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## 1. Investment paths in cyber are uncertain

Decision makers face the task of implementing a cybersecurity program to minimize cyber risk and maximize profits. In a complex and constantly changing world of cybersecurity they encounter a multitude of investment options.

They face the challenge of strategic resource allocation- *where, what, and when to invest.*

## 2. Managed through a digital twin

We used digital twin technology to replicate the corporate decision environment when it comes to governing an organization and investing in cyber security. Through simulations we collected insights in profits and compromise systems, driven by 72 participants' decisions (a representative sample of the hundreds runs in our dataset) complemented with sensitivity analysis.

## 3. Managing cyber risks is a balancing act

Approx 8% of IT expenses invested in cyber risk management seems best. However, it can either result in low-risk exposure and high financial performance or high risk expose and low financial performance.

We observed that (see Fig 1):

- Balancing investments between prevention, detection, & response is key.
- Shifting and adapting strategies from an emphasis on prevention to detection and response helps.
- There are limits to effective cyber security investments in time and magnitude.

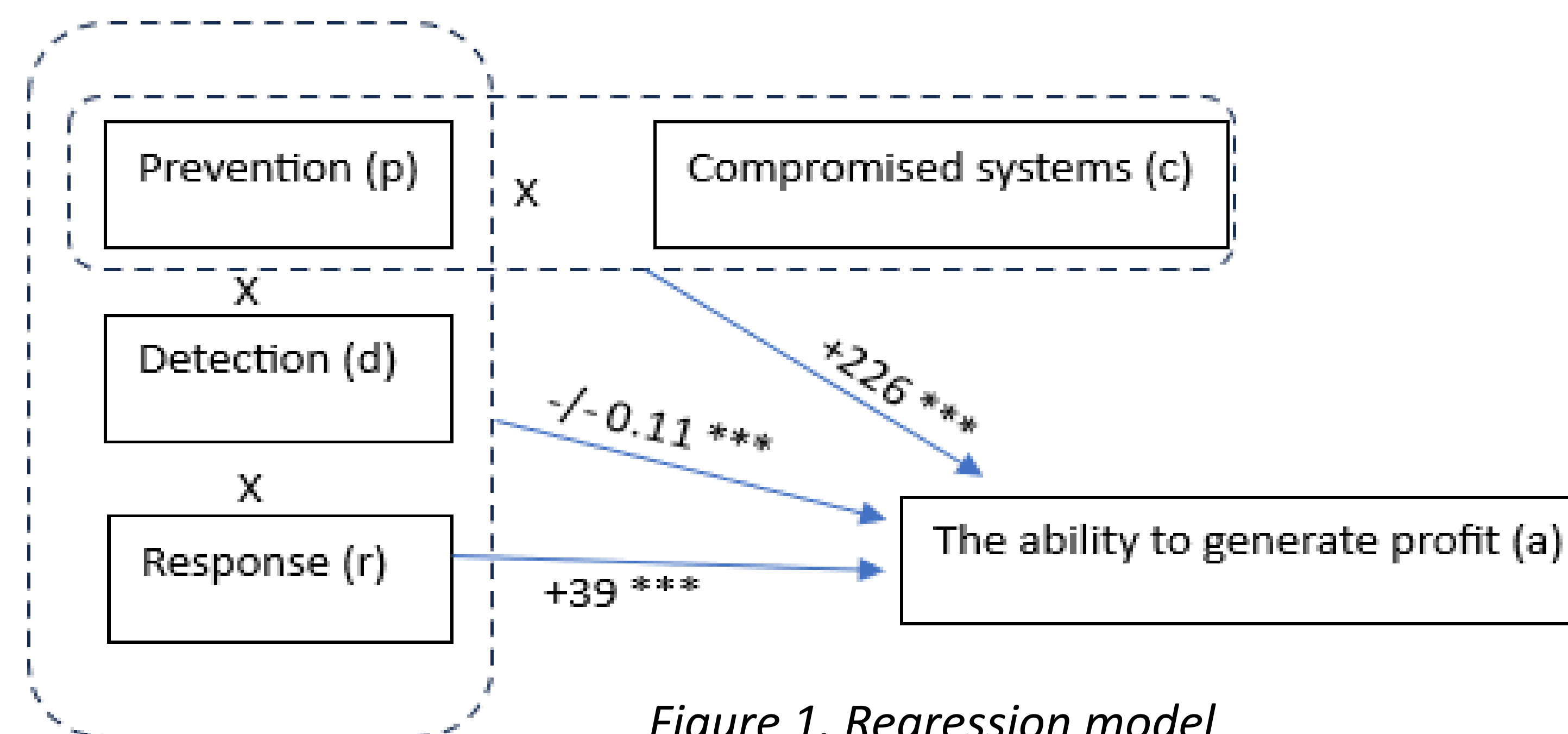


Figure 1. Regression model

## 4. There are (un)discovered tipping points

Suboptimal allocation of these 8% to prevention, detection and response across time may even cause a state of collapse of an organizations' security risk management strategy (see Fig 2).

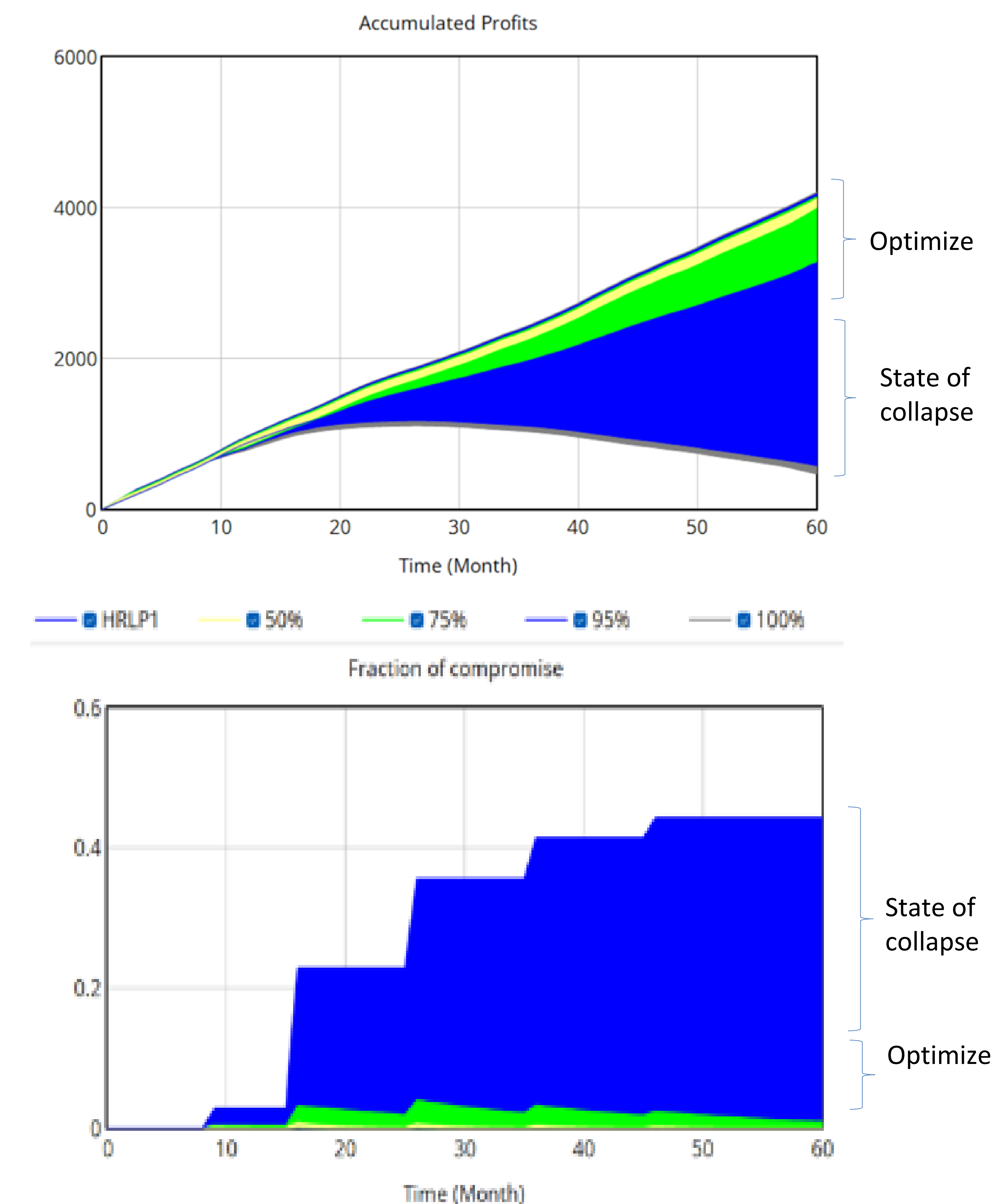
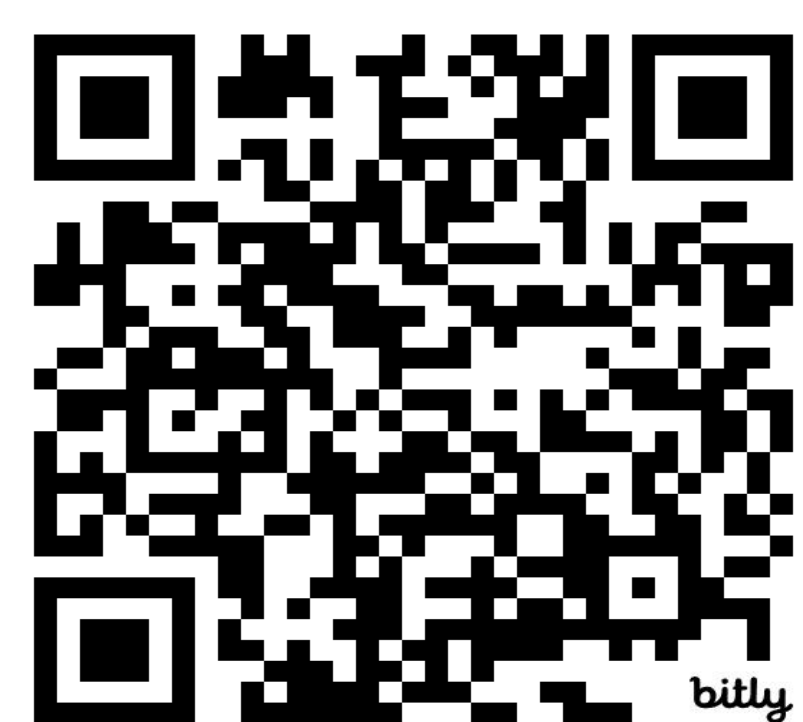


Figure 2. sensitivity analysis management bias on high risk and low financial performance profile

To play our *Simulation Experience* scan the QR code



Use Google Chrome

Are you interested in a tailored approach to optimize cyber security investments toward your organization?

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