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# Predicting Organizational Crisis using the VSM?

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Implications of a Quantitative Study on the relationship  
between System Viability and Organizational Crisis

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# Organizational Crisis?

- **Existential threat** to an organization: Study > 50:50 p of death
- Slowly developing, “**creeping**” (but may become visible abruptly)
- **No external events** such as catastrophes or natural disasters
- But: If a storm sinks a fully equipped ocean liner = Poor planning
- Progressively **opening gap between problems and problem-solving capacity** =  $\Delta$  Requisite Variety
- **Increasing complexity** (increasing number of interacting problem areas)
- **Progressive Loss of valuable resources** (the best go first) versus excessive increase in complexity.

*“What counts as a crisis is the expectation of loss of control: in other words cybernetic breakdown in the institution. This does not refer to an inability to impose decisions: it means that the institution is out of control itself”. SB BOTF p. 349*

# Diffuseness and Increasing Complexity

## Core Problems in Understanding Crisis

- Effects often spread **all over the organization**
- **Opaque** “mechanism” but tangible (negative) results
- **“Inexplicable”** effects (e. g. from hidden interdependencies)
- **Contradictory** symptoms
- **Multi-causality** confuses management, priorities unclear, **all explanations equally plausible**, breakdown of mental models
- **Triggers** of marginal perturbation change the picture instantly
- Proven measures with **no or adverse effects**, experience useless
- **Prognostics fail**, loss of stakeholder support
- **Error rates increase**, subsequent faults, aftereffects
- Hyperactivity, **Oscillation**
- Unpredictability, **Uncontrollability**
- **Stochastic path / outcome – nonviable organization**

*...it means that the institution is out of control itself”.*

# What to do? Observations...

- **No Theory of Crisis so far.**
- **Sectoral explanations** (finance, marketing, production etc.)
- **Lists of crisis causes:** e. g. “Too many / too less customers” (!)
- **“Crisis Management” o.k. - but too late**
- **“OC do not exist – a construction only”** o.k. - thanks...
- **“Complex problem” o.k. – now what?**

## Systems Perspective?

**Complex phenomena** are the object of **system sciences**

- **...invariant rules** that are at work in systems and which are
- **...decisive for the behavior** of these systems.

**OC are complex phenomena**

**Viability is an important topic in system sciences**

## Rationale

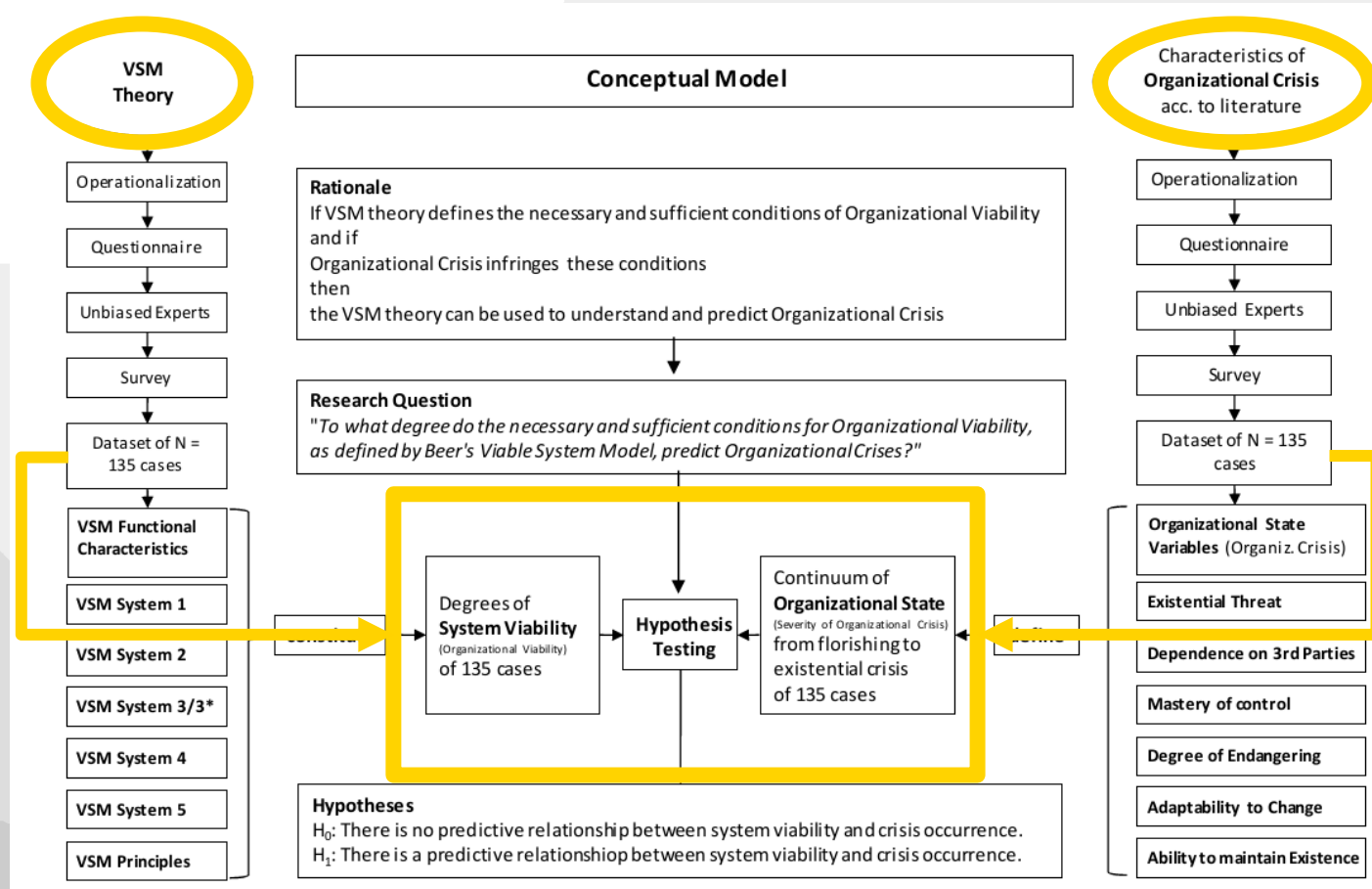
If the **VSM defines the necessary and sufficient *viability criteria*** for organizations and...

...if **OC** is a process which **threatens an organization's viability**...

...then **OC must infringe these conditions** and

...therefore, the **VSM conditions can be used to understand** and predict **OC**.

# Conceptual Model



# Operationalizing the VSM...

e. g. System ONE

## 1 Autonomous Operational Service Provision Units (SU)

In the organization there are one or several operational units (hereinafter: service units SUs) that...

1.1 ... have **sole** (i.e. exclusive) **responsibility** for **logically definable market areas** (e. g. by customers or products or geographical areas, etc.). If there is only one market area, the **interface to the market is clearly defined** (e. g. sales or production or project management).

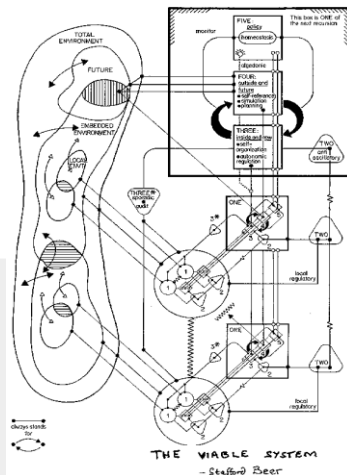
1.2 ...are **competent, able** and **flexible to serve** their market areas **comprehensively** (in conjunction with third parties where necessary).

1	2	3	4	5	6	7	8	?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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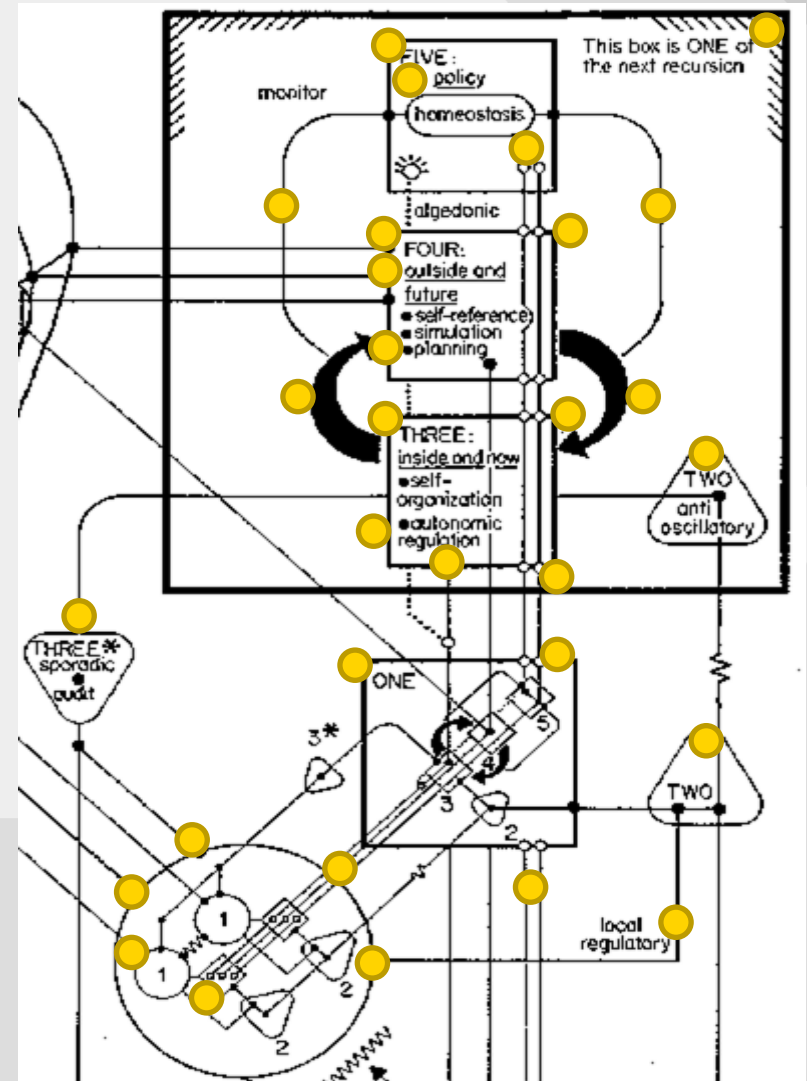
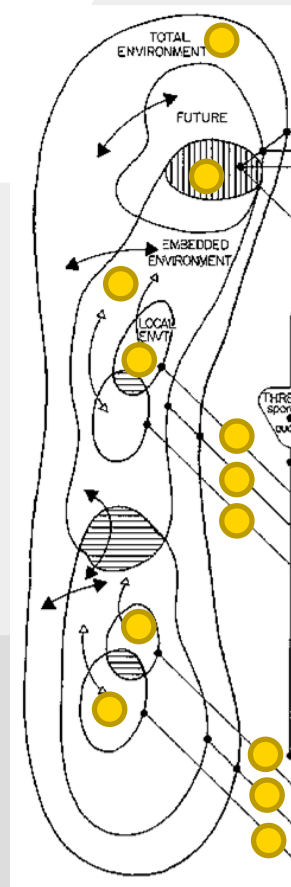
- 22 indicators only for the VSM but...
- Situation Vignette-Method: Compare "ideal" with "actual"
- Increases RV of the questionnaire drastically: 170 VSM aspects covered
- 93 synonyms to trigger associations with respondents
- Symmetric 8-point Likert-Scale but no neutral middle point



## VSM Areas Covered



- Autonomy
- Recursiveness
- Requisite Variety
- Com. Channels



# Operationalizing Viability / Crisis...

## V Viability

The organization assessed...	
V.1	...- at the assessed point in time - in terms of its <b>degree of vulnerability</b> (i. e. risk level) can be accurately <b>characterised</b> as...
V.2	.....- at the assessed point in time - is in a <b>position to adapt</b> to even <b>rapidly occurring</b> and/or <b>very changeable</b> circumstances.
V.3	...is...- at the assessed point in time - fundamentally in a position to <b>maintain its existence</b> for an <b>unlimited period of time</b> .

	perishing	in jeopardy	ailing	faltering	survivable	sustainably viable	thriving
1	2	3	4	5	6	7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does not apply at all.	Does not really apply.	Does apply to a degree.	Does largely apply.	Does mostly apply.	Does substantially apply.	Does absolutely apply.	
1	2	3	4	5	6	7	
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## 12 indicators for Viability / Crisis

# Operationalizing Viability / Crisis...

## K Crisis Independence

There were or are...	
K.1	... <b>periods</b> where the organisation's <b>existence</b> was/is <b>under threat</b> and the <b>outcome</b> was/is <b>in doubt</b> ( $\geq 50\%$ collapse : $\leq 50\%$ survival).
K.2	...situations or developments that the organisation <b>would not have survived without external help</b> (of third parties).
K.3	Did the organisation <b>cease to exist as an independent unit</b> ?

Does not apply at all.	Does not really apply.	Does apply to a degree.	Does largely apply.	Does mostly apply.	Does substantially apply.	Does absolutely apply.
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No	<input type="checkbox"/>	Yes	<input type="checkbox"/>			

## K Crisis Capability

There were or are situations or periods where the organisation for an uncomfortably long period was/is...	
K.4	... <b>unable to fulfil its core mandate</b> (purpose).
K.5	... <b>unable to meet its financial obligations</b> .
K.6	There were/are <b>periods</b> where the <b>demands</b> faced by the organisation <b>massively exceed(ed) its capabilities</b> , resulting in it <b>spinning out of control or the leadership</b> of the organization <b>losing control</b> .

1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Results

Difference between crisis and non-crisis organizations is not so much in the high scores but in the absence of low scores...

### Crisis all item scores



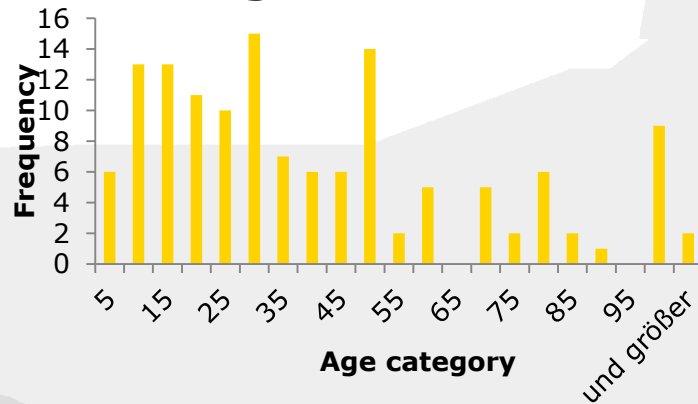
### Non-Crisis all item scores



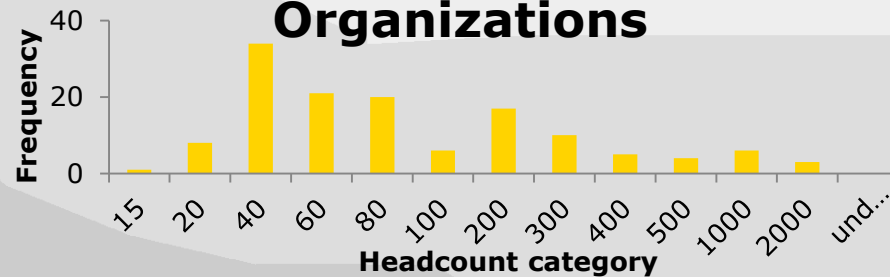
N = 135 Organizations

# Results

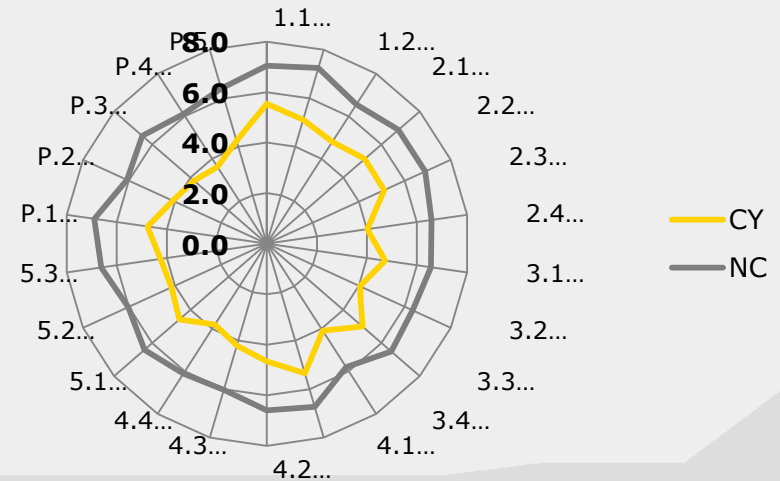
## Age of Organizations



## Headcount of Organizations



## Average Score Comparison Crisis (CY) / Non-Crisis (NC) Organizations (N = 135)



N = 135 Organizations

# Results

## Structural Equation Modelling

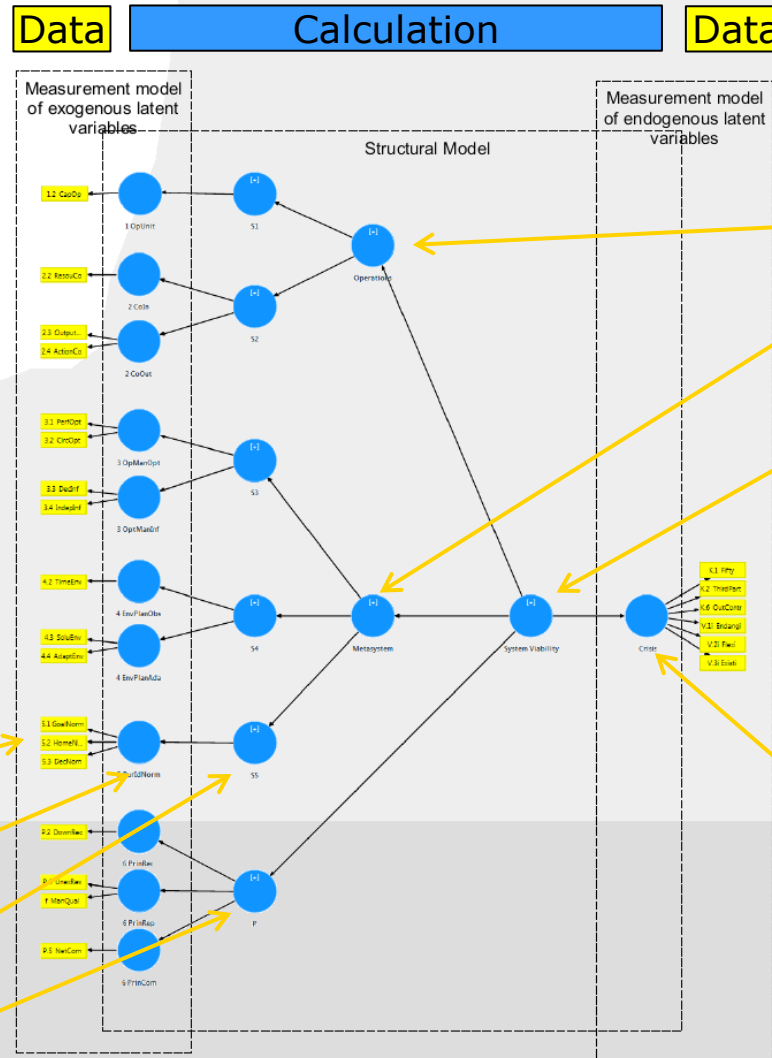
Allows statistical assessment of unobservable 'latent' (blue) constructs such as VSM properties

VSM aspects

VSM concepts

VSM S1 – S5

VSM Principles



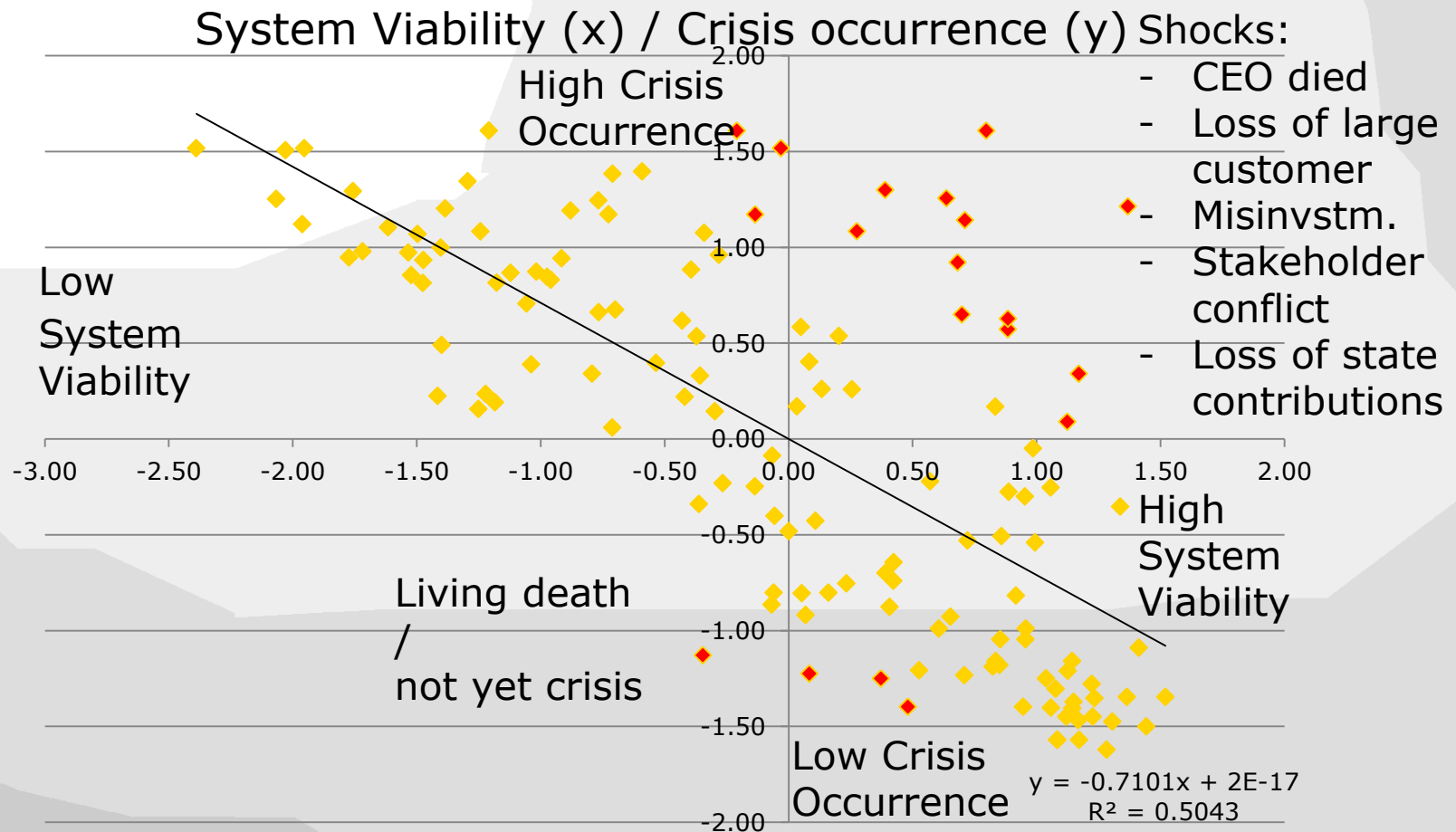
VSM ONEs (Ops)

VSM Metasystem

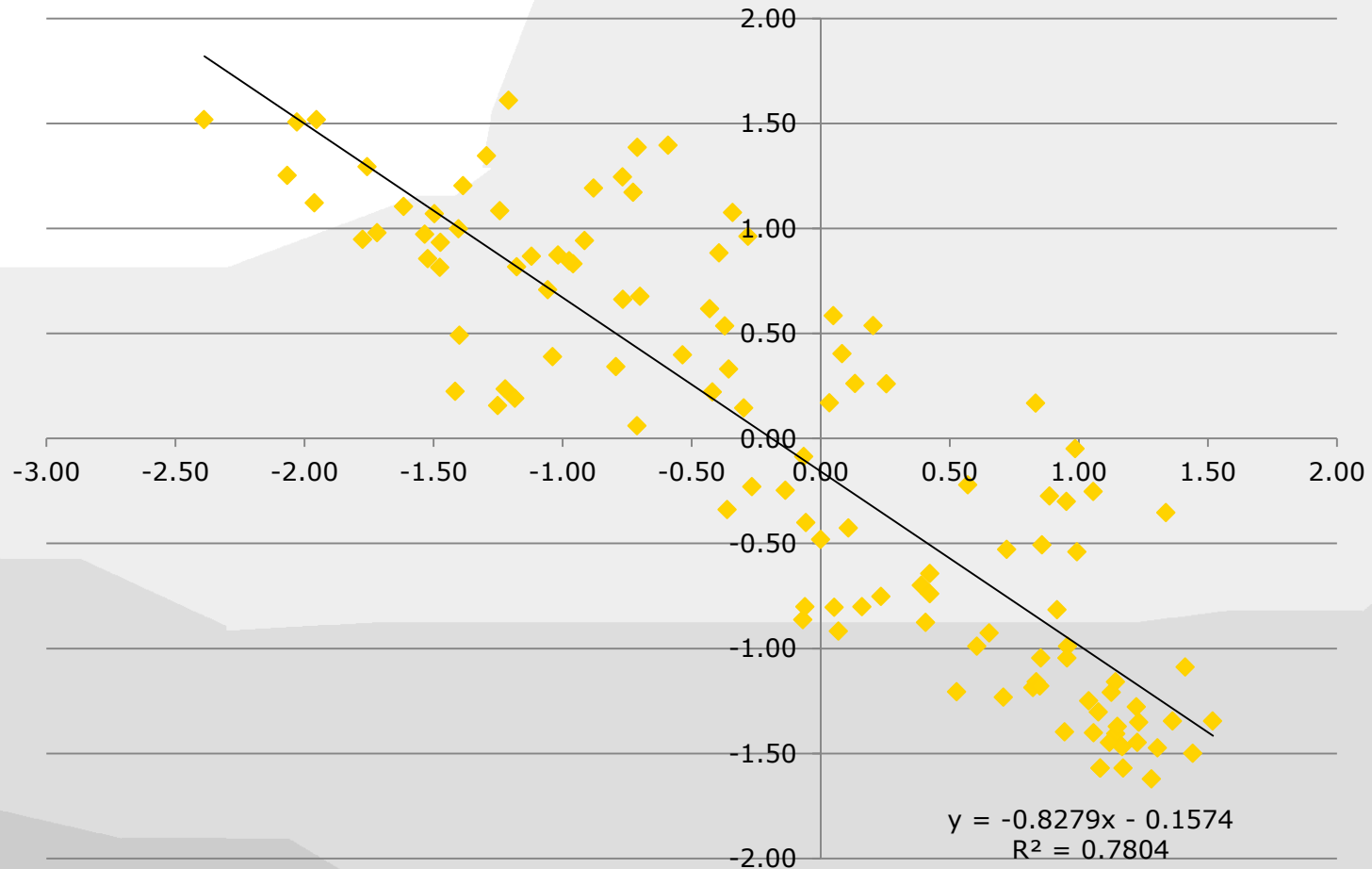
VSM System Viability

Organizational Crisis

## Results

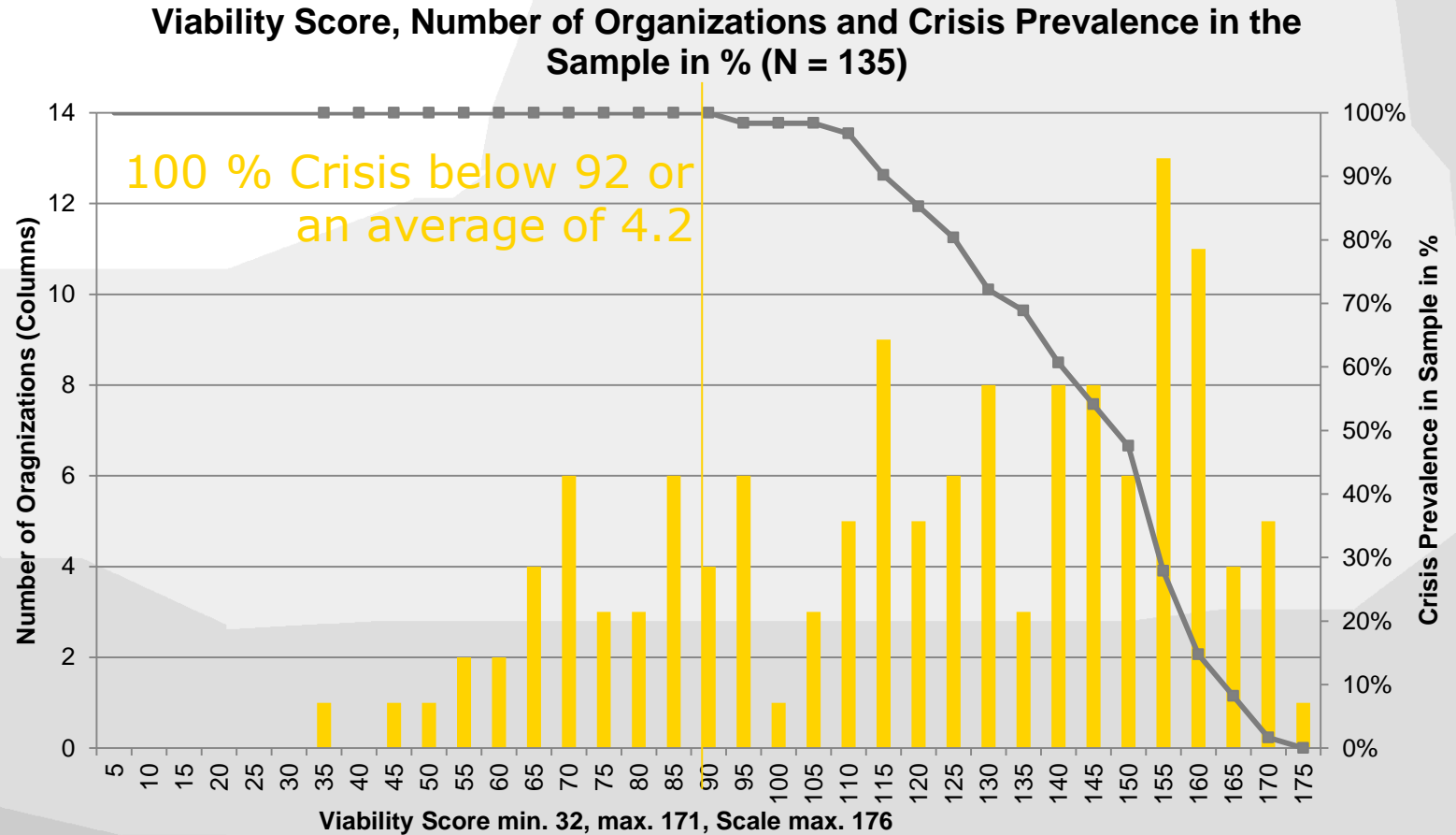


System Viability (x) / Crisis occurrence (y) n =  
116 (outlier adjusted)





# Results



# Findings

## Does the work provide a Theory of Crisis?

- No, but crisis can far better be understood if an organization is perceived as a system according to the VSM using the questionnaire. In so doing crisis can be understood (further analysed and managed) as a deviation from the VSM-characteristics.

## Reduce symptom-fighting?

- Yes. The holistic / systemic approach instead of several disciplinary perspectives adds value to the analysis and allows understanding of the (underlying mechanics of the) phenomenon. A deep analysis however, will again refer to disciplinary insights and concepts.

# Findings

## **Can the questionnaire be used to analyse single organizations?**

- Strictly speaking, no. It is statistically valid for a sample of organizations. For single organization application a statistical normalization process had to be done first. However, the questions would remain the same qualitatively only the scale would be calibrated and cut-off values would be defined.

## **Is it now possible to perform a VSM-assessment without cybernetic knowledge?**

- Yes, down to a certain level of abstraction comparable to the OMM of SCiO. It allows an practical assessment in some depth due to the situation vignette method which provides the user with a lot of context information, examples and synonyms.

# Findings

## Is it now possible to pre-empt organizational crisis?

- This question is wrongly posed. The questionnaire compares actual and target viability characteristics of an organization.
- Deviations can be evaluated and eliminated, viability may be restored and maintained.
- In such way “revitalized” viable organizations are able to adapt and survive within physiological limits - but they are not immortal.
- However, on the basis of a good S4 / S3/4 Homeostat an organization may be better prepared to adversities than other organizations and therefore pre-empt or survive crisis.

## Is viability now measurable?

- Not in absolute terms. The questionnaire is a “terrible simplificateur”, accordingly the viability scores are approximations only.

## Findings

### **Does the study provide evidence about the relative importance of different VSM functions (S1 – S5)?**

- **No**, the chosen regression method does not allow to do so.
- There was no VSM-function-specific evaluation of the data.
- According to Beer there is no more or less important with regard to the necessary and sufficient conditions of viability.

### **Does the study provide benefits for managers?**

- Yes, it may help managers **focus on the important parts** of the governance structure of their organizations.
- It may also help them to **recognize deviations** from the optimum and take appropriate measures.

# Discussion

