

Renewable Energy Cooperatives: Gaps in qualifications for new business models

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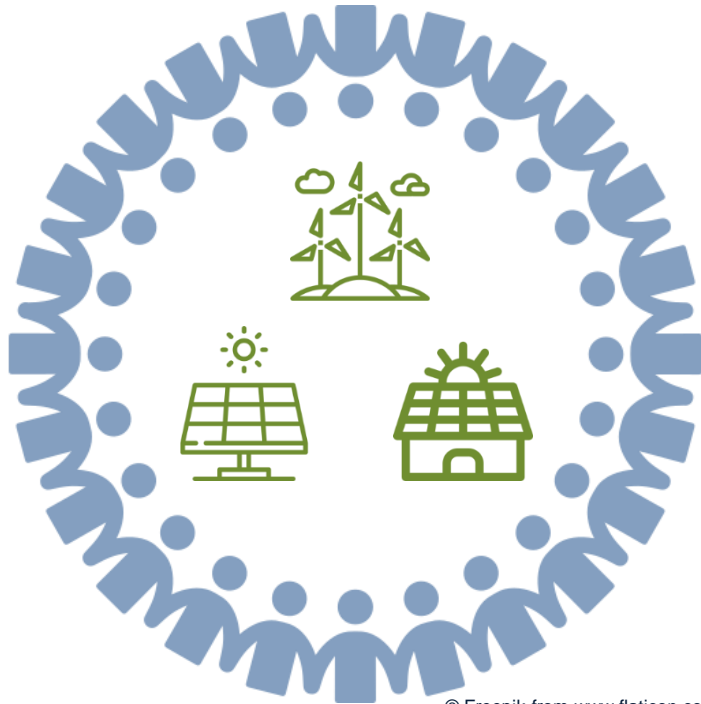
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Community energy as success model



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Community energy as “projects where communities (of place or interest) exhibit a high degree of ownership and control, [and are] benefiting collectively from the outcomes” (Seyfang et al. 2013: 978).

RECs in Germany



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883 Renewable Energy Cooperatives founded after 2006 with:

- ~200,000 members
- ~2.9 billion euros investments in renewable energies
- 8.31 TWh community-owned electricity generation in 2019
- 3.5 % share of the total renewable electricity generation in Germany

(DGRV 2020)

Challenging times for RECs

Hampering factors:

- Reduced feed-in-tariffs (Klagge et al. 2016)
- Tendering system (Müller et al. 2015)
- Direct marketing (Herbes et al. 2017)
- Uncertainties through the Capital Investment Act (Herbes et al. 2017)
- Limits of voluntary management (Herbes et al. 2017)

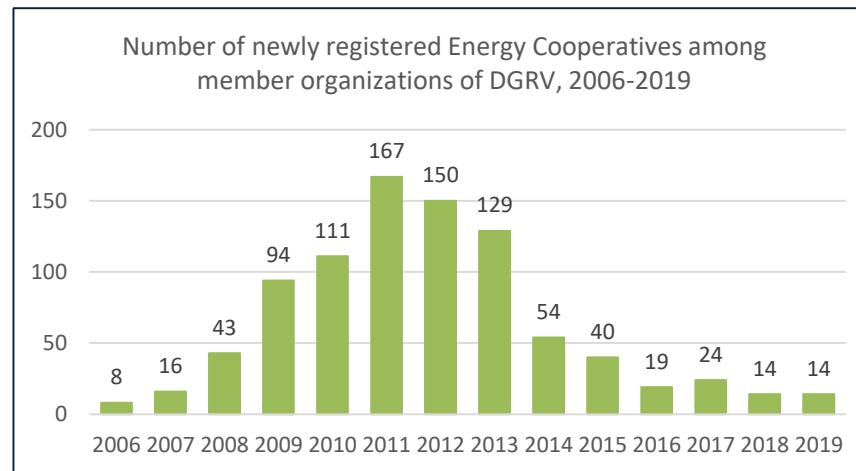
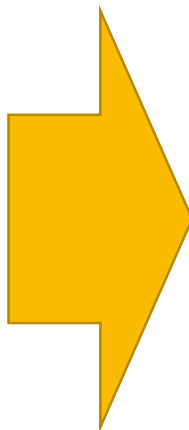


Figure based on: DGRV 2020

Problem:

- Decline in (new) cooperative engagement
- New business models more complex and risky
- Managers often overstrained (time and qualifications)

Research Questions

- 1) Do RECs plan for new business models? Which models do they favor?
- 2) What qualifications for managing the implementation of new business models do REC board members possess?
- 3) How well do REC managers think they are qualified for new business models?
- 4) Is there a difference in self-perception between those planning for new business models and those who are not?

Online Survey

- Online survey among REC management board members (and supervisory board members)
- Extensively pretested in autumn 2017
- Field phase: 10/2017 – 02/2018 (including a dedicated follow-up via telephone)
- ~ 760 RECs contacted (out of 862 coops in Germany (DGRV 2017))
- Response rates:
 - RECs in the sample: 125, i.e. approximately 15% of all RECs
 - Management board members in our sample: 187, i.e. at least 7.8% of all management board members in Germany
- Calculation of an aggregated human capital (HC) index

REC management requirements and REC business models

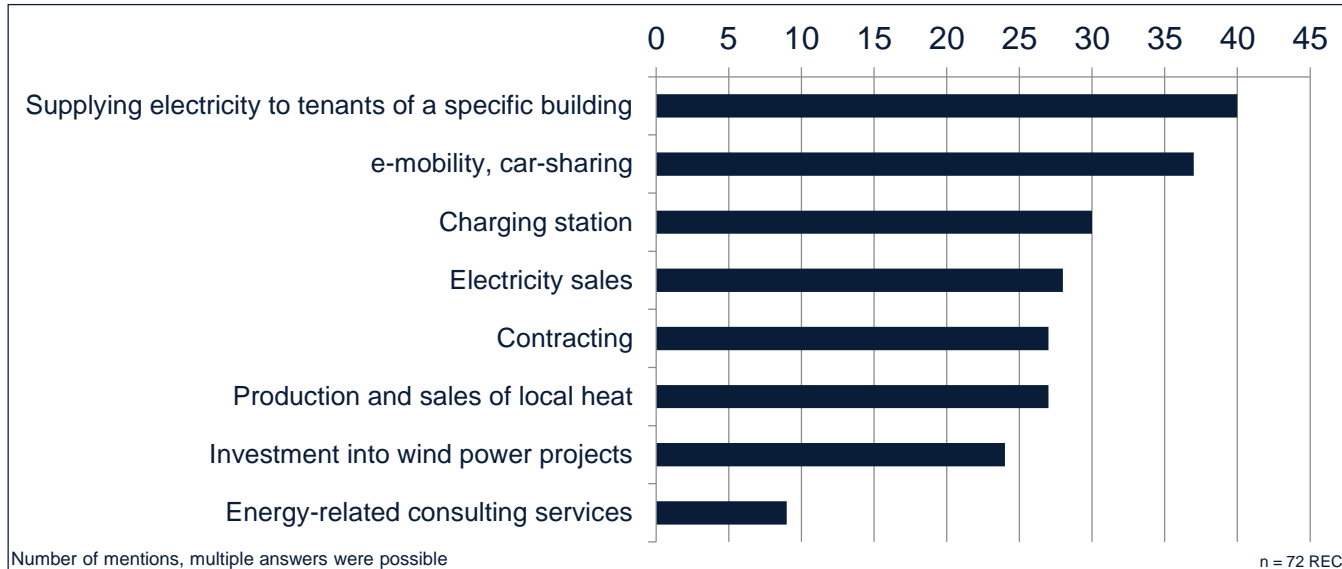
	Technology related know-how	Business know-how	Legal know-how	Project development and management	Marketing and public relations	Sales	Employee mgt., HR and leadership	Strategy and business planning	Know-how on cooperative businesses	Tax know-how	Renewable energies
Investment into wind power projects	◐	●	◐	○	○	○	○	◐	○	○	◐
Own wind power projects (call for tenders)	●	●	●	●	○	○	○	◐	○	○	◐
Direct sales of electricity to consumers and institutional buyers (general)	◐	◐	●	◐	●	●	○	◐	○	○	◐
Sales of electricity to tenants of a specific building	◐	◐	●	◐	◐	◐	○	◐	○	○	○
Production and sales of local heat	●	●	◐	●	●	●	○	◐	○	○	◐
Grid operation	●	●	◐	◐	○	◐	○	◐	○	○	○
Contracting	◐	●	●	●	◐	●	○	◐	○	◐	◐
E-mobility, car sharing	◐	◐	◐	◐	●	●	○	◐	○	○	○
Charging stations for e-mobility	◐	◐	○	◐	●	●	○	◐	○	○	○
Consulting services	●	◐	◐	○	◐	●	○	◐	○	◐	●

Note: ○ – Not relevant, ◐ - Somewhat relevant, ● - Highly relevant. Assessments from expert interviews and authors.

Descriptives

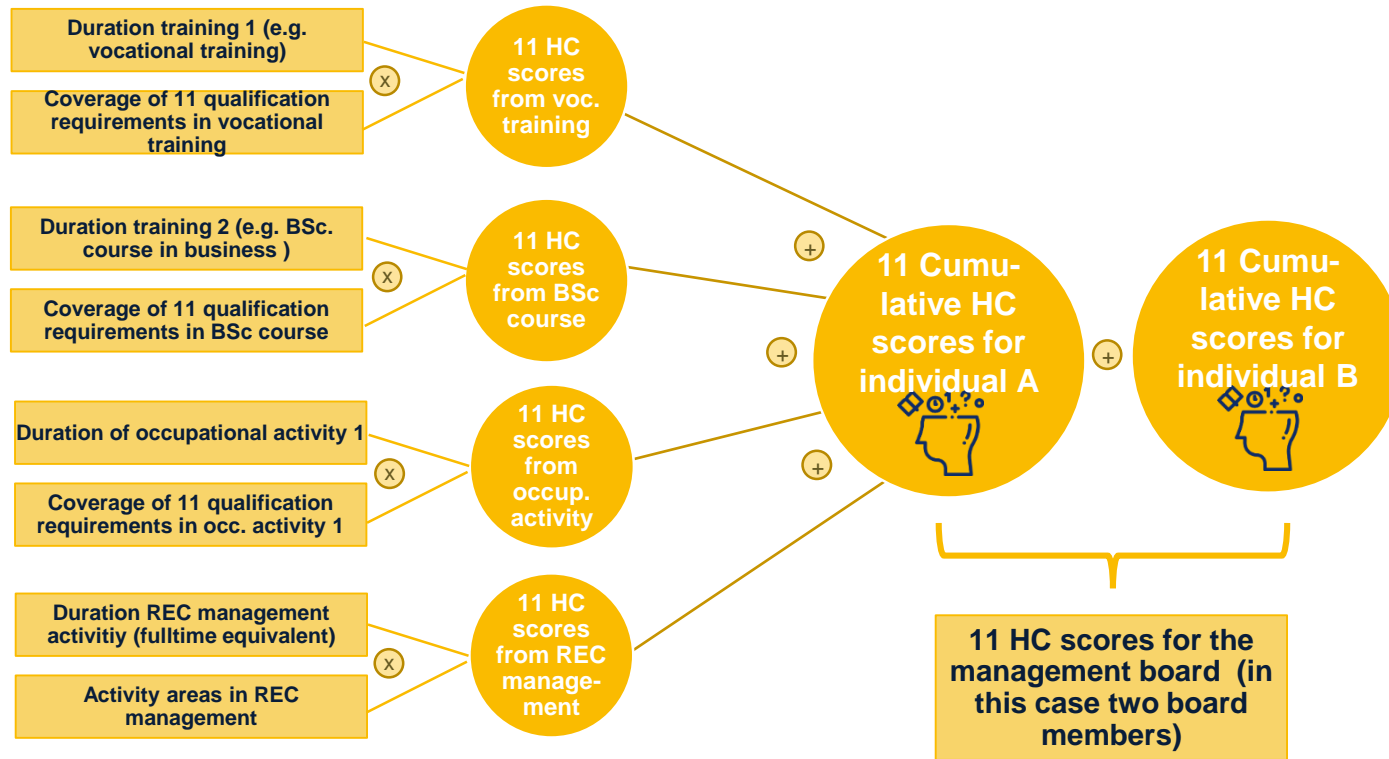
Variables	Descriptive statistics
Gender (n = 168)	Male: 94.0% Female: 6.0%
Age in years (n = 165)	Minimum: 26 Maximum: 81 Mean: 55.73 Standard deviation (SD): 11.7
Employment situation (besides the REC) (n = 182)	Employed, full-time: 59.9% Employed, part-time or marginally: 17.0% Not employed: 23.1%
Duration REC membership in years (n = 185)	Minimum: 1 Maximum: 49 Mean: 6.8 SD: 5.8
Duration executive board membership in years (n = 185)	Minimum: 1 Maximum: 49 Mean: 6.41 SD: 5.5
Weekly working hours for the REC (n = 169)	Minimum: 0 Maximum: 60 Mean: 10.79 SD: 11.8
Type of position in the REC (n = 184)	Full-time, paid: 6.5% Part-time, paid: 18.5% Voluntary, with compensation for expenses: 14.7% Voluntary, no compensation: 60.3%

Results: New business models (RQ1)

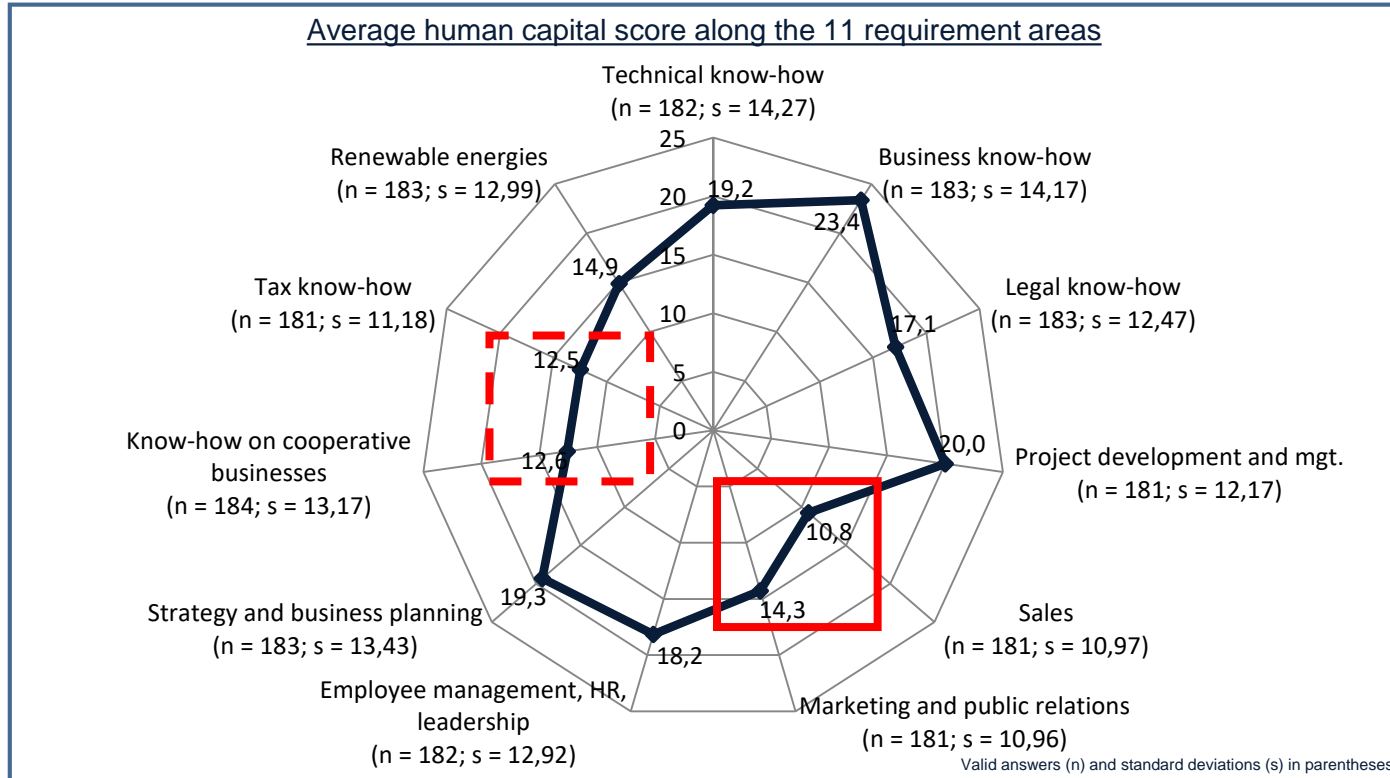


44% of all RECs who answered this question (n=121) are currently planning to change or expand their business models (according to their management board members)

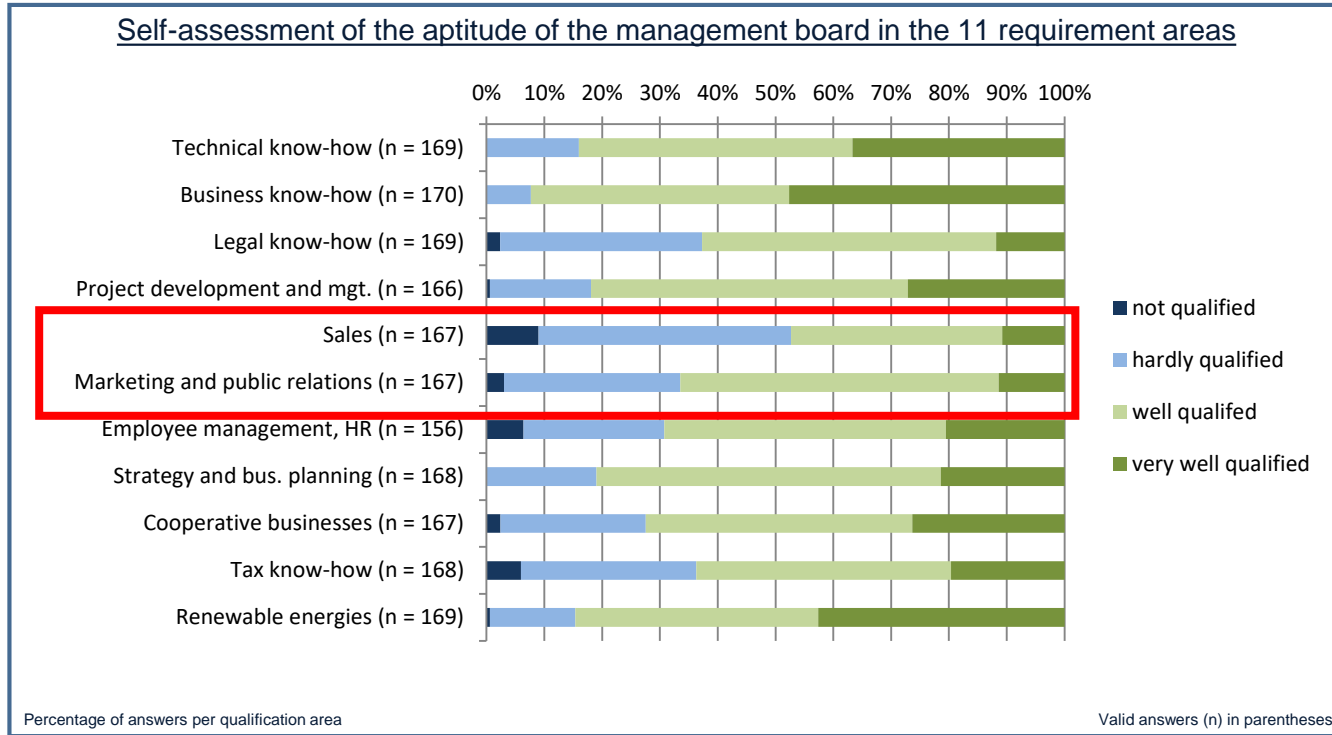
Human Capital Index



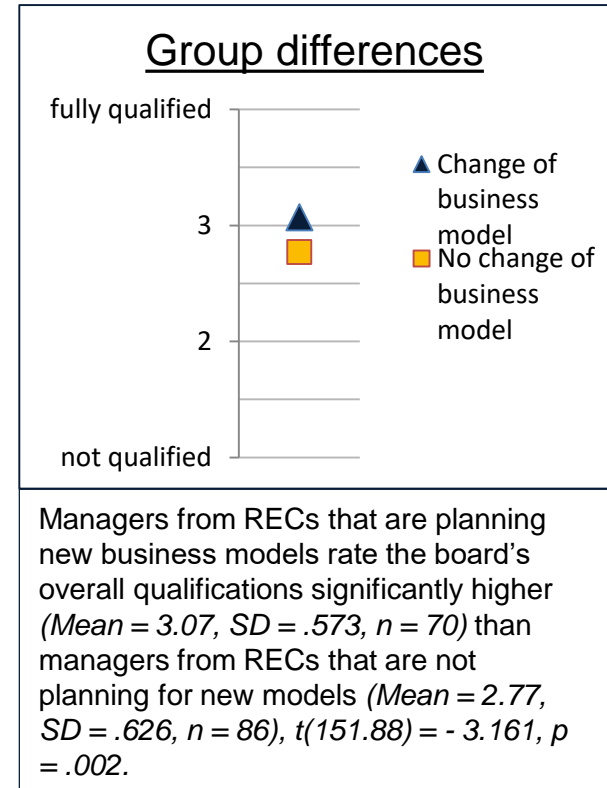
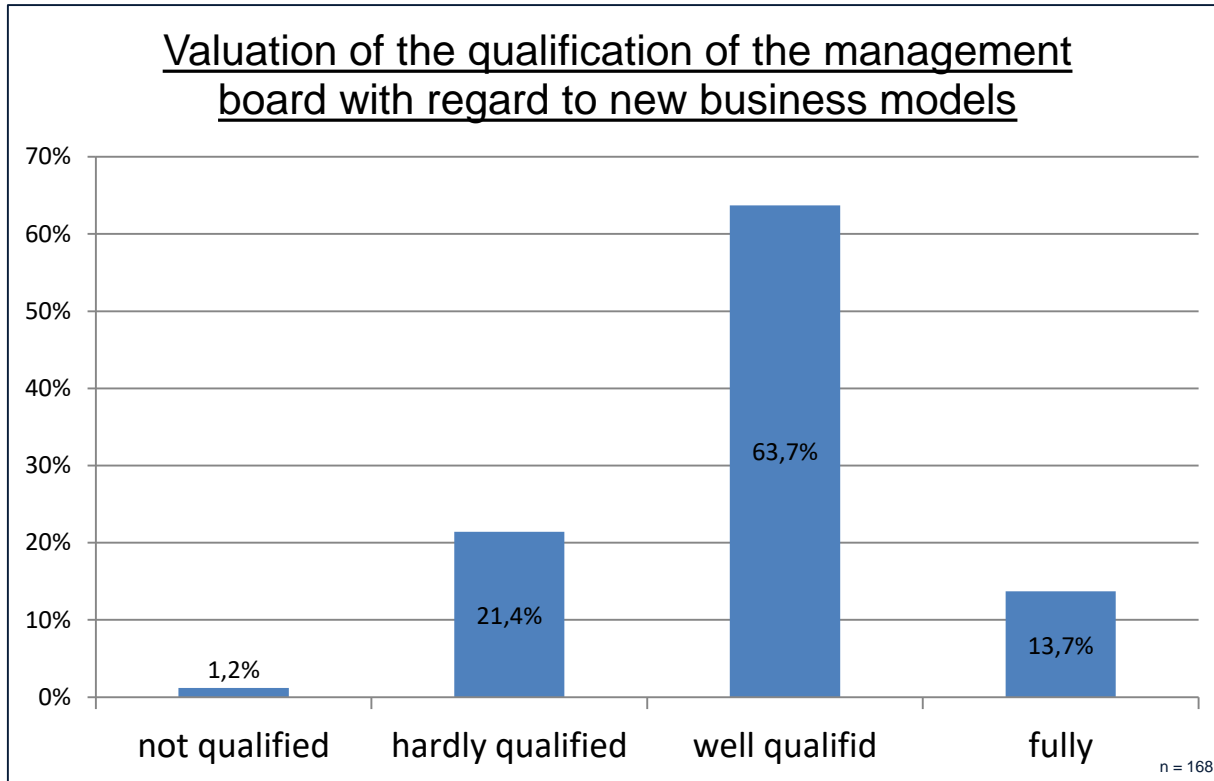
Results: Human Capital Scores (RQ2)



Results: Self-perception of qualifications (RQ3 + 4)



Results: Self-perception of qualifications (RQ3 + 4)

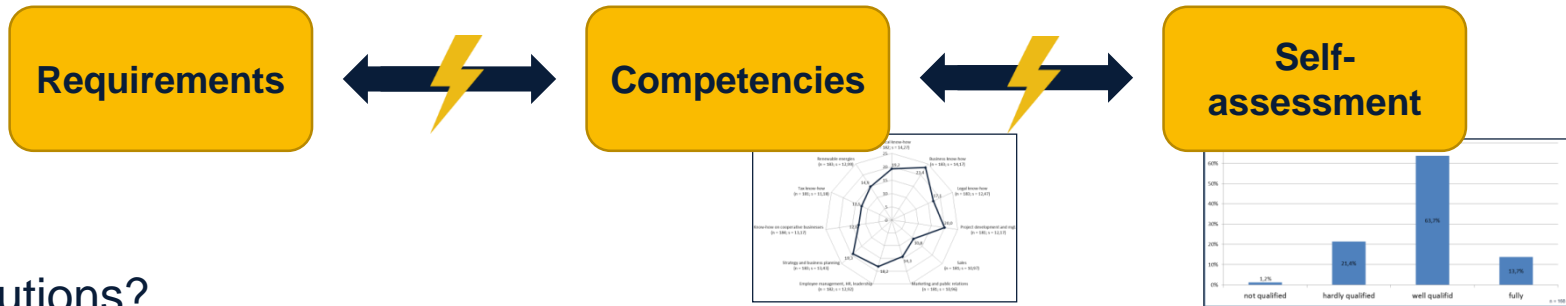


Conclusions

- REC transition from a subsidy-driven ‘standard business model’ to more diversified market-driven business models succeeded?
- New business models demand other competencies
- Business model decision making influenced by multiple factors: qualifications, risk aversion, customer types, technical complexity or geographical proximity
- “Black box” REC management opened: focus on people behind the scenes
 - strong in technical and operational know-how, but relatively weak in marketing, sales and public relations
- Subjective self-assessment of qualifications reflects shortcomings of objective measurement
- Still: Generally quite optimistic with regard to their qualifications, those planning for new business models even more optimistic

Conclusions

- Divergence:



- Solutions?

1. Improving the qualifications of existing management teams
2. Hire new (younger?) and paid managers
3. Resource pooling with other RECs
4. Strategic partnerships

Paper accepted yesterday:

Herbes, C.; Rilling, B.; Holstenkamp, L. (2021): Ready for new business models? Human and social capital in the management of renewable energy cooperatives in Germany. In: *Energy Policy*.

Literature

- DGRV, 2017. Energiegenossenschaften: Ergebnisse der DGRV-Jahresumfrage (zum 31.12.2016). <https://www.genossenschaften.de/sites/default/files/Umfrage%20Energiegenossenschaften%202016.pdf> (accessed 22 February 2019).
- DGRV, 2020. Energy Cooperatives in Germany: State of the Sector 2020 Report. https://www.dgrv.de/wp-content/uploads/2020/07/20200708_State-of-the-sector-2020.pdf (accessed 14 April 2021).
- Herbes, C.; Brummer, V.; Rognli, J.; Blazejewski, S.; Gericke, N. (2017): Responding to policy change: New business models for renewable energy cooperatives – Barriers perceived by cooperatives' members. In: Energy Policy, 109, 82-96.
- Kahla, F.; Holstenkamp, L.; Müller, J.; Degenhart, H. (2017): Entwicklung und Stand von Bürgerenergiegesellschaften und Energiegenossenschaften in Deutschland. Leuphana Universität Lüneburg. Lüneburg (Arbeitspapierreihe Wirtschaft & Recht, 27).
- Klagge, B.; Schmole, H.; Seidl, I.; Schön, S. (2016): Zukunft der deutschen Energiegenossenschaften - Herausforderungen und Chancen aus einer Innovationsperspektive. In: Raumforschung und Raumordnung, 74 (3), 243-258.
- Müller, J.R.; Dorniok, D.; Flieger, B.; Holstenkamp, L.; Mey, F.; Radtke, J. (2015): Energiegenossenschaften – das Erfolgsmodell braucht neue Dynamik. In: GAIA, 24(2), 96-101.
- Seyfang, G.; Hielscher, S.; Hargreaves, T.; Martiskainen, M.; Smith, A., 2014. A grassroots sustainable energy niche?: reflections on community energy in the UK. Environmental Innovation and Societal Transitions. 13, 21-44.
- Yildiz, Ö.; Rommel, J.; Debor, S.; Holstenkamp, L.; Mey, F.; Müller, J.; Radtke, J.; Rognli, J. (2015): Renewable energy cooperatives as gatekeepers or facilitators? Recent developments in Germany and a multidisciplinary research agenda. In: Energy Research & Social Science, 6, 59-73.