



EMERTECH 2017



EMERGING TECHNOLOGIES: Societal Challenges and Global Governance



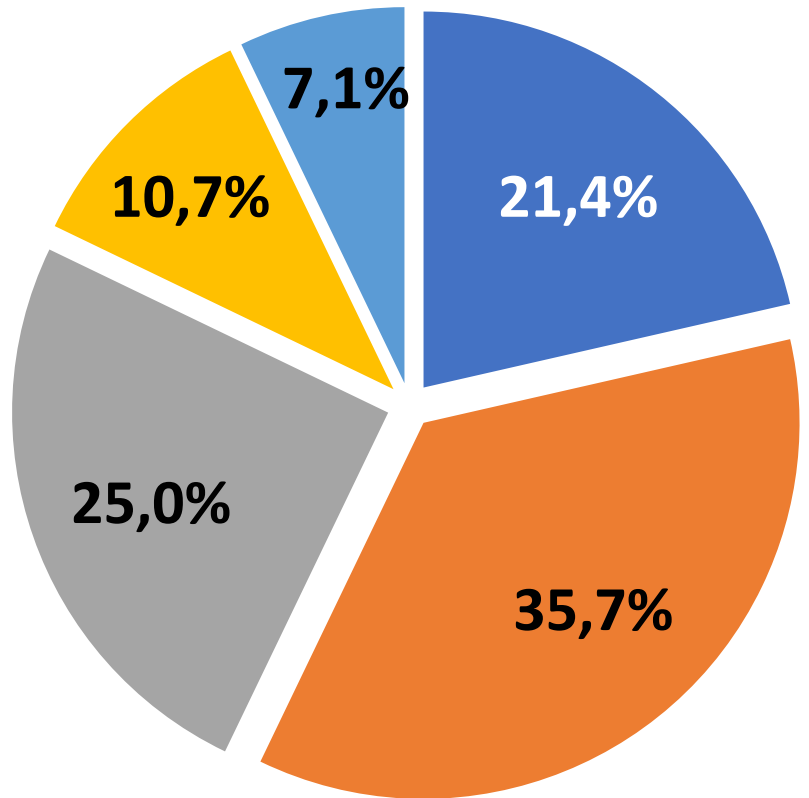
POLL RESULTS

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General data about respondents



EXPERT



RESEARCHER



**LEADER OF RESEARCH OR
EXPERT CENTER**



BUSINESS



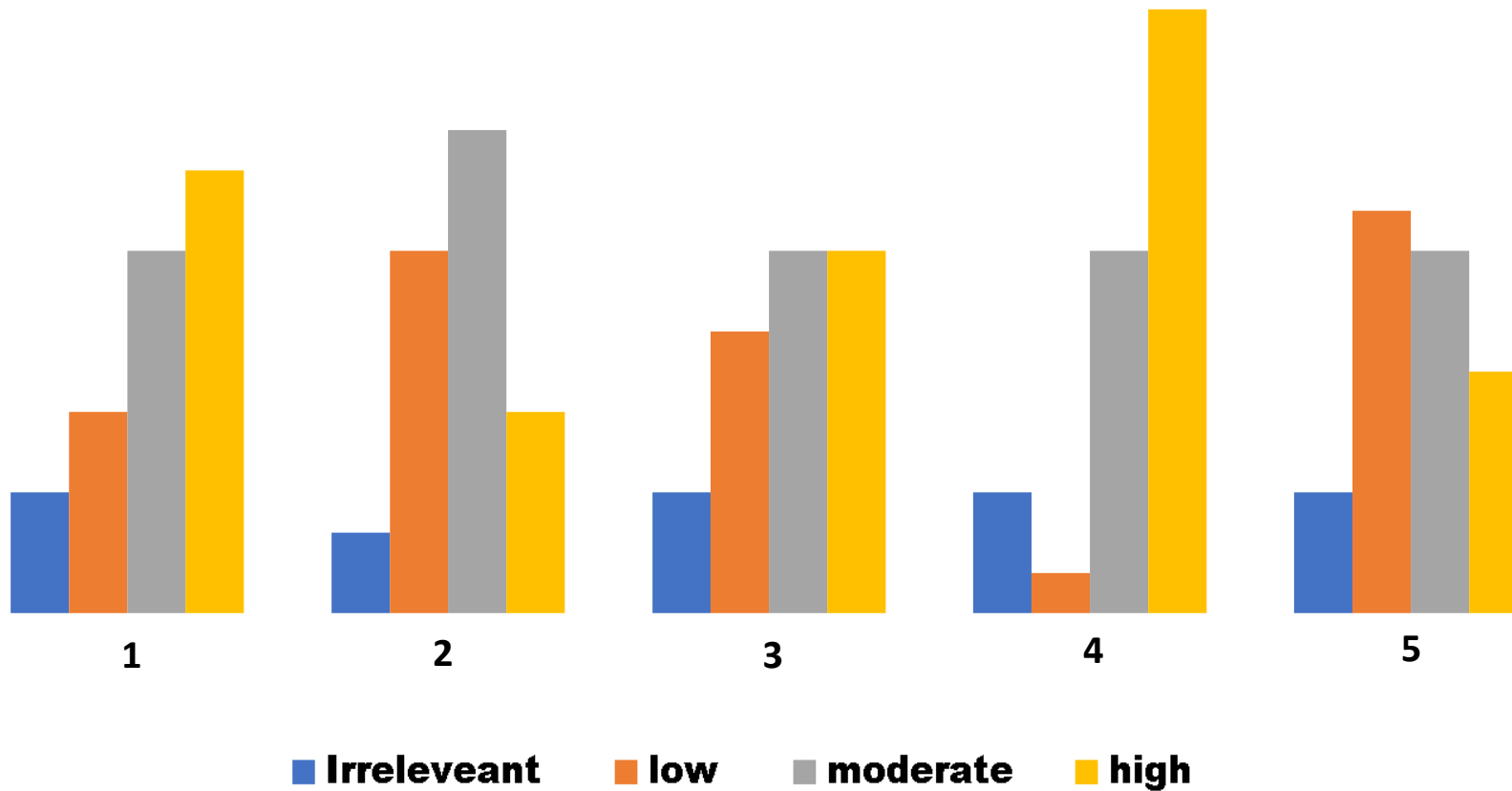
GOVERNMENT

also government-owned innovation institutions

- 50 questionnaires were distributed among Conference speakers and selected participants – prominent experts, researchers, etc.
- 28 returned filled (as of Nov.10, 2017)
- Despite the biggest group of respondents are acting researchers, other 2 major specialists categories (expert, leader of research/expert organization) has close shares
- Significant (17,8% in total) part of business and government representatives



Impact of new military and dual-use technology on international security



INTERPRETATION

- Highest level of consensus among respondents
- Risks of new arms race and non-classic military conflicts are moderately-high...
- ...but potentially may be balanced or governed by new global regimes
- The key challenge and risk is still radical ideologies, enhanced by digital capabilities
We still don't have neither technical (tanks and missiles do not help in fight with ideology) nor institutional instruments to deal with the challenge

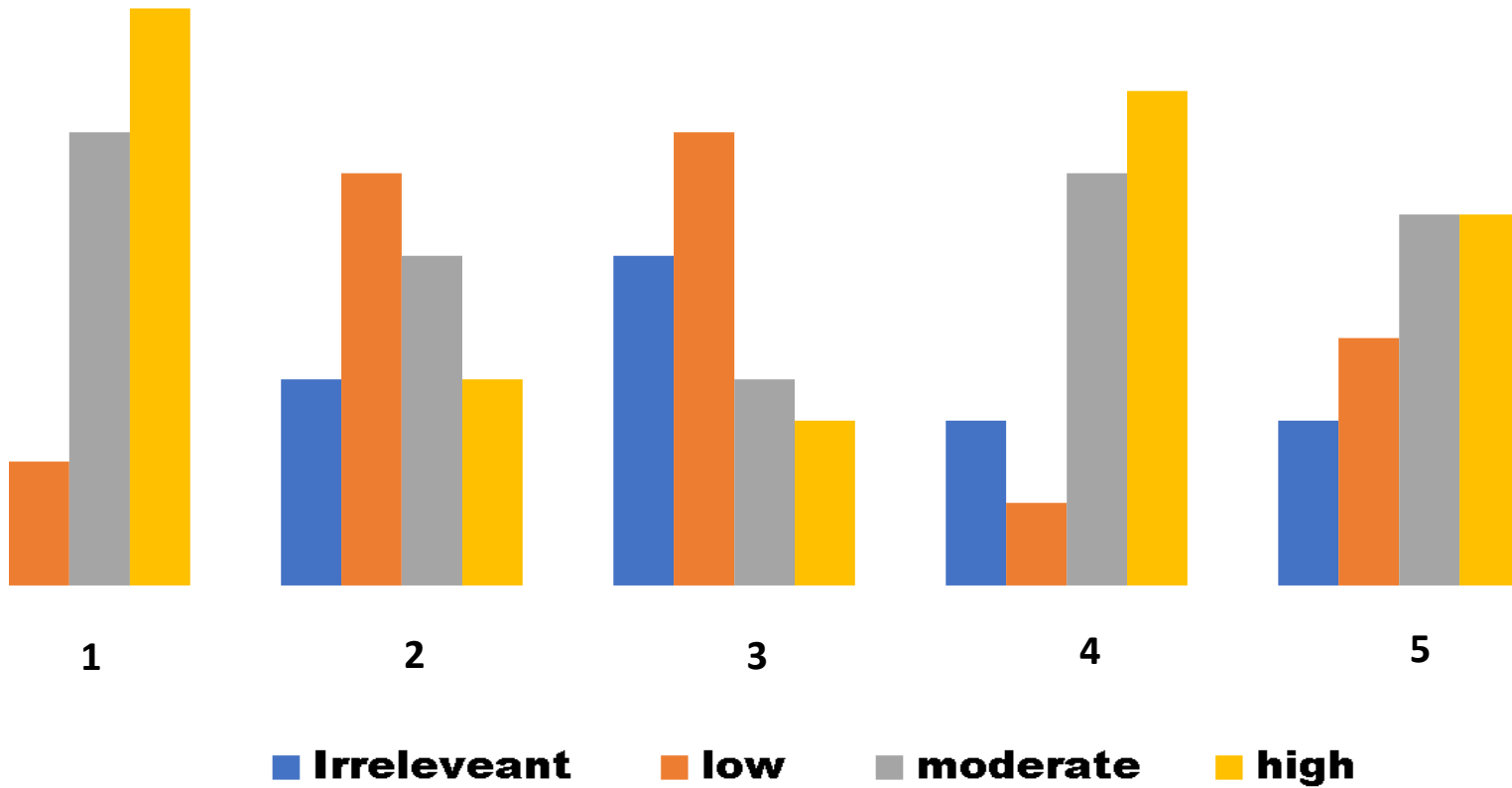
Possible answers:

1. risk of conventional arms race (based on fundamentally new technologies)
2. growing number of local conflicts (including those involving regional powers) - due to their admissibility in terms of "unmanned" (or low personnel engagement) military operations
3. growth of non-classic military conflicts (e.g. use of Global Strike systems or drones to eliminate individuals, groups, military installations and so forth)
4. spread of radical ideologies by means of internet and electronic media
5. New global control regimes will be developed for perspective arms that will reduce international security risks



Impact of emerging technologies on the global economy

INTERPRETATION



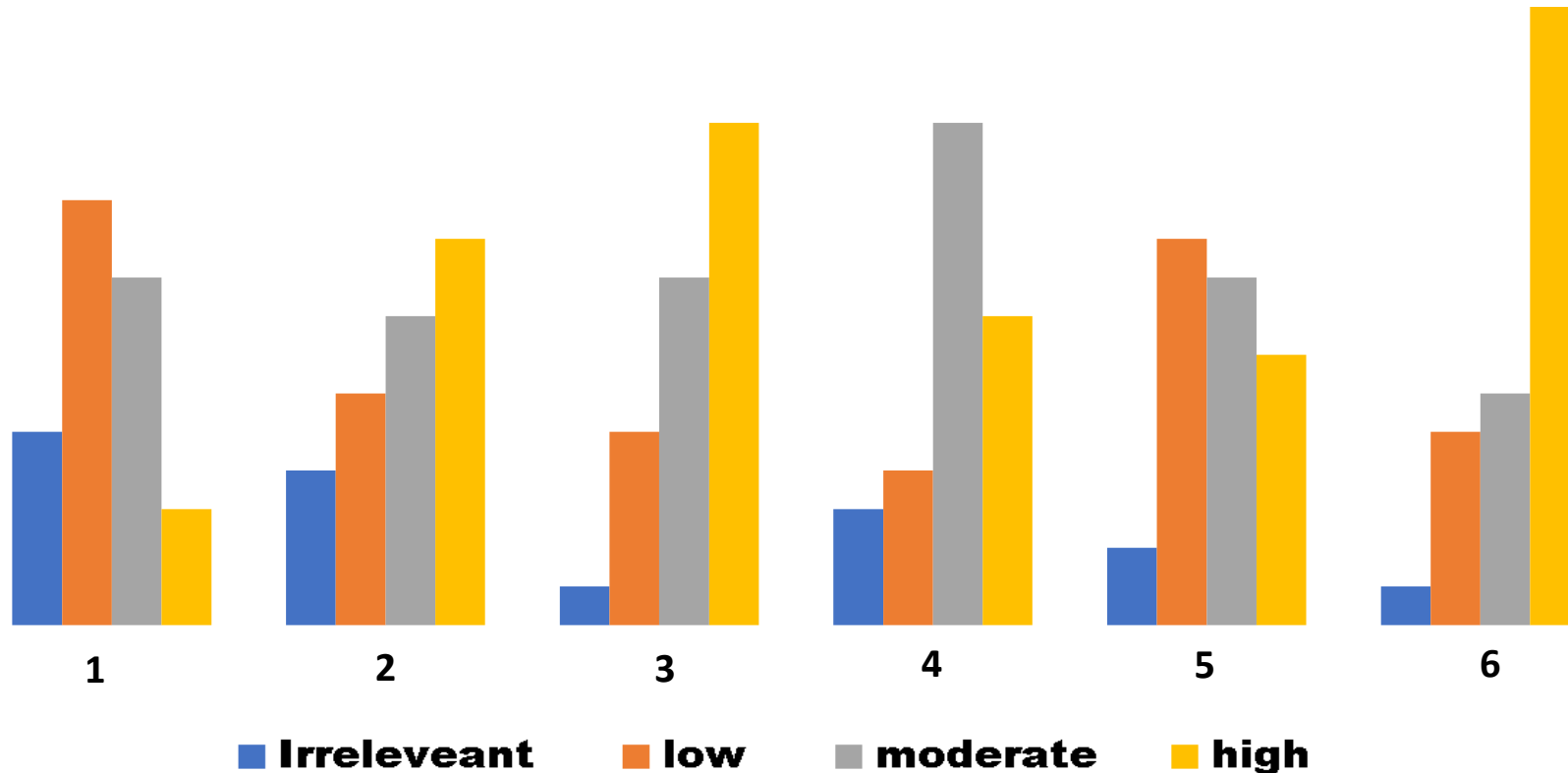
- **Optimistic view – new growth options, less risks of crisis**
No “secular stagnation” . Possible solution of macroeconomic indicators dilemma (rise of innovations without comparative rise in GDP and productivity growth, etc.)
- **No miracles – “Haves” economies still on the top**
Doomed to follow? What is the option for emerging economies – a new digital catch-up? Focus on institutional change?
- **Technology is important –but development is about human capital and institutions**
...and social and cultural factors. Obsession in technology is still popular - but does it work in non-institutionalized framework?

Possible answers:

1. will form new sources of economic growth
2. will lead to a structural crisis of due to increased competition (lower profits, forced restructuring due to the introduction of new technologies, etc.)
3. will reduce or eliminate the gap between advanced developing and the most developed economies
4. will increase the gap between the developed and developing economies
5. the key factor in global competition is not technology, but institutions and competences



International competition for resources (taking into account the technological change)



INTERPRETATION

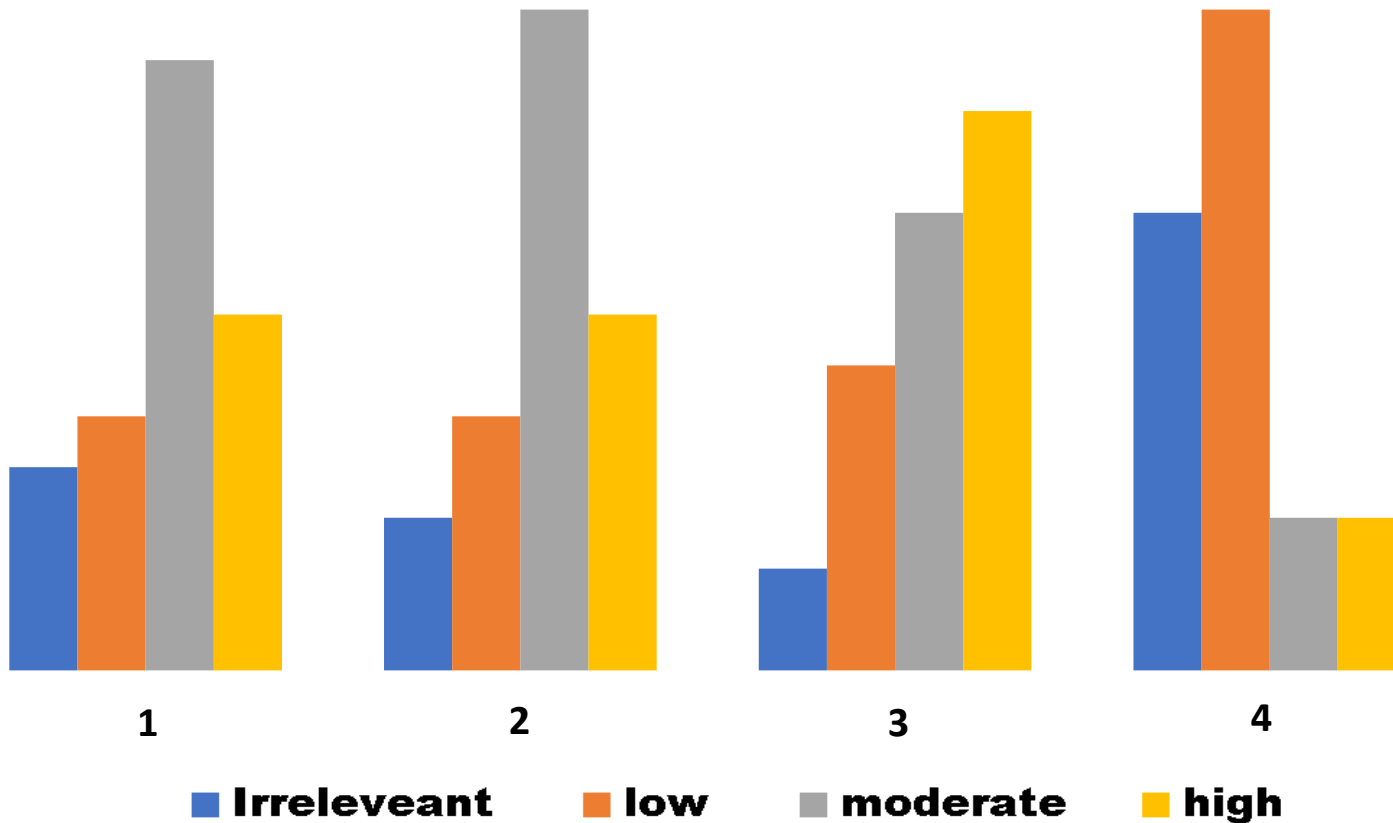
- **“Traditional” competition for space and mineral resources still exists, however not in the focus...**
- **...but Ocean and Arctic are surprisingly important!**
Considering the abovementioned shift away from traditional resource competition, this shouldn't be about resources – do we see a dilemma of geopolitics vs economy?
- **Specific resources for high-tech industries are on the rise**
In accordance with high-tech rise and recent exporter's policies
- **Return of “old” resources (water and land)**
Environment (also values) and demography factors
- **Predictably, key for competition [and competitiveness] are human capital and market capabilities, not spaces or resources**
...should we also name data as the new resource?

Possible answers:

1. for traditional mineral resources
2. for specific mineral resources (rare/rare earth metals, etc.)
3. for clean water sources and environmentally clean / available land suitable for agricultural activities
4. for the development of ocean resources (including Arctic) and Antarctic
5. new space race
6. competence and markets, being the main "area" for global competition



Consequences of the revolution in energy technologies



INTERPRETATION

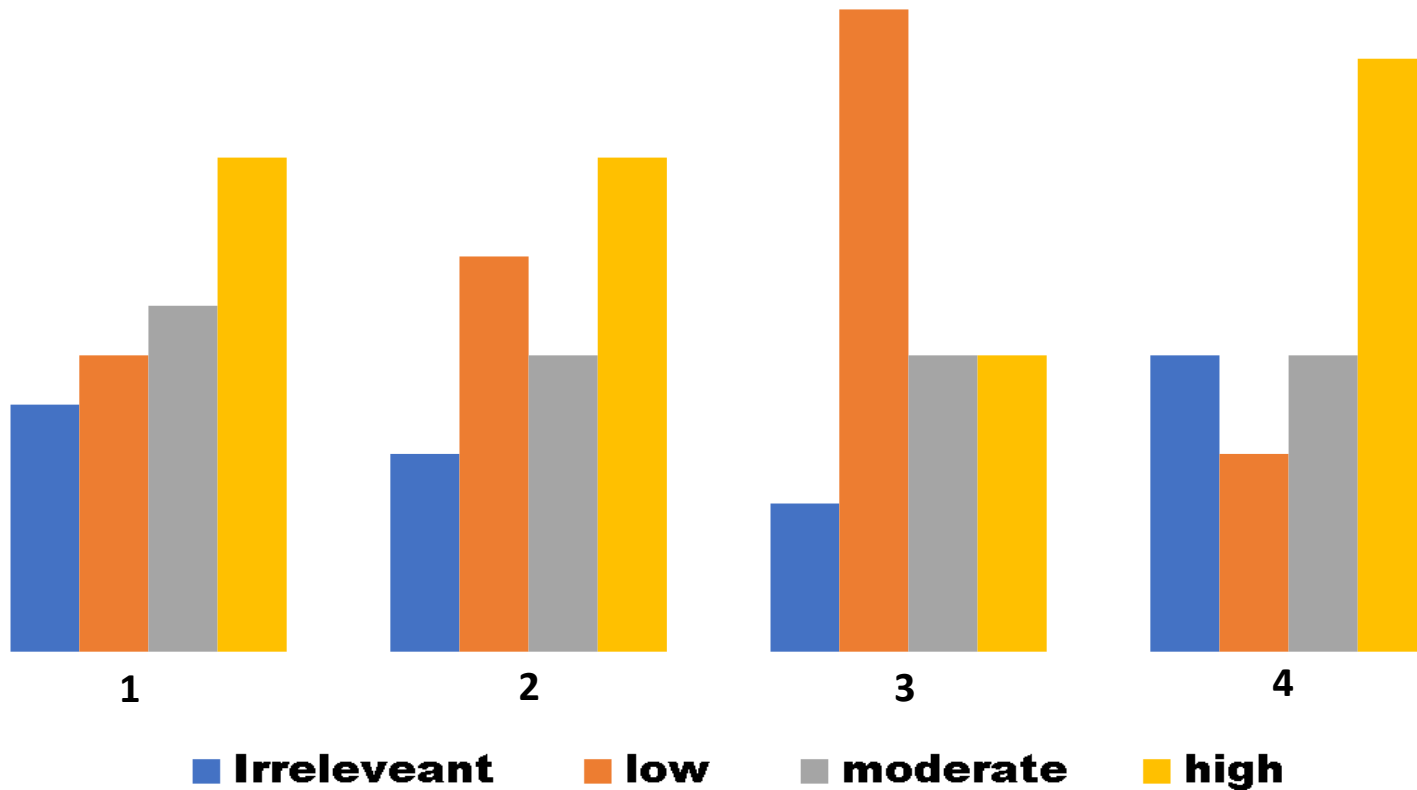
- **Good news: no crisis**
No contradiction of business-models, values and technologies of “traditional” and “innovative” energy
- **Clear representation of the need for “economization” of digital and renewable energy**
Are technologies ahead of business-models and market requirement – or we don’t have needed technologies as well?
- **Don’t bury traditional businesses! Digital and renewables may enforce them, not disrupt.**
- **Digital energy leaders are not yet there, but still have chances!**

Possible answers:

1. promotion of “digital” companies into energy market leaders
2. traditional market actors will integrate the achievements of the digital energy and renewable technologies, maintaining market power
3. the restructuring of the segment of renewable and/or digital energy — the transition to a more economically viable and advanced technologies
4. global energy crisis due to a conflict between old and new actors, technologies, institutions



Key social and demographic risks, associated with “Grand Challenges” and technologies



INTERPRETATION

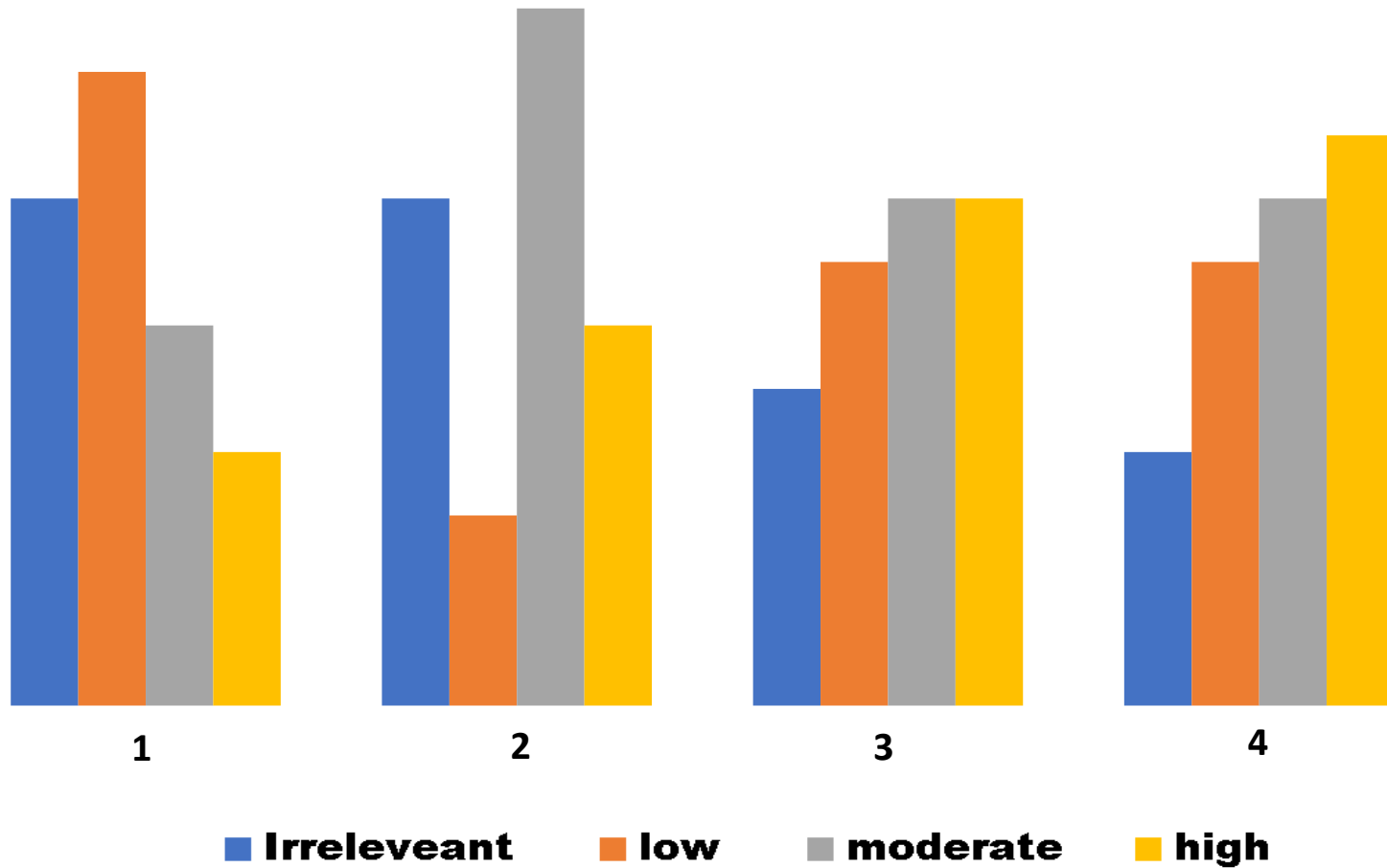
- **Most disputable question**
- **Digital – significant [and growing?] risk of social and/or age inequality**
Clear correlation with answers on global tech divide
- **Possibility of technology-driven migration or instability cause moderate polarization of respondents` opinions**
Progress of technology and its effects are still ambiguous
- **Environment is important – but catastrophic events or long-term environment negative effects, causing mass migrations, are not seen by respondents as likely**
- **Culture and values crisis are the most troubling Challenge**
Technology definitely plays its role – considering other answers

Possible answers:

1. "digital divide" - the factor of limitation of rights and distribution of benefits among different age groups and social strata
2. mass migration and / or internal instability caused by structural unemployment (due to the new digital and production technologies)
3. mass migration and / or internal instability caused by environmental risks and escalation of conflicts
4. cultural crisis of values due to digital technology, including threats for social and personal security



Dominant directions of the global environmental agenda



INTERPRETATION

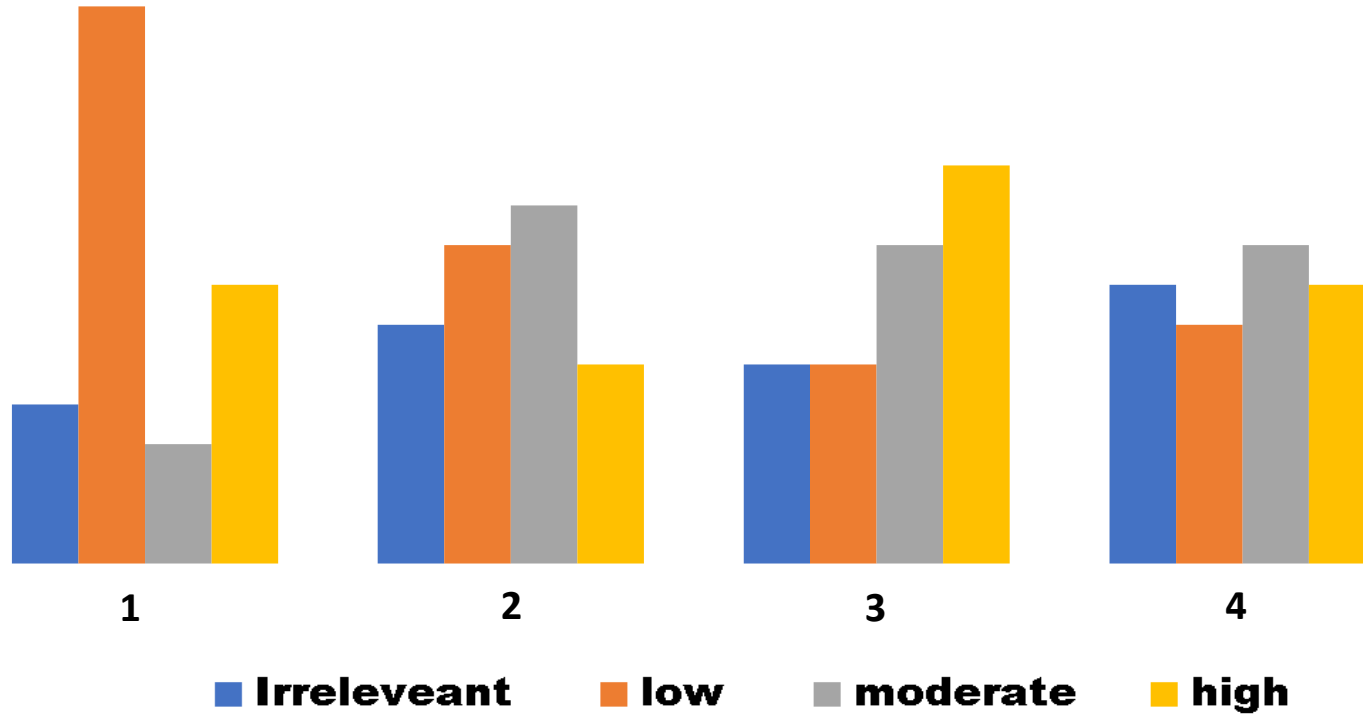
- **Not that much respondents still believe in global regimes**
New Kioto and Paris are still possible, but many thinks that they are in the past... or in some distant future?
- **Regional regimes are much more feasible, but there are still some problems and/or questions (moderate polarization of opinions)**
Polarization also hints on regional differences?
- **Partly in accordance with energy questions, possible solution is combination of tech and regulation/market advances**
Viable options (which theoretically may also enforce regimes) are not at hand, while sacrifice of economic and other interests is not a choice for many nations and political/social groups. Environment agenda should be aligned with tech and economy

Possible answers:

1. formation of global environmental regimes
2. regional environmental regimes and initiatives
3. breakthroughs in the field of "sustainable" and "clean" technologies
4. new market regulations (promotion of green businesses and markets, including "green protectionism")



Prospects for the development of norms, principles and institutions of global governance (taking into account the technological change)



INTERPRETATION

- **As in environment, respondents are very skeptical about global regimes**
Do we live in era of contradictory trends: rise of globalization and sunset of global governance institutions (except for some in trade and security area)? Or we simply have wrong global governance system?
- **...but regional dimension also gains a lot of confusion**
Recent EU experience (BREXIT, Catalonia and other) makes respondents cautious about regional cooperation and integration and its limits? Or rise of alliances (see below) is seen as a contradictory for true regionalization?
- **Alliances around leading powers are back**
Back to the past – or just fluctuations due to painful national reactions (rise of nationalism, protectionism) on “over-globalization” and defensive approach to global challenges?
- **Digital on the rise – but still nobody has a clear future vision (almost equal distribution of answers)**
May future global governance system be a “smart contract”? Algorithms and codes vs international agreements – or in support of them?

Possible answers:

1. New global trade, investment and political regimes, regulating also technological standards and risks
2. Domination of regional trade, investment and political regimes (including integration of scientific and technological systems)
3. Domination of alliances with leading powers (including greater integration of scientific technological systems) - up to the emergence of new varieties of bipolarity
4. Global digital / online trade, investment and logistics platforms will become the basis of the future global governance system

Further research needed.

**Join our expert pool for study and analysis of
Emerging Technologies impact on Society,
Economy and Global Governance!**

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