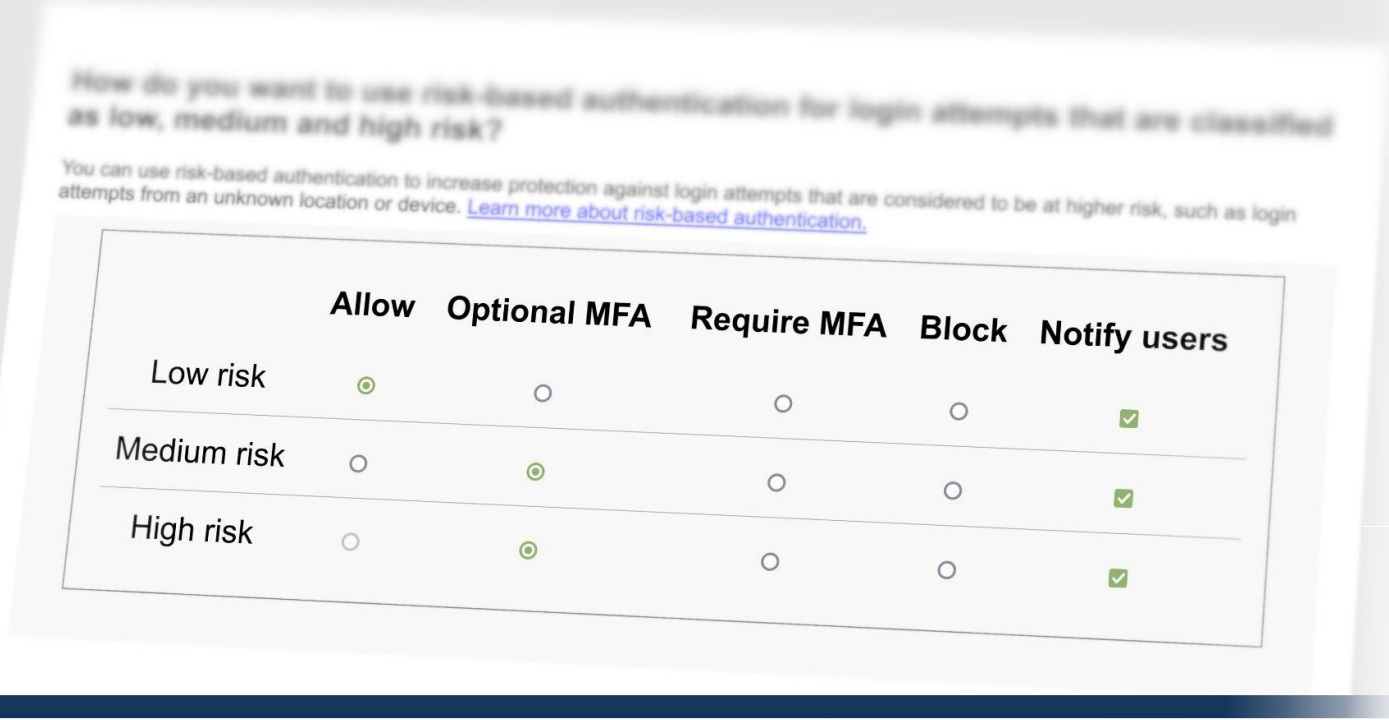

“As soon as it’s a risk, I want to require MFA”:

How Administrators Configure Risk-based Authentication

Philipp Markert, Theodor Schnitzler, Maximilian Golla, and Markus Dürmuth

August 7–9, 2022 | 18th Symposium on Usable Privacy and Security | Boston, Massachusetts, USA

RUHR UNIVERSITÄT BOCHUM RUB
Max Planck Institute for Security and Privacy
Leibniz Universität Hannover

Risk-based Authentication (RBA)

During the login of a user, calculate a risk based on contextual factors like the device and location.

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Risk-based Authentication (RBA)

During the login of a user, calculate a risk based on contextual factors like the device and location.

Boston, USA

Medium Risk

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Risk-based Authentication (RBA)

During the login of a user, calculate a risk based on contextual factors like the device and location.

Configuration of RBA

Behavior

- Allow
- Optional MFA
- Required MFA
- Block

Notify User

- Notify
- Don't Notify

Change Notification

- Change
- Don't Change

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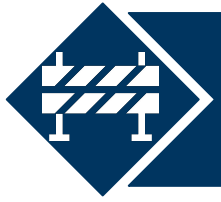
Research Questions

How do administrators configure RBA?



Which obstacles and misunderstandings do they encounter?

What is the impact of previous exposure to other RBA systems and how do different requirements influence administrators?

Method

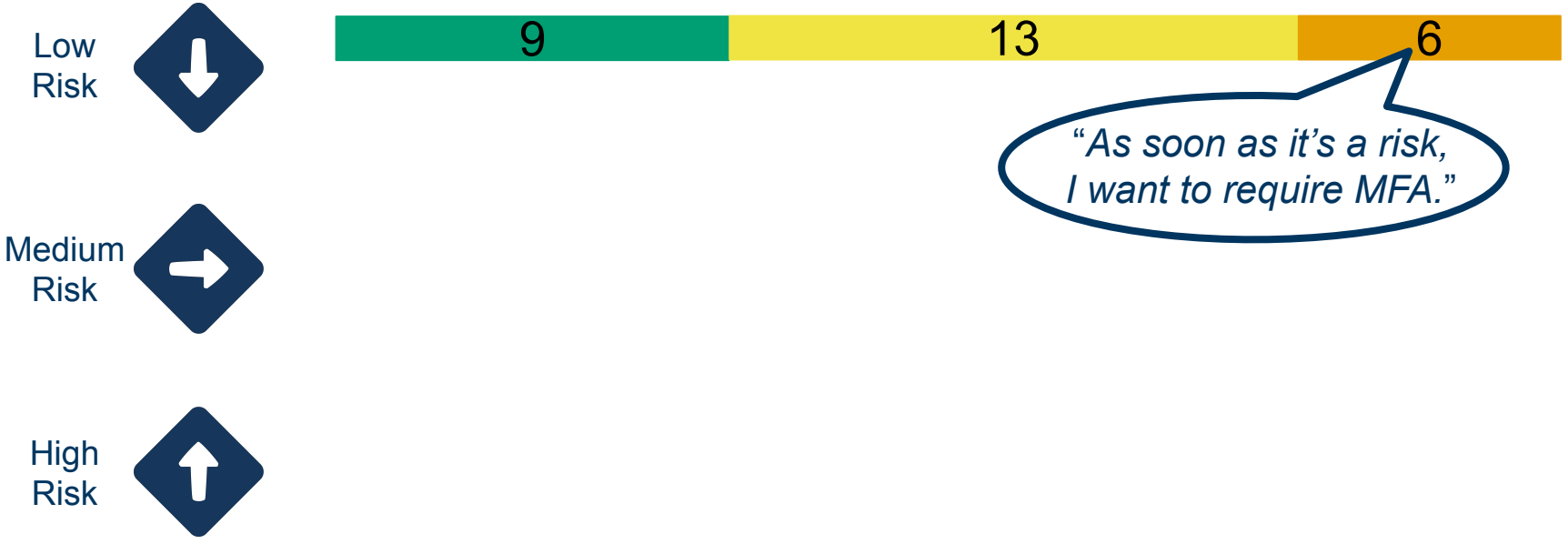
"You are the system administrator of the MediaShop Corporation, where you administrate the online shop dresscode.com"

Conducted with n=28 participants who work as administrators

10 participants 11–15 years of experience
9 participants >15 years of experience

RQ1: How Do Administrators Configure RBA?

Behavior: Allow | Optional MFA | Required MFA | Block



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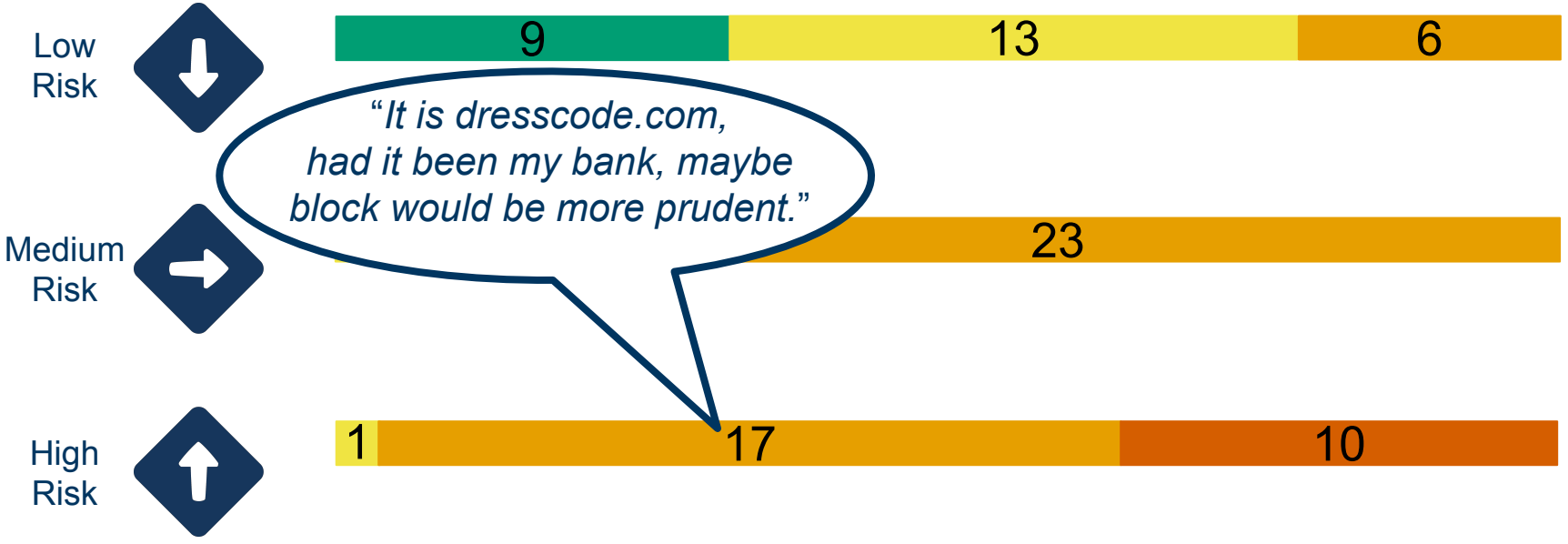

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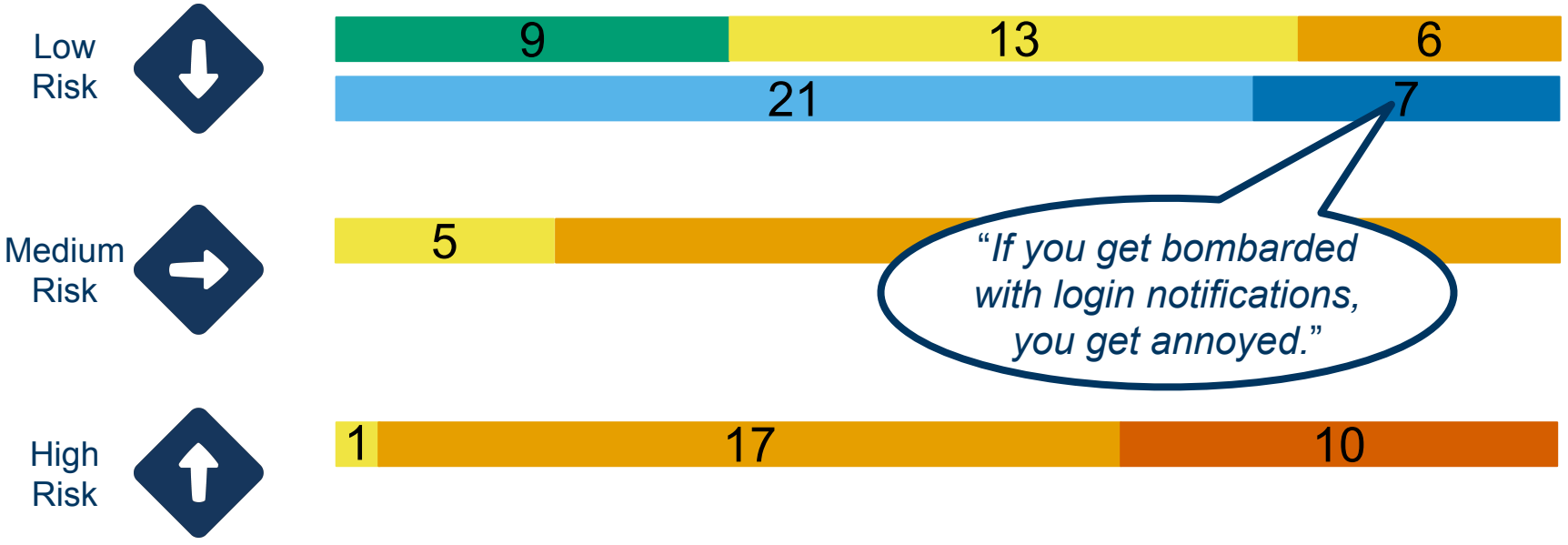
RQ1: How Do Administrators Configure RBA?

Behavior: Allow | Optional MFA | Required MFA | Block

Notification: Notify | Do Not Notify



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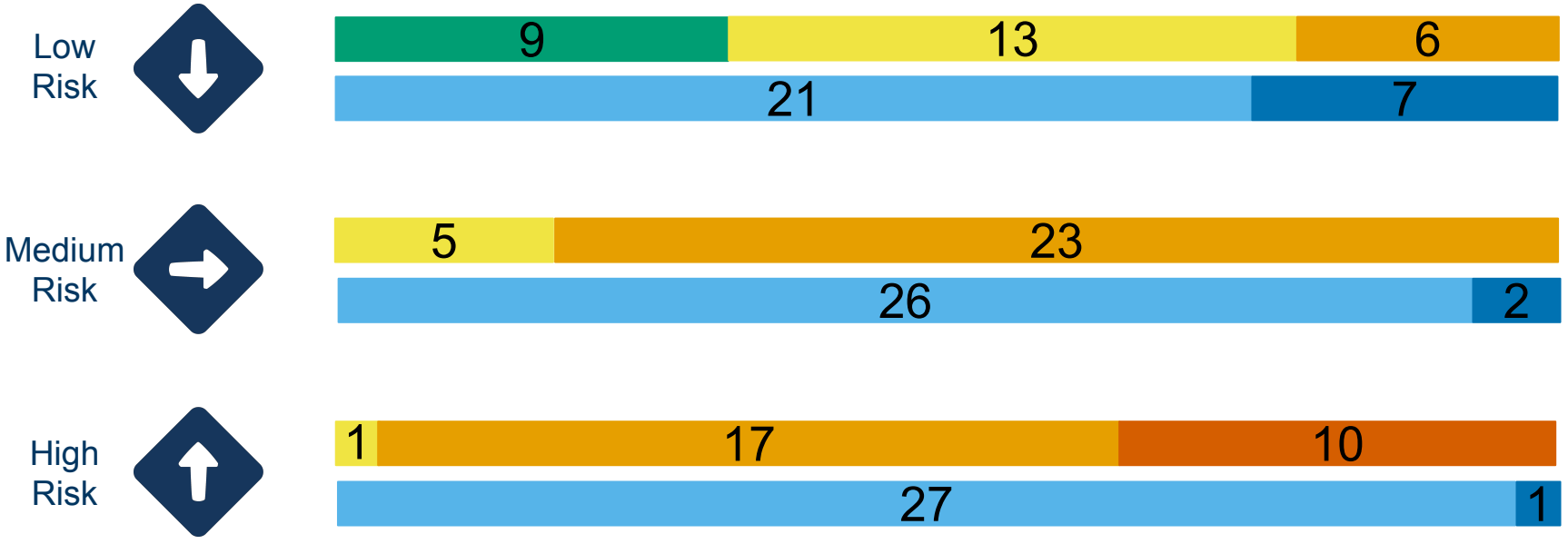

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RQ2: Which Obstacles and Misunderstandings Do Administrators Encounter?

Understanding Of Risk Level Calculation

"If I don't know exactly what 'low', 'medium', or 'high risk' means, then there is no reason for me to distinguish between them."

Consequence: User Burdening

"Which parameters classify 'low', 'medium', and 'high risk'? That would definitely be a criteria for me when adopting it."

Consequence: Reduced Sales

Awareness About All Risk Levels


High Risk


Medium Risk


Low Risk

No Risk

Understanding Of Crucial Terms


Optional MFA

"An attacker will just skip it [...] for users it's convenient to just skip it."


Block

"How long will the block last for? Is this an indefinite block? Is this just a slowdown of the login attempts?"

Risk-based Authentication

Risk Levels

Behavior

Notify User

Method

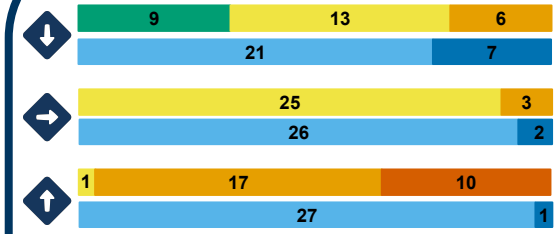
"you're responsible for the web shop dresscode.com"

n=28 administrators

19 participants with >10 years of experience

Findings

Spicing up Defaults



Clarity About the System

"*what classifies 'low', 'medium', and 'high'*"

Understanding of Crucial Terms

Optional MFA

Block

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