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Prof. Dr. Michael Nippa



IMPACT OF KNOWLEDGE ON SOCIETAL PERCEPTION AND ACCEPTANCE OF COAL:

Insights from a representative survey in Germany

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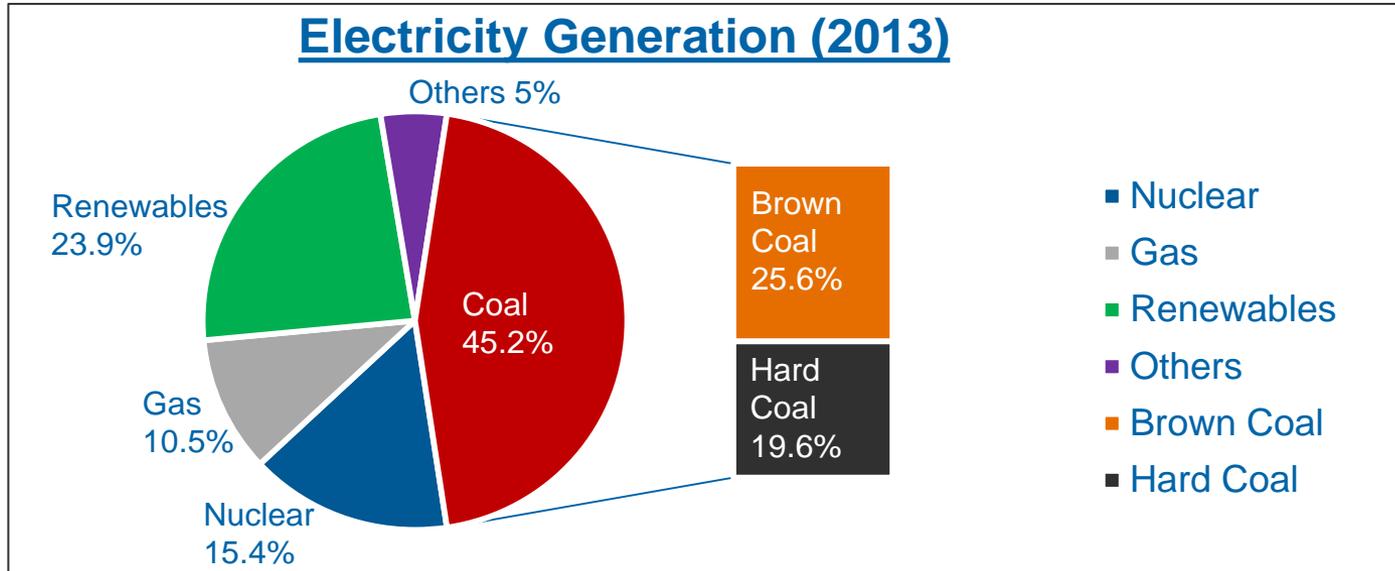


CONTEXT



Coal in the German Economy

Coal plays a key role in the German economy – **45.2%** of Germany’s **electricity generation** in 2013.



Source: Based on 2013 statistics from the Statistisches Bundesamt (2014)

In particular **lignite** (brown coal) is an **important domestic** energy source:

- **Germany is largest lignite producer** in the world.
- Lignite mining & generation industries contribute to **> 85 000 jobs**.

Motivation for Research Study

A **lack of societal support** for **coal power generation** may represent a significant **obstacle** to future **coal-related policy development, R&D activities, technology deployment** and **business investments**.



Representative survey study in Germany

Objective – Gain insights into the drivers of acceptance/resistance toward coal in Germany



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RESEARCH STUDY



Research Questions

- 1) What do people **know** about the role of **coal** in Germany's **electricity mix**?
- 2) How is **coal evaluated** along **social, economic and environmental** dimensions?
- 3) What is the level of **acceptance/support** for the role of **coal** in **Germany's (future) electricity mix**?

- Period of survey: October 2013
- Supported by "TNS Emnid" through CATI
- N = 1008 German citizens



SELECTED FINDINGS





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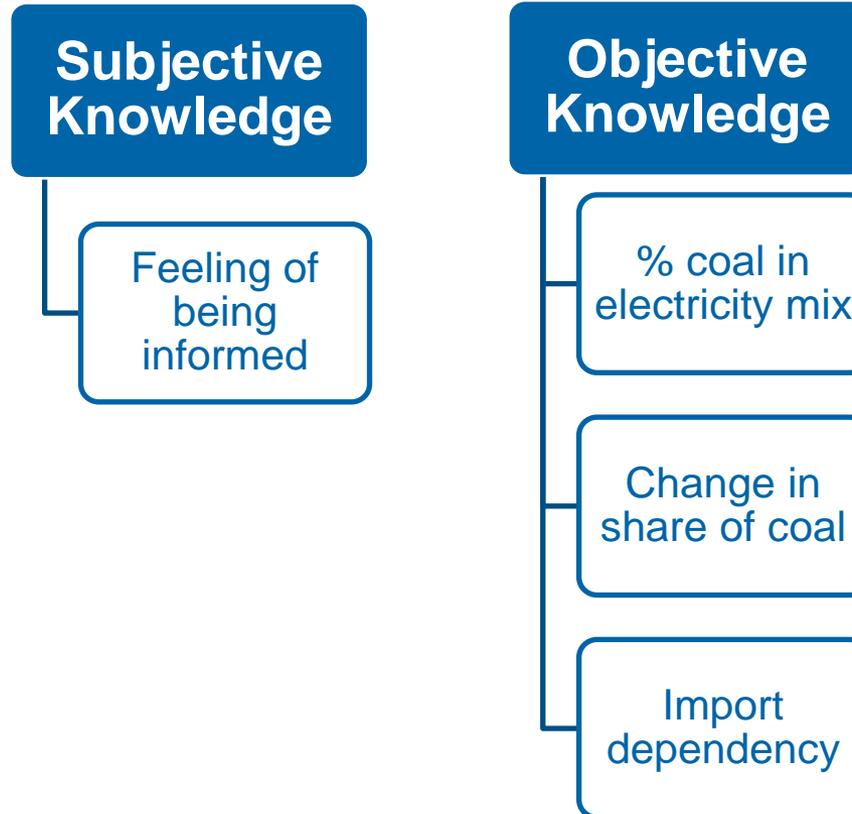
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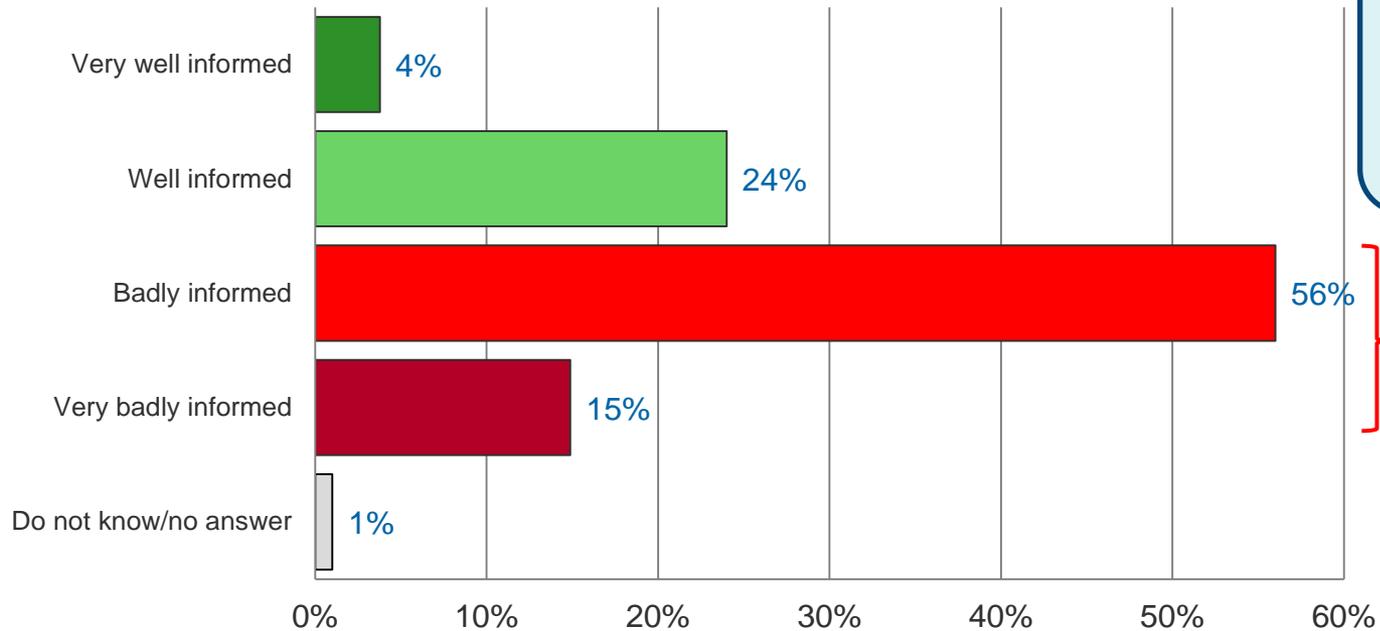


What do people know about the role of coal in Germany's electricity mix?

Subjective and Objective Knowledge



Subjective Knowledge: Feeling of being Informed about Use of Coal in Germany

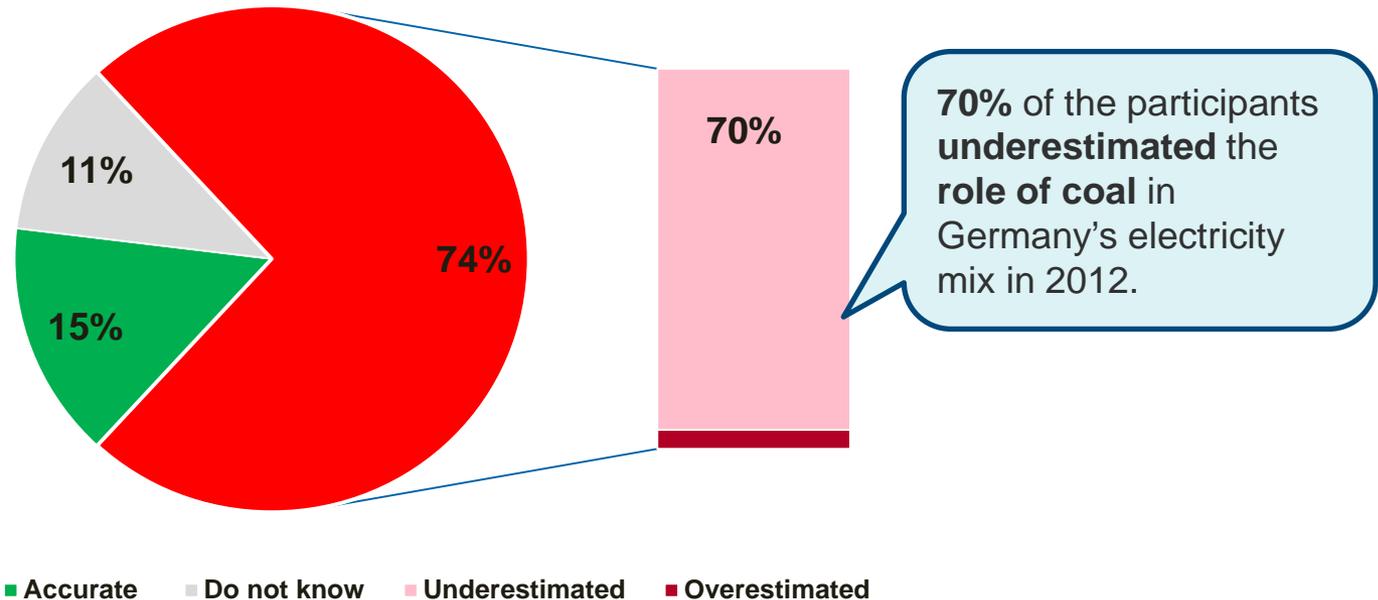


Majority of the participants felt badly informed about the use of coal in Germany.

71%

Fact: Coal accounted for about 45% of Germany's electricity mix in 2012

Accuracy in belief of coal % in Germany's electricity mix in 2012

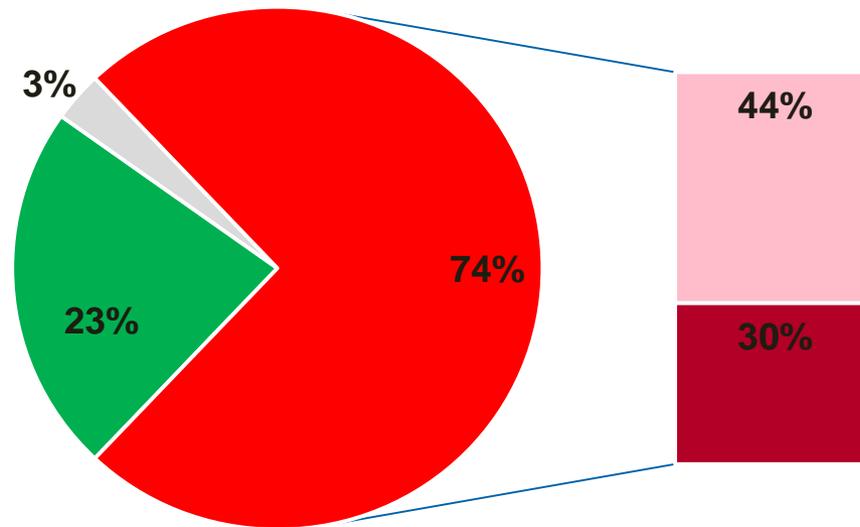


Accurate = +/- 5% of actual coal % in 2012
 Underestimated = <+/-5% of actual coal % in 2012
 Overestimated = >+/-5% of actual coal % in 2012

Objective Knowledge: Change in Electricity Generation from Coal in the Last 2 Years

Fact: Coal in Germany's electricity mix increased from 42% in 2010 to over 45% in 2013.

Accuracy in belief of change in coal electricity generation over the last 2 years



The **majority** of the participants **believed** that there was **no change** or **even a decrease** in coal's contribution to Germany's electricity generation.

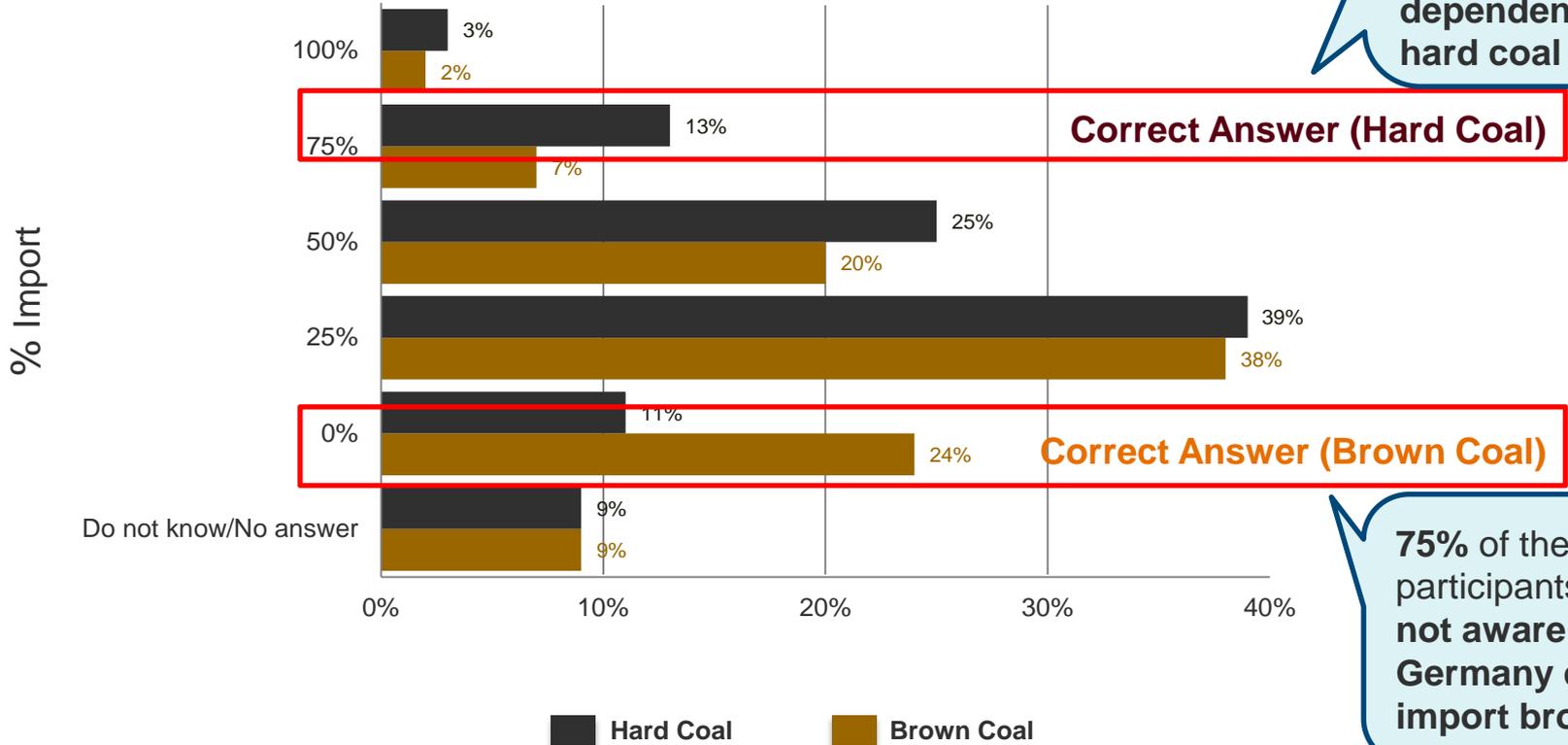
■ Increased ■ Do not know ■ Decreased ■ No change

Objective Knowledge: Dependence on Coal Imports

Fact: Germany is not dependent on brown coal import.
About 75% of hard coal used was imported.

Over 85% of the participants were **unaware** and were **inaccurate** in their belief of **Germany's dependence on hard coal import.**

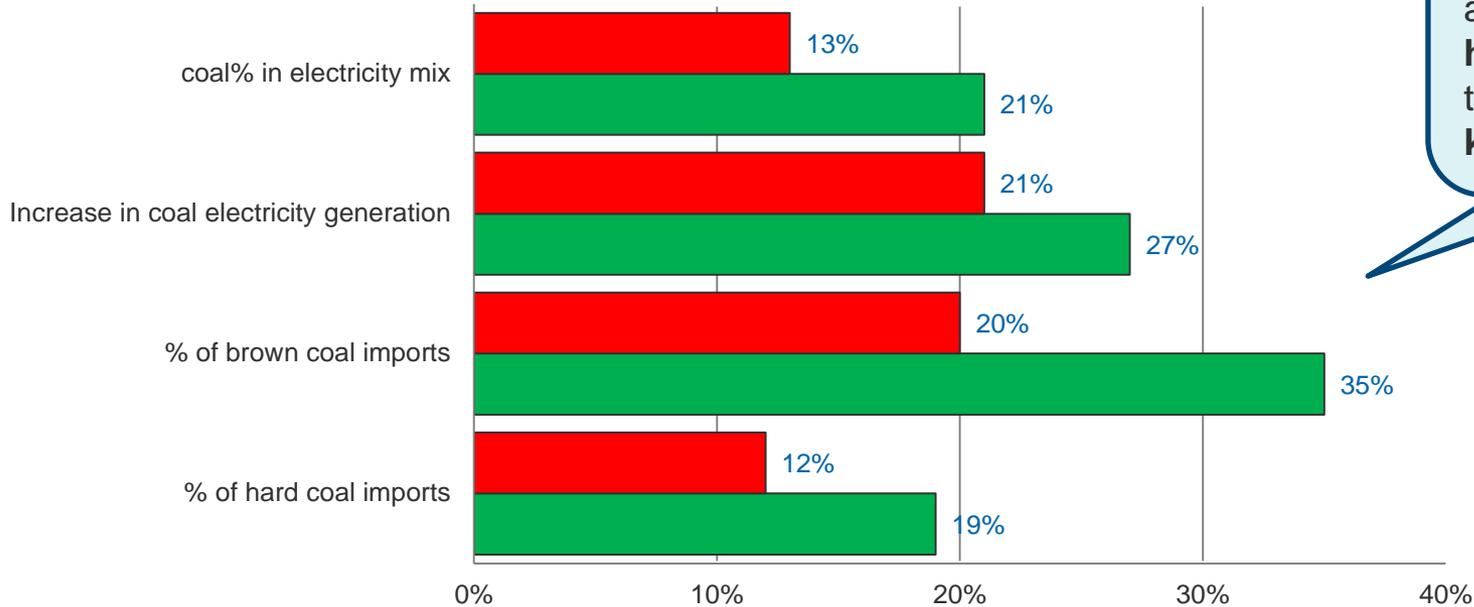
% of coal imports



75% of the participants were **not aware** that **Germany does not import brown coal.**

Relationship Between Subjective & Objective Knowledge

% of correct responses



Participants who felt better informed also exhibited higher accuracy in their objective knowledge

■ Badly informed & very badly informed group

■ Well informed & very well informed group

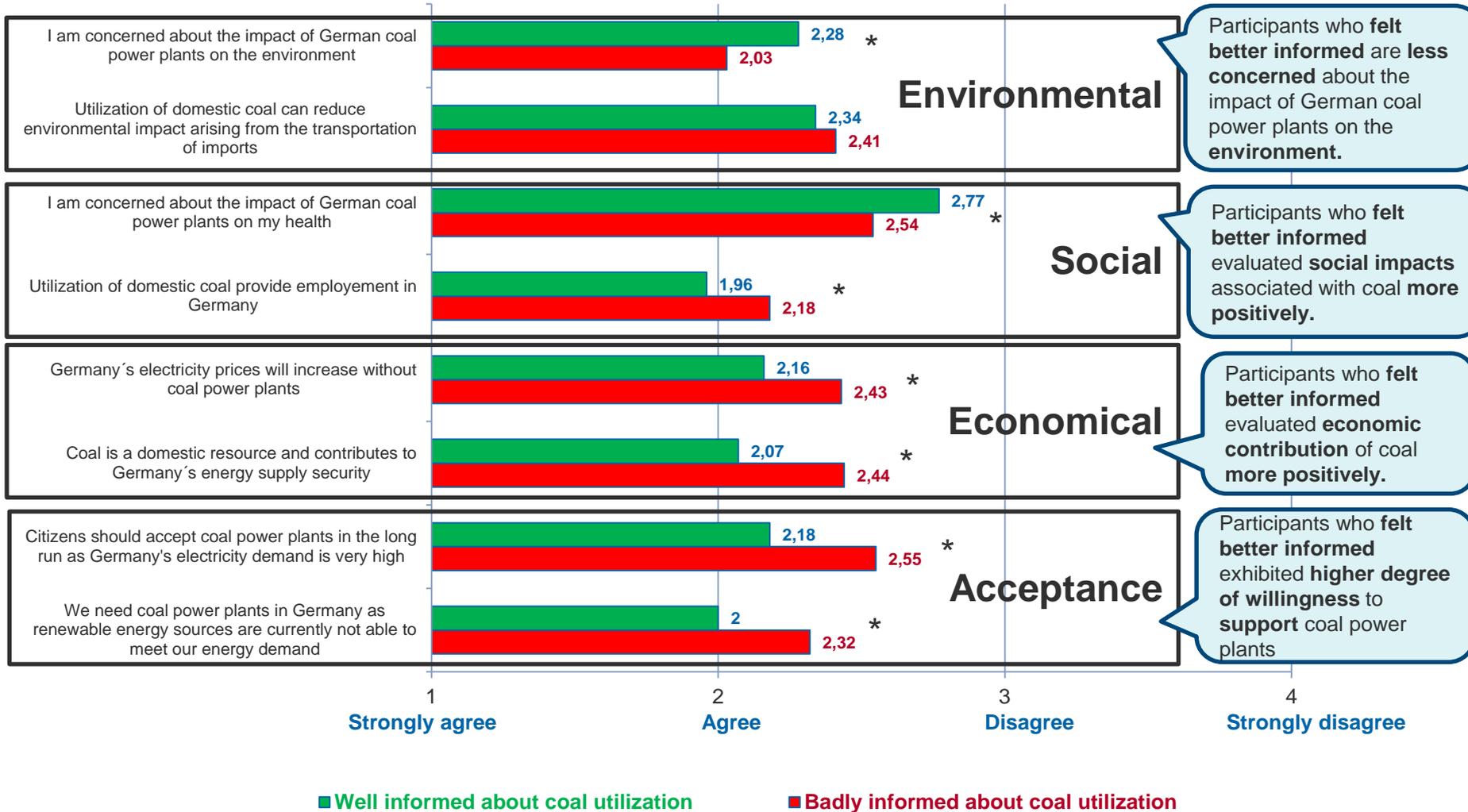


Does knowledge have an impact on how people

1) evaluate coal along different dimensions ?

**2) their acceptance of coal in Germany's (future)
energy mix**

Impact of Subjective Knowledge



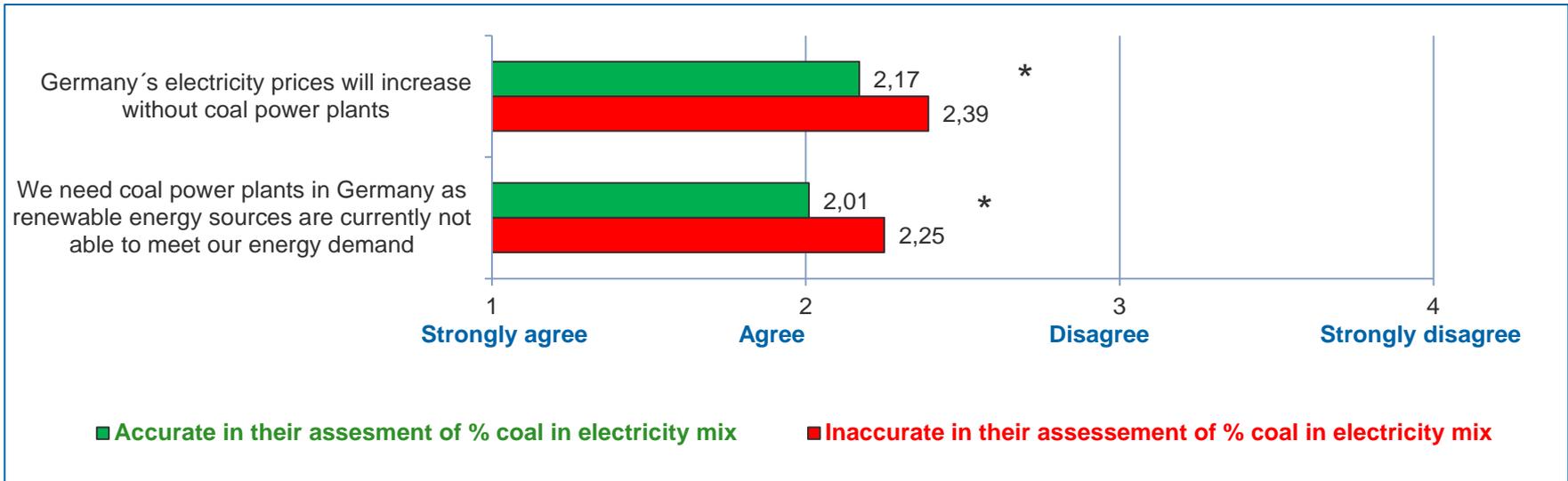
Participants who felt better informed are less concerned about the impact of German coal power plants on the environment.

Participants who felt better informed evaluated social impacts associated with coal more positively.

Participants who felt better informed evaluated economic contribution of coal more positively.

Participants who felt better informed exhibited higher degree of willingness to support coal power plants

Impact of Objective Knowledge



Participants who are **aware** of **coal's role** in Germany's **electricity mix** believe:

- Coal plays a key role in keep **electricity prices affordable**.
- **Coal is needed** until **renewable energy sources** are **able** to meet Germany's electricity demand.

Impact of Objective Knowledge

Participants who **believe (accurately)** that **coal %** in Germany's electricity mix has **increased** in the last 2 years:

- Are **more concerned** about the associated impact on the **environment**.
- Are **more worried** about potential impacts on their **health**.





KEY INSIGHTS & IMPLICATIONS



Insights & Implications for Policymakers and Energy Managers

Key Findings

- 1) Not only do participants **felt badly informed** about the use of coal in Germany, they also exhibited a **general lack of objective knowledge** about the role of coal in German economy.
- 2) Participants who **felt better informed** also exhibited **higher accuracy** in their **objective knowledge**.
- 3) In particular a **subjective feeling of being informed** contribute to **more positive evaluations** and **higher level of acceptance** for coal.

Implications & Directions for Future Research

- 1) Developing **targeted measures** to **increase individual's subjective knowledge** about **coal utilization** in Germany can have a **significant impact** on **public's coal evaluations & acceptance**.
- 2) Identifying ways to increase **objective knowledge** of the role of coal in Germany's economy can **avoid decisions** based on **"false" assumptions**.
- 3) Insights into **why subjective feeling of being informed is lacking** despite information availability (in particular in view of intense discussion regarding Germany's Energiewende) are needed.

THANK YOU!
Feedback & Comments are most welcome.

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