X	0	0	1	0	0	2	3	1	1	1	0	10	140
5 Water accessibility	3	1	1	1	X	1	3	1	3	1	0	1	0	2	3	21	284
6 sanitation improvement	0	0	1	0	0	X	1	3	1	1	0	1	0	2	3	13	195
7 Solid waste removal	3	1	1	1	3	2	X	2	2	2	1	1	0	1	3	23	506
8 housing rehabilitation	3	1	0	1	2	2	2	X	2	2	1	1	1	3	3	24	480
9 public space development	1	1	0	0	1	2	1	1	X	2	1	1	1	3	3	18	288
10 Employment opportunities	0	1	1	0	0	0	0	1	1	X	2	2	2	3	1	14	392
11 Access to micro-credit	0	0	1	2	0	0	1	1	0	3	X	2	3	3	1	17	340
12 strenthening of civil society	1	2	2	2	1	1	2	2	2	3	2	X	2	2	2	26	572
13 Gender and development	0	1	1	2	1	1	0	1	0	3	2	2	X	3	2	19	342
14 family development	0	1	1	0	0	1	2	3	1	1	2	2	2	X	2	18	558
15 Environmental protection	1	1	0	1	2	2	3	2	2	2	1	2	0	1	X	20	560
	14	13	14	14	14	15	22	20	16	28	20	22	18	31	28	PS	
	143	185	157	71	150	87	105	120	112	50	85	118	106	58	71	Qx100	

A	B	A	B
C	D	C	D
E	F	E	F

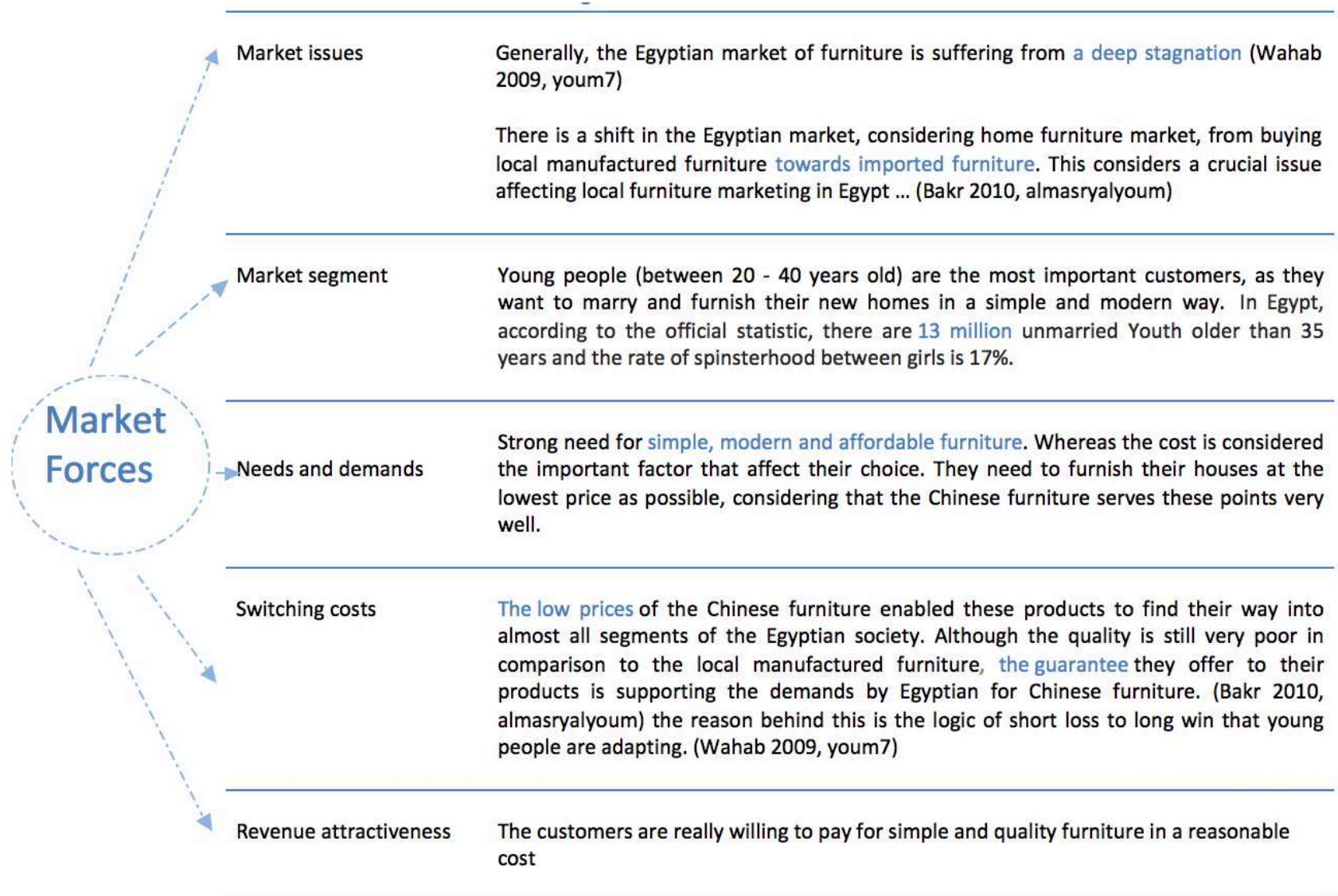
Vester sensitivity model: Set of variables > Criteria matrix > Influence matrix > Role allocation



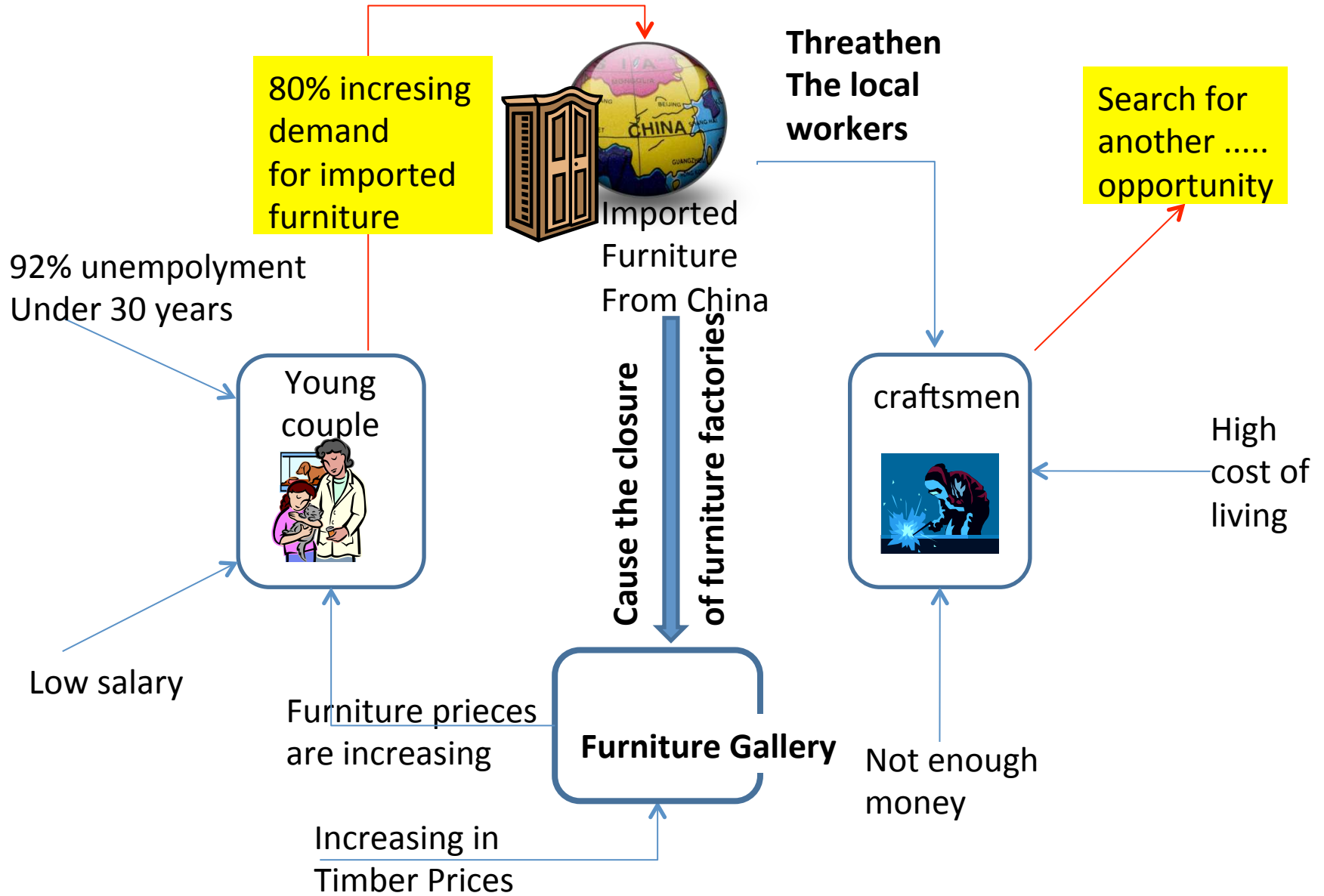
>List 2 driving forces > Define 2 extreme values > Select Scenario logics >“End-states” scenarios Description



>Consumer-story board >Producer-story board >Market force >problem system-map >business model



>Consumer-story board >Producer-story board >Market force >Problem system-map >Business model



Business model + Social Profits + Social benefits =
„Social business model“ of design





Vision:

enabling young couple to **enjoy** their life at home and **feel happy** to furnish their homes in affordable way, and empowering craftsmen through upgrading their skills and insuring generating income.

Business idea:

Connecting between the STRENGTH of local crafts people (after developing their skills) and (the needs of young people who want to marry regarding to affordable furniture) as an OPPORTUNITY for marketing the furniture produced by craftspeople in order to offer a combination of cost-effective simple furniture and interior services in affordable way

>Consumer-story board >Producer-story board >Market force >Problem system-map >Business model

-Supporting business with specific social mission -Local employment -facilitating active society: students, academia, artisan, private and public sectors work together to help each others SB		-Alleviate poverty through supporting local artisan to generate income and supporting young couple to save money in furnishing their homes -To reduce Unemployment between local artisan -To reduce spinsterhood between youth by offering them quality products and services in affordable way SP		
KP  DAR Project  Academic design school  	KA Interior and Furniture design services Produce-on-demand Network management Repair services	VP To generate income <ul style="list-style-type: none"> Free modern furniture designs Free Training workshops Products Marketing 	CR tailored services	CS <ul style="list-style-type: none"> Niche Producer: local artisan in three craft sectors: carpentry, leathers and patchwork Niche Consumer: young couple
	KR Packaging and logistics	To save money <ul style="list-style-type: none"> Free basic interior design services Premium interior services (On-site customer support) Highly cost-effective modern furniture (repair services guaranteed) 	CH Design students Young couple to be married	
CS Design services Network management Repair services Packaging and logistic		RS Sales commissions (low) Interior service fees Free (Get the basic for free, pay for more p.96) Generate small revenues (selling less of more p.67 long tail B.M.)		

"Like slavery and apartheid, **poverty** is not natural. It is man-made and it can be overcome and eradicated by the actions of **human** beings."

Mandela

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Thank you...

Ph.D. Candidate Doaa El Aidi
doaaelaidi31@hotmail.com
doaaaidi@gmail.com
#D3aa