

Value-Based Determinants of Wind Energy Acceptance and Relative Energy Preferences in Switzerland

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by

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Abstract

Nuclear energy has reentered Swiss policy discussions, as wind farm projects continue to face local opposition despite broad public support. This study draws on Cultural Theory and Schwartz's theory of basic human values to examine the value-based determinants of wind energy acceptance and relative preferences between wind and nuclear power. Using SHEDS data, the results show that collective welfare orientations are associated with stronger wind energy acceptance and preferences. Orientations toward personal interests and success are associated with stronger relative preferences for nuclear power. Overall, the findings suggest that energy preferences are broadly associated with underlying value orientations. They reflect an alignment between the broad characteristics of specific energy technologies and these orientations. A persistent regional pattern for romandie, not accounted for by the value orientations examined in this study, points to other value-based or contextual factors not captured by the framework. This study also provides a basis for future research examining whether responses to compensation schemes vary with individuals' value orientations.

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1 Introduction

In May 2017, 58% of Swiss voters approved the Energy Strategy 2050, committing to renewable energy expansion and a gradual nuclear phase-out (RTS, 2017). The decision followed the 2011 Fukushima disaster, which prompted Switzerland to reconsider its reliance on nuclear energy (Swiss Federal Office of Energy, 2013). Within this transition, wind power is expected to contribute to Switzerland’s future electricity supply. However, broad public support for wind energy does not always translate into local acceptance. Wind farm projects often encounter opposition, which has motivated extensive research into the reasons underlying local resistance.

At the same time, public sentiment toward nuclear energy appears to be shifting. The SOPHIA 2025 survey reports an increase in support for building additional nuclear plants, from 25% in 2019 to 38% in 2025. Over the same period, opposition declined from 70% to 56% (M.I.S Trend, 2025). Nuclear energy has reentered policy discussions as a potential option alongside renewable technologies. In August 2025, the Swiss Federal Council adopted a counter-proposal to allow new nuclear plants to be authorised again (Swiss federal council, 2025). According to the same survey, energy supply concerns remain relatively limited among the general public, with only 2% ranking it as their first priority and 3% as their second. Geopolitical instability emerges as the most prominent issue, particularly among political leaders (45% ranked it first vs. 28% of the general public). Within this context, developing Switzerland’s energy independence emerges as a priority for both the population (52%) and political leaders (50%) (M.I.S Trend, 2025). These concerns may contribute to greater openness toward diversifying energy sources, including nuclear power. The renewed debate also raises questions about which technologies should contribute to Switzerland’s future electricity supply.

Studying energy preferences requires considering both the acceptance of individual technologies and the relative preferences among them. Preferring one technology over another does not necessarily imply accepting that technology, while accepting a technology does not necessarily imply preferring it over competing alternatives. Within the Swiss context, we examine these two dimensions: wind energy acceptance and relative preferences between wind and nuclear power. Together, they provide a more complete understanding of individual energy preferences. The central aim of this study is to examine not only what individuals prefer but also the value orientations and worldviews associated with these preferences.

We therefore proceed in two stages. First, we provide a descriptive overview of wind energy acceptance and relative preferences across population subgroups. This allows us to identify which groups express higher levels of acceptance and stronger relative preferences. Second, we examine the value-based determinants of these preferences. The investigation is guided by Cultural Theory, which has been used to understand attitudes

toward nuclear power (Van De Graaff, 2016). The theory distinguishes four cultural profiles, each reflecting distinct orientations and worldviews that may be associated with different preferences toward energy technologies.

To operationalise the orientations underlying the profiles empirically, this study draws on Schwartz’s theory of basic human values. Based on the conceptual similarities between the profiles described by Van De Graaff (Van De Graaff, 2016) and Schwartz’s value framework, this study maps two broad value orientations onto the cultural profiles: collective welfare, on the one hand, and the pursuit of personal interests and success, on the other. This mapping is consistent with previous research linking value orientations to energy technology preferences (Bidwell, 2013; Whitfield et al., 2009).

Within the Schwartz framework, *equality*, *unity with nature*, and *protecting the environment* operationalise the collective welfare orientation, while *authority* and *wealth* capture the orientation toward personal interests and success. These items are used as predictors in two ordered probit models, estimated on SHEDS Wave 2025 data.

The results provide broad support for our hypotheses (**H1** and **H2**, detailed in Subsection 3.2), with some nuance. Items such as *protecting the environment* and *equality* are positively associated with both wind acceptance and wind preferences, consistent with **H1**. However, *unity with nature* shows a negative association with wind acceptance. Consistent with **H2**, *wealth* and *authority* are positively associated with nuclear preferences, while showing little to no significant association with wind acceptance.

More broadly, the strength of these associations differs across outcome dimensions. Environmental and collective welfare items emerge among the strongest predictors, with coefficients exceeding those of most sociodemographic and geographic controls. In contrast, *wealth* and *authority* emerge as significant predictors only in the relative preference model. Finally, *romandie* remains among the strongest predictors even after accounting for value-based items. Its coefficient magnitude is larger than that of any of the value-based items in the wind acceptance model. This persistence may reflect value orientations or worldviews associated with one of the cultural profiles not captured by the current framework, such as the hierarchicalist profile, or other unmeasured value dimensions unrelated to Cultural Theory specifically.

Taken together, these findings are broadly consistent with the motivational contrast between the egalitarian and individualist profiles in Cultural Theory. More generally, the relationship between value orientations and preferences may also extend beyond energy technologies. Compensation schemes, commonly proposed in the context of local resistance to wind farm projects, provide an opportunity to examine whether responses to such arrangements vary systematically with individuals’ value orientations. This possibility motivates hypotheses (**H3** and **H4**), developed in Subsection 3.2, and the proposed discrete choice experiment outlined in Section 9. These extensions provide a conceptual foundation for examining whether value orientations are also associated with preferences

for different compensation schemes among communities affected by wind energy projects.

2 Literature Review

Wind energy tends to enjoy broad public support (Krohn and Damborg, 1999), yet this general acceptance does not always translate into local support for specific projects, a discrepancy referred to as the social gap (Bell et al., 2005). Local opposition is frequently attributed to NIMBYism, though this explanation has been criticised as overly simplistic (Wolsink, 2007). Local opposition has been linked to visual and auditory impacts, biodiversity concerns, land use, and place attachment (as cited in Lindvall et al. 2025). Trust has also been identified as a key dimension of local acceptance, particularly in relation to how individuals perceive the fairness of energy siting decisions and risk management (Wüstenhagen et al., 2007).

Compared with wind energy, nuclear power has been associated with a different set of concerns. Public attitudes toward nuclear energy are shaped by nuclear accidents and concerns about energy security (Gupta et al., 2019). Economic and environmental considerations also play a role: ecological concerns are associated with opposition to nuclear energy, while those who prioritize economic benefits tend to discount its environmental risks (Lindvall et al., 2025). More fundamentally, attitudes toward nuclear power appear to be determined more by political and ideological factors, values, and worldviews than by risk perceptions and economic considerations (Whitfield et al., 2009). Similarly, altruistic and biospheric values have been shown to be positively associated with wind energy support whereas traditional values diminish it (Bidwell, 2013).

Taken together, these findings suggest that attitudes toward energy technologies may be shaped more by broader value orientations and worldviews than by risk perceptions or economic considerations alone. Individuals differ in their value orientations and worldviews. These differences may be reflected in the importance they assign to risks, benefits, and societal implications. Since different energy technologies embody different combinations of these characteristics, they may resonate differently across individuals. As a result, value orientations may shape both evaluations of individual technologies and how individuals weigh alternatives against one another. Consistent with this perspective, individuals exhibiting greater acceptance of nuclear energy tend to show lower acceptance of wind energy, and vice versa (Lindvall et al., 2025).

To interpret how broader cultural orientations and worldviews are reflected in attitudes toward nuclear power, Van De Graaff (2016) draws on Cultural Theory. The theory distinguishes four cultural profiles reflecting different orientations, worldviews, and views regarding how society should be organised. Three of these profiles are particularly relevant to energy preferences. Hierarchicists tend to favour nuclear energy, while individualist profiles show a more ambivalent pattern. Egalitarian profiles favour decentralised and

community-driven solutions and tend to oppose centralised energy technologies such as nuclear power. These preferences may also be consistent with greater support for wind energy, given its association with decentralised energy production. Yet such inclinations do not necessarily translate into local acceptance of specific wind energy projects.

Local acceptance may also depend on how wind projects are implemented and perceived by affected communities. The absence of perceived local economic benefits is an additional factor contributing to the social gap as it can generate perceptions of distributive injustice. To address this challenge, formal compensation schemes directed to both local communities and municipalities have been proposed (Lindvall, 2023). Yet evidence suggests that these schemes do not consistently generate perceptions of distributive justice, even among citizens with weak preferences for wind energy (Knauf, 2022). One possible explanation is that individuals may differ in the type of compensation arrangement they consider desirable, depending on their underlying value orientations. Consistent with this interpretation, community-based models have been shown to be preferred over individual participation models in Switzerland, particularly among individuals with progressive value orientations (Vuichard et al., 2019). This possibility motivates **H3** and **H4**, developed in the following section.

3 Research Design

3.1 Theoretical Framework

This study draws on Cultural Theory to examine how broader worldviews and value orientations are associated with energy preferences, an approach previously used to interpret attitudes toward nuclear power (Van De Graaff, 2016). The theory distinguishes four cultural profiles. Three of these profiles are particularly relevant to this study: the egalitarian, hierarchicalist, and individualist profiles.

In terms of energy preferences, egalitarian profiles tend to oppose nuclear energy and, given their preference for decentralised solutions, may similarly be inclined toward wind energy. Hierarchicalist profiles tend to favour nuclear energy and place faith in government and expert authority. Individualist profiles exhibit a more ambivalent position toward nuclear energy, with support depending on whether the technology can compete in a free market (Van De Graaff, 2016). Notably, they are not characterised by explicit support for or opposition to wind energy.

These differences in energy preferences reflect distinct underlying worldviews and value orientations, which are described as follows: The egalitarian profile is characterised by distrust of large institutions and a preference for decentralised, community-driven solutions. It reflects values of social solidarity and environmental conservation. The hierarchicalist profile places faith in government and expert authority, viewing centralised

structures and rules as the best solution to managing societal problems. It also tends to be sceptical of self-organising or community-driven processes. Nuclear power, historically perceived as large-scale, centralised, and state-directed, has been described as appealing to hierarchicalists while being distrusted by egalitarians. The individualist profile prioritises individual freedom and the free market, minimising government interference and perceiving hierarchical intervention as a constraint on individual creativity and enterprise (Van De Graaff, 2016).

These worldviews and value orientations suggest that the egalitarian profile reflects an orientation toward collective welfare and environmental conservation. This directly echoes the values Van De Graaff (2016) attributes to this profile. The individualist profile is not explicitly framed in terms of values in the same way; however, its emphasis on individual creativity, enterprise, and market autonomy can be read as reflecting an orientation toward personal advancement, economic success, and autonomy. The hierarchicalist profile's effort appears oriented less toward the self-versus-others distinction that structures the egalitarian and individualist profiles. Instead, it appears more strongly oriented toward order, structure, and the preservation of established social arrangements. While Cultural Theory captures broad cultural orientations, Schwartz's theory of basic human values provides a framework for operationalising these orientations at the individual level.

Schwartz (Schwartz, 1992, 2012) proposed ten fundamental value types recognized across cultures and organized in a circular structure. Individuals and groups differ considerably in the importance they assign to each. The theory identifies ten motivationally distinct value types: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Values that are adjacent share similar motivational emphases, while opposing values reflect motivations that are in tension. Each value type reflects a distinct underlying motivation, that is, a fundamental psychological need or force that helps explain why individuals are drawn to certain goals or principles over others. This circular structure, illustrated in Figure 1, can be further organized along two bipolar dimensions (Schwartz, 1992, 2012). These capture broad value orientations, that is, what individuals fundamentally orient their attention and efforts toward. Of particular relevance to this study is the self-transcendence versus self-enhancement axis, summarized in Table 1. It distinguishes between values emphasizing the welfare of others and those emphasizing the advancement of the self.

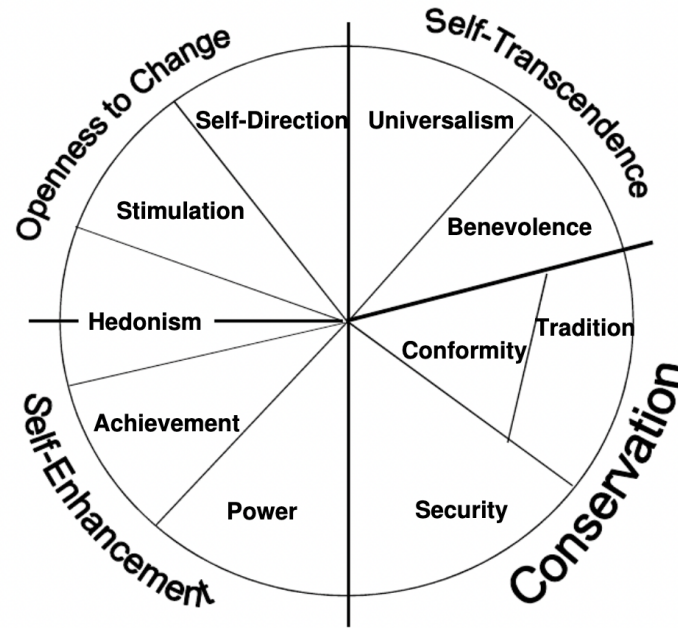


Figure 1: Circular structure of basic human values (Schwartz, 2012)

Table 1: Self-transcendence versus self-enhancement dimension

Self-transcendence	Self-enhancement
Orients individuals towards welfare and interests of others	Orients individuals toward the pursuit of one's own interests, success, and dominance over others
Value type: Universalism	Value type: Power
Defining goal: welfare of others and nature	Defining goal: social status, prestige, and dominance over people and resources

Note: The first row presents the broad value orientation (self-transcendence vs. self-enhancement); the second row presents the defining goal of the specific value type used in this study (Universalism and Power, respectively) (Schwartz, 1992, 2012).

The self-transcendence–self-enhancement axis shows a close correspondence with the contrast between the egalitarian and individualist profiles described above. At the level of broad orientation, the former is oriented toward collective welfare, whereas the latter may be seen as oriented toward personal advancement. However, as shown in Table 1,

this correspondence becomes less direct when considering the specific motivational goals defining each value type. For the egalitarian profile, the correspondence remains close at this more specific level. Its emphasis on collective welfare and environmental conservation aligns directly with the defining goal of universalism. For the individualist profile, by contrast, the correspondence is less direct. Power, as defined by Schwartz (2012), concerns the attainment or preservation of social status, prestige, control over resources, and dominance over people. The emphasis on economic success and resource control is broadly consistent with the individualist profile’s orientation toward market-driven autonomy and enterprise. However, the dominance-oriented aspect of power sits less comfortably with the individualist profile. As described by Van De Graaff (2016), this profile is primarily defined by resistance to external, particularly governmental, authority rather than by the pursuit of a dominant position within a broader social hierarchy. The specific items used to operationalise the power dimension in this study, and the interpretive ambiguity this raises, are discussed in Section 4.

Table 2: Mapping of Cultural Theory profiles onto Schwartz’s value types

Cultural Profile	Key Characteristics (Van De Graaff, 2016)	Schwartz Value Type	Defining (Schwartz, 2012)	Goal
Egalitarian	Preference for decentralised, community-driven solutions; values of social solidarity and environmental conservation	Universalism	Welfare of others and nature	
Individualist	Individual freedom and the free market; minimising government interference; emphasis on creativity and enterprise	Power*	Social status, prestige, and dominance over people and resources	

Note: * The correspondence between Power and the individualist profile is less direct than for Universalism and the egalitarian profile, particularly for *authority*; see Section 3.1 and Section 4 for discussion.

3.2 Hypotheses

On the basis of the theoretical framework and mapping developed above, we formulate the following hypotheses.

- **H1:** Universalism items are expected to be positively associated with both wind energy acceptance and a relative preference for wind over nuclear energy.
- **H2:** Power items are expected to be associated with relatively stronger preferences for nuclear energy, while no strong association is expected with wind energy acceptance.

Our hypotheses suggest that individuals may respond more favourably when the broader characteristics of an energy technology are aligned with their value orientations. In this context, these characteristics include the associated risks, benefits, and societal implications of the technology. If the same alignment principle extends to compensation schemes, responses to different compensation arrangements may similarly vary with individuals' value orientations.

This question is particularly relevant in the context of local acceptance: as established in the literature, general acceptance does not automatically translate into local acceptance, and part of this gap may lie in how benefits are distributed at the local level. A mismatch between the nature of the benefits offered and individuals' underlying value orientations may therefore contribute to this gap. Those who place greater importance on collective welfare may favour community-based arrangements, while those who place greater importance on material gain and resource control may prefer individually targeted schemes. We therefore formulate two hypotheses that can be tested in future empirical work using a discrete choice framework:

- **H3:** Individuals who place greater importance on material gain and resource control are expected to prefer individual compensation schemes over community-based compensation schemes. They are also expected to be more sensitive to the monetary level of individual compensation.
- **H4:** Individuals who place greater importance on collective welfare are expected to prefer community-based compensation schemes over individual compensation schemes. They are also expected to be less sensitive to the monetary level of individual compensation.

A possible discrete choice experiment design for testing these hypotheses is outlined in Section 9.

4 Data

4.1 Data Sample

This study draws on data from the Swiss Household Energy Demand Survey (SHEDS), Wave 2025. SHEDS is a longitudinal survey conducted since 2016, with approximately 5,000 respondents per wave. Originally developed within the SCCER CREST, it has operated since 2023 as part of the SWEET CoSi consortium. The survey captures household energy use across heating, electricity, and mobility, as well as a broad set of socioeconomic and psychological characteristics of Swiss households (Farsi and Weber, 2024; Liffey et al., 2026).

For the purpose of this study, we draw on value orientations measured via SVS items included in SHEDS. These allow us to operationalise the motivational orientations associated with the Cultural Theory profiles, which have been linked to distinct preferences for energy technologies. As part of the survey design, the SVS items are only administered to first-time respondents in each wave, as values are assumed to be stable over time. Returning respondents who completed the SVS in previous waves are therefore not included in the 2025 analytical sample. A subsample of 5,512 observations is used for the descriptive analysis. For the wind acceptance model, Block 1 is estimated both on the full available sample ($N = 5,485$, after listwise deletion of missing values on sociodemographic and geographic variables) and on the analytical sample used in Block 2 ($N = 4,301$). This allows for a direct comparison of coefficients across blocks. For the relative preference model, Block 1 is estimated directly on the analytical sample used in Block 2 ($N = 4,298$). The Block 2 specifications incorporate the SVS items and are estimated on the corresponding analytical samples. The reduction in sample size reflects the exclusion of returning respondents who were not re-administered the SVS items, as well as listwise deletion of the remaining missing values.

Table 3 summarizes the composition of the sample. The sample is roughly gender-balanced (50.6% female) and includes respondents from cities (45.9%), agglomerations (31.3%), and rural areas (22.8%). In terms of linguistic region, the majority of respondents are from German-speaking Switzerland (66.9%), followed by Romandie (21.3%) and Ticino (11.8%).

Table 3: Sample Characteristics and Control Variables (N = 4,301)

Variable	Description	Category	%
<i>Gender</i>	Sex of respondent	Male*	49.4%
		Female	50.6%
<i>Age group</i>	Age group of respondent	18–34	28.7%
		35–54*	39.8%
		55+	31.5%
<i>Education</i>	Highest educational attainment	University*	52.8%
		Apprenticeship	25.9%
		High school	10.8%
		Other**	10.5%
<i>Living area</i>	Type of living area	City	45.9%
		Agglomeration	31.3%
		Countryside*	22.8%
<i>Region</i>	Linguistic region of residence	Swiss German*,***	66.9%
		Romandie	21.3%
		Ticino	11.8%

Note: * reference category used in the ordered probit models.

** “Other” groups remaining education categories not listed explicitly.

*** Swiss German includes Alpen und Voralpen, Westmittelland, and Ostmittelland.

4.2 Dependent Variable

This study estimates two ordered probit models, each with a distinct dependent variable drawn from two survey items. Respondents rated their agreement with the following statements on a five-point scale (1 = totally disagree, 5 = totally agree). The survey items are reported in Table 4."

Table 4: Survey items for dependent variables

Variable	Statement	Scale
<i>wind</i>	Wind energy should be an essential part of the future electricity supply in Switzerland.	1–5
<i>nuclear</i>	Nuclear power should be a part of the future electricity supply in Switzerland.	1–5

The first, the wind acceptance specification, measures wind energy acceptance directly, using respondents’ agreement with the wind energy statement as a five-category ordered variable. The second, the 9-category specification, captures both the direction and intensity of relative energy preferences between nuclear and wind power. It is constructed by subtracting the nuclear agreement score from the wind agreement score, ranging from -4 (strong preference for nuclear) to $+4$ (strong preference for wind), with 0 indicating no relative preference between the two technologies. Table 6 in Section 6 reports the descriptive statistics for both outcome variables.

4.3 Value-Based Variables

Building on the mapping established in Section 3.1, this study uses six items from the Schwartz Value Survey (SVS) (Schwartz, 1992, 2012). These items operationalise the universalism and power value types. These value types capture the motivational goals associated with the egalitarian and individualist profiles in Cultural Theory. The SVS is a validated instrument in which respondents rate each value as a guiding principle in their own life on a scale from 1 (not important) to 5 (extremely important). The SHEDS dataset includes a subset of 16 SVS items, of which six are selected because they best reflect the motivational goals relevant to the Cultural Theory profiles in the context of energy preferences.

Within universalism, *equality* reflects a collective welfare orientation, while *respecting the earth*, *unity with nature*, and *protecting the environment* reflect environmental concerns. *authority* and *wealth* are used to operationalise the power value type. *wealth*, defined in SHEDS as “material possessions, money,” aligns closely with the economic success and market-driven autonomy attributed to the individualist profile in Section 3.1.

authority, defined in SHEDS as “the right to lead or command,” is more directly associated with the dominance-oriented aspect of power within Schwartz’s framework. As discussed in Section 3.1, power belongs to the self-enhancement pole, which corresponds more closely to the individualist profile’s broader orientation toward personal advancement. The defining goal of power, however, does not correspond as directly to the individualist profile, particularly in its emphasis on dominance. The wording of the

SHEDS item introduces a further layer of ambiguity, as *authority* can be understood in different ways. It may refer to control exercised within a private, voluntary sphere (e.g., leading an enterprise), which would be compatible with the individualist profile, or to a broader position of power within the social system, which is more consistent with the hierarchicalist profile. This ambiguity is kept in mind throughout the interpretation of results associated with *authority*.

Table 5: Selected value-based variables

Variable	Definition	Scale
<i>equality</i>	Equal opportunity for all	1–5
<i>respecting the earth</i>	Harmony with other species	1–5
<i>unity with nature</i>	Fitting into nature	1–5
<i>protecting environment</i>	Preserving nature	1–5
<i>authority</i>	The right to lead or command	1–5
<i>wealth</i>	Material possessions, money	1–5

Note: 1 = Not important, 5 = Extremely important as a guiding principle in life.

4.4 Control Variables

Several sociodemographic and geographic variables were included as controls. Table 3 provides a summary of all control variables, their description, and categories, with reference categories indicated.

5 Econometric Model

Two ordered probit models are estimated: one for wind energy acceptance using the five-category agreement scale and one for relative energy preferences using a nine-category specification. The ordered probit is appropriate when the dependent variable is ordinal: categories have a natural ordering but their position on the underlying continuum is only partially known. The discrete categories $-4 < -3 < \dots < +4$ are assumed to reflect an underlying continuous preference Y^* , yet we cannot assume that the portion of the continuum covered by each category is of equal length. In other words, the gap between the thresholds separating two adjacent categories may differ from that separating two others. OLS regression would impose equal spacing, making it inappropriate. While a

multinomial logit could accommodate multiple categories, it would discard the ordinal structure of the dependent variable, treating preference categories as unordered. The ordered probit preserves this structure by freely estimating thresholds μ_k , such that an individual is observed in category k when $\mu_{k-1} < Y^* \leq \mu_k$.

For each specification, a block-based approach is used. Block 1 includes sociodemographic and geographic controls only:

$$Y_i^* = \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i, \quad \varepsilon_i \sim N(0, 1) \quad (1)$$

Block 2 additionally incorporates the six value orientation variables:

$$Y_i^* = \mathbf{X}_i' \boldsymbol{\gamma} + \mathbf{V}_i' \boldsymbol{\beta} + \varepsilon_i, \quad \varepsilon_i \sim N(0, 1) \quad (2)$$

In both blocks, the observation rule and probability expression are:

$$Y_i = j \quad \text{if} \quad \mu_{j-1} < Y_i^* \leq \mu_j, \quad j = 1, \dots, J \quad (3)$$

$$P(Y_i = j) = \Phi(\mu_j - \mathbf{X}_i' \boldsymbol{\gamma} - \mathbf{V}_i' \boldsymbol{\beta}) - \Phi(\mu_{j-1} - \mathbf{X}_i' \boldsymbol{\gamma} - \mathbf{V}_i' \boldsymbol{\beta}) \quad (4)$$

where $\mathbf{V}_i$ denotes the vector of six SVS value orientation variables, $\mathbf{X}_i$ the vector of sociodemographic and geographic controls, μ_j are freely estimated thresholds, and Φ the standard normal CDF. This specification applies to both models, with $J = 5$ for wind acceptance and $J = 9$ for relative energy preferences. This sequential approach allows us to assess whether value orientations are associated with energy preferences over and above sociodemographic characteristics. The coefficients of the ordered probit model do not represent marginal effects directly, as they reflect changes in the underlying latent variable Y^* rather than changes in the probability of observing a specific outcome category. Average marginal effects are therefore computed for statistically significant variables in Block 2, measuring the change in the probability of being in each outcome category associated with a one-unit increase in the independent variable, holding all other variables constant.

6 Descriptive Results

This section provides an overview of wind energy acceptance and relative energy preferences at the national level and across subgroups. It assesses whether differences are more pronounced across living areas or across Switzerland's linguistic communities. We begin by examining how respondents prioritise low-carbon energy sources under an energy security framing. While this item does not capture general technology preferences, it provides contextual information on respondents' priorities for avoiding future energy

crises in Switzerland (see Appendix A for the survey item and full figures).

Among the low-carbon energy sources considered, wind energy is less frequently selected as a highest-priority option. Within the renewable category, it initially ranks behind hydropower and solar energy. However, it gains prominence as respondents move toward lower-ranked positions. Nuclear energy is also selected ahead of wind by a larger share of respondents as the highest-priority option. However, it follows a different pattern, as it is also the option most frequently ranked last. These results suggest that wind energy occupies a less prominent position than hydropower and solar energy among renewable sources, but remains broadly recognised among respondents. In contrast, nuclear energy displays a more polarised pattern. It is selected as a top priority by some respondents while also receiving the lowest priority from many others (Figure 2).

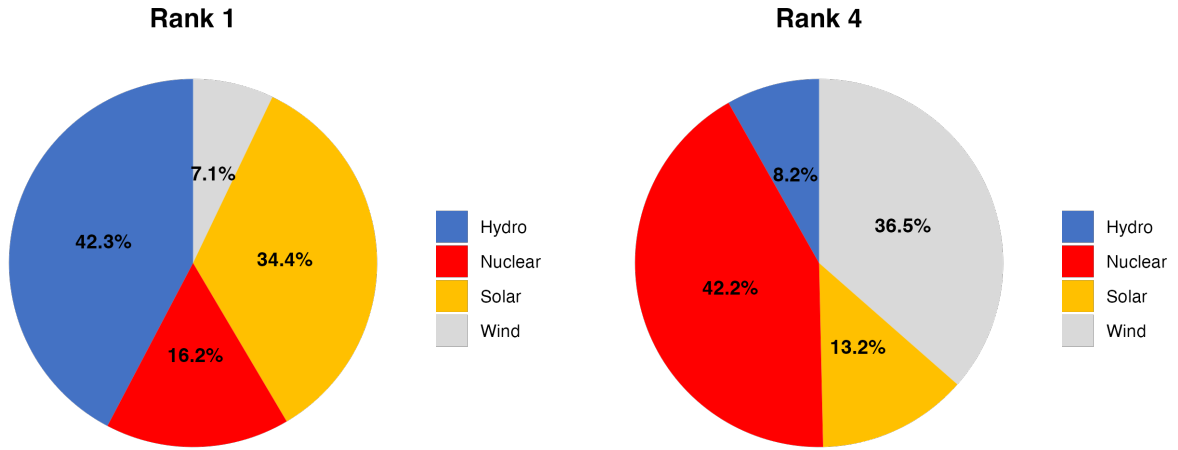


Figure 2: Low-carbon energy priority rankings (Rank 1 and Rank 4)

Turning from energy security priorities to respondents' views on the future electricity supply, respondents express broad support for wind energy. The mean agreement score is 3.47, suggesting that while most respondents are supportive, strong endorsement is not universal.

Table 6: Descriptive Statistics — Dependent Variables

Specification	Outcome Variable	Mean	SD	Min	Max
Wind acceptance	Wind energy acceptance	3.47	1.19	1	5
9-category	Relative energy preferences	0.52	2.04	−4	4

This overall level of acceptance is reflected in the distribution of responses: nationally, 52% of respondents score 4 or 5, while 19% score 1 or 2 (Figure 3). This pattern

holds broadly across living areas and German-speaking Switzerland, with acceptance rates ranging from 49% to 55% across subgroups. Variation is more pronounced across linguistic regions, with Romandie standing out as the least accepting region: only 44% score 4 or 5 and 24.5% score 1 or 2, compared to 52% and 19% nationally (Figure 4).

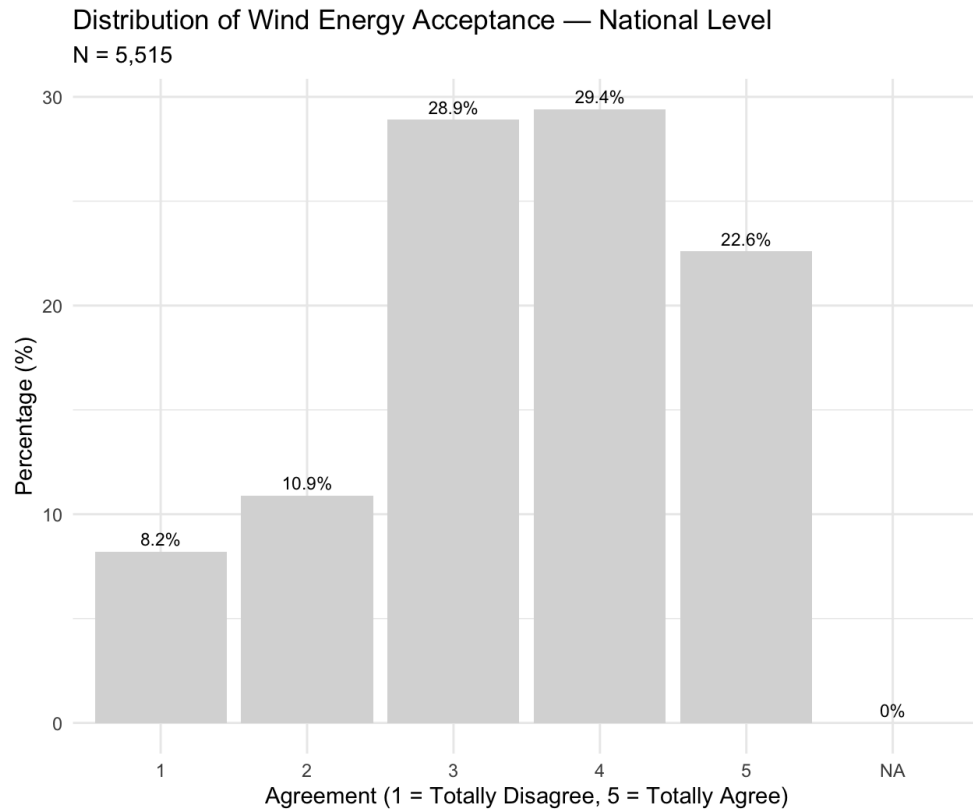


Figure 3: Distribution of wind energy acceptance — National level

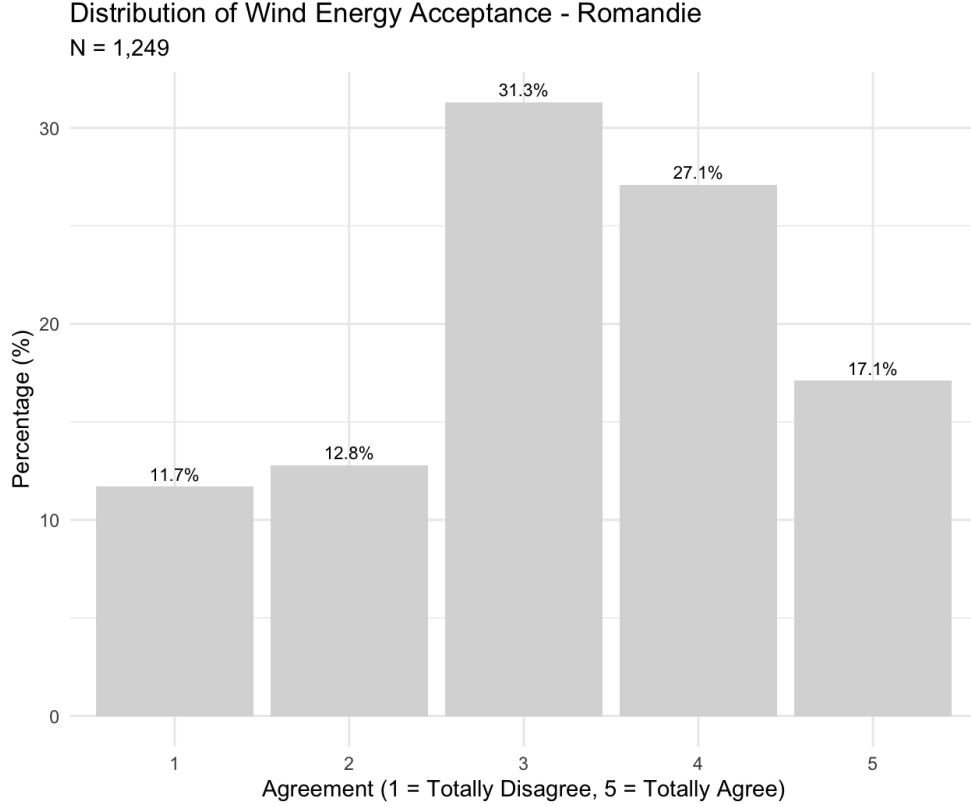


Figure 4: Distribution of wind energy acceptance — Romandie

We next examine relative preferences between wind and nuclear power. Relative preferences are calculated as the difference between respondents' agreement with statements on whether each technology should be part of Switzerland's future electricity supply (see Table 4). The mean difference is 0.52 (see Table 6), indicating a mild relative preference for wind over nuclear energy at the national level. This contrasts with priorities expressed under an energy security framing, where nuclear energy ranks ahead of wind when respondents select their top priority. At lower ranks, however, wind is more frequently selected as the second or third-choice priority (see Appendix B). This suggests that general technology preferences and energy security priorities do not necessarily align.

To explore heterogeneity in preferences, we classify respondents according to their individual combinations of nuclear and wind support scores. We define a category of *Moderate* respondents based on three cumulative criteria (see Appendix C). *Moderate* respondents are those open to both technologies, neither strongly rejecting nor exclusively supporting either source. The 25 cells of the 5×5 matrix are grouped into eight distinct profiles (see Appendix C for the full cell-to-profile correspondence, and Table C3 for their distribution at the national level). Figure 5 illustrates the distribution of respondents across these nuclear and wind support combinations.

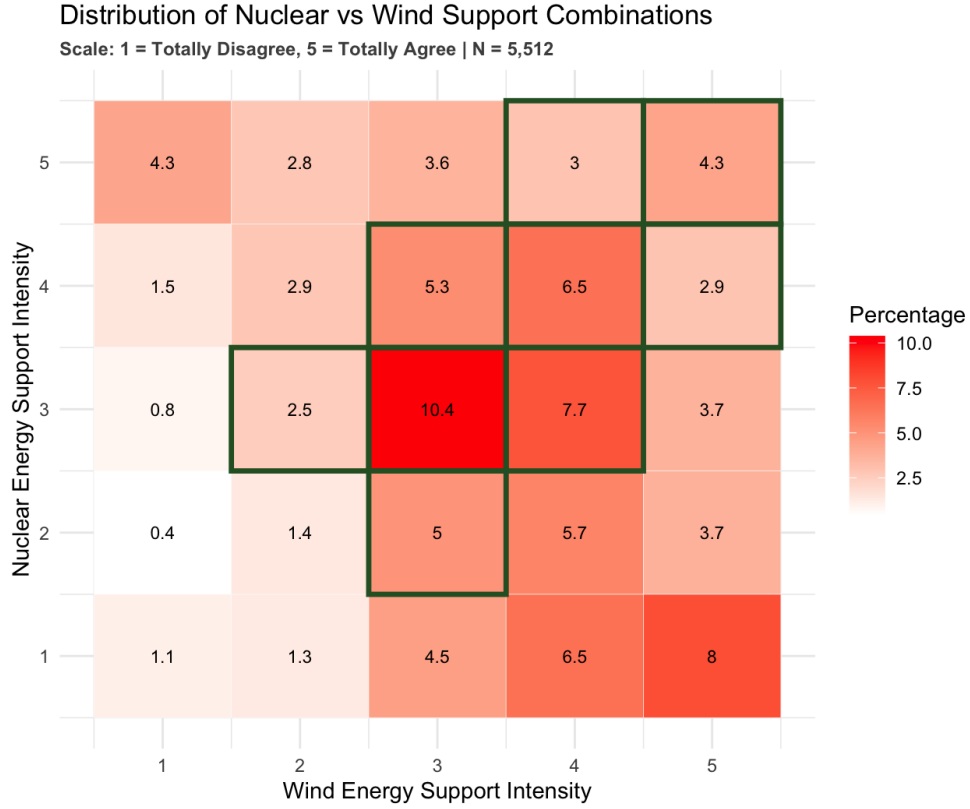


Figure 5: Nuclear vs Wind Support Combinations, National Level (N = 5,512)

Approximately 48% of the Swiss sample can be classified as *Moderate* (see Table C2 for the detailed cell breakdown). The corresponding cells are highlighted with green borders in Figure 5. Among the eight distinct profiles identified (see Table C3 for profile definitions and full distribution), the largest non-moderate group is *Clear wind supporters* (32.2%). This group is characterized by nuclear rejection and strong wind support. The second largest group is *Pro-energy pragmatists* (16.7%), who express high support for both technologies. *Exclusive nuclear supporters* represent 8.6% of the sample. The distribution reveals an asymmetric pattern in favour of wind energy, consistent with the mean preference difference of 0.52 (Table 6). Aggregating strong wind preference profiles (Nuclear ≤ 2 , Wind ≥ 4) yields 18.2% of respondents, compared to 8.6% for strong nuclear preference profiles (Nuclear ≥ 4 , Wind ≤ 2). Notably, 16.7% of respondents express high support for both technologies simultaneously, suggesting that a non-negligible share of Swiss households do not perceive the two energy sources as mutually exclusive. The share of *Refractors*, respondents opposed to both technologies, remains limited at 4.2%.

Turning to subgroup variation, cities show the highest share of *Clear wind supporters* (34.9%) while countryside respondents show the highest share of *Exclusive nuclear supporters* (10.1%). Overall, geographic variation is most pronounced at the extremes, while intermediate profiles remain broadly stable (Table 7).

Table 7: Profile Distribution by Living Area (%)

Profile	City	Agglomeration	Countryside
Undecided	10.11	11.21	9.83
Wind-leaning moderates	13.07	12.26	12.73
Clear wind supporters	34.85	29.28	30.67
Pro-energy pragmatists	16.74	17.55	15.49
Moderate nuclear supporters	11.29	12.26	12.34
Exclusive nuclear supporters	7.51	9.10	10.06
Wind-averse neutrals	2.64	4.11	3.70
Refractors	3.78	4.23	5.19
Total moderates	47.34	49.35	46.07

Note: Percentages may not sum to exactly 100% due to rounding.

Variation is more pronounced across linguistic regions. Romandie stands out with one of the lowest shares of *Clear wind supporters* (27.8%, compared to 26.5% in Ticino), the highest share of *Exclusive nuclear supporters* (11.1%), and a lower moderate rate than Ticino (47.4% vs. 55.0%). Ticino presents the highest moderate rate and the largest share of *Pro-energy pragmatists* (20.2%). German-speaking Switzerland closely mirrors the national pattern (Table 8).

Table 8: Profile Distribution by Linguistic Region (%)

Profile	German-CH	Romandie	Ticino
Undecided	9.48	11.94	13.16
Wind-leaning moderates	12.37	13.14	14.54
Clear wind supporters	34.40	27.81	26.53
Pro-energy pragmatists	17.00	14.34	20.24
Moderate nuclear supporters	11.72	11.39	13.75
Exclusive nuclear supporters	8.05	11.13	6.29
Wind-averse neutrals	3.19	4.33	2.16
Refractors	3.82	5.92	3.34
Total moderates	46.78	47.36	55.01

Note: Percentages may not sum to exactly 100% due to rounding.

Taken together, these descriptive results confirm broad support for wind energy. The largest non-moderate profile consists of *Clear wind supporters*, representing 32.2% of respondents. A substantial moderate segment of approximately 48% suggests openness to both technologies. Differences across linguistic regions are more pronounced than across living areas. This suggests that regional variation may reflect broader cultural differences across Switzerland’s linguistic communities rather than urban-rural divides. The ordered probit models in the following section examine the individual-level determinants of both wind energy acceptance and relative energy preferences.

7 Results

The following section examines the individual-level determinants of wind energy acceptance and relative energy preferences, with particular attention to the role of value orientations. Based on the theoretical framework developed in Subsection 3.1, **H1** predicts that universalism items are positively associated with both wind energy acceptance and a relative preference for wind over nuclear energy. **H2** predicts that power items are associated with relatively stronger preferences for nuclear energy, while no strong association is

expected with wind energy acceptance. A simulation based on the predicted probabilities of the model is presented at the end of the section to illustrate the aggregate implications of the findings.

Table 9 presents descriptive statistics for the six value-based variables.

Variable	Mean	SD	Min	Max
<i>equality</i>	3.98	0.98	1	5
<i>respecting the earth</i>	4.00	0.89	1	5
<i>unity with nature</i>	3.78	0.97	1	5
<i>protecting the environment</i>	4.04	0.88	1	5
<i>authority</i>	2.28	1.05	1	5
<i>wealth</i>	3.10	0.97	1	5

Among the six value-based items, those reflecting environmental and collective welfare concerns (*protecting the environment*, *respecting the earth*, *equality*, *unity with nature*) receive substantially higher agreement scores than those reflecting power-related motivations (*authority*, *wealth*).

This suggests that Swiss respondents report, on average, stronger self-transcendence than self-enhancement orientations, as defined in Section 3.1. Table 10 reports the models for wind energy acceptance. Table 12 reports the model for relative energy preferences using the nine-category specification. For each model, Block 1 includes sociodemographic and geographic controls only, while Block 2 additionally incorporates the six value-based orientation items. In addition, full marginal effects across all outcome categories are provided in Appendix D and Appendix E. These results are reported for the items and control variables discussed in this section and in Section 8.

Table 10: Ordered Probit Results — Wind Energy Acceptance

Independent Variables	Dependent Variable: Wind Acceptance (1–5)		
	(1)	(2)	(3)
Age			
<i>18–34</i> (ref: <i>35–54</i>)	0.002 (0.035)	0.036 (0.040)	0.054 (0.040)
<i>55+</i>	−0.038 (0.035)	−0.042 (0.039)	−0.089** (0.040)
Gender			
<i>female</i> (ref: <i>male</i>)	0.083*** (0.029)	0.056* (0.033)	−0.043 (0.034)
Education			
<i>apprenticeship</i> (ref: <i>university</i>)	−0.066* (0.035)	−0.040 (0.040)	−0.029 (0.040)
<i>high school</i>	−0.009 (0.048)	−0.020 (0.054)	−0.012 (0.054)
<i>other</i>	−0.079 (0.050)	−0.070 (0.056)	−0.043 (0.056)
Living Area			
<i>city</i> (ref: <i>countryside</i>)	0.136*** (0.037)	0.143*** (0.042)	0.114*** (0.042)
<i>agglomeration</i>	0.056 (0.040)	0.055 (0.045)	0.068 (0.045)
Linguistic Region			
<i>romandie</i> (ref: <i>swiss german</i>)	−0.249*** (0.035)	−0.217*** (0.040)	−0.237*** (0.041)
<i>ticino</i>	0.071 (0.051)	0.090* (0.053)	0.057 (0.053)
Value-Based Items			
<i>respecting the earth</i>			0.025 (0.027)
<i>unity with nature</i>			−0.049** (0.023)
<i>protecting the environment</i>			0.168*** (0.026)
<i>equality</i>			0.188*** (0.019)
<i>authority</i>			−0.029* (0.017)
<i>wealth</i>			0.006 (0.018)
Observations	5,485	4,301	4,301
AIC	16,403	12,876	12,624

Note: Standard errors in parentheses. (1) sociodemographic and geographic controls only, full sample. (2) same specification as (1), restricted to the analytical sample of Column (3), i.e. respondents with non-missing SVS items, to allow direct comparison of coefficients. (3) adds value-based items. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Column (1) presents Block 1, including sociodemographic and geographic controls only, using the full sample. Here, *romandie* is the strongest predictor (-0.249^{***}), while *city* respondents show higher acceptance (0.136^{***}). Column (2) re-estimates the same Block 1 specification on the analytical sample used in Column (3). This allows a direct comparison of coefficients once value-based items are added. Column (3) adds the six value-based items (Block 2). *Equality* (0.188^{***}) and *protecting the environment* (0.168^{***}) emerge as the strongest positive predictors of wind acceptance, consistent with **H1**. However, *unity with nature* is negatively associated (-0.049^{**}), indicating that the association between universalism items and wind acceptance is not uniform across items. *Gender* is significant in Column (1) but only marginally significant in Column (2), once the sample is restricted to respondents with non-missing SVS items. In Column (3), it is no longer significant after value orientations are included. *Romandie* (-0.237^{***}) remains the strongest predictor overall, and *city* residence (0.114^{***}) remains significant. *Wealth* is not significant, while *authority* shows only a marginal negative association (-0.029^*). These results are broadly consistent with **H2**, which predicts that power items are not strongly associated with wind energy acceptance.

Table 11 summarises the largest average marginal effects. *equality* is associated with a larger increase in the probability of high acceptance (category 5, +5.5pp) than the corresponding decrease in the probability of low acceptance (category 1, -2.7pp). *protecting the environment* displays a similar pattern (category 5, +4.9pp; category 1, -2.4pp). *romandie* shows the largest marginal effect among the control variables and displays a comparable pattern in the opposite direction: the decrease in the probability of high acceptance (6.9pp) exceeds the increase in the probability of low acceptance (3.4pp), consistent with the lower acceptance observed in the descriptive analysis.

Table 11: Largest Average Marginal Effects — Wind Energy Acceptance

Variable	High acceptance		Low acceptance	
	Category	AME	Category	AME
<i>equality</i>	5	+5.5pp	1	-2.7pp
<i>protecting the environment</i>	5	+4.9pp	1	-2.4pp
<i>romandie</i>	5	-6.9pp	1	+3.4pp

Note: Full marginal effects for all categories are provided in Appendix D.

Table 12: Ordered Probit Results — Relative Energy Preferences (9-category)

Independent Variables	Dependent Variable: Relative Energy Preferences (9-category)	
	(1)	(2)
Age		
<i>18–34</i> (ref: <i>35–54</i>)	−0.008 (0.039)	0.032 (0.039)
<i>55+</i>	0.072* (0.038)	−0.012 (0.038)
Gender		
<i>female</i> (ref: <i>male</i>)	0.307*** (0.032)	0.165*** (0.033)
Education		
<i>apprenticeship</i> (ref: <i>university</i>)	−0.109*** (0.039)	−0.100** (0.039)
<i>high school</i>	0.035 (0.052)	0.053 (0.053)
<i>other</i>	−0.124** (0.054)	−0.093* (0.054)
Living Area		
<i>city</i> (ref: <i>countryside</i>)	0.120*** (0.040)	0.086** (0.040)
<i>agglomeration</i>	−0.026 (0.043)	−0.004 (0.043)
Linguistic Region		
<i>romandie</i> (ref: <i>swiss german</i>)	−0.133*** (0.039)	−0.142*** (0.039)
<i>ticino</i>	−0.049 (0.051)	−0.073 (0.051)
Value-Based Items		
<i>respecting the earth</i>		0.031 (0.026)
<i>unity with nature</i>		−0.024 (0.023)
<i>protecting the environment</i>		0.213*** (0.026)
<i>equality</i>		0.221*** (0.018)
<i>authority</i>		−0.092*** (0.017)
<i>wealth</i>		−0.088*** (0.018)
Observations	4,298	4,298
AIC	17,609	17,066

Note: Standard errors in parentheses. Column (1) is restricted to the analytical sample of Column (2), i.e. respondents with non-missing SVS items, to allow direct comparison of coefficients. (1) sociodemographic and geographic controls only. (2) adds value-based items. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 12 presents the ordered probit results for the nine-category specification. Block 1 shows that *Gender* is the strongest predictor (0.307***), with women expressing stronger wind preferences relative to men. *apprenticeship* (−0.109***) and *other* (−0.124**) education categories are negatively associated with wind preferences, while *city* residents show stronger wind preferences than rural ones (0.120***). *romandie* is negatively associated with wind preferences relative to German-speaking Swiss (−0.133***). After adding value-based items in Block 2, *equality* (0.221***) and *protecting the environment* (0.213***) emerge as the strongest positive predictors of wind preferences, consistent with **H1**. *authority* (−0.092***) and *wealth* (−0.088***) are negatively associated, consistent with **H2**. *Gender* attenuates (from 0.307*** to 0.165***), as does *city* (from 0.120*** to 0.086**). *romandie* remains significant (−0.142***). Notably, for all variables reported in Table 13, the largest average marginal effect on the nuclear preference side occurs at category −1 rather than −4, and the effects are systematically larger on the wind preference side than on the nuclear preference side.

Table 13: Largest Average Marginal Effects — Relative Energy Preferences (9-category)

Variable	Wind preference		Nuclear preference	
	Category	AME	Category	AME
<i>equality</i>	+4	+3.1pp	−1	−1.84pp
<i>protecting the environment</i>	+4	+3.0pp	−1	−1.78pp
<i>authority</i>	+4	−1.3pp	−1	+0.76pp
<i>wealth</i>	+4	−1.2pp	−1	+0.73pp
<i>romandie</i>	+4	−2.0pp	−1	+1.2pp

Note: For each variable, the reported category corresponds to the outcome category with the largest AME magnitude on each side (wind vs. nuclear preference). Full marginal effects for all categories are provided in Appendix E.

To further illustrate these findings, we use the predicted probabilities from Block 2 of the ordered probit model. For each respondent, the model estimates the probability of belonging to each of the nine preference categories given their individual characteristics and value orientations. These probabilities are aggregated into three groups: pro-wind, indifferent, and pro-nuclear. The resulting distribution provides a model-based estimate of respondents' relative positioning between wind and nuclear energy.

Table 14: Simulated Preference Distribution (95% CI)

Group	Pro-wind	Indifferent	Pro-nuclear
National	49.4% [48.97, 49.91]	23.5% [23.37, 23.57]	27.1% [26.69, 27.51]
Romandie	45.6% [44.59, 46.70]	23.9% [23.79, 24.16]	30.4% [29.41, 31.31]
Other regions	50.4% [49.94, 51.01]	23.3% [23.22, 23.44]	26.2% [25.73, 26.66]

Note: Predicted probabilities from Block 2 of the ordered probit model. Pro-wind: categories +1 to +4. Pro-nuclear: categories −1 to −4. Indifferent: category 0. Bootstrap confidence intervals based on 1,000 replicates.

At the national level, 49.4% of the predicted distribution falls into the pro-wind categories, compared to 27.1% in the pro-nuclear categories, while 23.5% is indifferent. Wind energy accounts for the largest predicted share in all groups shown in Table 14. However, the gap between pro-wind and pro-nuclear is notably narrower in Romandie (45.6% vs. 30.4%) than in other regions (50.4% vs. 26.2%), consistent with the negative *romandie* coefficient estimated in Block 2. These results provide an aggregate illustration of the regional differences identified in the ordered probit models and are discussed in the following section.

8 Discussion

This study examined the individual-level determinants of wind energy acceptance and relative preferences between wind and nuclear power in Switzerland. The analysis is set against the backdrop of a renewed nuclear debate among policy makers and the persistent gap between broad public support for wind energy and its local acceptance. The empirical findings show that associations with energy preferences extend beyond sociodemographic characteristics. Value-based items are associated with both wind energy acceptance and relative preferences between wind and nuclear power. However, the direction of these associations is not always as expected. These findings are broadly consistent with the theoretical framework developed in Subsection 3.1.

Universalism items, particularly *equality* and *protecting the environment*, are among the strongest predictors of wind energy acceptance. They are also the strongest predictors of relative wind preferences. Conversely, power items, *authority* and *wealth*, are associated with relatively stronger preferences for nuclear energy. Together, these results suggest a contrast between two sets of motivations. On the one hand, *equality* and *protecting the environment* capture collective welfare and environmental motivations. On the other hand, *authority* and *wealth* capture power-related motivations. This contrast may point

more broadly to a role for self-transcendence and self-enhancement orientations in energy preferences in Switzerland.

The positive association between universalism items and wind energy acceptance is consistent with the egalitarian profile described by Van De Graaff (2016). This profile is characterised by social solidarity, environmental conservation, and a preference for participatory, decentralised, and community-driven decision-making processes. Renewable energy technologies are described within this framework as more closely aligned with these characteristics than centralised and state-directed energy systems (Van De Graaff, 2016). Wind energy, as a decentralised renewable technology, may therefore be particularly compatible with these egalitarian preferences. However, *unity with nature* is negatively associated with wind energy acceptance. This counterintuitive finding suggests that a general orientation toward harmony with nature does not necessarily translate into support for wind infrastructure. One possible explanation is that individuals who place greater importance on harmony with nature may also be more sensitive to the local impacts of wind energy development. These may include concerns about landscape alteration and effects on local ecosystems.

The power items, however, require a more differentiated interpretation. As discussed in Section 4, *wealth* aligns closely with the individualist profile’s emphasis on economic success and market-driven autonomy. By contrast, *authority* is more directly associated with the dominance-oriented aspect of power, making its correspondence with the individualist profile less direct. It could also be envisaged as consistent with the hierarchicalist profile (see Sections 3.1 and 4). Given this ambiguity, the results for *authority* cannot be attributed with confidence to the same individualist mechanism and are therefore interpreted with this alternative possibility in mind.

In the wind energy acceptance model, *wealth* is not significantly associated with acceptance, while *authority* shows only a small negative association. Both results are consistent with **H2** and with the individualist profile’s lack of an explicit position in favour of or against wind energy. The role of these power items becomes more apparent in the relative preference models. These models directly compare preferences for wind and nuclear energy. Both show significant negative associations with wind preferences, indicating relatively stronger preferences for nuclear power. However, their associations are weaker than those of the universalism-related items. This pattern is consistent with the individualist profile’s ambivalence toward nuclear energy. Individualists may be open to nuclear power in principle, while its reliance on state support may conflict with their preference for market-driven solutions (Van De Graaff, 2016). For *authority*, however, this association could also be envisaged as consistent with the hierarchicalist profile’s given its emphasis on dominance and command.

The marginal effects further illustrate differences in the strength of the associations between value-based items and relative energy preferences. Collective welfare and envi-

ronmental motivations are more strongly associated with wind preferences than power-related motivations are with nuclear preferences. For *equality* and *protecting the environment*, a one-unit increase raises the probability of being in the strongest wind preference category (category +4) by more than it reduces the probability of being in the moderate nuclear preference category (category -1). This suggests that these motivations are more strongly associated with an increased preference for wind than with a reduced preference for nuclear energy.

authority and *wealth* show a different pattern. A one-unit increase reduces the probability of being in the strongest wind preference category (category +4) by more than it raises the probability of being in the moderate nuclear preference category (category -1). This suggests that these power-related motivations are more strongly linked to reduced wind preference than to stronger nuclear preference. Notably, the largest marginal effects on the nuclear preference side occur at category -1 rather than -4. This suggests a moderate rather than strong relative preference for nuclear power, consistent with the individualist profile's ambivalent relationship with nuclear energy described above. It also provides less support for interpreting *authority* as hierarchicalist. A hierarchicalist motivation would more plausibly be reflected at the extreme category (-4).

By contrast, *romandie* shows larger marginal effects than *authority* and *wealth* on both sides — -2.0pp at category +4 and +1.2pp at category -1. Its association with nuclear preference therefore appears more pronounced than those of the power-related items. Its persistence across all specifications suggests that it may capture an additional dimension not fully accounted for by the value orientations measured here.

The wind energy acceptance results further support this interpretation. *romandie* shows the largest marginal effect among the control variables (-6.9pp at category 5, +3.4pp at category 1), exceeding even the effects of *equality* (+5.5pp) and *protecting the environment* (+4.9pp). This suggests that *romandie* is more strongly associated with a reduction in strong wind energy acceptance than with an increase in very low acceptance. This is consistent with the descriptive analysis, where linguistic-region Romandie showed the lowest wind acceptance rate, one of the lowest shares of *Clear wind supporters* (27.8%), and the highest share of *Exclusive nuclear supporters* (11.1%).

The simulated preference distribution (Table 14) further illustrates this regional difference. The *romandie* coefficient (-0.142***) captures the direction and statistical significance of the regional association, while the simulation translates this association into predicted probabilities. The pro-wind share is approximately 5 percentage points lower in Romandie than in the other regions (45.6% vs. 50.4%).

Taken together, these findings underscore the strength of this persistent regional association across both wind energy acceptance and relative energy preferences. *romandie* is characterised by lower wind energy acceptance and relatively stronger preferences for nuclear energy than the other linguistic regions. This pattern is consistent with the

preferences attributed to the hierarchicalist profile. Hierarchicalists are characterised by trust in government and expert authority, with centralised solutions such as nuclear energy more compatible with these preferences than decentralised energy systems (Van De Graaff, 2016). The persistent regional association observed for *romandie* could point to an as yet unidentified value orientation associated with the hierarchicalist profile, or to other unmeasured value dimensions not specifically linked to a profile in Cultural Theory. More broadly, it may also reflect factors beyond value orientations altogether. These may include the geographical, cultural, and linguistic proximity to France, where nuclear energy has historically occupied a central position in energy policy. Other contextual factors not captured in this study may also contribute to the observed association.

This persistence does not appear to be primarily accounted for by differences in the value-based items measured here. The *romandie* coefficient changes only slightly when these items are added: from (-0.249^{***}) to (-0.237^{***}) in the wind acceptance model, and from (-0.133^{***}) to (-0.142^{***}) in the relative preference model. In the latter case, the coefficient even becomes slightly larger in absolute terms. This is notable given that several of these items are significantly associated with the outcome variables.

Table 15 provides a direct comparison of the two groups: mean scores are similar for four of the six items; only *authority* differs significantly (2.44 vs. 2.24, $p < 0.001$), while *equality* shows a marginal difference ($p = 0.059$). Taken together, these results suggest that differences in the six value-based items considered here are unlikely to account for the persistent *romandie* association.

Table 15: Mean Comparison of Value-Based Items — Romandie vs. Rest of Switzerland

Value-based item	Romandie	Rest of Switzerland	Diff.	p-value
	Mean (SD)	Mean (SD)		
Equality	4.03 (0.99)	3.96 (0.97)	0.07	0.059*
Respecting the earth	4.02 (0.92)	4.00 (0.88)	0.02	0.586
Unity with nature	3.78 (1.01)	3.78 (0.95)	-0.01	0.881
Protecting the environment	4.03 (0.91)	4.04 (0.87)	-0.02	0.645
Authority	2.44 (1.10)	2.24 (1.03)	0.20	<0.001***
Wealth	3.09 (1.04)	3.10 (0.95)	-0.01	0.700

Note: Two-sample t-tests comparing mean scores between Romandie ($N = 919$) and the rest of Switzerland, i.e. German-speaking regions and Ticino ($N = 3,384$). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The relative preference model also shows residual associations with education and gen-

der. One possible value-based interpretation can be proposed. Compared with university education, vocational training may be associated with different forms of socialisation and exposure to environments that foster self-expression values and openness to change. This may potentially reflect more conservation-oriented dimensions (Inglehart and Welzel, 2005). The persistent association of female gender may similarly reflect broader socio-cultural orientations not fully captured by the value dimensions included in this study. These may potentially include more progressive attitudes, as women tend to hold more progressive views than men in Western European democracies (Langsæther and Knutsen, 2024). In the absence of direct measures for these dimensions, educational trajectories and gender may serve as partial proxies for such orientations in the data. These potential differences in underlying value orientations may emerge more clearly in relative preferences. This is because relative preferences compare wind and nuclear directly, rather than wind acceptance alone.

Urban residence provides another example of a residual association not explained by the value orientations included in this study. The association of urban residence with both wind energy acceptance and relative preferences persists even after accounting for these orientations. This may reflect multiple mechanisms. Urban environments may provide greater exposure to social and cultural diversity, which has been associated with stronger self-expression values and post-materialist orientations (Inglehart and Welzel, 2005). As with the interpretations discussed above, this explanation cannot be formally tested with the current data, as the relevant value dimensions were not directly measured.

9 Conceptual design of the proposed DCE

The findings of this study suggest that energy preferences are broadly associated with individuals' underlying value orientations, consistent with **H1** and **H2**. This reflects an alignment between the characteristics of specific energy technologies and these orientations. However, some nuance emerges for environmental items such as *unity with nature* and *respecting the earth*.

Compensation schemes are among the instruments proposed to facilitate local acceptance of wind farm projects. If the same alignment principle extends to compensation schemes, responses to these schemes may vary according to individuals' value orientations. H3 and H4 formalise these expectations regarding both the preferred type of compensation and sensitivity to the level of compensation offered:

- **H3:** Individuals who place greater importance on material gain and resource control are expected to prefer individual compensation schemes over community-based compensation schemes. They are also expected to be more sensitive to the monetary level of individual compensation.

- **H4:** Individuals who place greater importance on collective welfare are expected to prefer community-based compensation schemes over individual compensation schemes. They are also expected to be less sensitive to the monetary level of individual compensation.

A discrete choice experiment (DCE) is particularly suited to test these hypotheses. In a DCE, respondents choose between hypothetical alternatives defined by a set of attributes and their respective levels. The levels are selected to reflect realistic scenarios. By systematically varying attribute levels across choice tasks, the DCE enables the estimation of the trade-offs respondents make between the different alternatives. This allows the relative importance of each attribute in respondents' choices to be assessed. Furthermore, individual-level variables can be incorporated into the analysis through interactions with the attributes in the choice model. These interactions allow researchers to examine whether preferences vary according to respondents' characteristics.

Testing H3 and H4 requires two key design elements. First, an attribute distinguishing between individual and community-based compensation arrangements is needed. Interactions between this attribute and individuals' value orientations allow the analysis to assess whether preferences for one type of compensation scheme over the other vary systematically with these orientations. Second, the level of compensation must be systematically varied across choice scenarios. Interactions between the compensation level and these orientations allow the analysis to examine whether sensitivity to the monetary level of compensation differs across individuals.

Beyond testing these hypotheses, a DCE examining local acceptance of wind energy projects should also consider contextual characteristics that may influence how respondents evaluate wind farm projects. Factors such as proximity to the wind farm and ownership structure have been identified in the literature as relevant determinants of local acceptance. Including these characteristics allows the effects of compensation arrangements to be assessed alongside other project attributes that may also influence respondents' preferences.

Based on this rationale, the proposed DCE includes four attributes: compensation type, compensation level, proximity to the wind farm, and ownership structure. Table 16 summarises the proposed DCE attributes and their conceptual role.

Table 16: Proposed DCE Attributes and Their Conceptual Role

Attribute	Purpose in the DCE
Type of compensation	Distinguishes between individual and community-based compensation arrangements and enables a test of preference heterogeneity as predicted by H3 and H4
Compensation level	Captures the role of compensation magnitude and enables a test of differential sensitivity as predicted by H3 and H4
Proximity	Captures contextual differences related to local acceptance
Ownership structure	Captures differences associated with project governance and ownership arrangements

The first attribute defines the type of compensation scheme. It distinguishes between individual and community-based arrangements, reflecting a distinction examined in the Swiss context (Vuichard et al., 2019). Individual arrangements provide direct financial benefits to households, whereas community-based schemes redistribute benefits to the local community as a whole. Interactions between this attribute and value orientation measures allow the analysis to test the preference heterogeneity predicted by **H3** and **H4**.

The second attribute defines the level of compensation offered. Varying the amount across choice scenarios allows the analysis to examine how respondents' choices vary with the magnitude of financial benefits. Interactions between the compensation level and value orientation measures allow the analysis to assess whether sensitivity to the amount offered varies across respondents. This provides a test of **H3** and **H4**.

The third attribute captures the proximity of the proposed wind farm to respondents' place of residence. It is represented by different distance categories. Proximity is included because it reflects an important contextual dimension of local wind energy acceptance. It encompasses considerations such as perceived visual impacts, noise exposure, and place attachment. Varying the distance across choice scenarios allows the analysis to assess how respondents evaluate projects located at different distances.

The fourth attribute defines the ownership structure of the wind farm. Ownership is represented through different arrangements reflecting the diversity of actors involved in Swiss wind energy development. These range from locally embedded actors, such as municipalities, to utility companies operating at a broader scale. Varying the ownership structure across choice scenarios allows the analysis to assess whether respondents

evaluate projects differently depending on the ownership structure.

Together, these four attributes form the basis of the proposed conceptual DCE design. They are intended to examine local acceptance of wind energy projects and the role that compensation schemes may play within it. More specifically, the design allows the analysis to assess whether preferences for different compensation schemes and sensitivity to compensation levels vary systematically with individuals' underlying value orientations. The proposed DCE therefore extends the present study by examining whether the value-alignment mechanism identified for energy technologies also applies to compensation arrangements. If such patterns are observed empirically, they would indicate that responses to compensation schemes are not uniform across the population, but instead vary systematically with individuals' value orientations. Such findings would help account for why a given compensation scheme may generate different levels of acceptance across population groups.

10 Limitations

Several limitations of this study should be acknowledged. First, the analysis identifies associations between value orientations and energy preferences rather than causal effects. The ordered probit models do not allow causal relationships to be identified or quantified.

Second, the correspondence between Cultural Theory profiles and Schwartz's value types is grounded in the theoretical framework developed in Section 3.1. This correspondence is established primarily at the level of broad orientations, linking the motivations underlying the Cultural Theory profiles to the poles of Schwartz's framework. It does not imply a direct equivalence between the two frameworks as a whole. The proposed alignment is closer for the egalitarian profile, whereas the motivations underlying the individualist profile have a less direct counterpart in Schwartz's value orientations. This correspondence reflects an interpretation proposed in this study rather than an equivalence established in prior research. It is not perfect. Nevertheless, it provides a useful basis for operationalising some of the underlying motivational orientations associated with these profiles.

This conceptual limitation is also compounded by data availability constraints. The SVS items available in SHEDS are limited and do not allow all Cultural Theory profiles to be represented. In particular, the available items do not allow the hierarchicalist profile to be directly or fully measured within the present framework.

The *authority* item reflects the power value type within Schwartz's framework and belongs to the broader self-enhancement orientation. This is broadly consistent with the way the individualist profile is conceptualised here, namely as oriented toward personal advancement. At the same time, its emphasis on control and dominance may also reflect motivations associated with the hierarchicalist profile. As discussed in Section 4, the

wording of the available item does not allow these alternative interpretations to be clearly distinguished. The results associated with *authority* should therefore be interpreted with caution.

The case of *unity with nature* illustrates a further challenge. Universalism is operationalised in this study through several items, with the theoretical framework suggesting a broadly common orientation across them. However, *unity with nature* shows a different association with wind energy acceptance relative to *equality* and *protecting the environment*. This highlights the limits of assuming that items within the same broader value dimension will relate to technology preferences in the same way.

The explanatory scope of the analysis is necessarily bounded by the theoretical mapping adopted in this study. This mapping draws on the worldviews and value orientations associated with Cultural Theory profiles, as described by Van De Graaff (2016). These orientations are then related to Schwartz’s value framework. Other theoretical perspectives may conceptualise the alignment between value orientations, worldviews, and energy technologies differently. They may therefore identify additional determinants of energy preferences. For instance, traditional values have been associated with lower wind energy support (Bidwell, 2013). This points to the relevance of Schwartz’s openness to change versus conservation dimension as a potentially important but unmeasured determinant.

A separate set of limitations concerns the data and the context in which preferences are measured. The analytical sample used in the ordered probit models is broadly representative of the Swiss population. However, some linguistic regions are represented by smaller subsamples. In particular, the Ticino subsample ($N = 506$) is considerably smaller than the German-speaking Swiss subsample ($N = 2,874$). This may reduce the precision of regional comparisons in the regression results.

A further limitation concerns the specific context in which preferences were elicited in this study. The preference measures used reflect general attitudes toward energy technologies rather than preferences in specific decision contexts. As shown in the descriptive analysis (see Appendix B), rankings differ when energy security is made salient. This suggests that energy preferences may also reflect considerations beyond the value orientations examined in this study. Consequently, the associations identified here may not fully generalise to contexts in which trade-offs between objectives or security considerations are explicitly framed.

11 Future Research

Several avenues for future research emerge from this study. The results suggest that value orientations contribute to explaining variation in wind energy acceptance and relative energy preferences. However, general support for wind energy does not automatically translate into local acceptance. One way of addressing this gap is to examine whether

the value-alignment mechanism identified in this study also extends to compensation schemes, that is, whether responses to such schemes vary systematically with individuals' value orientations in communities affected by wind energy projects. As outlined in Section 9, this proposition could be tested through a DCE. Such an experiment could provide valuable insights into differences in acceptance across population groups for different compensation schemes.

Another avenue for future research concerns the association of *romandie* across both measures of energy preference. This association persists even after accounting for the value-based items examined in the present study. It may therefore reflect orientations or worldviews not fully captured by the present measures. Within the framework adopted in this study, such patterns could potentially be consistent with a hierarchicalist cultural profile. Table 17 presents ESS items that could be used to formally assess whether a hierarchicalist profile contributes to the observed regional differences.

Existing ESS items could also provide a starting point for operationalising the two other poles of Schwartz's framework. On the one hand, items related to conformity, security, and tradition could be used to assess the conservation pole. On the other hand, items capturing self-direction, such as valuing creativity and independent decision-making, could provide an indication of the openness-to-change pole.

Incorporating these additional dimensions could help assess whether the persistent associations of education and gender are partly related to value orientations not captured in the present study. This could provide further support for, or challenge, the interpretations proposed in Section 8. More broadly, including additional value dimensions may extend the analysis to theoretical frameworks that similarly link value orientations to energy-related attitudes. This would require additional SVS items or alternative measurement instruments in future waves of SHEDS, allowing researchers to assess whether value dimensions and worldviews beyond those examined here are associated with energy preferences.

The individualist profile could also be further explored through achievement values. In Schwartz's framework, these values emphasise personal success through competence, including being ambitious and hard-working (Schwartz, 1992, 2012). This may resonate with the individualist profile's emphasis on creativity and enterprise (Van De Graaff, 2016). However, this alignment remains partial.

Table 17: Suggested ESS Items Related to Cultural Theory Profiles

Item code	Description	Scale
<i>Human Values (PVQ) — Conservation</i>		
ipstrgva	Important that government is strong and ensures safety	1–6
ipfrulea	Important to do what is told and follow rules	1–6
ipbhprpa	Important to behave properly	1–6
impsafea	Important to live in secure and safe surroundings	1–6
imptrada	Important to follow traditions and customs	1–6
<i>Human Values (PVQ) — Openness to Change</i>		
ipcertiv	Important to think new ideas and being creative	1–6
impfree	Important to make own decisions and be free	1–6
<i>Political Trust</i>		
trstprl	Trust in country’s parliament	0–10
trstplt	Trust in politicians	0–10
trstlgl	Trust in the legal system	0–10
lrnobed	Obedience and respect for authority most important virtues children should learn	0–10
loylead	Country needs most loyalty towards its leaders	0–10

Note: Human values items (PVQ) use a 1–6 scale where 1 = very much like me and 6 = not like me at all. Political trust items use a 0–10 scale where 0 = no trust and 10 = complete trust. Source: European Social Survey (2024).

Finally, the findings of this study are based on general energy preferences. As noted in Section 10, rankings differ when energy security is made salient. This suggests that the associations identified in the present study may not generalise to contexts where specific trade-offs are explicitly framed. Future research could examine whether the association between value orientations and energy preferences varies across different decision contexts. For instance, this could involve comparing general preference measures with those elicited under scenarios emphasising energy security or crisis conditions. Nuclear energy acceptance could also be examined as a separate outcome. This may be particularly rele-

vant given the renewed policy debate and shifting public attitudes toward nuclear energy in Switzerland.

12 Conclusion

Energy transitions require not only the deployment of new technologies but also their social acceptance. Although wind energy enjoys broad public support, it frequently encounters local opposition. This discrepancy has motivated extensive research into the factors underlying local opposition to wind farm projects. At the same time, nuclear energy has re-entered policy discussions in Switzerland, making individual differences in energy preferences particularly relevant. This study examines whether value orientations can help explain these differences, focusing on wind energy acceptance and relative preferences between wind and nuclear energy in Switzerland.

As a first step, the study provides a descriptive overview of wind energy acceptance and relative energy preferences across population subgroups in Switzerland. Wind energy enjoys broad but moderate support nationally, with more pronounced differences across linguistic regions than across living areas. Romandie stands out with lower wind energy acceptance and stronger relative preferences for nuclear energy.

More importantly, the findings extend previous applications of Cultural Theory to energy preferences. Van De Graaff (Van De Graaff, 2016) used Cultural Theory to interpret attitudes toward nuclear energy. Her study identified cultural profiles characterised by distinct worldviews and value orientations, leading to different energy preferences. Building on this approach, our study related two of these profiles to broader value orientations in Schwartz’s framework. We focused on two orientations in tension and operationalised them through corresponding SVS items.

Two main findings emerge. First, universalism items, particularly *equality* and *protecting the environment*, are among the strongest positive predictors of wind energy acceptance. They are also the strongest predictors of relative wind preferences. This is consistent with **H1**. Second, power items, *authority* and *wealth*, are associated with stronger relative preferences for nuclear energy. Consistent with **H2**, they show little to no association with wind energy acceptance. The two sets of items also differ in the strength of their associations with energy preferences. Universalism-related items show stronger associations with wind energy preferences, whereas power-related items are associated with comparatively weaker preferences for nuclear energy. The item *unity with nature* represents a partial exception, as it is negatively associated with wind energy acceptance. This suggests that a general orientation toward harmony with nature does not necessarily translate into support for wind infrastructure.

These patterns are broadly consistent with the value orientations attributed to the egalitarian profile and, with some caution, with those attributed to the individualist

profile. The power-related items provide a less direct representation of the motivations underlying the individualist profile, particularly in the case of *authority*.

Taken together, these findings are broadly consistent with a value-alignment mechanism. This suggests that individuals are more likely to accept and prefer energy technologies whose characteristics align with their underlying value orientations. If this mechanism extends to compensation schemes, responses to such arrangements may similarly vary with individuals' value orientations. Testing this proposition empirically remains an important avenue for future research, as outlined in the proposed discrete choice experiment (see Section 9).

The findings also reveal an interesting residual pattern that warrants further consideration within the Cultural Theory framework. Van De Graaff 2016 describes the hierarchicalist profile as characterised by trust in government authority and a preference for centralised solutions, making it an important counterpoint to the egalitarian profile. However, the present study did not establish a corresponding mapping of the hierarchicalist profile onto Schwartz's value orientations. Several covariates remain significantly associated with the outcomes after accounting for the value-based measures included in the analysis. Among these, the *romandie* coefficient is particularly noteworthy: its association persists across model specifications and corresponds to lower wind energy acceptance and stronger relative preferences for nuclear energy. The associated average marginal effects are also among the largest across covariates for both outcomes, further highlighting the strength of this association. This raises the possibility that the *romandie* coefficient captures, at least in part, value orientations or worldviews consistent with the hierarchicalist profile. However, because these orientations could not be directly assessed in the present study, this interpretation remains tentative.

Looking ahead, three research avenues emerge from these findings and limitations. First, the proposed discrete choice experiment, as outlined above, would allow for a direct test of whether the value-alignment mechanism also applies to compensation schemes.

Second, developing measures of the hierarchicalist profile would allow for a formal test of whether the persistent *romandie* coefficient reflects this cultural orientation. Such measures could draw on ESS items covering conformity, security, and tradition, as well as political trust items capturing institutional trust and trust in government and expert authority.

Third, incorporating achievement values, such as being ambitious and hard-working, already available in SHEDS, could provide a complementary way of exploring the motivations associated with the individualist profile. Expanding the analysis to include items capturing the conservation and openness-to-change poles of Schwartz's framework could further broaden the analysis beyond the self-transcendence versus self-enhancement dimension. Together, these extensions would provide a more complete picture of the value-based determinants of energy preferences in Switzerland.

Switzerland is currently undergoing an energy transition alongside a renewed debate over nuclear energy. The findings suggest that differences in public support for energy technologies are related not only to their perceived benefits or costs, but also to individual value orientations. This indicates that how individuals evaluate the benefits, costs, and risks of different energy technologies may itself be related to these value orientations. Accounting for these orientations may therefore help explain differences in support for wind and nuclear energy, which are likely to remain relevant as Switzerland continues to navigate its energy transition.

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Appendices

Appendix A: Prioritization Ranking of Low-Carbon Energy Sources

A.1 First-choice preferences

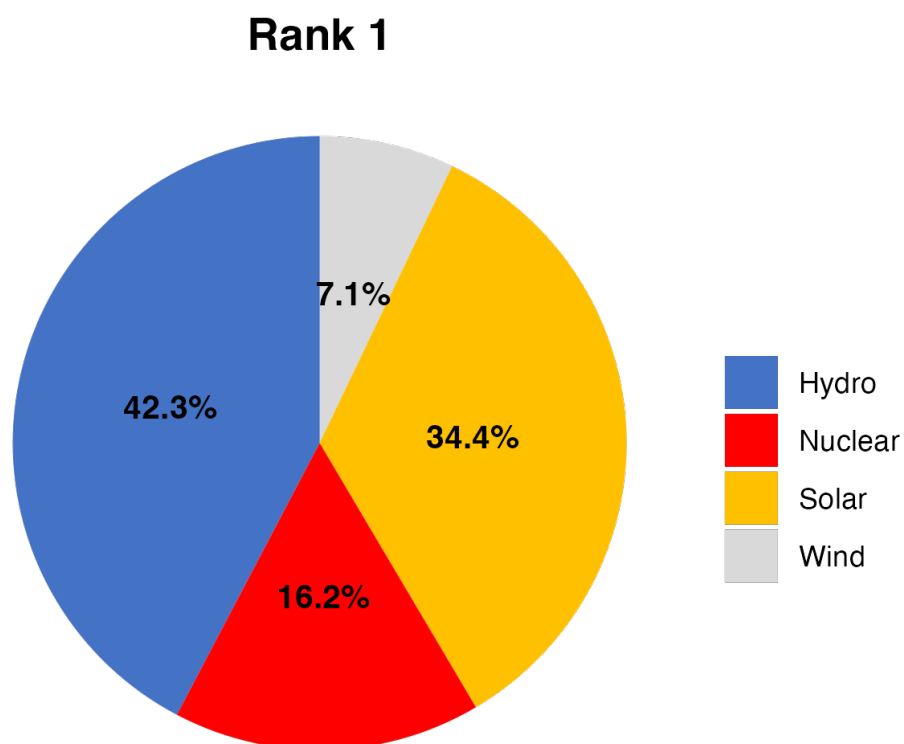


Figure A1: First-choice low-carbon energy preference: Share selecting Wind, Hydropower, Solar, and Nuclear

A.2 Second-choice preferences

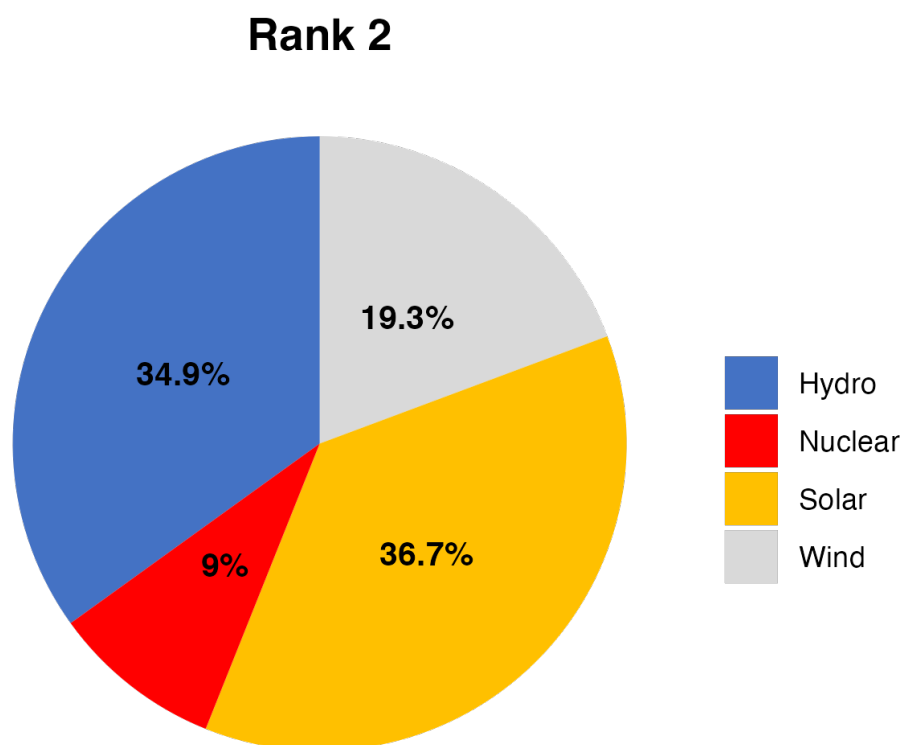


Figure A2: Second-choice low-carbon energy preference: Share selecting Wind, Hydropower, Solar, and Nuclear

A.3 Third-choice preferences

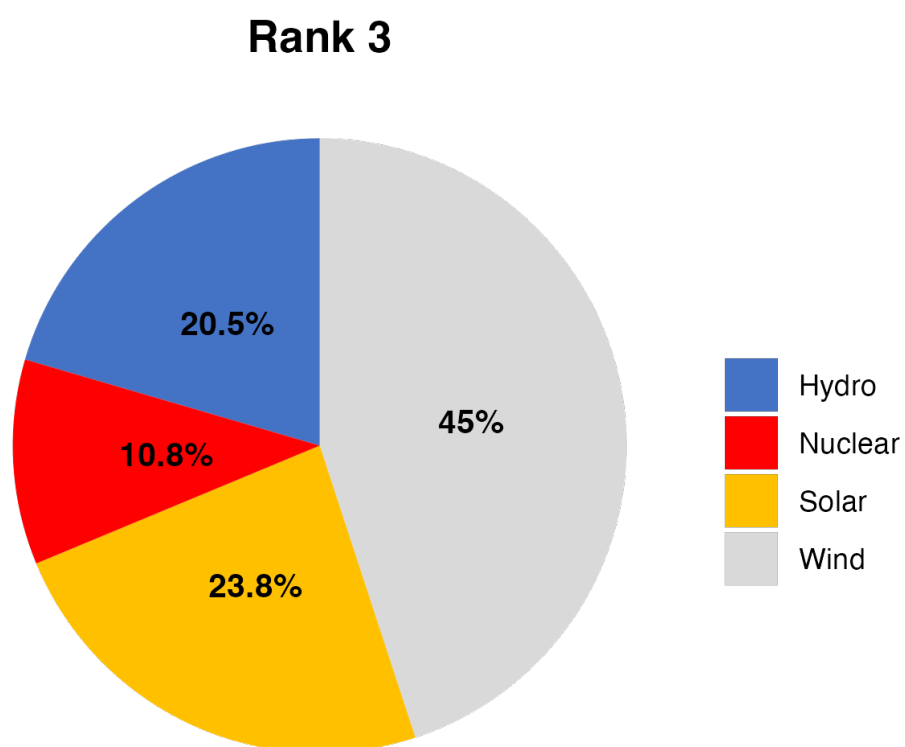


Figure A3: Third-choice low-carbon energy preference: Share selecting Wind, Hydropower, Solar, and Nuclear

A.4 Fourth-choice preferences

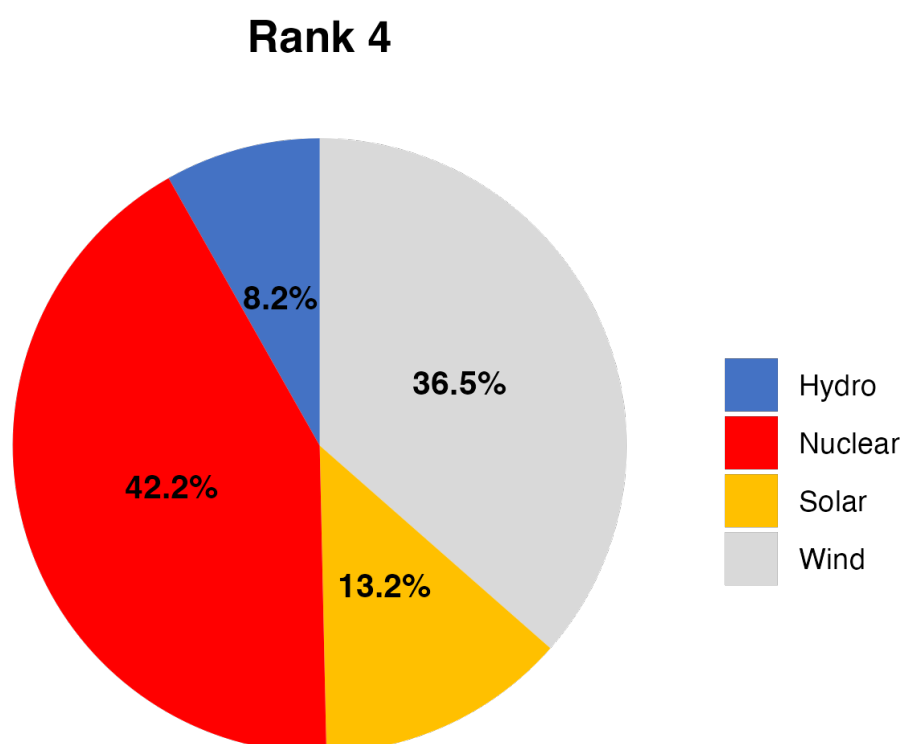


Figure A4: Fourth-choice low-carbon energy preference: Share selecting Wind, Hydropower, Solar, and Nuclear

A.5 Survey item

Respondents ranked energy sources by priority for energy security; rankings for hydropower, wind, solar, and nuclear are retained.

Table A1: Energy source priority ranking

Description	Items retained	Scale
Priority ranking of energy sources for energy security	Hydropower, Wind, Solar, Nuclear	Rank 1–5

Appendix B: Nuclear vs Wind Energy Security Priority Ranking

B.1 Rank 1

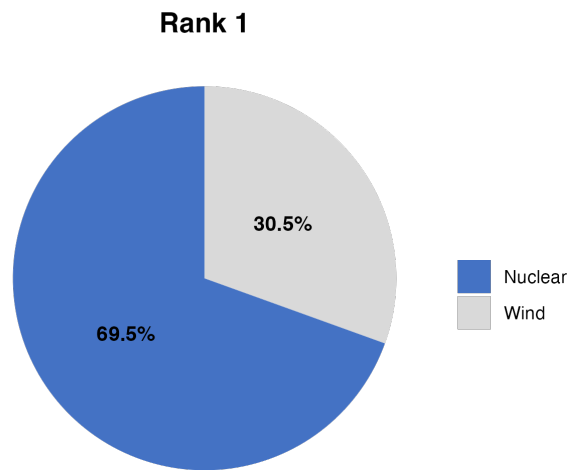


Figure B1: First-choice energy security priority: Nuclear vs Wind

B.2 Rank 2

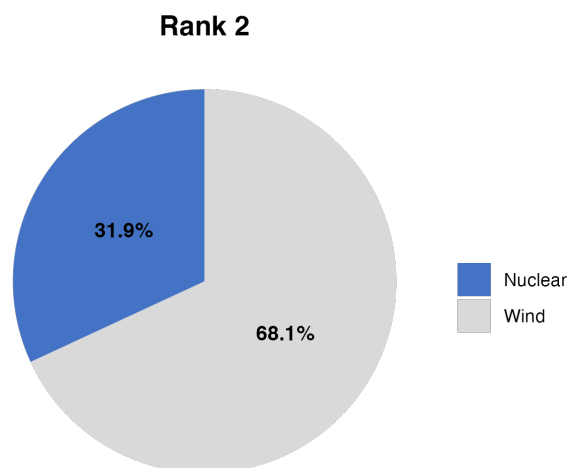


Figure B2: Second-choice energy security priority: Nuclear vs Wind

B.3 Rank 3

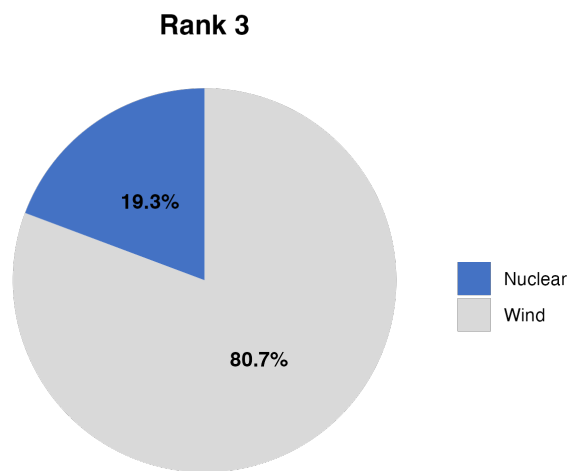


Figure B3: Third-choice energy security priority: Nuclear vs Wind

Appendix C: Moderate Respondents and Segmentation Profiles

C.1 Definition of Moderate Respondents

A respondent is classified as moderate based on three cumulative criteria: (1) no outright rejection of either technology — no score of 1 or 2 on both axes simultaneously, with the exception that a score of 2 is tolerated if the other axis is neutral (3); (2) no unilateral extreme position — scores of 5 are excluded unless paired with a score of 4 or above; and (3) a moderate difference between the two preferences, defined as $\text{Wind} - \text{Nuclear} \in \{-1, 0, +1\}$.

C.2 Cell-to-Profile Correspondence

Table C1: Correspondence Between Matrix Cells and Segmentation Profiles

Profile	Cells (Nuclear, Wind)
Undecided	(3,3)
Wind-leaning moderates	(2,3), (3,4)
Clear wind supporters	(1,3), (1,4), (1,5), (2,4), (2,5), (3,5)
Pro-energy pragmatists	(4,4), (4,5), (5,4), (5,5)
Moderate nuclear supporters	(4,2), (4,3), (5,3)
Exclusive nuclear supporters	(4,1), (5,1), (5,2)
Wind-averse neutrals	(3,1), (3,2)
Refractors	(1,1), (1,2), (2,1), (2,2)

Note: N = Nuclear score, W = Wind score, scale 1–5. This correspondence applies uniformly across all subgroups analysed in this study.

C.3 National Level

Table C2: Distribution of moderate respondents by cell — National level (N = 5,512)

Cell (Nuclear, Wind)	Difference	%
(2, 3)	+1	5.01%
(3, 2)	-1	2.52%
(3, 3)	0	10.38%
(3, 4)	+1	7.73%
(4, 3)	-1	5.34%
(4, 4)	0	6.51%
(4, 5)	+1	2.92%
(5, 4)	-1	2.96%
(5, 5)	0	4.30%
Total		47.67%

Note: Percentages refer to the full national sample (N = 5,512).

Table C3: Segmentation Profiles — National Level (N = 5,512)

Profile	Cells (N,W)	Logic	%
Undecided	(3,3)	Neutral on both	10.38%
Wind-leaning moderates	(2,3)(3,4)	Slight wind preference, open to both	12.74%
Clear wind supporters	(1,3)(1,4)(1,5) (2,4)(2,5)(3,5)	Nuclear rejection + strong wind support	32.17%
Pro-energy pragmatists	(4,4)(4,5) (5,4)(5,5)	Supportive of both technologies	16.69%
Moderate nuclear supporters	(4,2)(4,3)(5,3)	Pro-nuclear, reserved on wind	11.83%
Exclusive nuclear supporters	(4,1)(5,1)(5,2)	Strong nuclear support, wind rejection	8.58%
Wind-averse neutrals	(3,1)(3,2)	Nuclear neutral, reluctant on wind	3.35%
Refractors	(1,1)(1,2)(2,1)(2,2)	Against both, no openness	4.26%
Total	25 cells		~100%

Note: N = Nuclear score, W = Wind score, scale 1–5. Percentages may not sum to exactly 100% due to rounding.

Appendix D: Average Marginal Effects — Wind Acceptance

D.1 *equality*

Table D1: AME — *equality* (Wind Acceptance)

Category	AME	SE	
1	−0.0269	(0.0043)	***
2	−0.0220	(0.0020)	***
3	−0.0230	(0.0054)	***
4	+0.0174	(0.0050)	***
5	+0.0545	(0.0080)	***

D.2 *protecting the environment*

Table D2: AME — *protecting the environment* (Wind Acceptance)

Category	AME	SE	
1	−0.0241	(0.0046)	***
2	−0.0196	(0.0029)	***
3	−0.0205	(0.0056)	***
4	+0.0155	(0.0046)	***
5	+0.0487	(0.0096)	***

D.3 *romandie*

Table D3: AME — *romandie* (Wind Acceptance)

Category	AME	SE	
1	+0.0339	(0.0081)	***
2	+0.0276	(0.0048)	***
3	+0.0289	(0.0071)	***
4	−0.0219	(0.0077)	***
5	−0.0686	(0.0128)	***

Appendix E: Average Marginal Effects — Relative Energy Preferences

E.1 *equality*

Table E1: AME — *equality* (Relative Energy Preferences)

Category	AME	SE	
−4	−0.0180	(0.0031)	***
−3	−0.0131	(0.0014)	***
−2	−0.0173	(0.0013)	***
−1	−0.0184	(0.0018)	***
0	−0.0141	(0.0048)	***
+1	+0.0080	(0.0034)	***
+2	+0.0187	(0.0019)	***
+3	+0.0237	(0.0021)	***
+4	+0.0305	(0.0059)	***

E.2 *protecting the environment*

Table E2: AME — *protecting the environment* (Relative Energy Preferences)

Category	AME	SE	
−4	−0.0174	(0.0032)	***
−3	−0.0127	(0.0017)	***
−2	−0.0167	(0.0019)	***
−1	−0.0178	(0.0024)	***
0	−0.0136	(0.0049)	***
+1	+0.0077	(0.0033)	***
+2	+0.0181	(0.0023)	***
+3	+0.0229	(0.0029)	***
+4	+0.0295	(0.0064)	***

E.3 *authority*

Table E3: AME — *authority* (Relative Energy Preferences)

Category	AME	SE	
−4	+0.0075	(0.0021)	***
−3	+0.0055	(0.0012)	***
−2	+0.0072	(0.0014)	***
−1	+0.0076	(0.0013)	***
0	+0.0058	(0.0019)	***
+1	−0.0033	(0.0017)	**
+2	−0.0078	(0.0017)	***
+3	−0.0098	(0.0017)	***
+4	−0.0127	(0.0027)	***

E.4 *wealth*

Table E4: AME — *wealth* (Relative Energy Preferences)

Category	AME	SE	
−4	+0.0072	(0.0023)	***
−3	+0.0052	(0.0013)	***
−2	+0.0069	(0.0015)	***
−1	+0.0073	(0.0013)	***
0	+0.0056	(0.0016)	***
+1	−0.0032	(0.0018)	*
+2	−0.0075	(0.0019)	***
+3	−0.0094	(0.0018)	***
+4	−0.0121	(0.0024)	***

E.5 *romandie*

Table E5: AME — *romandie* (Relative Energy Preferences)

Category	AME	SE	
−4	+0.0117	(0.0039)	***
−3	+0.0085	(0.0025)	***
−2	+0.0112	(0.0031)	***
−1	+0.0119	(0.0033)	***
0	+0.0091	(0.0036)	**
+1	−0.0052	(0.0028)	*
+2	−0.0121	(0.0036)	***
+3	−0.0153	(0.0042)	***
+4	−0.0197	(0.0061)	***

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I hereby declared that this assignment is my own work.

Where I have used Artificial Intelligence (AI) tools, I have:

- Used them responsibly and in accordance with university guidelines.
- Applied them only to support and not to substitute my own work.
- Critically evaluated, verified, and edited all AI outputs before inclusion.
- Ensured that all substantive arguments, interpretations, and conclusions are my own.
- Provided full citations to original scholarly sources where appropriate.
- Provided full citations to AI for direct contributions (if applicable).
- Declared the use of AI in the AI checklist.

I understand that I am fully responsible for the content, accuracy, and integrity of this submission.

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Date: 02.09.2026

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Please list all tasks for which AI was used, the corresponding AI assistant (incl. version number), and the purpose in the assignment.

Task	Section(s)	Tool(s)	Purpose
Brainstorming	All	Claude Sonnet 5	In General, back and force Questions to understand what AI suggests and what it could imply for my work.
Finding Literature			
Reviewing Literature	Littérature Review	Claude Sonnet 5	Asking about content, Making sure I understand
Writing Code	Data, Descriptive Results, Results	Claude Sonnet 5	Used to assist with plots, figures, models specifications
Correcting Code	Data, Descriptive Results, Results	Claude Sonnet 5	Help debugging
Analyzing Data	Descriptive Results Results	Claude Sonnet 5	Asked when not sure about results, what they could imply
Writing text	All	Claude Sonnet 5	Use AI to help me convey message in a more proper way, wording and sentence fluidity
Correcting text	All	Claude Sonnet 5	Helping me with spelling, grammar

Formatting	All	Claude Sonnet 5	Help me formatting tables and section in Latex
Others (please specify)			
